Bolubacky 5

SCIENTIFIC CORRESPONDENCE OF PROFESSOR DRAGOŠ CVETKOVIĆ

Professor Dragoš Cvetković has saved and classified a part of his scientific correspondence. These archives are located in the Mathematical Institute of the Serbian Academy of Sciences and Arts, Belgrade, Kneza Mihaila, 36. A part of the correspondence has been scanned and organized within several files whose names indicate the content and the period of time.

Each archive file is commented by D. Cvetković. Comments include some autobiographic facts which help in understanding the meaning of documents in the file. More details on the biography of D. Cvetković can be found in the book

Cvetković D., *Graphs as inspiration, Autobiographical Notes and Other Texts on the Occasion of Four Decades of Scientific Work in Mathematics (Serbian)*, Ed. V. Kovačević-Vujčić, Akademska misao, Beograd, 2006.

General comments on this electronic collection are contained in a separate file.

File: GENERAL CORRESPONDENCE, 1975 - 1978

Comments by D. Cvetković

The file begins with a few letters from 1974. My letter of 23.7. thanks P. Erdös for sending two copies oh his book "Probabilistic Methods in Combinatorics". In his letter of 23.9. P. Erdös explains that one copy is for S. Simić.

31.3.1975. F. Harary asked me to join the Editorial Board of new Journal of Graph Theory.

I have exchanged many letters with my graduate student R. Šokarovski from Skopje in 1975 and 1976. We published jointly the book Cvetković D., Šokarovski R., *Fundamentals of Graph Theory (Macedonian)*, Skopje, 1975. Unfortunately, R. Šokarovski died on 6.12.1976. in the age of 32.

I spent the academic year 1975/76 in Eindhoven as a postdoctoral fellow, working with J.J. Seidel. At the same time my doctoral student S. Simić was serving his National Service.

14.11.1977. I was thanking L. Lovász who invited me to be one of main speakers at the conference Algebraic Methods in Graph Theory, Szeged, 1978. Further correspondence on this topic occured on 5.1.1978 and 15.4.1978.

In 1978 I had an intensive correspondence with many colleagues:

J. Akiyama, B. Alspach, N. S. Annigieri, L. Babai, J.-C. Bermond, J. A. Bondy, M. Borowiecki, R. C. Bose, F. C. Bussemaker, M. F. Capobianco, S. D'Amato, M. Doob, C. Godsil, S. K. Gupta, F. Harary, M.-C. Heydeman, A. J. Hoffman, W. Imrich, C. Johnson, V. R. Kulli, L. Lesniak-Foster, J. H. van Lint, D. Marušič, R. N. Naik, T. Pisanski, D. Powers, P. R. Rao, D. Rouvray, H. Sachs, E. Sampathkumar, A. J. Schwenk, J. J. Seidel, J. M. S. Simoes-Pereira, D. Šiljak, J. Topp, W. T. Tutte, H. B. Walikar, H. Walther.

23.7.1974

Mr. Paul Erdos
Univ. of Calgary
Depart. of Math.
Calgary,Alberta,
Canada

Dear Professor Erdos,

Thank you very much for the copies of your papers which you kindly sent to me from Island. I have also received two copies of your book (written with J.Spencer) from Budapest, "Probabilistic Methods in Combinatorics". Assuming that a copy of it is meant for S.Simić, I wish to thank you in his name and mine.

Yours sincerely

Dragoš Cvetković

1974 IX 23

NORTHERN ILLINOIS UNIVERSITY

DeKalb, Illinois

60115

Dear Dr Cretkovic,

Enclosed I send you my paper and prob-
lem - I submitted the same for the Balkan
meeting, please find out if they
recived it, if not please submit the
copy I sent you.

Kind regards to you and Dr Gemić

D. Endés

The copy of my book with Spencer was
other
as you guessed meant for Dr Gemić

»RUĐER BOŠKOVIĆ« INSTITUTE
41001 Zagreb, Croatia, Yugoslavia

POB 1016
PHONE: (041) 424-355
TELEX: 21-383

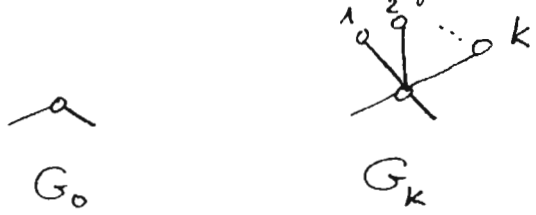
1974

Zagreb 10. IX

Dragi Dragoš.

Javljam Ti se posledњi put kao civil. 12. IX javljam se u kasarnu u Visoko. Zadnjih mesec-dva dano bio sam dosta okupiran privatnim poslovima, a i činjenica da uskoro idem me je potpuno destimulisala za rad.

Našao sam ovih nekoliko relacija, možda će Te to interesirati: Neka G označava i graf i njegov karakteristični polinom. Neka je G_0 proizvoljni graf. Neka se G_k dobije iz G_0 tako da se na svaki čvor iz G_0 doda još k čvorova:



G_0 $\qquad$ G_k

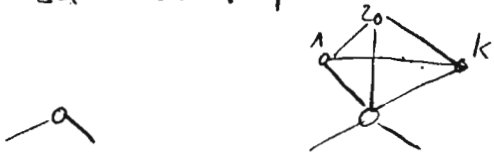
Tada je

$$G_k(\lambda) = \lambda^{(k-1)n} G_0\left(\lambda - \frac{k-1}{\lambda}\right)$$

gde je n broj čvorova grafa G_0.

Ovaj rezultat ti je svakako poznat.

Neka G_0 kao i prije označava proizvoljni graf a neka G_k dobiven iz G_0 dodavanjem po k čvorova svakom čvoru, tako da je svaki od njih povezan sa svih preostalih $k-1$.



G_0 G_k

Tada

$$G_k(\lambda) = (\lambda+1)^{n(k+1)} (\lambda-k+1)^n \, G_0\left[\frac{(\lambda+1)(\lambda-k)}{\lambda-k+1}\right]$$

Neka je G_k dobiva dodavanjem na svaki čvor grafa G_0 lanca duljine k.

G_0 G_k

Tada

$$G_k(\lambda) = [L_k(\lambda)]^n \, G_0\left[\frac{L_{k+1}(\lambda)}{L_k(\lambda)}\right]$$

gde $L_k(\lambda)$ jeste karakteristični polinom lanca od k čvorova.

Po mogućnosti ću se javljati.
Molim Te, izvještavaj me o sudbini naših članaka.
Ja ću Te, ako mogu, također obavještavati o našim zajedničkim radovima

Pozdrav

Ivan

DEPARTMENT OF CHEMISTRY **TUFTS UNIVERSITY** MEDFORD, MASSACHUSETTS 02155

Profesor Dragos Cvetkovic,
Elektrotehnicki Fakultet,
Universitet u Beogradu,
Beograd, Srbija,
Jugoslavija.

6 Sijecnja 1975

Dragi Dr. Cvetković

Pred 2 dana u posebnoj koverti poslao sam Vam na uvid jedan manji rukopis u zelji da cujem Vasa predhodna misljenja koja bi nastojao uklopiti u konacnu verziju rada. U radu se razmatra pojam nesazetih (primarnih ili ireducibilnih) crteza - sam naziv mozda i nije najsretniji. Takodjer nemogu reci da vidim neku neposrednu korist ovakve analize, stoga sam i natuknuo pri zavrsetku rada onu anegdotu o Michael Faradayu. Prikupljam daljnje podatke o slozenijim molekulnim sustavima i nije iskljuceno da ova posebna svojstva ipak su nekeko vezana za neke strukturne elemente koje jos nemozemo u potpunosti sagledati.

Ovu temu o ireduciblinim crtezima i dalje razradjujem i imam u pripremi dva manuskripta u kojim se rasmatraju neke posljedice prisustva nula-koeficientata za sustave od zanimljivosti u kemiji. Vjerovatno jos ovog tjedna cu zavrsiti prijepis prvog manuskripta a pokusati cu i drugi zavrsiti tokom ovog mjeseca. Poslao bi Vam onda takodjer i ove materiajale - koji imaju uzu kemijsku orjentaciju - jer mozda u njima Vi nadjete neke zanimljive elemente koji s matematske strane dopustaju rigorozniju obradu i koji mogu biti podloga za daljnu razradu koja bi izlazila iz uzeg interesa fizike i kemije.

Koristim ovu priliku da Vam zahvalim na ranije poslanom materijalu (otisak disertacije) i da Vas zamolim za novije separate. Najsvjeziji rad u Chem.Phys. Letters sam pregledao. Dozvolite neke letimicne utiske da pripisem: Za anorgansku kemiju zanimljive su strukture s koordinaicjom 8 (a niže iznimno i vise), tj stupanj pripadnog crteza bio bi cak 8. Vi se (u niz radova) stalno ogranicavate (ili najcesce) na stupanj valencije 3. Ovo ogranicava primjenu na tzv konjugirane nezasicene sustave, dakle ni veci dio organske kemije nije tu ukljucen (valencija zasicenog ugljika je 4). Dakle spomenuti rad be se mogao nadopuniti pregledom daljnjih za kemiju (sada ukljucujuci i anorganske sustave) vaznih gradja - to sam nedavno spomenuo Trinajsticu obzirom da ovdje malo suradjujem s jednim anorganskim kemicarem koji se zanima za primjenu teorije cretza u kemiji - i koji bi mogao biti dobar "izvor" vaznih anorganskih struktura. Konacno, namece se i pitanje nije li mozda broj crteza koji imaju cjelobrojne vlastite vrijednosti konacan - bez obzira na velicinu i valencije ? Najme tesko je zamisliti da povecanjem broja vrhova i bridova u crtezu se nece pojaviti necjelobrojni korjeni karakteristicnog polinoma. Ovaj problem je matematske naravi i mozda Vi nadjete neko rjesenje - iako jednom rjesen mozda bude imao neko fizicko i kemijsko znacenje.

Uz mnogo pozdrava M. Randić

10.1.1975

Mr. W.Imrich
Institut für Mathematik,
Montanistische Hochschule
A-8700 LEOBEN, Austria

Dear Professor Imrich,

I would appreciate receiving, if possible, the reprints of your papers dealing with operations over graphs in which the vertex set is cartesian product of vertex sets of graphs on which the operation is made.

I would like to get an information, too. I know that Austrian mathematicians have been dealing with generalizations of regular graphs. Is there a list of all regular graphs of degree 3 with 12 vertices ? Is there a way to obtain that list?

Thanking you in advance for your kindness,

Yours sincerely

Dragoš Cvetković

Institut für Angewandte Mathematik
Montanistische Hochschule Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1975 01 16

Prof. Dragos Cvetković
Department of Mathematics
Faculty of Electral Engineering
University of Beograd
P.O. Box 816
11.001 Beograd

Dear Professor Cvetković,

Thank you very much for your letter of January 10, 1975. With separate mail I will send you all reprints on products of graphs I have.

Personally I have only determined the cubic graphs on ten vertices, but a week ago I found the following reference in the Р.Ж.: Петренюк Л.П., Петренюк А.Н., О конструктивном перечислении 12-вершинных кубических графов, Комбинатор. анализ Вып.3.М., Моск. ун-т, 1974, 72 - 82. I am trying to get a copy myself (there are 86 such graphs).

I hope to be able to meet you some time at a graph theory conference.

Sincerely yours,

Wilfried Imrich

JOURNAL OF MOLECULAR STRUCTURE

Salford, Great Britain, 10/1/1975

Dear Sir,

Your manuscript entitled

'Graphical studies.....non-bonding MO.'

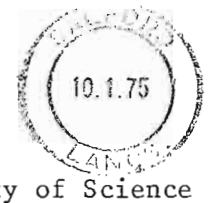
~~has been received safely and is now being considered for publication.~~
has been accepted for publication and forwarded to the publisher.

W. J. Orville-Thomas

ELSEVIER SCIENTIFIC PUBLISHING COMPANY,
P.O. BOX 330, AMSTERDAM

POSTCARD

4



Professor N.Trisjstic.

Chemistry Department, Faculty of Science & ~~Technology~~,
Mathematics,

Institute Rudar Boskovic

P.O.B.1016, 410001 Zagreb

YUGOSLAVIA

PROF. W. J. ORVILLE-THOMAS,
Department of Chemistry and
Applied Chemistry,
University of Salford,
Salford M5 4WT, Lancs.,
Great Britain.

UM

The University of Manitoba

Department of Mathematics and Astronomy

Winnipeg, Canada R3T 2N2

January 22, 1975

Dr. Dragoš Cvetković,
Department of Mathematics,
Faculty of Electrical Engineering,
University of Belgrade,
P.O. Box 816,
11.001 Belgrade,
Yugoslavia

Dear Dr. Cvetkovic:

Thank you for your letter of November 14. It is good to hear that progress is being made on the book; these things always go slowly. Enclosed is the correspondence that I have received from VEB Deutscher Verlag, plus a letter from Frank Harary that you might find interesting.

As for your question concerning cubic graphs, I know of no pair of cubic cospectral graphs, nor have I been able to construct one. Despite this, I would be quite surprised if they were characterized by their spectra. On the other hand, if we had a cospectral pair we could form new graphs by using the vertex-edge incidence matrix of each graph as a corner block to form the adjacency matrices of a pair of bipartite graphs and then taking the line graphs.

Concerning the regular graphs where $\lambda_i + \lambda_j = -1$ for subdominant eigenvalues, what I actually had in mind was the Moore graphs since this fact was used in the proof in the text. Actually we can construct many such graphs in the following manner: take a regular graph G whose distinct eigenvalues are $d, d-r, d-2r, \cdots, d-2kr$ where $2d-(2k+1)r=-1$. This will be a graph whose subdominant eigenvalues come in pairs that sum to -1. Then $G \times K_{r,r}$ also has the subdominant eigenvalue property and the eigenvalues are also evenly spaced so that $G \times K_{r,r} \times K_{r,r} \times \cdots \times K_{r,r}$ has the subdominant eigenvalue property. By counting edges, these graphs are not self complementary. Many graphs exist that can be used for G, e.g., the Hoffman-Singleton graph or $L(K_{3,3})$.

Incidently, problem 8 at the end of Chapter 6 is not quite right, but I haven't worked out the best form yet. I'll send you a correction shortly.

I hope things are going well with you and your family otherwise. Thanks for your holiday greetings.

Sincerely,

M. Doob

MD:nb
Enc.

24.1.1975

Mr. A.J. Schwenk
The University of Michigan
Department of Mathematics
Ann Arbor,Michigan 48104

Dear Mr. Schwenk,

I am most kindly asking you to send me either a pre-print or a reprint of your paper entitled:On moments and coefficients in spectral graph theory, The 1975 Winter meeting of the A.M.S. in Washington, D.C.

Thanking you in advance,

Yours sincerely

Dragoš Cvetković

24.1.1975

Mr. Frank Harary
The University of Michigan
Department of Mathematics
Ann Arbor, Michigan 48104

Dear Professor Harary,

I am enclosing herewith two reprints of my paper written together with S.K. Simić entitled "Some remarks on the complement of a line graph" with the kindest request to give one copy to Prof. Beineke.
Please convey my regards to Prof. Beineke.

Yours sincerely

Dragoš Cvetković

Visoko, 9 II 1975

Dragi Dragoš

Hvala Ti na dva pisma koja si mi nedavno poslao. Sa zadovoljstvom sam pročitao vest da je i drugi naš rad prihvaćen za štampu. Što se tiče mogućnosti da postanem član Matematičkog Instituta, to bi za mene bila izuzetna počast.

—

I ranije sam pokušavao rešiti u opštem slučaju spektar $G_1 \circ G_2$ (korone grafova G_1 i G_2), ali to mi ni onomad a ni sada nije išlo od ruke. No nastaviću u tom pravcu.

Za sada mogu poslati samo sledeći rezultat:

Neka je G proizvoljni graf sa n čvorova a R regularni graf stepena r sa m čvorova (ne nužno povezan). Neka $P(G, \lambda)$ označava karakterističnom polinom grafa G. Tada važi

$$P(G \circ R, \lambda) = P\left(G, \lambda - \frac{m}{\lambda - r}\right)\left[P(R, \lambda)\right]^n \qquad (+)$$

Jednakost (+) sadrži kao specijalni slučaj formule za $G \circ K_m$ i $G \circ \overline{K}_m$. Spektar grafa $G \circ R$ se bez teškoća dobiva iz jedn. (+).

Da li je to interesantno?

—

Sutra putujem u Samobor na odsustvo a tom prilikom prisustvovaću u Zagrebu Savjetovanju hemičara Hrvatske. Imaću prilike da razgovaram sa članovima GTK. Neću zaboraviti ni na "zaduženja

u vezi Tvoje knjige.

Javiću se po svom povratku u Visoko.

Pozdravi,

Ivan

26.2.1975

Mr.M.Doob
The University of Manitoba
Department of Mathematics
and Astronomy
Winnipeg,Canada
R 32 T 2N2

Dear Mr. Doob,

Thank you for your letter of 22.2 and for the interesting contributions.

Unfortunately, a misapprehention occurred regarding the graphs having spectral properties of self-complementary graphs

I am interested in graph G with the following properties:

1^{o} G has $4r+1$ vertices,

2o G is regular of degree $2r$,

3^{o} G has eigenvalues $2r, \lambda_1, \lambda_2, \ldots, \lambda_{4r}$ with $2r \geq \lambda_1 \geq \lambda_2 \geq \ldots \geq \lambda_{4r}$ and $\lambda_i + \lambda_{4r+1-i} = -1$ for $i=1,2,\ldots,2r$.

4^{o} G is not self-complementary.

May you quote such a graph?

Yours sincerely

Dragoš Cvetković

Драги професоре,

Најприје, честитам Вам Нову 1975 годину и желим Вам све најбоље у животу и раду.

Јављам Вам се после дуге паузе и са мало више некоректног односа на моју савесност у периоду који је прошао. Извињавам се, мада то мало вриједи, и дозволите да Вам кажем да сам дорнах после матуре, осим око послова на радном месту, доста антиговао око цртарске дјеце мале куће, ситнаџа породицу. Био сам доста упропашћен са стамбеним проблемом, пуненада ми се указала јако повољна прилика за цртарску стопа-куће, и у ситуацији у којој сам се налазио, нисам себи могао да дозволим да пропустим ту могућност. Највећи део лета и десети „путовању" сам око цртарске куће. Молим Вас да ме за ово схватите и да прихватите као један мали разлог за мој некоректан однос према матичарском раду и Вама у овом периоду.

А сада да Вам кажем зашто сам се радом из теорије графова. Прошитао сам и разрадио Вашу докторску дисертацију и радове које сте ми дали. Разматрао сам и радио на темама које сте ми Ви предложили — „особине графова у зависности од спектра чворова". Чини ми се доцније и са Вашом дефинитивном сагласношћу, изабрао бих ја за матичарски рад. На овом подручју већ имам неке мале резултате. Радио сам на разрађивању неких особина графова који су на неки начин функције спектра чворова. Међутим, резултати, које имам, су доста парцијалног карактера. Нисам могао да нађем неки дефинитиван приказ овом проблему, као што је нпр., Ваш најновији рад са стохастичним графовима и роботима, на дефинитиван

Наиме, постоји велики број особина графова у вези са степеном графа. Но, то је рудиментарно, Ваша докторска дисертација је, чини ми се, несумњиво и јако не и само толико досад знаћемо из теорије графова да бих желео и могао да се прихватим једном таквом радњу.

За Ваше питање, покушао сам да и проблем Хамилтонових путева доведем у везу са тиме, и да прикажем, досад сам времена ту утрошио, а и да је тачно оно што сте ми Ви рекли, да су Хамилтонови путеви јако „тврд" проблем. Међутим мислим да и надам се да ће од свих мојих разматрања — чланка око Хамилтонових путева имати неке мале теорему које нешто мало описују неке особине Хамилтонових путева. Ја сам размишљао у овом правцу: дводоведени графови који не садрже мења подграфове (према дефиницији Харарија) су Хамилтонови графови; када су дводоведени графови који садрже мења-подграфове хамилтонови? Дакле, размишљао сам и око тога да су Хамилтонови графови доста удаљени од подграфа који у комплементу имају чворове са степенима већим или једнаким 3. Што се тиче описаних осталих графова који су обухваћени од комплементације степена чворова ја сам размишљао на пример при коме расподела степена графа је повољна, биперфектност, само комплементарност, мала неке карактеристичне суседне чворова или гране, онда који резултати задовољавају граф, стабло графова и сл.

Иако писати прелепше времена радно, ипак мислим да ћемо ипак „путовати". У фебруару ћу радо код Вас, да Вам кажем нешто сам досад радио и Вас замолим за консултације и савете. Шаљем прилогом ових, само дводоведених, графова за које сте

ми дали и Ваше радове.

За Вам кажем, писао радио на проблему пребројавања бојених или обојених графова са задатим расподелама боја, већ сам се оријентисао на описивању особина графа који су облика од стабла дрвећа.

Коначно, предлажем Вам да дипломски рад моја магистарска тема буде „Неке особине графова који су будућег стабла дрвећа".

Молим Вас за Ваш коначан став у вези са предложеном темом за магистарски рад, за коначну формулацију наслова теме и за остала питања у вези са магистарским радом.

Желим Вам да уђе и Правилник о последипломским студијама из области математике на Природно-математичком факултету у Скопљу. У вези са тим, дозволите да Вам кажем да после дефинитивног утврђивања теме магистарског рада са Вама, ја ћу рећи да се сазове Совет у Београду за прихватање магистарске теме. Семинарски рад ће радио и предао ћу Вам радом на магистарску тему, што ће документовано, са Вашом дозволом.

Молим Вас ако можете да ми ~~пошаљете~~ кажете неке ~~књиге~~ или радове као на пример: Parthasarathy, Enumeration of ordinary graphs with given portion; Ore, Note on Hamilton circuits; Pósa, A theorem concerning Hamilton lines; Walther, Voss, — über die Kreise in Graphen; неке друге радове ~~ово~~ графова са задатим расподелама. Исто тако, молио бих Вас, ако Вашом коначном ставу о магистарској теми, да ми дате, ако можете, неке радове који су у вези са магистарском темом.

Наиме, доста велики број особина графова је везан са степеном графа. Но, то је рудиментарно, Ваша докторска дисертација је, писао сам само нескромно и још не и само довољно знаковем из теорије графова да бих желео и могао да се придружим једном таквом раду.

За Вас кажем, покушао сам да и проблем Хамилтонових путева доведем у везу са њима, и да пронађем, доста сам времена ту утрошио, а и да је можда оно што сте ми Ви рекли, да су Хамилтонови путеви само "један" проблем. Међутим мислим да и надам се да ће од свих мојих разматрања — једна око Хамилтонових путева имати неке мале теореме које нешто мало описују неке особине Хамилтонових путева. Ја сам размишљао у два правца: 1) повезани графови који не садрже мања графове (према дефиницији Харарија) су Хамилтонови графови; 2) када су повезани графови који садрже мања-подграфове хамилтонови? Дакле, размишљао сам и око тога да су Хамилтонови графови доста обласи од подграфа који у неким теоријама чворова са степенима већим или једнаким 3. Шта се тиче одређених особина графова које су обухваћене од комплементарности степена њихових чворова ја сам размишљао на пример, при каквом распореду степена граф је повезан, биперитивност, само неких неквадратних, већ неки карактеристичних скупа чворова или грана, онда који услови гарантују задовољавају граф, типови графова и сл.

Иако писао превише времена радио, због чега сам мислим да још једна „пауза". У фебруару ћу радио, што сам доста радио и вас замолим за консултације и савети. Шаљем прилогом рад, још једно, што сте ми рекли, доста вам се свиђа које сте

Дозволите ми да Вас на крају обавестим да је моја садашња адреса: „Булевар ослобођења" број 32, 91000 Скопље.

С поштовањем,
Ристо Мокаровски

Драги професоре,

Примио сам Ваше писмо и књигу Valther-a и Woss-a. Захваљујем Вам се, а такође и на сугестијама и предлозима које сте ми дали у претходном периоду у вези са мојим семинарским радом.

Драго ми је што могу да Вас упознам информацијама које тражите. Ваша књига „Теорија графова и њене примене" доступна је библиотеци у Скопљу и може се набавити у књижари „Културе" у Скопљу. За сам је набавио претходне године, и то је прва књига из теорије графова са којом сам дошао у додир. Књига је један период била у књижарама, затим један дужи интервал није је било, а сада, од пре недељу дана опет је има у књижари „Културе". Књига је заступљена и у нашим факултетским и институтским библиотекама као: на Електромашинском факултету, Природно-математичком факултету, Математичком институту и т.д., заједно са другим класичним књигама из теорије графова

Теорија графова се не предаје ни на једном факултету Скопског Универзитета као засебан предмет, међутим, она је заступљена као део неког другог предмета. Тако, например, на Електромашинском факултету и на постдипломским студијама истог факултета изучавају се делови теорије графова и теорије мрежа у оквиру предмета „Теорија електричних кола", који предаје Проф. д-р М. Богдалов. Као уџбеник поменула сам скрипта коју је написао д-р М. Богдалов, књига „Електрична кола" од д-р М. Милића, а препоручује се и књига „Теорија графова и њене примене" наших аутора Ви и д-р М. Милић. Поштујем и предлог

у наставном плану на овом факултету да се од идуће академске године уведе предмет "Теорија графова и мрежа" као изборни предмет.

На Природно-математичком факултету теорија графова није заступљена као предмет, међутим, она је присутна у општим математичким активностима на факултету. Осим тога, почев од ове године, студентима-апсолвентима већ су почели да узимају семинарске и дипломске радове из теорије графова. Елементи теорије графова на овом факултету заступљени су у предмету "Линеарно програмирање" који предаје доцент д-р З. Кадељевић.

Елементи, делови теорије графова изучавају се и на специјалистичким студијама које организује Математички институт са Нумеричког центром, у оквиру предмета "Оптимизационе методе" који предају М. Богдановић и М. Живковић, сарадници Економског института у Београду. Ту је више реч о мрежном планирању.

На Високој економској школи у Ужицу изучавају се основни елементи теорије графова, мрежа и мрежног планирања у оквиру предмета "Квантитативни методи у економији", који предаје Проф. д-р Т. Зечевић, професор Економског факултета у Београду.

На Архитектонско-грађевинском факултету елементи теорије графова и мрежно планирање изучавају се у оквиру предмета "Организација и руковођење" и "Организација у грађевинарству." који предаје доцент мр. М. Четрдесет. Више о мрежном планирању предаје се на последипломским студијама на Грађевинском одсеку, при чему се

као наставници повезују сарадницу и наставнице из других универзитетских центара у нашој земљи.

Прошле године Математички институт је организовао семинар „Теорија графова и њене примене" у чијем су раду учествовали и студенти, сарадници и наставници Математичког института, Природно-математичког факултета и др.

У оквиру Математичког института постоји традиционална Математичка школа за талентоване математичаре – ученици средњих школа у СР Македонији. Садржај рада Школе је сваке године нов и усавршен се путем конкурса. Школа ради у три степена: први степен – у разредима, специјално организованим математичким паралелама у средњим школама у Републици; други степен – Зимски семинар на Природно-математичком факултету и трећи степен – Летња математичка школа у Охриду. Ове године тема Школе је „Основи теорије графова и њене примене". Наставници-руководиоци разреда у средњим школама, као и ученици, препоручена је Ваша књига, и она је основна књига коју ће користити наставници у припремању. По предлогу Савета Математичке школе, ја сам написао једну мању приручну скрипту „Основни појмови од теорија на графови", као увод за помоћ ученицима у паралелама Математичке школе.

Теоријом графова, као основном предметном области ће бавити се засада један други сарадник Српске Универзитете, осим мене. Међутим, већи број сарадника делимично се бави или интересује за теорију графова и њене примене. Новембру ове

колега: д-р Д. Карлицка, д-р А. Самарџиски, д-р Г. Гулона, С. Марковски, м-р Н. Целаковски, д-р М. Богданов, инж. М. Четрлонов, М. Кон-Поповска, Ј. Хаџитодов, м-р С. Шурлеталоска, д-р С. Здравковска и др.

Надам сам навео информације о каквој врсти књиге су Ваша потребе. Ако Вам требају неке друге информације или прецизније податке, потпуно бих се да их саопштим.

Имам још у плану да Вас замолим и предложим термин за сусрет са Вама у Београду због одређених обавеза које бих сада имао на радном месту у Институту и које су повезане са временским терминима, па бих Вас молио да ми дозволите да то уклопим у следећем писму. Надам се да ћу моћи да се сусретнем са Вама најкасније до краја овог месеца.

Са поштовањем,
Ристо Шокаровски

Dragi kolega,

Vaše me je pismo veoma obradovalo , ali sam se postidela što vam se ranije nisam javila. Ja sam , nažalost prilično lena za pisanje pisama , a u Beograd praktično od našeg poslednjeg sastanka nisam dolazila. Pokušaću sada da bar donekle nadoknadim propušteno.

Prvo ću vam opisati šta sam dosada radila i šta radim , a zatim ću odgovoriti na pitanja vezana sa predavanjem teorije grafova i vašom knjigom.

Algoritam za crtanje planarnih grafova sam , zajedno sa svojim asistentom, razvila do kraja , Program lepo radi , ne traje dugo i zauzima relativno malo memorije. Napisali smo zajednički rad pod naslovom "Jedan efektivni algoritam za postavljanje planarnih grafova" Taj rad je referisan na Evropskoj kongerenciji o sintezi i analizi mreža koja je održana prošle godine u Londonu. Na konferenciji je bio i kolega Milić. Ako vas rad interesuje , možete ga naći u materijalima sa konferencije koje kolega Milić sigurno ima.

Nas dvoje smo zatim razvili i algoritam za postavljanje grafova na torus. Program je takodje napravljen , ali se sastoji iz nekoliko programa koji se nastavljaju jedan na drugi. Jedan test primer je kroz njega prošao. Program je prilično dug i trebalo bi ga još usavršavati. Nažalost , moj asistemt Zoran Salčić otišao je u SAD na dve godine , te sada nemam sa kome da to radim. On je napravio magistarski rad koji obuhvata i problem postavljanja planarnih grafova i problem postavljanja na torus. Taj rad je sada kod mene. Čekam da se ovog leta pojavi u Sarajevu pa da ga bi ni. Ja bih veoma volela da čujem šta mislite o njemu , jer sam sama novajlija u tom području i zato nisam dovoljno sigurna. Dostaviću vam posebno jedan primerak, U njemu ću obeležiti ono što je naijintersantnije. Veoma bi me zadužili kada bi mi rekli da li su u njemu sve postavke i dokazi korektni , te da li bi se deo o postavljanju na torus mogao negde objaviti.

Treći problem , na kome sada radim sa jednom koleginicom (Zove se Gordana Jovenović , diplomirala je elektrotehniku i radi kod nas kao asistent) je jedan metod za dobijanje svih stabala grafa; Ideju za ovo sam dobila radeći postavljanje planarnih grafova(sam metod nije ograničen na planarne grafove).Nas dve sada završavamo referat koji ćemo prijaviti za Konferenciju o teoriji kola koja će se održati ovog leta u Splitu.

Ja ću vam , ako vas interesuje , dostaviti jednu kopiji čim ga završimo.

Sada ,u retkim slobodnim trenucima , razmišljam o jednom algoritmu za utvrdjivanje izomorfizma grafova. Ideja se , ukratko , sastoji u ovome: Graf se posmatra kao skup čvorova.Kada se uporedjuju dva skupa npr skup brojeva ili skup naslova , oni se prvo urede po opadajućem ili rastućim vrednostima brojeva ili po azbuci , a zatim se tako uredjeni uporedjuju čla po član. Čvorove grafa treba prvo kodirati , zatim poredati , a onda upored vati. Baza za kodiranje može da bude položaj čvora u konfiguraciji grafa. Naprimer stepen čvora , stepeni čvorova koji su od njega udaljeni za jedan dva itd i načini njihovog povezivanja.Neke sam stvari probala na papiru i dosada je dobro išlo. Radimsamo sa kubnim grafovima , jer je metod koji je ~~praktično~~ najbliži onome koga sam izložila kod njih praktično nemoćan. Zasada nisam ništa postavljala na računar jer nemam vremena.Metod koga sam razvila za izomorfizam otkriva simetriju u grafu i daje i potrebne i dovoljne uslove ako svi čvorovi imaju različiti kod (tj kada nema simetrije) , a samo potrebne kada postoji simetrija.Brine me jedino što će zahtevati dosta prostora u memoriji.

Eto , to bi bilo sve o mom radu. Kao što vidite , ja sam trajni zaljubljenik u grafove i pretvorila sam se u upornog amatera.

Ja dosta koristim vašu knjigu i preporučujem je obavezno svima koji rade sa mnom . Ona se ne može da kuši u Sarajevu , a izgleda više ni i Beogradu. Pretpostavljam da pomišljate na novo izdanje?Smatram da je veoma dobra za uvodjenje u teoriju i da može da zainteresuje svakog. Ako želite da je preradjujete , trebalo bi da prvo definišete njen cilj. Ako želite da njena namena ostane ista , tj da služi ljudima iz ranih oblas koji žele da svoje probleme rešavaju koristeći grafove , trebalo bi je još proširiti i uneti najnovije reference.Kako se grafovi sada dosta lansiraju u računarskim naukama , a čula sam i u dijagnostici kvarova , vredelo bi da ubacite i ta poglavlja pored primene u teoriji kola. Teorija grafova se na našem fakultetu ne predaje posebno nigde. Neki njeni elementi sada se samo pominju u teoriji kola

Eto , to bi bilo uglavnom sve.Nadam se da sam bila dovoljno iscrpna - možda i previše .Ako vas interesuju dalje pojedinosti , veoma ću vam rado pisati. Zasada nemam izgleda za put u Beograd , ali ako budem dolazila svakako ću vas potražiti.

Sve najbolje želi vam

Branka Krnić

PS . Jedak kolega želeo bi da primeni teoriju grafova u dijagnostici kvaro On se zove Dževad Hasanbegović. Ja sam mu dala kopiju Zikova , a on me je pitao da li je izašao drugi deo. Znate li nešto o tome?.

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF MATHEMATICS · WELLS HALL

EAST LANSING · MICHIGAN · 48824

21 March 75

Dear Prof. Cvetković,

Unfortunately, I have not yet written up the manuscript you requested. I shall send you a copy when it exists. Please note that my new address is:

Department of Mathematics
Michigan State University
East Lansing Michigan ~~48~~ 48824
U.S.A.

Sincerely,
Allen J. Schwenk

THE UNIVERSITY OF MICHIGAN
DEPARTMENT OF MATHEMATICS
ANN ARBOR, MICHIGAN 48104

AREA CODE 313
764-0335

31 March 1975

Dr. Dragoš Cvetković
Department of Electrical Engineering
University of Belgrade
Bulevar Revolucije, 73
P.O. Box 816
Beograd, YUGOSLAVIA

Dear Dragoš:

The Journal of Graph Theory will come into existence in 1976. It is to be published by American Elsevier, the company in this country associated with North-Holland. It will be an international journal and the Editorial Board has been proposed accordingly. I am delighted to invite you to be a member of this Board, representing Yugoslavia.

I hope that you will accept this appointment for an initial period of three years, 1 Jan. 1976-1 Jan. 1979. As I am leaving for Africa just one month from today in order to visit the Université de Niamey in Niger for the month of May, I would particularly appreciate receiving your acceptance of this appointment just as soon as possible, so that the Editorial Board can be definitely organized.

The journal will be a quarterly with about 92 pages in each issue. Accordingly, it is our objective that the standards for publication will be higher than those in most existing journals. Not only will all papers and notes be refereed, but in a sense which is perhaps impossible to put nicely into words, every article should be interesting and have some aesthetic appeal. I am very happy to inform you that JGT will have an extraordinarily well qualified Managing Editor: Professor Gary Chartrand of Western Michigan University in Kalamazoo. All papers will be refereed through his office under my direction. The material for most of Volume 1 will consist of the invited papers which were presented at the Special Session on Graph Theory at the meeting of the American Mathematical Society in Washington, D.C. two months ago.

It would be very fine indeed if you could contribute a paper to JGT and if you would suggest to the authors of papers on graph theory which are truly outstanding that they consider submitting their work to JGT.

The response that we have had concerning this proposed new journal has been uniformly enthusiastic and I hope that you share this feeling. I am looking forward to hearing that you will join me in this important, exciting, scholarly endeavor.

Yours sincerely,

Frank Harary

Frank Harary

7-IV-75

Драги професоре,

Примио сам Вашу фотографију и захваљујем Вам се још једном на брзини коју водите са мојим магистерским радом.

Шаљем Вам један део књига и радова које сте ми узајмили, између којих и оне за које ми кажете да Вам сада требају.

За бих дошао у Београд, ако је могуће у уторак, 15-IV-75, између око 9 h. Молим Вас, уколико нисте у могућности да ме тада примите, ако хоћете да одредите и да ми јавите термин када бисте могли да ме примите.

За време мог доласка у Београд, референсом бих Вама још сам до сада урадио, замолио бих Вас за неке конкретне консултације и затражио бих, ако сте у могућности да ми дате на увиду још неке радове које ми требају.

Том приликом вратио бих Вам и остале књиге и радове који су сада код мене.

Са поштовањем,
Р. Шпаровски

Молим Вас потврдите пријем књига и радова које Вам шаљем пуштем поштом.

8.4.1975

Mr. A. Balaban
Institute of Atomic Physics
POB 35
BUCHAREST, Romania

Dear Professor Balaban,

I take the liberty to address myself to you with a question, the reply to which is may be known to you.

Are there two nonisomorphic, cospectral, connected, regular graphs of degree 3?

I know for an example of two nonisomorphic, cospectral, disconnected, regular graphs of degree 3 with 20 vertices and I can construct infinitely many such pairs applying the operation L_2 (notation according to Harary's book) on known pairs. Your information would be very useful to me.

I would appreciate very much your sending me the reprints of your pppers concerning graph spectra.

Yours sincerely

Dr Dragoš Cvetković

TELEGRAM - Zajednica JPTT

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prof dr dragos cvetkovic
''lamartinova '' 44 beograd

prihvatam vas drugi predlog za susred u petak 18 4 75 zahvaljujem
r sokarovski

col 44 18 4 75

DISCRETE MATHEMATICS

April 10, 1975

Dear Professor Cvetkovic:

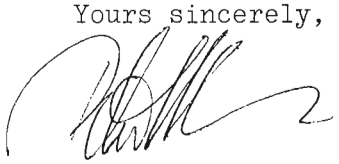
I am very glad to inform you that your manuscript entitled

"Graph Equations for Line Graphs and Total Graphs"

has been accepted for publication in DISCRETE MATHEMATICS. I am sure you will soon hear from the Publishers regarding technical details.

Thanking you for your interest in our Journal, I remain,

Yours sincerely,



Peter L. Hammer

P.S.: On the recommendation of the referee and in order to clarify things I have inserted the words "the equation" between "H" and "L (G)" in theorem 2. Also I have changed the sentence following Figure 8 (page 7) to "We plan to consider other graph equations in future papers." I hope you agree with these changes.

22.4.1975

Mr. Frank Harary
The University of Michigan
Department of Mathematics
Ann Arbor,Michigan 48lo4

Dear Mr. Harary,

Thank you very much for your letter of 31.3.1975. I am glad to hear that Hournal of Graph Theory will be published very soon. At the same time, I am very surprised and honoured by your kind invitation addressed to me to be a member of the Editorial Board. Naturally, I agree with your proposal.

I take the advantage of this occasion to send you three recent papers of mine,. I shall perhaps send you a new paper which can be be taken into consideration for a possible publication in the Journal of Graph Theory.

I wish to inform you that I will spend the academic year 1975/76 in Eidenhoven (The Netherlands) with Prof. J. J. Seidel, because I have been awarded the research fellowship from the Eindhoven University.

Probably that I shall participate at the Conference on Finite Geometrics and Designs at Brighton (England) dueing 5.9.-9.9.75 period. By the way, I am busy learning English and I hope that my English will be tolerable by Automn.

Yours sincerely

D.Cvetković

Поштовани колега,

Најлепше Вам се захваљујем на услузи.Посебно хвала на послатој Ва
књизи ТЕОРИЈА ГРАФОВА која је врло интересантна и са гледишта при
не јер сте се срећно укомпоновали као аутори да дате и теорију и
приемну.

Надамо се да ћемо Вас једног дана видети код нас и чути неко
предаваље из Ваше области интересовања.

Срдачан поздрав

Б.Попов

Драги професоре,

Најпре користим прилику да Вам се још једном захвалим за велику помоћ и добар пријем који сте ми указали приликом престоја у Београду, као и увек до сада.

Према договору, шаљем Вам кратак списак оних теорема, дефиниција и ставова које сам Вам показао у Београду, као и скицу плана-садржаја мастер-ског рада. У следећих дана, када будем готов, послаћу Вама на увид делове рада које заокружим и напишем. До Првог маја послаћу Вама и семинарски рад, са молбом да га прегледате и оцените дали се може прихватити.

Пренео сам у Институту и Савету Математичке школе Ваш наведени пристанак да будете професор-руководилац на Летњој математичкој школи. Ваш наведени пристанак је примљен са задовољством и око 15 маја биће Вама уручен и званичан позив за Ваш ангажман у Летњој математичкој школи. Надам се да ћете прихватити наш позив, разуме се, ако Вам то услови и обавезе дозвољавају.

За сада радим на писању семинарског рада, читам за мастерски рад и скицирам делове.

С поштовањем,
Ристо Шокаровски

Poštovani Kolega,

Primila sam Vaše pismo, mnogo mi se zahvaljujem na spisku studenata koji će položiti. Nerado da ću priznati Vaše pismene, ali to činim iznuzetno, jer me iskustvo uči da ko ne položi usmeni, taj je pismeni vezovatno prepisao.

Slovačević mi reče da im niste predavali analitičku geometriju i diferencijalne jednačine, pa ili neću ni to pitati. Inače da neću mi je žao i ispredavati diferencijalne jednačine, jer mom se činilo da sve znanje, te nauke mnogim koje da im najvažnije stvari ne izostavi.

Srdačno Vas pozdravlja

Vjeno Čanić

28.4.1975

Mr. M.Doob
THE UNIVERSITY OF MANITOBA
Department of Mathematics
and Astronomy
Winnipeg,Canada
R 32 T 2N2

Dear Dr. Doob,

I am enclosing herewith the chapter 6 of the book "Spectra of graphs". This version is written by Prof. Sachs, who took into consideration my complements about which I had informed you. Some unclearness remained on p. 48, while on p. 55 Prof. Sacks omitted to incprporate your modifications concerning switching of T(8), though I drew his attention to that. It is an inadvertent omission so please mention it when you write to him about other remarks. I would propose toyyou to write him directly, though you can do it through me also.

I received the copy of the letter adressed by Prof. Sacksto the Publishers, promising to them to submit the complete manuscript in the Autumn of this year. Naturally, the parts of the manuscript are already submitted to the Publishers. From the same letter I see that the Publishers are to make an agreement with you, soon.

I am anclosing the additional page for Miscelleneous results and exercises. I have proposed to Prof. Sachs to attach this page to the chapter, but it seems that he inadvertently omitted it.

Yours sincerely

D.Cvetković

DISCRETE MATHEMATICS

Publisher:
North-Holland Publishing Company
P.O. Box 103
Amsterdam
The Netherlands

April 29, 1975

Dear Professors Cvetkovic and Simic:

I am very glad to inform you that your manuscript entitled
"Graph Equations for Line Graphs and Total Graphs"

has been accepted for publication in DISCRETE MATHEMATICS.
I am sure you will soon hear from the Publishers regarding
technical details.

Thanking you for your interest in our Journal, I remain,

Yours sincerely,

Peter L. Hammer

ТЕЛЕГРАМ · ТЕЛЕГРАМ · Заједница ЈПТТ · Zajednica JPTT · Zaj

23/45
skopje/9 1112 3/4 10 1110

512

profesof doktor
dragos cvetkovic
''lamartinova'' 44
beograd

primio sam vase prvo i drugo pismo sa materijalima za sada je dosta materijala za knjigu stop javljam vam se opsirnije u ponedeljak stop

risto sotarovski

col 44

Dear Professor Harary,

1. I am enclosing herewith the first version of the manuscript "Graph equation, graph inequation and a fixed point theorem", with the kindest request to look superficially through it and to let me know whether it could be taken into consideration for publication in the Journal of Graph Theory. In the case of an affirmative reply the improved version of the paper would be forwarded to you. As you see at present we have much more material on graph equations.

2. I am enclosing herewith the copy of my letter to Professor Bellman in connection with the book on graph spectra. You have once given your opinion to Academic Press on this book so that I am kindly asking you to assist us, if possible, in this situation.

3. Is the information on the solution of the four colour problem published in the April issue of the journal Scientific American true?

Yours sincerely

D.Cvetković

21.5.1975

Dear Professor Bellman,

In your letter of 31.7.1972 you informed me that you have noted with great interest my paper"Graphs and their spectra" and that you would be willing to take this material, in form of a book, into consideration for publication in Academic Press series. In my letter of 5.1o.1972 I replied to you that the writing of such a book is in course (together with Professor H.Sachs) which would be published by Deutscher Verlag der Wissenschaften, Berlin. Simultaneously I proposed (in agreement with Professor Sachs) a cooperation between the Academic Press and the German Publishing House in connection with the publication of our book. On 12.1o.1972 you expressed a great interest for such a proposal. Thereafter, negotiations between the Academic Press and Deutscher Verlag der Wissenschaften were conducted and I was informed by the German Publishers that Academic Press desisted from the publication of this book.

Academic Press never informed me about this, so I am most kindly asking you to see to it that the competent people from Academic Press inform me about the present situation.

The manuscript of the book (as I gather from a letter of the co-author Prof. H.Sachs) will be definitively ready in Fall this year. The book would appear with the title: Spectra of graphs - A monograph". Professor M. Doob (Canada) has written a chapter, so that he also took part in the writing apart from Prof. Sachs and me.

As far as I know the German Publisher is still interested in cooperation with the Academic Press, and naturally the authors, are looking forward to such a cooperation.

Yours sincerely

D.Cvetković

21.5.1975

Dear Professor Sachs,

I am enclosing herewith the letters which I addressed to R. Bellman and F. Harary, in connection with our book.

In the April issue of the journal Scientific American,1975, M. Gardner stated that the four collour problem was solved negatively (W.Mc-Gregor has found a counter example with 1lo regions). Do you know anything about the reliability of this information?

Yours sincerely

D.Cvetković

СОЦИЈАЛИСТИЧКА РЕПУБЛИКА МАКЕДОНИЈА
УНИВЕРЗИТЕТ „КИРИЛ И МЕТОДИЈ"
МАТЕМАТИЧКИ ИНСТИТУТ СО НУМЕРИЧКИ ЦЕНТАР

Бр. 06-328

23. 5 1975 год.

СКОПЈЕ

Почитуван професоре Цветковиќ,

Оваа, како и изминатите години, Математичкиот институт со нумерички центар при Универзитетот "Кирил и Методиј" во Скопје, Претседателството на Републичката конференција на Сојузот на Социјалистичката младина на Македонија и Републичкиот завод за унапредување на образованието и воспитувањето на СРМ ја организираат Математичката школа 75, - за млади математичари од средните училишта на СРМ.

Годинава, тема за работа на Математичката школа 75 е "Теорија на графови и нејзина примена." Школата работи во три степени: Прв степен - работа по паралелки во средните училишта; Втор степен - јунски семинар во Скопје за најдобрите од паралелките во средните училишта; Трет степен - Летна математичка школа 75, со учество на најдобрите од претходниот степен. Летната математичка школа 75 ќе се одржи во Охрид, од 1-VII- до 15-VII-1975.

Како ценет научен работник на полето на теоријата на графови, чест ни е да Ве поканиме да бидете гост и да Ве замолиме да бидете наставник и раководител на Летната математичка школа 75, во времето од 1-VII- до 15-VII-1975 година.

Доколку ја прифатите нашава покана, Ве молиме благовремено да ни јавите.

Со почитување,

Совет на Математичката школа

П р е с е д а т е л,

Ј. Кујбан

30.5.1975

MATEMATIČKI INSTITUT SA
NUMERIČKIM CENTROM
UNIVERZITET ĆIRILO I METODIJE
SKOPJE

Zahvaljujem na vašem pismu od 23.5.75 i sa zadovoljstvom prihvatam vaše predlog da budem nastavnik i rukovodilac na Matematičkoj školi u Ohridu ovoga leta.

Predpostavljam da će osim mene u toku letnje škole na Ohridu biti i neki vaš predstavnik koji bi vodio tehničke poslove u vezi sa učenicima.

D.Cvetković

Другите професори,

Имаме ваш подреден и добавен условен граф G_1 и граф $G = X \wedge K_2$.

Дефиниция: Ако G двухроматичен с дялове $\{x_1, x_2, \dots x_n, y_1, y_2 \dots y_m\}$ и ребрата му са $A \subseteq \{x_1 \dots x_n\} \times \{y_1 \dots y_m\}$, G_C е граф с същите дялове и ребра $\{x_1 \dots x_n\} \times \{y_1 \dots y_m\} - A$.

Дефиниция: G_D е граф с ребра A. Ребрата $a_1 = x_{i_1} y_{j_1} \in A$, $a_2 = x_{i_2} y_{j_2} \in A$ са съседни ако е:

1) $x_{i_1} \neq x_{i_2}$, $y_{j_1} \neq y_{j_2}$ и

2) $(x_{i_1}$ несъч. $y_{j_2} \wedge y_{j_1}$ със. $x_{i_2}) \vee (x_{i_1}$ несъч. $y_{j_2} \wedge y_{j_1}$ несъч. $x_{i_2})$

Теорема G је облика $K_2 \wedge X$ ако и само ако G_D има подграф изоморфан са K_n.

Услов је подредан.

~~Постаје једно~~

Нека је $G = K_2 \wedge X$, где је X са чворовима $x_1, x_2 \ldots x_n$, а K_2 са чворима 1 и 2.

$((x_1,1),(x_1,2)), ((x_2,1),(x_2,2)) \ldots ((x_n,1),(x_n$

сви из G_D, образују подграф изоморфан са K_n.

ℓ

Ако G и подграф изоморфен са K_n.

Нека G има подграф са върховите $a_1, a_2, \dots a_n$ и нека $a_1 = (x_1, y_1)$, $a_2 = (x_2, y_2) \dots a_n = (x_n, y_n)$, където $x_i \neq x_j$ $i \neq j$

$y_i \neq y_j$ $i \neq j$

x_i е съседен с y_i

и x_i е със. $y_j \Rightarrow x_j$ е със. y_i

$\Rightarrow$ лесно се забелязва, че G е от вида $K_2 \wedge X$.

Пълно доказателство

Лукит Здравомир

MATHEMATICS IN SCIENCE AND ENGINEERING

A Series of Monographs and Textbooks

Editor:
RICHARD BELLMAN
Departments of Mathematics and Engineering
University of Southern California
University Park
Los Angeles, California 90007

Publishers:
ACADEMIC PRESS INC.
111 Fifth Avenue
New York, New York 10003

June 3, 1975

Professor D. Cvetkovic´
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11.001 Geograd
YUGOSLAVIA

Re: Graphs and Their Spectra

Dear Professor Cvetkovic´:

I am sorry that our letters appear to have gotten mislaid. I have asked Academic Press to write to you directly and to write what is the current status of the negotiations.

Cordially,

Richard Bellman
Richard Bellman

RB:rk

RICHARD BELLMAN, *Editor*
Mathematics in Science and Engineering
Department of Mathematics and Engineering
University of Southern California
Los Angeles, California 90007

AIRMAIL
PAR AVION

Professor D. Cvetkovic
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11.001 Beograd
YUGOSLAVIA

AIRMAIL
PAR AVION

ЕЛЕКТРОТЕХНИЧКИ ФАКУЛТЕТ
У БЕОГРАДУ
Бр. 1/1 2/1 1975 г.
БЕОГРАД

Na osnovu čl. III.74. Statuta Elektrotehničkog fakulteta, podnete predstavke Cvetković Dragoša EF br. 125/75, Odluke Naučno-nastavnog veća od 5.11.1974. godine, čl. 83 i 85 Samoupravnog sporazuma o medjusobnim odnosima radnika u udruženom radu i čl. 65 Pravilnika o ličnim dohodcima, donosim sledeće

R E Š E N J E

Dr CVETKOVIĆ DRAGOŠU, docentu Elektrotehničkog fakulteta odobrava se jednogodišnje plaćeno odsustvo počev od 1. septembra 1975 do 1. septembra 1976. godine radi stručnog usavršavanja kao korisniku stipendije Univerziteta za tehnologiju u Eindhovenu - Holandija.

Imenovanom pripadaju mesečne prinadležnosti za vreme boravka u inostranstvu i to za prva tri meseca u iznosu od 100% a za ostale mesece u iznosu od 75% od osnovnog ličnog dohotka.

Dekan
Elektrotehničkog fakulteta
Dragoslav Popović
Dragoslav Popović

5-VI-1975

Драги професоре,

Јављам Вам се после дуже паузе, јер раније нисам био готов са преузетим обавезама. Најпре, примио сам Вашу дописницу, као и писмо са мишљењем се радом ~~о~~ планарним графовима. Драго ми је што сте прихватили позив за долазак у Охрид као гост, наставник и руководилац Летње математичке школе '75. Са резервацијом себе у хотелу биће све у реду. Расподела је сразмерна да професор-руководилац сам одређује тематику и садржај рада, обим тематика, као и начин извођења, те ће свако имати пуну слободу у планирању и начину извођења наставе. Једино ће требало водити рачуна о предзнању ученика из теорије графова, као и о књигама које су им на располагању. Ако Вам треба још нешто о овоме, т.ј. о начину рада Летње математичке школе, — јављам Вам стојим на располагању.

А сада да Вам поднесем кратак извештај о томе шта сам урадио са књигом. Исписао сам, по мом мишљењу, сав рукопис, т.ј. све што мислим, све што сам имао на располагању, све што сте ми дали, колико сам могао за ово кратко време. Најпре се извињавам због лоше техничке обраде а нарочито и лоше рукописа у којем Вам предајем први рукопис књиге. Трудио сам се да материјал којим смо се договорили, који сте ми дали и који сте ми препоручили да користим, — да организујем како знам најбоље. Дали је добро — оценићете Ви.

Материјал сам распоредио у следећа 12 мања поглавља:

1. Увод (више увод о теорији графова као дисциплини, о проблемима којим се бави, о историјолу и о неким алгебарским основама теорије графова)
2. Неоријентирани графови. Основни особини.
3. Оријентирани графови. Основни особини.
4. Дрва. Ациклични графови.
5. Задача на најкус пат.
6. Ојлерови и Хамилтонови вериги.
7. Унутрешно и спољашно стабилно множество. Јадро на граф. Кира на граф. Паросојувач во бипарт. граф.
8. Планарни графови
9. Обојување на граф. (Боење графа)
10. Транспортни мрежи
11. Графови и матрици
12. Теоријата на графови и другите математички дисциплини.

Делове 1., 5., 12., послаћу Вам сутра обавезно, јер их нисам стигао још у јучњој пријему.

Мокја распоред и није најбољи. Оцените Ви сами што само може да иде. Да Вам кажем, материјал који сте ми послали максимално сам искористио. Вашу сам књигу максимално експлоатисао, па би било добро да мало боље видите да ли тиме можда нисам грешерао, и да то нема којекакве последице. Дозволите да Вам искрено кажем да сам тек сада увидео, Ваша књига је наизглед мала по броју страница, али јако, јако много богата и садржајна. Ви такође познајете осталу литературу, па знате и можете оценити шта је и

одавде је узето и у нашем облику, и како је унесено у овај наш рукопис. Трудио сам се да матер-ијал који сте ми дали што боље преведем на македонском језику. Молио бих вас, ја незнам, да ми пошљете референце за литературу за Штајне-рова стабла (Steiner-ова стабла), као и за књигу о томе да не постоји алгоритам за распознавање изоморфних графова у општем случају, ви што наводите у делу о изоморфизму графова. Такође, молим Вас само имате да одете нешто за предговор, а евентуално још и неке задатке.

Будући да сам, мојом кривицом, прекорачио 1. јун, да Вас молим да схватите да је сада сваки прекидом рецензент, да што је могуће хитније, молим Вас, прегледат рукопис, да оцените сами шанав можелити, и да што хитније пошљете Ваш став. Молим Вас. Разуме се, ако није у реду, онда се не може дати у штампу, али опет молим да и о томе што хитније пошљете Ваш став. Онда бих тражио друго решење, јер Зимски семинар Математичке школе почиње већ 23-VI-1975, а Летња школа у Охриду - 1. VII-1975.

Такође, ако је рукопис у реду, односно може иде са малим исправкама, онда бих молио ако је могуће да штампање и рецензија иду некако упоредо. Што се тиче рецензије, ја сматрам и предлажем, ако друго није могуће, да иде и без рецензије од стране неког другог рецензента, јер сте Ви аутор и довољно сте ауторитет у области теорије графова, па можете себи дозволите да књига иде Вашом сопственом рецензијом. Мислим да нешто раде и проф. Девиде и проф. Куреша. Ово сам Вама навео само као предлог Ви сигурно боље знате шта се и како се треба ура-дити. А сада нешто о грешкама у рукопису: Не

обратићете пажњу на техничке и друге грешке. Оне ће бити исправљене. Обратите ако хоћете, можете, пажњу на стилистичке грешке. Грешке које сам учинио, нисам их учинио намјерно, већ можда нетачношћу.

Сутра ћу вам послати тамоће и списак литературе и остале детаље. Тешко за сада, у суботу ћемо тек писаћу Вам још обавијестићу.

Са поштовањем,
Ристо Мокровски

Драги професоре,

Прошао сам Ваше дисно. Шаљем Вам преостале делове књиге: поглавље 1 т.е. увод, поглавље 5 и завршне елементе књиге – индекс, литературу и садржај. Одмах да Вам кажем, мислио сам и на поглавље 12 – теорија графова и друге математичке дисциплине, припремио сам и један текст на основу вашег текста, али на крају нисам мислим да то не стављамо у књизи. Прво, Ви ће ће сигурно то објавити у Вашој новој самосталној књизи; друго, за разумевање тог дела од стране ученика потребно је још доста предзнања, као, рецимо из комбинаторике и мало анализе и логике, па би требало да се дођу још у уводу или као додатак елементе из тих области. Ја не мислим да је књига намењена само ученицима, али нам предлажем да то не уђе сада у књизи.

У списак литературе навео сам сву литературу коју сте Ви преторили у Вашој првој књизи и додао неке нове књиге које сам користио, као и неке друге књиге које Ви не наводите у првој књизи. Списак је свакако рударан, али мислим да је добро да нешто стоји, као упутна за оне који хоће да се баве теоријом графова. У индекс сам навео само појмове и неке теореме и алгоритме. Већ сте видели, од мрежа навео сам само транспортне мреже, јер нисам имао времена да мало шире обрадим то подручје. Такође и део о матрицама је врло кратак, као и неке друге делове. Али додавањем још материјала, мислим да би доста увећало број страница књиге. Разуме се, могућа би то могло у неком рационалнијем и концентрисанијем стилом.

Грешке и исправке које наводите свакако ћу исправљене. Сигурно да Ви имате још неку примед-

ба, али сам ја вас ставио у ситуацију да их не можете шире сагледати, због тога што сам вам врло касно послао рукопис.

Књига ће бити штампана у склопу библиотеке „Математичка школа" у издању Математичког института са Нумеричким центром Универзитета у Скопљу.

На основу нашег првог договора, ја сам дао да рукопис прочита и д-р Димитра Карагиозова са нашег Универзитета и она има повољно мишљење о њему. Она се иначе бави оперативним истраживањем и математичким програмирањем и предложити ће је и студентима и другим заинтересованима, овде у Скопљу и Македонији. Вероватно да ми можете захвалити за овај корак.

Питање у вези Математичке школе '75 у Охриду. Школа ће у Охриду радити 15 дана, пробних. Број часова одређујете Ви, руководилац Летње школе. Досадашња је пракса 3-4 часова дневно, обично у преподневним часовима. Међутим, што Ви можете урадити онако како сматрате да је најбоље. Сигурно Летње школе су они ученици који покажу задовољавајуће резултате у Јунском семинару у Скопљу, који се одржава од 22-28 јуна. Можете рачунати, према досадашњој пракси, да тај број буде око 30 ученика. Такође досадашња је пракса да професор-руководилац организује и изводи наставу. Уколико Ви сматрате да Вам ја могу бити сарадник у извођењу наставе, ја сам сагласан да сарађујемо. Ученици су до сада обрадили материјал из моје књиге скрипте (ону коју сам Вам показао у Београду, Ви је имате).

На Јунском семинару у Смољу бисте обрадили исти материјал из ваше књиге, али не целосно, сасвим. Можете рачунати да ће бити мања претставу о свим основним појмовима и ставовима који су садржани у вашој књизи. У Охриду би требало да ми Летње школа пружи концентрисану проширење тог познавања, и разуме се, уколико Ви сматрате, и сасвим нове делове, нових књига, у одређеном обиму и обему у којем Ви одредите.

Со почитување
Р. Шосаровски

WESTERN MICHIGAN UNIVERSITY

DEPARTMENT OF MATHEMATICS (616) 383-6165 KALAMAZOO, MICHIGAN 49001

June 16, 1975

Professor D. M. Cvetkovic'
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11.001 Beograd
YUGOSLAVIA

Dear Professor Cvetkovic':

Your manuscript "Graph equations, graph inequations and a fixed point theorem", which you sent to Professor Harary for consideration for publication in the Journal of Graph Theory, has been forwarded to me. Thank you for your interest in the journal. I have sent out your paper for review and will write to you again when I have some information.

Professor Harary is currently out of the country and will not be in Ann Arbor until August 30. I will, of course, see that he gets your letter at that time; please write to him in care of Professor Edward Patterson at the University of Aberdeen in Scotland.

The information on the Four Color Problem published in Scientific American was only a joke. It was meant only to be humorous.

Sincerely,

Gary Chartrand

Gary Chartrand

GC:slh

P.S. I am interested in your book on graphs and eigenvalues. Could you please give me an exact reference. Thank you.

WESTERN MICHIGAN UNIVERSITY
DEPARTMENT OF MATHEMATICS

Chartrand
KALAMAZOO, MICHIGAN
49008

KALAMAZOO MICH JUN 17 '75 C
U.S POSTAGE
26

Professor D. M. Cvetkovic'
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11.001 Beograd
YUGOSLAVIA

AIR MAIL

AIR MAIL

.24

25-VI-75

Драги професоре,

Примио сам Ваше писмо, са рецензијом проф. Д. Тошића. Драго ми је што могу да Вам саопштим да је наша књига данас изашла. Сутра ћу је Вама бек послати.

Ми вас очекујемо на Летњој математичкој школи у Охриду. Јавили сте ми бек да долазите 30-VI-75, авионом, директно у Охрид. Молим Вас само хоћете да јавите којим авионом долазите, оријентационо, то могућности, време доласка. Иначе, обезбедили смо Вама собу у новом хотелу „Метропол" у Охриду, који се налази у непосредној близини Универзитетског одмаралишта, где ће се и одржавати Летња математичка школа. Сада је у Скопљу одржава Јунски семинар Математичке школе, који се завршава у суботу, 28-VI-75, одакле ће ученици отпутовати 1-VII-75 у Охрид.

Очекујемо Ваш долазак,

Са поштовањем

Ристо Малчевски

26 – VI – 1975

Драги професоре,

Са задовољством шаљем Вам нашу књигу. Нуде све најбоље, али мислим да нуде ни мало боље. Одговарајуће обавезе према Вама и професору Д. Тошићу уредићемо приликом Вашег престоја у Охриду. Молим Вас, уколико већ нисте послали писмо, ако је могуће, да ми јавите телеграмом време Вашег доласка у Охрид.

Очекујемо Вас,

са поштовањем,
Ристић Шокаровац

27.6.1975

Dear Professor Chartrand,

Thank you for your kind letter of 16.6.75. The reference which you requested for the time being reads:

H.SACHS, D.M.CVETKOVIĆ: SPECTRA OF GRAPHS - A monograph (In preparation)Ž

Yours sincerely

Dragoš Cvetković

Драги професоре,

Примио сам Ваше друго и прво писмо са материјалима. Прешао сам, прво писмо са материјалима примио сам са мало већим закашњењем. Мислим да је сада свакако доста материјала за нашу књижицу, имајући пред очи свега у вези послова које сте ми послали, као и детаљне упутства које сте ми дали. Свакако, ситуацију ћу реализовати сугестије и предлоге које износите у писмима. Још бих само желео да се могли договорити о организацији и распореду материјала у књижици. Ја мислим да би, према нашој књижици, одговарало организовање и распоред материјала нешто сличан као у првој књизи Берта о графовима. Ја за сада радим на оној гомили материјала који сте ми претпустили да уредим, као, транспортне мреже; проблем најкраћег пута; карактеристичне фамилије графова и грана, дрвећа; графови и матрице, и сл. Задатке које сте послали су јако добри, а и упознавању се упутствима које сте ми дали. Мислим да ја свакој дела, мање целине, треба да буде одређен број задатака. Нема никакве промене у вези публиковања, а ни у вези математичке школе. Што се тиче књиге, максималне толеранције потребе и ситуације је прва јуна очекујемо да све буде готово. Могу да вам кажем да ми није баш лако, нешто због недостатка времена, нешто због неискуства, нешто због других обавеза.

Шаљем Вам семинарски рад „Правовни извори".

Молим Вас да га прегледате и процените дали се може прихватити у целини као семинарски рад. Уколико је Ваше мишљење негативно, замолио бих Вас да ми кажете да ли могу урадити боље. Уколико процените да се може прихватити, молим Вас, прва Правнику о потврђивању студија, да уђете у мој индекс да је семинарски рад примљен, са насловом и датумом, и евентуално ако још нешто имате да додате. У оба случаја молим Вас да ми, ако је могуће, што скорије пошаљете повратни одговор, јер ми је жао да што брже урадим и не прекорачим рок.

Што се тиче магистарског рада, Савет факултета прихватио ми је наслов „Егзистенција и реализација права са предодређеним степенима и особинама". Молим Вас, кажите ми дали се слажете са насловом. Мислим да он најбоље, најбоље одговара договору и оном што сам Вам изложио у Београду. Хтео бих да Вам кажем да сам написао најбоље што могао да ту са радом завршим до првог јуна, јер се и књига мора стрпети. Пријатно сам и узео годишњи одмор, радим посвећено, па ћу видјети дали ћу успети.

На крају, трудићу се да што пре

Притежаваме документи за Вашата дейност, за нашия ръководител.

Сърдечно Ваш
Р. Шокаровски

17.7.1975

Dear Sirs,

Thank you for your information on computerized system concerning references in graph theory.

Instead of the correction of the printout of some papers of mine I enclose herewith a list of my papers which may be useful for you. Already published original scientific papers on graph theory are encircled in blue and red. Blue denotes papers on mathematical graph theory and red papers concerning applications of graph theory to chemistry. Handwritten text in reference /16/ is in Macedonian and means: 5th Congress of mathematicians and physicists and astronoms of Yugoslavia, Ohrid, 14-19, September 1970, Collection of papers, Vol. I, Skppje 1973, 115-119.

My address is as above. In the next academic year my address will be (from 1.9.75):

TECHNOLOGICAL UNIVERSITY EINDHOVEN
Department of Mathematics
PO B. 513
Eidenhoven
The Netherlands

Yours sincerely

Dragoš Cvetković

17.7.1976

Dear Dr. Doob,

Thank you for your letter of 26.5.75. I apologize for such a delayed answer. In the meantime I have been on a jurney and very busy with various obligations.

I am surprised that my letter containing Chapter 6 was opened. As far as I know our state authorities are entitled to control the letters of citizens only when the latter are under the legal investigation.Since up to now I made violations only when parking my car, I believe that the opinening of the letter occurred by accident. I any case I have the impression that you received everything which I sent to you.

Thank you for the new proof of my result concerning spectrum and chromatic number of a graph. During the Summer time I shall consider the possibility of incorporating this material into the book on spectra. Professor Sachs advised me that there are good possibilities for the book to be completed by the Fall.

Are you familiar with the new paper by Professor Seidel and his collaborators containing the proof of the theorem about characterization of regular graphs having the smallest eigenvalue equal to -2?Would it be convenient that you prepare about it a footnote or some short text within the chapter 6? Or are you leaving it to Professor Sachs and me to do it?

I shall be with Professor Seidel from September this year and I have a research fellowship by 1.9.1976. Most probably that I shall use the awarded fellowship until the end. It would be very nice to meet you in the Netherlands.

Yours sincerely

Dragoš Cvetković

* The Publishers from Berlin ask you to forward to them your short curriculum vitea (data on the birth, schooling, doctoral thesis, important publications, etc).

Beograd 20.8.75.

Poštovani profesore Stojaković,

Šaljem Vam sa zakašnjenjem referat za magistarski rad Slobodana Simića "Grafičke jednačine". Ako ste saglasni sa referatom molio bih da ga potpišete.

Bilo bi dobro vaspitno kad bi ste odgovorili pre 1.9. jer ja počekom idućeg meseca putujem u Holandiju.

Takođe bih Vas molio da mi odgovorite da li bi ste se prihvatili učešća u komisiji za magistarski rad R. Šobajića na Fakultetu u Skoplju o čemu sam Vam ranije pisao.

Pozdravlja Vas

Grgur Vuković

Драги професоре

Овај рад о конкуренцији сам написао и дао сам колеги, професору руског језика, да исправи граматичке грешке. Да ли је потребно да рад буде написан писаћом машином? Послаћу вам то чим буде завршен.

Имао полагано сам испите код проф. Једине недостаје и остао је још само час испит из друге године. Пишите ми када ће мој полагати?

Литературу коју сте ми давали је сам вратио, међутим писао је довољно прецизно, због сигурнога испита. Да вас молим да ми је поново поклоните.

Много сам ван прича
за Русију, да ћу ипак
ићи, нема нашто да чека.
Желим вам још одговарање
Срећан Божић

СРПСКА АКАДЕМИЈА НАУКА
И УМЕТНОСТИ
11000 БЕОГРАД
КНЕЗ-МИХАИЛОВА 35

Асистент
Цветковић др инж.Драгош

11ооо Београд
Ламартинова 44

Драги професоре,

Примите најтрпље пуно поздрава од мене и Ванге.

Захваљујем се на честитки поводом рођења моје кћеркице.

Извињавам се што се нисам у међувремену јављао.

Намеравам, односно сигурно долазим у Београд у четвртак 28 августа ујутру. Дошао бих код Вас кући око 9,00 h. Надам се да ћу Вас наћи. Тим приликом ћу вам вратити књиге које сам од Вас позајмио и уредно показати мој рад.

Данас ћемо ја и Ванга послати Вама 20 примерака наше књиге као и књига „Предавања по алгебри" професора Чупуне.

Са поштовањем

Ристо и Ванга

29.8.1975

MATHEMATICAL REVIEWS
Ann Arbor

Dear Sirs,

I wish to inform you that my address during the next academic year (from 1.9.1975) will be the following:

Dragoš Cvetković
Technological University, Eindhoven
Department of Mathematics
POB 513
Eindhoven, The Netherlands

In spite of this, I would like that my copies of MR will be sent to the old address.

D.Cvetković, 11000 Belgrade, Lamartinova 44, Yugoslavia.

Yours sincerely

Dragoš Cvetković

29.8.1975

ZENTRALBLATT FUR MATHEMATIK
Prof.Dr. Ulrich Guntzer
1000 Berlin,lo,Otto-Suhr-Allee
26-28

Dear Sirs,

I wish to inform you that my address during the next academic year (from 1.9.1975) will be the following:

Dragoš Cvetković
Technological University Eindhoven
Department of Mathematics
POB 513
Eindhoven,The Netherlands.

Yours sincerely

D.Cvetković

THE UNIVERSITY OF MICHIGAN
DEPARTMENT OF MATHEMATICS
ANN ARBOR, MICHIGAN 48104

AREA CODE 313
764-0335

5 September 1975

Dear Dragos:

Hearty congratulations on your fellowship in Holland! Please send me the exact mailing address you will have during the coming academic year in Eindhoven.

Welcome to the Editorial Board of JGT.

Yours sincerely,

Frank H.

Frank Harary

FH/aj

JUGOSLOVENSKA
AUTORSKA AGENCIJA
AGENCE YOUGOSLAVE D'AUTEURS
ZAJEDNIČKA SLUŽBA

BEOGRAD. 8.9.75

Majke Jevrosime 38
Fah 687 — Tek. rač. 60806-603-12092
Telefon 323-154, 323-155, 322-768
Telegrafska adresa: AUTORAGENCIJA

Dr Dragoš Cvetković
TECHNOLOGICAL UNIVERSITY
EINDHOVEN
DEPARTMENT OF MATHEMATICS
P.O.B. 513
EINDHOVEN /Holland/

Predmet : SPECTRA OF GRAPHS
With a Section by M Doob
Cvetković-Sachs-Dob

Poštovani druže Cvetkoviću,

U prilogu vam dostavljamo 5 primeraka ugovora za navedeno delo koje nam je dostavio VEB DEUTSCHER VERLAG DER WISSENSCHAFT iz istočnog Berlina na potpis, sa molbom da nam svih 5 potpisanih primeraka vratite. Primerak za vašu evidenciju poslaćemo vam naknadno.

Pretpostavljamo da su pregovori za objavljivanje dela dovjeni direktnim putem jer se naslov dela ne nalazi u našoj kartoteci.

Uz srdačne pozdrave.

Odsek književnih prava
/Savica Paunović /

Šef zajedničke službe
/ Ružica Vlaškalin /

University of Waterloo

Waterloo, Ontario, Canada
N2L 3G1

Faculty of Mathematics
Department of Combinatorics
and Optimization
519/885-1211

September 9, 1975

Prof. D.M. Cvetkovic
Elektrotehn fak.
Beograd, Yugoslavia

Dear Prof. Cvetkovic:

Thank you for sending us copies of your papers for inclusion in the next edition of Forward Citations in Graph Theory.

Yours sincerely,

G Berman

G. Berman

GB:dmh

ZENTRALBLATT FÜR MATHEMATIK

Herausgeber: Akademie der Wissenschaften der DDR

Schriftleitung: Dr. Walter Romberg
1199 BERLIN-ADLERSHOF, Rudower Chaussee 5
Telefon: 670 28 41

Heidelberger Akademie der Wissenschaften
Prof. Dr. Bernd Wegner
1000 BERLIN 10, Otto-Suhr-Allee 26-28
Telefon: 34 60 35

- Prof. Dr. M. Schneider -

Berlin, den September 1o, 1975

Dear Professor Cvetković,

thank you very much for your kind letter of August 29, 1975 informing us about your temporarily change of address. We have noted in our files that you will stay at the University of Eindhoven during the next academic year.

Thanking you once again very much for your consideration,

yours sincerely

M. Schneider

12 74 4000

TECHNOLOGICAL UNIVERSITY EINDHOVEN - Department of Mathematics

PO BOX 513 EINDHOVEN
THE NETHERLANDS

Ministry of Justice
Raamweg 47
The Hague

Concerning Visa

EINDHOVEN,
September 17, 1975

Dear Sirs,

I have been awarded a research fellowship from the Eindhoven University of Technology for the next academic year and I began to work at the University a few days ago.
My wife, Zora Cvetković (maiden name Obradović) and my son Mladen Cvetković (7 years old) intend to spend together with me at least five months and, maybe, somewhat longer. My wife asked the Dutch embassy at Belgrade for a visa for her and for our son on August 28, 1975. The official in the embassy promised to write to the Ministry of Justice and ask for staying permission for my wife (i.e. the visa). In the same time the official advised me to contact the Ministry of Justice in The Hague. I was at the Ministry of Justice in The Hague on September 16, 1975 (Raamweg 47) and an official said to me that the Ministry has not received any request from the Dutch embassy in Belgrade for the staying permission for my wife and my son.

I ask you most kindly to give the visa for my wife and my son as soon as possible, having in mind that my wife asked for the visa already in August.

Please find enclosed a copy of the "curriculum" from which you can see my position at the Eindhoven University of Technology.

If it would take much time until the staying permission could be given, may I ask you to permit my wife and my son to come here as a tourist and to wait here for the visa?

Yours respectfully,

Dr. Dragoš Cvetković.

Private address:
Castorstraat 57, Eindhoven.

Milan B. Knežević
Č. Minderovića 2/7
11030 Beograd

Dr. Dragoš Cvetković

Lamartinova 44
11000 Beograd

Druže Cvetkoviću,

razmatranje o razlaganju sistema $(\frac{10}{3})$ ostavio sam u obliku koji Vam je poznat. Vaša primedba bila je na mestu. Štajnerovi sistemi parnih redova ne egzistiraju, tako da je moje razmatranje bilo bezuspešno. Ipak sam ga zadržao u postojećem obliku, ali Vam ga zato ne šaljem. Nastojaću da do Vašeg povratka ipak nešto učinim, iako pred svega još nisam protumačio Denistonove rezultate.

Nadam se da će Vaš boravak u Holandiji biti uspešan.

Pozdrav Vama i Vašima.

17. 09. 1975.
Beograd

Prof. F. Harary
The University of Michigan
Department of Mathematics
ANN ARBOR, Michigan 48104
U.S.A.

September 23, 1975

Dear Professor Harary,

Thank you for your letter of September 5, 1975.
My mailing address for the coming academic year is
as above.

Yours sincerely,

Dr. D. Cvetković.

Dragi Kolega Cvetkoviću,

neobično sam obradovan, čitajući razvoj događaja u pogledu objavljivanja rezultata na kojima sam radio na Vaše sugestije. Isto tako sam saglasan, sa Vašim predlogom o načinu na koji bi rad bio objavljen.

U ovom trenutku nalazim se na odsustvu radnog mesta u Varaždinu, i nevoljno ću imati priliku da učestvujem u eventualnom daljem istraživanju, ako bi od Vas u tom pogledu potekla inicijativa. Međutim, nekoliko bih, možda Vama to ne bi predstavljalo problem, i potrošnice, ali me s vremena na vreme obaveštite o rezultatima do kojih ste došli.

Nadam se da bih kroz nekoliko meseci ako dva imao više vremena, pa bih u tom

slučaju, bio raspoložen ali ne mogu
te, u nekim za te poslove nepodesnosti i
potreba u nečem drugom rad.

Pišite na moju ranijem adresu.

Ruku srdačnu pozdravu od
Svetara Cvijeta

Драги професоре,

Примио сам оба Ваша писма. Нисам Вам се јавио јер нисам био готов. Захваљујем Вам се на брзини коју водите према мени као мој руководиоцу у изради магистарског рада и уопште у теорији графова. Пуно пута до сада био сам некоректан према Вама, најчешће у односу на договорене термине, за Вам се извињавам и мислим да ће ово бити мој задњи пут.

Ево, мислим да сам довршио завршни магистарски рад. Са свим тим сам урадио, већ сам Вас углавном упознао. Има неке нове делове у одређене подграфе (тако сам поделио магистарски рад), као и део нови део „Операције над графовским разбијањима". Неке закључке делове из првобитног плана нисам унео у магистарски рад, због тога што мислим да нисам у стању унео нешто што би било оригинално, већ само експозиторне резултате. Ви већ углавном знате шта сам самостално урадио у одређеним деловима магистарског рада, а већ ћете видети шта сам накнадно унео.

Захваљујем Вам се на интересантним информацијама које ми пружите у писму, на пажљиво разматрање материјала којег сам Вама предао и на бројним сугестијама и упутствима,

као и на настављању на грешке које сам уочио. На основу Волфеј примера да је графовско разбојство $\Pi = (5,4,4,4,4,4,3,3,3,2)$ апсолутно повезано мало не задовољава ниједан од услова које сам навео у теореми 2.4 (у ранијем облику), довољно сам теорему 2.4 са још једним условом – (iv). Разбојство Π које сте Ви навели задовољава услов (iv) теореме 2.4.

Мастарски рад у овакавом облику као што га Ваша мајка, сигурно да ће неки технички недостатци, али ако буде све у реду, урадићу га у мало бољем техничком облику.

Сада бих хтео да Вам саопштим да је Наставнички савет Природно математичког факултета изабрао комисију за преглед и оцену мастарског рада у саставу: Ви, проф. д-р Г. Чупона и доцент д-р А. Карапиџа. Ви ћете ускоро о томе добити и званично обавештење. У складу са досадашњом праксом, Ви као мој руководилац имате одлучујућу реч у прегледу и оцени мастарског рада и писању рецензије, без обзира на Ваш садашњи престој у Холандији. Ја Вас молим да прегледате мастарски рад. Уколико он не буде прихватљив, молим Вас да ми пишете о Вашем ставу, како бих могао да урадим даљи рад на њему. Уколико пак процените да се мастарски рад може прихватити и позитивно оценити, онда бих требао да напишете Ваш став, тј. рецензију на мој мастарски рад и да је пошаљете било на моју адресу, било на адресу Природно-математичк-

ког факултета у Скопљу. Поред Вас, и остали чланови комисије оцењују рад, с тим што је Ваша рецензија од доминантнијег значаја. Само на самом почетку одбране, односно на Ваш садашњи престој у Холандији, Савет факултета би изабрао замену за Вас на одбрани. Ово је углавном службена процедура. Међутим, мени је Ваш став о магистарском раду много више значајан изван ове процедуре, па бих Вас замолио да ми о томе напишете

Ви сте ми предлагали у магистарски рад да направим компарацију између спектра графа и графовског разбојења, као инваријанте графа. То нисам успео до сада. Хтео бих Вама да кажем да сам за следећу годину у Математичком институту у Скопљу пријавио тему отвореног типа о неким питањима о графовским разбојењима, и надам се да почнем и да реализујем Ваш предлог.

Толико за сада. Желим Вам пуно радних успеха у Вашем престоју у Холандији.

Са поштовањем,
Ристо Малчески

3.10.1975.

Драги колега Цветковићу,

Јављам Вам се као новоспечени војник (радиотелеграфиста при јединицама за извиђање). После застрашујућег почетка некако сам се средио и полако се привикавам на нови начин живота. За сада је све уреду. Заклетву за сада нисам полагао, тако да још нисам осетио шта значи бити „војник". Једине обавезе су ми јутарња гимнастика, уредно постројавање при прозивку и оброке, наравно кревета, итд.

Та бих се сада вратио на блиску прошлост. Прва половина септембра ми је била весела натурка; добро сам се наиграо и нисам се више ових сплитских момци и послова које сте ми Ви дали могу Вам рећи да сам их некако досртавао. Једино што нисам „покерио за месец" је моја магистарска. Како сада стварно стоје, нисам ја ту у стању ништа више да урадим. Наиме, моја обука траје 5-7 месеци и пре завршетка обуке скоро да никакво ослобођење не долази у обзир. Што се тиче наредног раза, изгледа да ћу и ја морати да пођем у месец. Иначе, могао бих се поиграти са неким интегралима и резултатима. За сада Вам посилам најновију ја сам написао једну теоријску дедукцију ($L(G) = S(H)$) која има лепа решења. Већ „покерам" $L(G) = S(H)$ је привидала. Она прва се у процесу решавања веома ослања на оној нашој заједничкој причи о комплементу линеарног графа. За сада једно што више могу да урадим је то да је приведем у неку форму. Ако би Вас та дедукција заинтересовала могао бих Вам послати и нешто више о њој. Уосталом (поновићу још једном и неке ваше мисли) приметио сам да оператор S (подграфа) пролази кроз релацију $\leq$ (бити индуковани подграф): $G_1 \leq G_2 \Rightarrow S(G_1) \leq S(G_2)$. То вам је наравно интуитивно јасна идеја из нашег последњег разговора; требало би само решити неку (на жалост неки изоврсну) једначину у којој се $L, T, S, \ldots$ појављују као оператори.

На крају искористио бих прилику да Вас најсрдачније поздравим и да Вам се захвалим на оне две рецензије које сам примио. Такође поздрављам и Вашу супругу, и сина за кога претпостављам да је већ школи у Колицију. Колико сам успео да сазнам, Ви сте се добро опоравили и то ми је посебно мило. Желим Вам много успеха у раду и надам се да ћу у наредних годину дана од Вас чути много добрих вести.

Много Вас поздравља
Слободан Симић

(52002 PULA
V.P. 2581/61)

October 6, 1975

Professor D. M. Cvetkovic
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P. O. Box 816
11.001 Beograd
YUGOSLAVIA

Dear Professor Cvetkovic:

The referee of your paper "Graph Equations, Graph Inequations, and a Fixed Point Theorem" has reported that this does not meet sufficiently high standards. Of the two graphical theorems, one is rather obvious and the other not too interesting. Thus, the Journal of Graph Theory will not be able to publish this paper. I am returning your paper and a list of comments made by the referee.

Sincerely,

Gary Chartrand

GC/mej

encl.

Prof. G. Chartrand
Department of Mathematics
Western Michigan University
KALAMASOO, Michigan 49008
U.S.A.

October 8, 1975

Dear Professor Chartrand,

If you have any news about my paper "Graph equations, graph inequations and a fixed point theorem", please, let me know at the above address, which is my new address during this academic year.

Yours sincerely,

D. Cvetković.

Mr. B.L. Garman
Department of Mathematics
Western Michigan University
KALAMAZOO, Michigan 49008
U.S.A.

October 8, 1975

Dear Mr. Garman,

My address during this academic year is as above. Please, send the forthcoming issues of "Graph theory news letter" to this address. I have just sent the subscription fee.

Yours sincerely,

D. Cvetković.

13.10.75.

Dragi Bolpo Lukiću,

Hvala na pismu od

Vaše ideje su interesantne. U vezi [illegible]
izomorfnosti dva grafa pomoću $(G_1 \wedge G_2) \vee (\overline{G}_1 \wedge \overline{G}_2)$,
nedavno se [illegible]
stvarima, koje nemam, podsjeća stvar ali bi Vi mogli
da pregledate ruski referativni žurnal (Matematika)
i pokušate pronaći pojam. Sjećam se, to
je

Ako se generalizacija barem [illegible]
lako da dobije za druge binarne operacije, uradite
to ali nemojte da se suviše komplikujete (naročito
ako imate teškoća).

Obavestite se na fakultetu o proceduri za se-
minarski rad pa mi javite.

Ako mislite na neku mehaničku mašinu za
rad sa grafovima nisam siguran da je to potrebno jer
se svaka mehanička mašina za obradu informacija može
programirati na kompjuteru. Međutim ako razmislite
o kompjuterski orijentisanom algoritmu ili pažetu
algoritme za rad sa grafovima ili za dokazivanje
teorema u teoriji grafova, to je vrlo interesantno.

Veoma me zabrinjava pitanje korišćenja literature. Danas naučni radnik jednostavno <u>mora</u> da bude u stanju da čita stručne članke na engleskom jeziku a pomalo i na ostalim (nemački i francuski naročito; ruski ne računam kao problem za nas). Niko Vam ne može prevoditi stručne članke pogotovo što će Vam to trebati sve više i više. Stoga morate odmah da naučite elementarne stvari iz engleskog i da sami čitate. Isto tako podsećam Vas (na pisanje referativnih časopisa).

Čudi me kako ste opisali samostalni rad. Samostalni rad mora da bude ekspozicija literature u vezi sa zadatim problemom, tj. opis poznatih činjenica. Nove stvari treba da uđu u magistarski rad.

Pozdravlja Vas

D. Cvetković

WESTERN MICHIGAN UNIVERSITY

DEPARTMENT OF MATHEMATICS (616) 383-6165 KALAMAZOO, MICHIGAN 49008

October 15, 1975

Dr. D. M. Cvetković
Department of Mathematics
Technological University Eindhoven
P. O. Box 513 - Einghover
THE NETHERLANDS

Dear Dr. Cvetković:

Enclosed is a copy of a letter which I sent to you a few days ago.

Sincerely,

Gary Chartrand

Gary Chartrand

GC/slg

Encl.

copy: Dr. D Goldwork.

TECHNOLOGICAL UNIVERSITY EINDHOVEN - Department of Mathematics

PO BOX 513 - EINDHOVEN
THE NETHERLANDS

Prof. D.H. Younger
Managing Editor J.C.T.
Faculty of Mathematics
University of Waterloo
WATERLOO, Ontario,
Canada N2L 3G1.

EINDHOVEN,
October 15, 1975

Dear Professor Younger,

I must apologize for the delay in answering your questions d.d. April 9, 1975 concerning G.B. Purdy, The minimum genus of a two-point universal graph.

The paper is correctly written; all statements are true; the problem is not trivial. Yet we have a feeling that the author's proof is somewhat artificial, and that a shorter proof would be possible. The paper is not written very carefully.

As for your further question, I do not consider the paper to meet "high standard". It is mildly interesting, and I am inteded to speak of "medium standard".

On a separate sheet some detailed remarks are made.

Sincerely yours,

J.J. Seidel.

Comments on "The minimum genus of a two-point universal graph"
by G.B. Purdy.

General: use either vertex, or point, but not both of these.

p. 2, second sentence should be:
Given any two vertices A and B of G, there exists a point F_1 joined to A but not to B, a point F_2...

p. 3, rows 2-7, the construction can be improved; it is sufficient to have only k-2 handles instead of 2k-4; this has no consequences.

p. 3, rows 10-11, it is not clear if the conjecture relates to planar graphs at all or to planar graphs with 11 vertices.

p. 3, row 11, the word "probably" does not belong here. Yes or no.

p. 3, second row of the proof, instead of "the complement of G" write "the complement of G with respect to the surface", since the complement of a graph is something different.

p. 4, Lemma 2, the last sentence is to be: "There is a subgraph of G which is a tree with the same property."

p. 5, line 6, $|d(x) - d(Y)| = 1$.

p. 6, the proof of Lemma 3 is obvious and could be deleted.

p. 8, in relation to the term "minimal subtree".

References: data of 2. are missing.

Prof. F. Harary
The University of Michigan
Department of Mathematics
ANN ARBOR, Michigan 48104
U.S.A.

October 16, 1975

Dear Professor Harary,

Is your paper (joined with A.J. Schwenk) entitled "The spectral approach to determining the number of walks in a graph" already published? If yes, please send me the exact reference, because something related I have proved the conjecture from that paper and would like to refer to it.

Yours sincerely,

D. Cvetković.

Dr. M. Doob
The University of Manitoba
Department of Mathematics and Astronomy
WINNIPEG,
Canada R3T 2N2.

October 23, 1975

Dear Dr. Doob,

As you know, I shall spend this year in Eindhoven working with Prof. Seidel. My family is also here.
I was very pleased when Prof. Seidel told me that you would come next August.

I have seen you not on prime graphs which is very nice. The simple proof of Palmer's theorem by spectra has been already known to Mr. Simić and me. It is contained in his master's thesis "Graph equation" and in the ramuscript of our book about graph spectra.

Last month I signed the agreement for the book which had already been signed by Prof. Sachs. The agreement has to be sent to you and, since they, as you already noticed, usually send the letters by surface mail, I am not quite sure that you have already received the agreement.

Sincerely yours,

D. Cvetković.

TECHNOLOGICAL UNIVERSITY EINDHOVEN - Department of Mathematics

PO BOX 513 - EINDHOVEN
THE NETHERLANDS

Dr. N.J.A. Sloane
Bell Laboratories
600 Mountain Avenue
MURRAY HILL, New Jersey 07974
U.S.A.

EINDHOVEN,
October 30, 1975

Dear Neil,

The authors of the scheduled report [1] have a correction and an addition to page 72 (sequence 595) of your book: A handbook of integer sequences. We claim that the number N(n) of nonisomorphic connected cubic graphs on n vertices is:

n =	4	6	8	10	12	14
N(n) =	1	2	5	19	85	509

The number N(12) = 87 appearing in your book is false. As a matter of fact, your reference HA5, KO1 seems not to be very reliable. We do not know, and would like to know, whether R.W. Robinson has published anything, as was announced in [2]. The number N(12) = 86 appears in [3] , but the enumeration contains 2 graphs which are isomorphic. For our N(n) = 85 we have 3 independent checks, namely by the first, and by the second author of [1], and by [3] if one of the 2 isomorphic graphs is deleted. Our claim N(14) = 509 will be published in [1], and is based on a computer search. Appended is an outline of the scheduled [1]; we are open to your additional suggestions.

By separate mail I send you some preprints. In addition, Delsarte, Goethals and I have done work on Spherical codes and designs, along the lines of [Bounds], but with the additional notion of spherical designs, a refinement of the notion of eutactic stars due to good old Schläfli. We shall send you a preprint when it is available.

I hope everyone is well, especially Ann and Jessie. Please give regards,

sincerely yours,

J.J. Seidel.

[1]. F.C. Bussemaker, S. Cobeljić, D. Cvetković, J.J. Seidel,
Computer investigation of cubic graphs.

[2]. A.T. Balaban, R.O. Davies, F. Harary, A. Hill, R. Westwick,
Cubic identity graphs and planar graphs derived from trees,
J.Austral.Math.Soc. 11 (1970), 207 - 215.

[3]. L.P. Petrenjuk, A.N. Petrenjuk,
On constructive enumeration of 12-vertex cubic graphs (Russian),
Combinatorial analysis no. 3 (1974), Moscow, edited by A. Rybnikov,
72 - 82.

copy: Dr D Cvetković

TECHNISCHE HOGESCHOOL EINDHOVEN

POSTBUS 513 - TEL.(040) 47 91 11 (Doorkiesmogelijkheid via 47 2796 -) - GIROREKENING 107 63 26 - BANKIER . F. VAN LANSCHOT - EINDHOVEN

Mr. K. Popp
Afdeling Weg- en Waterbouwkunde
Technische Hogeschool
Stevinweg 1
DELFT

UW BRIEF | LETTER EN NUMMER | EINDHOVEN, INSULINDELAAN 2

JJS/hr | 24 november 1975

ONDERWERP

Dear Mr. Popp,

Dr. Cvetković and I have gone through your abstract on the graph theoretical approach to certain network problems. We have the following remarks.

1. "safe graph" is to be called "2-edge connected graph". Instead of "irreducible safe graph" the term "critically 2-edge connected graph" could be used. Check whether such a term has already been used in the literature!

2. If we modify "Actual task" so that we consider only Hamiltonian circuits instead of all possible ISG, we get the so called "travelling salesmen problem", which is extremely difficult. On the other hand, if we consider the set of double trees (instead of the set of ISG's) we get the shortest tree problem, which is extremely simple!

3. I am afraid that both Dr. Cvetković and myself are not able to contribute much to your problems, since our interests and knowledge is too far away.

4. On the other hand, you may find the following suggestion useful. Dr. A. Wattel, who works at the Department of Mathematics of the Vrije Universiteit, De Boelelaan 1081, Amsterdam-Buitenveldert, tel.nr. 020 - 5483082 (department) has worked on problems in graph theory which resemble your problems.

Therefore, I suggest that you contact him, ask him for his comments, and try to arrange a meeting with him. It seems to me that this would be more helpful to you.

Sincerely yours,

Prof.dr. J.J. Seidel

11 Little Green Lane
Chertsey, Surrey

Tuesday Evening.

Dear Prof. Cvetkovič,

I was delighted to get your telephone call this evening. So that there is time for you to check the arrangements for Friday, I thought it might help to write them down now. I shall telephone you on Thursday at 7 p.m, as arranged also.

You should go to WATERLOO Station and take a train for EGHAM. There is a large indicator board at Waterloo near platforms 18–21, and your train will be given on this board, and its platform will also be indicated. I suggest you

catch the 0924 train, which is due at Egham at 0955. If you are not on that train, I shall await the next one! Trains are fairly frequent.

I shall phone you on Thursday as planned

Best wishes

Norman Biggs

4-XI-1975

Dragi profesore,

Primio sam juče Vaše pismo. Uzimam na znanje Vašu primedbu u vezi sa Vašom naučnom titulom i izvinjavam se Vama uколико sam Vam time učinio neprilike. Dopuštite mi da kažem da ja Vas tako oslovljavam jer ste Vi zaista bili i sada ste moj profesor.

Svakako da pretpostavljate da strpljivo očekujem Vašu ocenu na moj magistarski rad. U međuvremenu, pored obaveznih poslova u Institutu, radim po malo i na doformiranju nekih rezultata u magistarskom radu. Zamolio bih Vas, uколико ste u mogućnosti, i uколико je to uopšte moguće, da rad pregledate i saopštite Vašu recenziju bar malo prije 1-XII-1975. Ovo Vas molim zbog toga što oko 1-XII-1975 je sednica Nastavničkog veća na Prirodno-matematičkom fakultetu u Skoplju, a sledeća sednica je tek oko 1-I-1976. Da bih želeo, uколико magistarski rad bude pozitivno ocenjen, da na sednici oko 1-XII-1975 bude postavljeno i pitanje oko daljeg toka procedure za odbranu magistarskog rada. Naravno, ovu molbu shvatite kao moju želju, a na Vama je da postupite onako kako treba i onako kao što pregled magistarskog rada zahtjeva. Prof. d-r Đ. Crnjona i docent d-r D. Karžičkog čitaju rad i očekuju Vašu recenziju.

Hteo bih, zajedno sa Vančom, da Vas obavestimo o Vančinom opredeljenju za dalji rad na postdiplomskim studijama. U okviru datih okolnosti, i naš Institut je delimično uključen u projekt „Izgradnja i korišćenje atomske centrale u SR Makedoniji", gde je uključen

veći broj naučnih institucija i privrednih organizacija u Makedoniji. Vančo je, sticajem okolnosti i potrebe, a i po svojoj stručnosti – inženjer energetičar i svoje specijalnosti (on je specijalist za numerička proračunjavanja), uključen u taj projekt preko našeg Instituta, pa se definitivno opredelio i za magistarski rad „Numeričke metode u reaktorskoj fizici" u sklopu tog projekta. Vančo, zbog poštovanja prema Vama, oseća se malo nezgodno da Vam ovo saopšti, i izvinjavajući se Vama, nada se da će te ga razumjeti, i da će i u budnće moći da se Vama obraća.

Sa poštovanjem,
Risto Šokarovski

DEPARTMENT OF MATHEMATICS
ROYAL HOLLOWAY COLLEGE
(*University of London*)
Englefield Green, Surrey
Telephone : Egham 4455

Head of Department :
PROFESSOR H. G. EGGLESTON, M.A., Ph.D., Sc.D.

5th November, 1975.

Professor D.M. Čvetkovic,
Department of Mathematics,
Technological University of Eindhoven,
P.O. Box 513,
Eindhoven, Netherlands.

Dear Dragos,

Thank you for your postcard. I was glad to hear that you had settled in Eindhoven and I hope your wife and family have now joined you.

In the course of the research for the bibliography of our book on the History of Graph Theory, we have come across a Dutch paper written in 1907 (copy enclosed). It is a statement & proof of what is now called Turan's Theorem. I wondered if there is a student at Eindhoven who would be prepared to translate this into English for us? We should also be interested to know a little more about the journal in which it appears.

If you can help us in this way, we should be most grateful.

Best wishes,

N

Norman.

Bell Laboratories

600 Mountain Avenue
Murray Hill, New Jersey 07974
Phone (201) 582-3000

November 6, 1975

Professor J. J. Seidel
Department of Mathematics
Technological University of Eindhoven
P.O. Box 513
Eindhoven
THE NETHERLANDS

Dear Jaap:

Thank you very much for your letter of October 30 and also for the reprints. Some of mine are enclosed in exchange.

Concerning Sequence 595. I have heard nothing about this sequence since the Handbook was published. N(12) = 87 was stated in a letter to me, dated September 17, 1971, from R. R. Korfhage, Director, Computer Science and Operations Research Center, Southern Methodist University, Dallas, Texas 75222.* In a letter to me dated April 15, 1970, R. W. Robinson said ""Cubic Graphs" may never get written up - the solution available now, to which Harary has referred, is so involuted that I consider it unsatisfactory (through doubtless better in the limit than Parthasarathy's "method")." Since these letters I have heard nothing until your letter which arrived today. I am very happy to have the corrected terms of the sequence, and will put them into the next supplement to the book (long overdue). Couldn't you include the terms of the sequence in your abstract (for concreteness)? Please send me a copy when it is ready, and also of your new paper on spherical codes.

It is fascinating to see root-systems appearing in the "Line graphs ..." paper. A superficial reading produced a few minor comments. Page 1.1, line -9, no comma after "therefore". Line -8, "two thirds" needs a hyphen. Line -8 "The final part is involved since" might better read "The connection with elliptic geometry is that". Page 1.2, line -1, change "in connection" to "related".

Best regards,

Neil

MH-1216-NJAS-mv N. J. A. Sloane

Enc.
As above

* Here is his present address

Dr D. Cvetković

Castorstraat 57

EINDHOVEN

Holland

МАТЕМАТИЧКИ ИНСТИТУТ

Број: 13 XI 1975. год.

БЕОГРАД

ОПОМЕНА

Молите се да у року од 15 дана вратите Библиотеци Математичког института следеће књиге и часописе:

1. Dragoš,
2. Tvoj rad "Spectra of graphs formed by
3. some unary operations" biće štampan u
4. t. 19 (33), 1975 i ide u štampu ovih dana.
5. S pozdravom
6.
7.
8.

~~ДИРЕКТОР ИНСТИТУТА~~

From:- Renu Laskar
10 Hameau de la Georgerie
91120 Palaiseau
France
Nov 13, 1975

Prof. D. Cvetkovic'
Dept. of Math,
Faculty of Elect. Engng.
Univ. of Beograd
P.O. Box 816
11001 Beograd
Yugoslavia.

Dear Prof. Cvetkovic':

I am on my sabbatical leave from Clemson Univ, Clemson, S.C. U-S.A and I ~~am~~ spending my leave in Paris Univ doing research with Prof. C. Berge's combinatorics group. I know you through your work. I would like to visit your department. If there is any interest I would be glad to give seminar talk. I have done some work on graph theory, finite geometries, graphs related to designs of experiments.

Would you please send me your reprint of Univerzitet u Beogradu Publikacije Elektrotehnickog Fakultet Serija Matematika No 354 1971 entitled Graphs and their Spectra to the above address.

with best wishes
Yours sincerely
Renu Laskar.

RÉPUBLIQUE FRANÇAISE

16 15
13-11
1975

AÉROGRAMME

M Dr. D. Cvetkovic'
Dept. of Math, Faculty of Elect Engg.
University of Beograd
P.O. Box 816
11001 Beograd
Yugoslavia

PAR AVION

Deuxième pliage

Ce pli ne sera pas acheminé par avion
s'il contient un objet quelconque.

EXPÉDITEUR :

Nom Rene Lacker

Adresse 10 Hameau de la Sergerie
91120 Palaiseau, France

Premier pliage

Dr Jovan D. Kečkić

BEOGRAD, Molerova 29-a
Yugoslavia

Dr Joban Z. Kerkuh

БЕОГРАД
Молерова 29-а

13.11.1975

Kolega Cvetkoviću,

Uzeo sam vašu adresu od Janića, jer bih hteo da vas zamolim za saradnju u sledećoj stvari.

Ja sam pri kraju jedne knjige koja će se verovatno zvati JEDNOGODIŠNJI KURS MATEMATIKE, ili nešto slično. Ona je prvenstveno namenjena hemičarima, farmaceutima i biolozima. Koliko mi je poznato, vi ste uspešno primenjivali grafove u hemiji. Stoga mi je palo na pamet da bi bilo dobro da ova knjiga sadrži jedno kratko poglavlje o grafovima i primenama u hemiji.

Molio bih vas da, ukoliko imate volje i vremena, napišete jedan kraći tekst o tome. To bi trebalo da iznosi oko 20 kucanih strana i da bude sasvim elementarno, sa što manje formalizma i što više primera, jer se od budućih čitaoca ne očekuje neki naročiti smisao za matematiku. Recimo, mislim da definicija tipa: "Uredjen par (X,ρ), gde je X neprazan skup, a ρ binarna relacija, naziva se graf" ne bi bila podesna. Posle izložene teorije trebalo bi (detaljno) uraditi bar dva primera iz hemije. Nemojte se truditi da izložite mnogo materijala, već samo po nešto što se lako primenjuje. Zainteresovanog čitaoca uputićemo u literaturi na primer na vašu knjigu.

Normalno, ja bih naveo da ste vi napisali to poglavlje, i pripao bi vam odgovarajući honorar (po tabaku).

Molim vas odgovorite mi odmah da li pristajete na moj predlog, i, u slučaju da ste saglasni, kada bih mogao da očekujem tekst. Bilo bi dobro kada biste mi ga dostavili do sredine decembra, jer planiram da predam knjigu odmah posle Nove godine.

Mnogo pozdrava,

J. Z. Kerkuh

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. N.L. Biggs
Department of Mathematics
Royal Holloway College
(University of London)
ENGLEFIELD GREEN, Surrey, Great Britain.

Eindhoven, November 20, 1975.

Dear Norman,

Thank you for your letter of November 5.
Please find enclosed the translation you wanted. Mr. W.H. Haemers, a new collaborator of Prof. Seidel, who has translated your text, noticed that the proof was not quite correct. The statement underlined in the text, seems to be not true if $p \neq q$.

But, of course, it is hardly to believe that all other solutions (given by other people, as mentioned in the paper) are not correct. Prof. Seidel told me, that all these people were good mathematicians, expecially F. Schuh. W. Mantel has proposed the problem and also gave a solution, so the reference should be made to him. J. Teixeira de Mattos was the teacher of Prof. Seidel in the secondary school.

The journal "Wiskundige Opgaven met de Oplossingen" has been published as a separate journal since the 19-th century until 1964 by the Dutch Mathematical Society and was devoted to problems. The other journal of the Dutch Mathematical Society, the "Nieuw Archief voor Wiskunde", took over in 1964 and made it its problem section. The present editor of this problem section is J.H. van Lint.

In order to show how old the tradition is, it should be mentioned that the Dutch Mathematical Society (Wiskundig Genootschap) was founded in 1776; hence it is older than the Dutch Kingdom! Proposition of mathematical problems and its distribution dates back to 1754. The "Wiskundige Opgaven" to which you refer started in 1855. These data come from an old book about the history of the Wiskundig Genootschap, which Seidel has in his library.

I am just going to write a report on cubic graphs (together with Prof. Seidel and some other people). We found 3 pairs of cospectral connected cubic graphs on 14 vertices and we have several other data on cubic graphs.

My family is now with me.

Best wishes,

D. Cvetković.

Vraagstuk XXVIII.

K 13 a. Er zijn eenige punten gegeven waarvan geen vier in eenzelfde vlak liggen. Hoeveel rechten kan men hoogstens tusschen die punten trekken zonder driehoeken te vormen? (W. MANTEL.)

Opgelost *door* H. GOUWENTAK, W. MANTEL, J. TEIXEIRA DE MATTOS, Dr. F. SCHUH *en* Dr. W. A. WYTHOFF.

Oplossing *van* Dr. W. A. WYTHOFF.

Zij n het aantal punten. Denken wij ons het grootste aantal rechten dat zonder driehoekvorming mogelijk is, werkelijk getrokken.

Zij A_1 een willekeurig punt. Zoeken wij alle punten op, die met A_1 door rechten verbonden zijn, en noemen wij deze $B_1, B_2, \ldots . B_q$. Nemen wij daarna alle punten die, buiten A_1, met een of meer der punten B verbonden zijn, en noemen wij deze $A_2, A_3, \ldots . A_p$. De laatstgenoemde zijn dus alle punten die uit A_1 langs twee lijnen bereikbaar zijn.

Het is duidelijk, dat wij nu alle punten genoemd hebben. Bestond er toch nog een punt C niet tot de B's of tot de A's behoorende, zoo zouden wij de lijn A_1C kunnen trekken zonder driehoeken te vormen; immers het trekken van deze lijn kan alleen dan tot driehoekvorming aanleiding geven, indien C uit A_1, behalve rechtstreeks, nog langs twee lijnen bereikbaar is. Wij zouden dus de lijn A_1C aan het stelsel kunnen toevoegen, hetgeen in strijd is met de onderstelling, dat het aantal getrokken lijnen zoo groot mogelijk is.

Verder is het duidelijk, dat de punten B onderling niet door lijnen verbonden kunnen zijn. Bestond er immers een verbindingslijn tusschen twee der punten B, dan vormde deze verbindingslijn met de lijnen die hen met A_1 verbinden een driehoek.

Ook de punten $A_2, A_3 \ldots . A_p$ kunnen geen onderlinge verbindingslijnen hebben. Denken wij ons namelijk een of meer van zulke verbindingslijnen en noemen wij deze A'A'', A'''A^{iv}, enz. (waarvan b.v. A' en A''' hetzelfde punt kunnen zijn). Wij voegen nu aan elk der punten A', A'', enz. een der punten B toe waarmede het verbonden is, en noemen deze B', B'', enz. De aanwezigheid der lijnen A'B', A''B'' en A'A'' sluit de lijnen A'B'' en A''B' uit. Wij zien nu echter, dat bij het aantal lijnen kunnen vermeerderen zonder driehoeken te vormen, nl.

door A'A'', A'''A^{iv} enz. gelijktijdig te vervangen door A'B'' en A''B', A'''B^{iv} en A^{iv}B''', enz., hetgeen weer in strijd zou zijn met de onderstelling, dat het aantal getrokken lijnen zoo groot mogelijk is.

De n gegeven punten zijn dus te verdeelen in twee groepen $A_1, A_2, \ldots . A_p$ en $B_1, B_2, \ldots . B_q$ zoo dat de punten van elk dezer groepen onderling geen verbindingslijnen bezitten. Wij zien echter gemakkelijk in, dat elk der punten A met elk der punten B moet zijn verbonden, want, als dit niet zoo mocht zijn, kunnen wij zonder driehoekvorming de ontbrekende verbindingslijnen toevoegen.

Het geheele aantal rechten is dus pq d.i. $p(n - p)$, en het komt er nog slechts op aan n zoodanig in p en $n - p$ te verdeelen dat $p(n - p)$ zoo groot mogelijk wordt.

Herleiden wij $p(n - p)$ tot $\frac{1}{4}n^2 - (\frac{1}{2}n - p)^2$, dan zien wij, dat de grootste waarde bereikt wordt, als de volstrekte waarde van $\frac{1}{2}n - p$ zoo klein mogelijk is.

Dit heeft plaats

voor even waarden van n, als $p = \frac{1}{2}n$ is; het aantal rechten is dan $\frac{1}{4}n^2$;

voor oneven waarden van n, als $p = \frac{1}{2}n \pm \frac{1}{2}$ is; het aantal rechten is dan $\frac{1}{4}n^2 - \frac{1}{4}$.

Deze uitkomsten kunnen worden samengevat in de formule $E(\frac{1}{4}n^2)$, indien onder $E(x)$ verstaan wordt het grootste geheele getal dat niet grooter is dan x.

Vraagstuk XXIX.

Q 2. In de ruimte R_n is een quadratische ruimte V^2_{n-1} van $(n - 1)$ afmetingen en een punt O willekeurig gegeven, dat de oorsprong is van een rechthoekig coördinatenstelsel $O(X_1X_2 \ldots X_n)$. Zijn P_i en Q_i de snijpunten van V^2_{n-1} met de as OX_i, dan is de uitdrukking

$$\sum_1^n \frac{\overline{P_iQ_i}^2}{\overline{OP_i}^2 \cdot \overline{OQ_i}^2}$$

bestand tegen wenteling van het assenkruis. (Dr. P. H. SCHOUTE.)

Opgelost *door* K. B[illegible] C. B. BIEZENO, Dr. P. H. SCHOUTE, Dr. F. SCHUH, J. TEIXEIRA DE MATTOS, A. VEGA *en* Dr. W. A. WYTHOFF.

Problem

Let there be given some points, no four of which are in a plane. What is the largest number of lines which can be drawn connecting pairs of points without forming any triangles. (W. Mantel)

Solved by H. Gouwentak, W. Mantel, J. Teixeira de Mattos, Dr. F. Schuh and Dr. W.A. Wythoff.

Solution (Wythoff)

Let n be the number of points. Assume the largest number of lines, such that no triangles occur, is drawn.

Let A_1 by any point. Let $B_1, \ldots, B_q$ be all the points, which are on some line through A_1. Let $A_2, \ldots A_p$ be all the points except for A_1 which are one a line through one of the points B.

It is clear that there are no points left, since, if there exists a point C, not belonging to the A's or B's, we can draw A_1C without forming a triangle, which contradicts our assumption.

Furthermore we know that since there exist no triangles no two points B are on a line.

Now suppose there are one or more lines through two points of $A_2, \ldots, A_p$; call these lines A^1A^2, A^3A^4, etc. (note that A^1 and A^3 for instance may be the same point). Choose B^1, B^2, B^3, etc., a collection of points B, such that A^i and B^i are on a line. The existence of the lines A^1B^1, A^2B^2 and A^1A^2 excludes the existence of A^1B^2 and A^2B^1.
But now we see that replacing A^1A^2, A^3A^4, etc. simultaneously by A^2B^1, A^1B^2, A^4B^3, A^2B^4, etc. increases the number of lines such that no triangles are formed. This however contradicts our assumption.

Thus the given n points can be devided into two parts $A_1, \ldots, A_p$ and $B_1, \ldots, B_q$, such that any pair of points from one part is not on a line. Furthermore we know that any two points from different parts must be on a line, since, if not so, we could draw this line unpunished.

Hence the number of lines equals $pq = p(n-p) = \frac{1}{4}n^2 - (\frac{1}{2}n-p)^2$, and this is maximal if $|\frac{1}{2}n-p|$ is as small as possible. Hence $p = [\frac{1}{2}n]$.

Conclusion: the maximal number of lines equals $[\frac{1}{4}n^2]$.

Dutch mathematical society
(= wiskundig genootschap)
1964
Nieuw Archief van Wiskunde

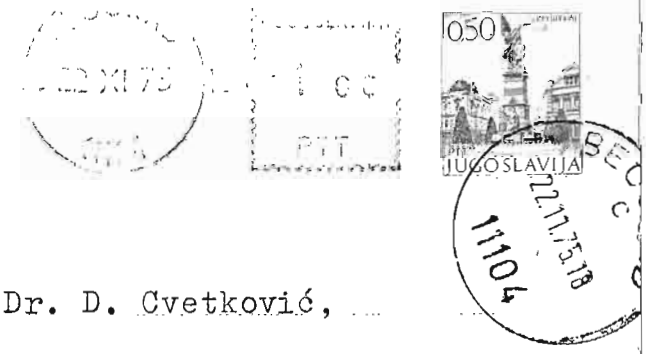
21.XI.1975.

Dragi kolega Cvetkoviću,

Primio sam vašu kartu i radujem se da ste se dobro snašli u novoj sredini. Odgovaram tek sada jer sam pre 2 nedelje, nakon dosta urgencija, uspeo da dobijem od BIGZ-a potvrdu da je knjiga rasprodata. Recenzija je gotova i sada ostaje samo da odlučimo da li da se rukopis (436 kucanih stranica) šalje Univerzitetskoj komisiji odmah ili posle Nove godine. Naime, prema prof. Nastiću, na sednici Univ. veća koja će se održati negde u februaru, biće rešeno pitanje povećanja autorskih honorara od 1000 na 1500 din. po tabaku. Neki autori koji kao i mi imaju gotove rukopise čekaju ishod ove sednice.

Ja se sećam da ste i vi govorili o povećanju honorara, ali nismo definitivno rešili kako ćemo postupiti. Stoga javiti mi da li se slažete da i mi čekamo, ili da dozvolimo da rukopis ode odmah. Meni oba rešenja odgovaraju. Srdačno vas pozdravlja

Miroslav Ćirić



Dr. D. Cvetković,

Technological University of
Eindhoven,
afd. WSK. Dept. of Mathemathics, P.O.B. 513

Eindhoven
Holland

27-XI-1975

Драги професоре,

Примио сам ваше писмо од 19-XI-1975. Захваљујем се Вама на пажљивом читању текста магистарског рада, на примедбе које ми упућујете и на предочавању грешака које сам учинио.

Постављате ми неколико питања за не мале грешке које сам учинио у параграфу 7, и у вези с тим како да се оне отклоне. Покушао бих да одговорим:

1° Грешка у теореми 7.9 (Композиција графова и NEPS)

У прво сте да тврдња c) у теореми 7.9 и теореми 7.8 није тачна. Тачно је да је NEPS из теореме 7.9c (а исто тако и из теореме 7.8c) јаки производ графова Ја сам се ту доле потрудио да учиним велику грешку. Сада би се могло поставити питање дали се композиција графова може на неки начин изразити преко NEPS-a. Свакако, за то је неопходно одређено проширење појма базе NEPS-a, као и самог NEPS-a. Означимо условно то проширење NEPS-a са NEPS1. Могло би се разматрати о следећем предлогу:

Дефиниција 1.

База B дужине n је скуп n-торки $(\beta_1, \beta_2, \dots, \beta_n)$ од којих бројева $1, 0, -1$, при чему n-торка $(0, 0, \dots, 0)$ није садржана у B.

Дефиниција 2.

NEPS1 $(B; G_1, G_2, \dots, G_n)$ графова $G_1, G_2, \dots, G_n$ по бази B дужине n је граф чији је скуп чворова једнак Картезијевом производу скупова чворова графова $G_1, G_2, \dots, G_n$ и у коме су два чвора $(x_1, x_2, \dots, x_n)$ и $(y_1, y_2, \dots, y_n)$ суседна ако и само ако у бази B постоји n-торка $(\beta_1, \beta_2, \dots, \beta_n)$ која испуњава следеће услове:

1° x_i и y_i су суседни у $G_i \iff \beta_i = 1$

2° $x_i = y_i \iff \beta_i = 0$

3° $\{x_i$ и y_i нису суседни у $G_i \iff \beta_i = -1$

Са оваквим дефиницијама базе и NEPS1, конто-
зицију $G_1[G_2]$ графова G_1 и G_2 дала би NEPS1 $(B; G_1, G_2)$,
где је база $B = \{(1,0), (1,1), (1,-1), (0,1)\}$, а конто-
зицију $G_1[G_2[G_3]]$ графова G_1, G_2, G_3 би дала
NEPS1 $(B; G_1, G_2, G_3)$ где је база $B = \{(1,0,0), (1,0,1), (1,0,-1),$
$(1,1,0), (1,1,1), (1,1,-1), (1,-1,0), (1,-1,1), (1,-1,-1), (0,1,0),$
$(0,1,1), (0,1,-1), (0,01)\}$. Ми желимо, могла би се
формулишу следећа теорема:

Теорема 1

Конто-зицију $G_1[G_2[G_3 \cdots [G_n]\ldots]$ графова $G_1, G_2, \ldots, G_n$
је NEPS1 $(B; G_1, G_2, \ldots, G_n)$ по бази $B = B_1 \cup B_2 \cup \ldots \cup B_n$,
где је:

B_1 — скуп свих уређених n-торки $(\beta_1, \beta_2, \ldots, \beta_n)$
у којим је $\beta_1 = 1$ а β_i за $i = 2, 3, \ldots, n$ могу бити било
који од бројева $1, 0, -1$,

B_j, $j = 2, 3, \ldots, n-1$, је скуп свих уређених n-торки
$(\beta_{1j}, \beta_{2j}, \ldots, \beta_{nj})$ у којим је $\beta_{1j} = \beta_{2j} = \cdots = \beta_{j-1,j} = 0$, $\beta_{jj} = 1$,
а β_{ij} за $i = j+1, j+2, \ldots, n$ могу бити било који од
бројева $1, 0, -1$,

$$B_n = \{(\underbrace{0, 0, \ldots, 0}_{n-1}, 1)\}.$$

Доказ ове теореме произилази, на пример,
из следеће последице разматрања: Нека су
$(x_1, x_2, \ldots, x_n)$ и $(y_1, y_2, \ldots, y_n)$ два чвора из конто-
зиције $G_1[G_2[\ldots[G_n]]]$. Чворови $(x_1, x_2, \ldots, x_n)$ и $(y_1, y_2, \ldots, y_n)$
су суседни у $G_1[G_2[\ldots[G_n]]]$ ако и само ако [x_1 је
суседан са y_1 у G_1] или [$x_1 = y_1$ и
чвор $(x_2, x_3, \ldots, x_n)$ је суседан
са $(y_2, y_3, \ldots, y_n)$ у $G_2[G_3[\ldots[G_n]]]$]. Чворови $(x_2, x_3, \ldots, x_n)$
и $(y_2, y_3, \ldots, y_n)$ су суседни у $G_2[G_3[\ldots[G_n]]]$ ако и
само ако [x_2 је суседан са y_2 у G_2] или [$x_2 = y_2$ и
чвор $(x_3, x_4, \ldots, x_n)$ је суседан са $(y_3, y_4, \ldots, y_n)$ у $G_3[G_4[\ldots[G_n]]]$].

Продужавајући овако до чворова (x_{n-1}, x_n) и (y_{n-1}, y_n) у $G_{n-1}[G_n]$, прелазимо на закључак да је композиција $G_1[G_2[\cdots[G_n]]]$ графова $G_1, G_2, \cdots, G_n$ замена $NEPS1(B; G_1, G_2, \cdots, G_n)$, где је база B одређена као у претходној теореми 1.

Очигледно је да се и остале операције нпр. композиција, производ и јаки производ графова могу представити као $NEPS1$. Може се даље, без тешкоћа, одредити графовско разбијање које одговара $NEPS1$-у, односно да се дефинише $NEPS1$ графовских разбијања.

2° У вези са теоремом 7.12

Контрапример који наводите ($B=(1,1)$, $\Pi_1=\Pi_2=(1,1)$), а моју се навести и ~~[illegible]~~ произвољан број других сличних контрапримера, показује да теорема 7.12 није (сасвим) тачна у формулацији у којој сам је навео. Међутим, она је тачна ако се база B наметне још и услов да садржи најмање две n-торке. Још мање, претпоставка се може одржати на следећи начин:

Теорема 2 (уместо теореме 7.12)

Нека су $\Pi_j = (d_{1j}, d_{2j}, \cdots, d_{p_j j})$, $j = 1, 2, \cdots, n$ — повезана графовска разбијања, $n \geq 2$, $p_j \geq 2$, $j = 1, 2, \cdots, n$, и нека је B-база једнака n са особином да за свако $j = 1, 2, \cdots, n$ у B постоји n-торка $(\beta_1, \beta_2, \cdots, \beta_n)$ у којој је $\beta_j = 1$. Тада $NEPS(B; \Pi_1, \Pi_2, \cdots, \Pi_n)$ је повезано графовско разбијање ако и само ако бар један од следећих услова:

(i) База B садржи најмање две n-торке

(ii) База B се састоји из само једне n-торке $\vec{b}_0 = (1,1,1,\cdots,1)$

$\sum (d_{i1}, d_{i2}, \cdots, d_{in}) * \vec{b}_0 \geq 2$ [illegible]

сумирање

Збрајање по свим n-торкама — елементима облика $(i_1, i_2, \dots, i_n)$ Картезијевог производа $N_1 \times N_2 \times \cdots \times N_n$ скупова $N_j = \{1, 2, \dots, p_j\}$, $j = 1, 2, \dots, n$, а операција "$*$" одређена је дефиницијом 7.8.

Доказ.

Означимо са (D), као што смо то већ означили у докторској дисертацији, особину базе B да за свако $j = 1, 2, \dots, n$ садржи n-торку $(\beta_1, \beta_2, \dots, \beta_n)$ у којој је $\beta_j = 1$.

Ако су $\Pi_1, \Pi_2, \dots, \Pi_n$ повезана граф-разбијања и база B са особином (D) задовољава услов (i), онда сваки сабирак у $NEPS(B; G_1, G_2, \dots, G_n)$ је ≥ 2, па је $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ повезано графовско разбијање. Исто тако, ако су $\Pi_1, \Pi_2, \dots, \Pi_n$ повезана граф-разбијања и B база са особином (D) за коју је испуњен услов (ii), онда су за разбијање $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ испуњени услови из теореме 2.1, па је $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ повезано графовско разбијање.

Обрнуто, нека су $\Pi_1, \Pi_2, \dots, \Pi_n$ — повезана графовска разбијања, нека је B-база дужине n са особином (D) и нека је $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ — повезано графовско разбијање. Тада сваки сабирак у $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ је ≥ 1 и сума свих сабирака у $NEPS(B; \Pi_1, \Pi_2, \dots, \Pi_n)$ је $\geq 2(p-1)$, где је $p = p_1 \cdot p_2 \cdot \cdots \cdot p_n$. За базу B тада постоје две могућности: прва — B се састоји из најмање две n-торке и друга — B се састоји из само једне n-торке $\vec{b}_0 = (1, 1, \dots, 1)$. У првом случају испуњен је услов (i) а у другом услов (ii). Овим би доказ био завршен.

3° Како су израђене табеле?

Табеле сам израдио сам.

— Табела апсолутно повезаних графовских разбијања (табела 2) израђена је посматрањем разматрањем свих графовских разбијања са $p \leq 6$ (из табеле 1), применом следећих својстава: теорема 2.1, теорема 2.3, теорема 2.4 и непосредним проверавањем. Овде треба напоменути

да сва разбијања из табеле 2 задовољавају теорему 2.4 и теорему 2.3 (теорема 2.3 је специјалан случај теореме 2.4), тј. сва хамилтонски повезана графовска разбијања са $p \leq 6$ подвргавају се теореми 2.4.

— Табела билатералних графовских разбијања (потребно је означена као табела 6 а треба да буде табела 5) израђена је поступком разматрањем свих графовских разбијања са $p \leq 6$ (из табеле 1), применом теореме 5.1 и непосредним проверавањем.

— Табела простих графовских разбијања (табела 4) израђена је поступком разматрањем свих графовских разбијања са $p \leq 6$ (из табеле 1), применом следећих ставова и поступака: лема 4.1, теорема 4.1, теорема 4.2, теорема 4.3, теорема 4.4, теорема 4.5, методом непосредног проверавања и налажења, теорема 1.8 и став да нетривијалан граф има просто графовско разбијање.

— Табела графовских разбијања (табела 1) са $p \leq 6$ израђена је полазећи од нашег оформљавања графовских разбијања са $p \leq 3$ и примењујући надаље следеће ставове и поступке: теорема 1.1, теорема 1.3 (са модификацијом да теорема 1.3 у директивном облику важи и када сабирци у разбијању Π нису обавезно поређани у монотоно нерастућем поретку), теорема 1.5 (iv), теорема 1.6, теорема 1.10, непосредним налажењем и проверавањем и компаративањем са списком графова са $p \leq 6$ који је дат у „Graph Theory" — F. Harary; на крају књиге.

4° Референце за теорему 2.3?

У вези са теоремом 2.3, ја у математичком свету наводим да је овај резултат раздвојен више

аутора, те наводећи аутора, мисао је сасвим лијепа грешка прво, треба напоменути да аутори те употребљавају појмом „апсолутна повезаност". Услов (i) из теореме 2.3 је прилично очигледан да је довољан за апсолутну повезаност графовског разбијања, ако се вероватно може прецизније мањим ауторима. Услов (ii) теореме 2.3 приписује O. Ore-у, Теорија графова (руско издање, Москва 1968, дат као теорема 2.2.5, страна 39. Услов (iii) теореме 2.3 наводе бетн број аутора, ~~као~~ Ore, Harary и др. у књизи „Graph Theory" – F. Harary, (превод на руски, Москва 1993), у руском издању он је наведен као задатак 2.14 на страни 39. Услов (iv) теореме 2.3 приписује O. L. Poša, и узет је из његове теореме о Хамилтоновим графовима, наведена, на пример, у руском издању Теорија графова, Ф. Харари, Москва 1968, као теорема 7.3 на страни 85.

5. Библиографски подаци, литература

Прихватам Ваше примедбе. Грешке које сам овде учинио су резултат и моје нестрпљивости и непажње. Сада ћу се потрудити да их прецизно коригујем. Захвалио бих Вам се да ми за ово дате мало времена, јер сам већ књиге и радове прилично одавно где сам их узео, па ми сада треба мало времена да то сакупим. Молио бих за мало повјерења да ћу то и ~~учинити~~ учинити.

Питање не такође, мада сматрам да је у овом раду вредно да се одржи. На то ће бих желео да Вам одговорим, а и моје мишљење о напоменутом раду и његовој вредности је сасвим. Желео бих Вам рећи мада сам самостално радио, тј. мада нисам узео, преписао, као готово из неке књиге или радника. Оно мало сам сам урадио у овом смислу,

могло би се сматрати, једино нејасније као неко одређено систематизовање и сређивање неких резултата о дељу проблема повезаних са графовским разбојништвима, а затим следеће делове које сам самосталио урадио, тј. написао сам или преписао као целине из неког текста или књиге: Теорема 1.2. и теорема 1.3. су као нека уопштавања теореме 1.1 (Havel-Hakimi); теорема 1.5 iv) као једноставна мала модификација теореме 1.4 (Erdős-Gallai) теорема 2.4 и теорема 2.5; табела апсолутно повезаних графовских разбојништава (табела 2); доказ теореме 3.1; доказ теореме 3.2; формулација и доказ тривијалне леме 4.1; формулација и доказ теореме 4.1 и теореме 4.2; формулација и доказ леме 4.2; формулација и доказ леме 4.3; теорема 4.5; табела простих графовских разбојништава (табела 4, $p \leq 6$); теорему 5.1 сам у прво време сам формулисао и лично доказ, али после Вашег указивања да она већ постоји и да је њен аутор Berge, навео сам да је њен аутор Berge, а доказ сам задржао онако како сам га ја лично; мала теорема 5.2; табела бипартитних графовских разбојништава са $p \leq 6$ (табела 6); доказ теореме 6.1., теорема 6.3, тј. њена формулација; леме 6.1; лема 6.2; теорема 6.4 (за коју сте ми Ви већ указали да је недавно објављена); формулације теореме 6.7. и графу 7, Ви сигурно најмеродавније можете видети шта сам самостално урадио, а шта ће вероватно доказ могла у обиљу одређивање графовских разбојништава која одговарају неким операцијама над графовима.

Надао бих се да сам у магистарском раду дао доказе неких теорема, а да доказе написао сам нашао и видео онакве какве их аутори теореме дају. Могућа и неке од својстава које сам формулисао већ постоје, али ја их нисам срео

остало где сам могао будући, што би отеш
Свакако била моја грешка.

Ја бих заиста имао толико. Исправићу грешке
и примедбе на које ми указујете. Заиста ћу најно-
вијим стилом исправки да Вама ћу га најкасније
послати. А после тога ћу још једном предузети
и престижнији магистерски рад са уврштеним исправкама.
Ја бих, ако Ви то прихватате предложио да текст
магистарског рада овако како је сада, са исправкама,
буде коначан. Надаљу, једино Ви то желите најнепри-
стојније и компетентније оценити.

Ја се још једном захваљујем на Ваш добар одтас
према мени и на добронамерна указивања која ми
упућујете.

Честитам Вам 29 Новембар, Дан Републике,

Са поштовањем
Ристо Шокаровски

Royal Holloway College University of London

Department of Mathematics
Egham Hill
Egham
Surrey TW20 0EX

Head of Department and Professor of Pure Mathematics
H. G. Eggleston, M.A., PH.D., SC.D.

Professor of Applied Mathematics
M. R. C. McDowell, M.A., PH.D., F.INST.P.

Tel : Egham 4455

27th November, 1975.

Professor D.M. Čvetković,
Department of Mathematics,
Eindhoven University of Technology,
P.O. Box 513,
Eindhoven,
The Netherlands.

Dear Dragoš,

It was very kind of you to arrange for the translation. We were most grateful for your work and would like you to pass on our thanks to Mr. Haemers. It is very interesting that the proof given is fairly similar to the standard ones.

I was glad to hear that you are enjoying your time in Eindhoven and that it is mathematically productive. I have several questions about trivalent graphs, but I shall write to you again about these when I have more time for reflection.

Please give my kind regards to Professor Seidel.

Best wishes,

Norman

Milan B. Knežević
Č. Minderovića 2/7
11030 Beograd

Dr. Dragoš Cvetković
Castorstraat 57
Eindhoven
Holand

Druže Cvetkoviću,

evo, opet Vas uznemiravam interesujući se hoćete li u toku zime dolaziti u Beograd i da li biste u to vreme imali malo vremena za mene i izvesni materijal koji sam napisao.

Ako se sećate, razlaganje sistema započinjem obrazovanjem onoga podsistema u koji ulaze sve simetrične kombinacije, tako sam bar postupio kod sistema $(\frac{9}{3})$. Smatrajući da se na potpuno isti način može postupiti kod svih sistema niza $(\frac{6n+3}{3})$ detaljno sam razmatrao ovaj postupak razlaganja za nekoliko članova navedenog niza. Cifre su strahovite. Po slobodnoj, neobaveznoj proceni podsistem u koji ulaze simetrične kombinacije sistema $(\frac{15}{3})$ može da se obrazuje u preko 500, a sistema $(\frac{21}{3})$ u preko 80.ooo varijanata. Za veće članove niza nisam se usudio da prognoziram. Za sistem $(\frac{9}{3})$ ovaj broj je odredjen i iznosi 8 različitih podsistema, iako su od 12 potrebnih 4 (simetrične) kombinacije unapred poznate.

Materijal još nije završen, ali će iznositi najviše 25 strana sa grafičkim prikazima u tekstu. Čim ovo završim nastaviću da na sličan način razradjujem dalji postupak razlaganja sistema niza $(\frac{6n+3}{3})$. Može se desiti da nastavak bude komplikovaniji od početnog koraka.

Pored razmatranja maksimalnog broja obrazovanja pojedinih podsistema i maksimalnog broja razlaganja čitavih sistema, prebno je pronaći uslove za ograničavanje ovoga broja. U pomenutom materijalu o tome postoji samo napomena.

Naravno da sve ovo može da čeka, ali bi me zanimalo Vaše mišljenje o onome što sam napisao.

Srećna Vam Nova godina.

Beograd, 03.12.1975.

Milan Knežević

8. 12. 1975

Kolega Cvetkoviću,

Izvinite što vam se nisam odmah javio sa odgovorom, kao što ste tražili. Raznorazni poslovi uvek su me sprečavali da to učinim.

Milo mi je što se prihvatate da izradite tekst o grafovima i primenama. Rok koji ste najavili, tj. 1. - 15. januar 1976. odgovara. Ako dodje do zakašnjenja od desetak dana, i to je prihvatljivo, pogotovu što i sam snosim deo krivice za eventualno zakašnjenje.

Evo nekoliko podataka o knjizi. Ona je podeljena u tri dela čiji su (radni) naslovi:

1. Pregled srednjoškolske matematike (oko 70 kucanih strana);
2. Uvod u višu matematiku (oko 250 kucanih strana);
3. Matematička obrada eksperimentalnih podataka (oko 40 k.str.

Drugi deo je taj u kome je izložen osnovni kurs. Za sada, on sadrži poglavlja:

1. Uvod
2. Polinomi
3. Elementi linearne algebre
4. Numerički nizovi i redovi
5. Funkcije
6. Diferencijalni račun
7. Integralni račun
8. Diferencijalne jednačine
9. Verovatnoća i statistika

Na kraju svakog poglavlja, iza matematičke teorije, slede primene u hemiji, biologiji i redje u fizici.

Matematički deo poglavlja o linearnoj algebri gotov je i ima 35 kucanih strana. Tu je obradjena sledeća materija: Matrice (operacije sa matricama, inverzna matrica), Determinante (definisane pomoću razvoja po prvoj vrsti), Sistemi linearnih jednačina (Cramer, matrični metod, Gauss), Vektorska algebra, Pojam vektorskog prostora (uključujući i pojam linearne zavisnosti). Karakteristični polinom matrice nije radjen.

Ja sam prvo mislio da grafovi dodju na početak, izmedju Uvoda i Polinoma, ali kako vi hoćete da koristite po nešto iz linearne algebre, onda najbolje da dodju izmedju algebre i nizova. Inače, ako imate neki drugi predlog, ja nemam ništa protiv.

Da ponovim još jednom: Vaš tekst ne bi trebalo da bude duži od oko 20 kucanih strana, i da oko polovina bude posvećena primenama u hemiji. Teže dokaze slobodno izostavite, naročito ako se radi o nečem manje-više očiglednom. Na primer, ja nisam dokazivao Weierstrassove teoreme o neprekidnim funkcijama.

Nadam se da sam ovim pregledom uspeo da vam dam osnovnu sliku o koncepciji knjige, i da ću u preciziranom roku dobiti i vaš tekst.

Mnogo pozdrava,

P.S. Za svaki slučaj, adresa mi je [illegible]

copy: Dr. D. Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Prof. R.R. Korfhage
Dept. of Computer Science and Operations
Research; Southern Methodist University
Institute of Technology
DALLAS, Texas 75275, U.S.A.

Eindhoven, December 11, 1975

Dear Professor Korfhage,

Thank you for your letter. We have compared your cycle vectors with our data. Yourcycle vectors 59 and 60 read

1 2 2 10 14 8 18 22 11 12
1 2 2 4 6 8 10 10 2 2

According to our data the first vector should read

1 2 2 10 14 8 18 22 16 6

and the graph corresponding to the second vector does not exist. Therefore, we should like to have further data about your construction of the graphs 59 and 60, for instance a picture or a list of the edges in each vertex. All other 84 vectors fit with our data.

Bussemaker, Cobeljić, Cvetković and I are preparing a Report in which we find the following numbers N(n) of nonisomorphic connected cubic graphs of order n:

n =	4	6	8	10	12	14
N(n) =	1	2	5	19	85	509.

Sincerely yours,

Seidel

J.J. Seidel.

UM

The University of Manitoba

Department of Mathematics and Astronomy

Winnipeg, Canada R3T 2N2

December 30, 1975

Dr. Dragoš Cvetković
Technological University
Department of Mathematics
P.O. Box 513
Eindhoven
The Netherlands

Dear Dr. Cvetković:

I just received your letter of October 23. Due to the strike of postal services here, I am still receiving letters that were sent in September via air mail.

Also arriving in the mail, finally, is the contract for the book. I shall be signing and returning it and I suppose you will get your copy in due course.

Is the thesis of Mr. Šamić in English? If not, can you tell me the major results?

My plans for later this year are coming into view. I hope to arrive in Eindhoven during the summer. Will you remain there until September?

Regards to your family.

Sincerely yours,

Michael Doob

MD/lg

Кула 10.01.1976.

Драги Колега Цвекановићу,

Тако ми је тако што нисам скоро ранije да Вам одговорим. Има више ра
лога наравно, нпр. нередовитост рада би довела до губитка рада, бар свој
ауто, има и других објективнијих разлога. Наиме, још увек сам у фази о
ке, слободног времена које ја немам. Када се распореду имамо необичне
активности и нпр. нас задоше тако да не стижемо да нешто „саме
само урадимо". Ја бих рекао, да кажем, не терам да пишем на брзину. Дру
го, иначе сам некако изолован од света; не знам шта се догађа ван кр
та касарне изузев неких крцатих догађаја за које сазнајем из штампе
са осталим колегама са факултета се не виђам. Једино сам Лазковића
видео. Вам хонаве овог материјала у већ упућеном чланку. Не зна
шта ће радио сазнао сам једино да је ревидирано.

Ваше писмо ме је веома обрадовало, али истовремено растужило. Ка
рло тетошила ме је вест да је проф. Sachs обољио. Болестан и да се нал
зи у болници. За њега ми нисам писао, изузев што сам му честитао
нову годину. Надам се да је сада добро, као и да је изашао из болнице.
Надам ускоро да му се јавим, јер ме што му се још нисам захва
лио за свој хонв на конгрес. Сматрам да је мој хонв довољан н
пошљу неки прилог. Иначе, добио сам хонв да учествујем на конгре
су PARIS-ORSAY 9-13 JULY 1976. То ми је стигло на кућну адресу и ја сам ов
хонв добио од мојих пре неколико дана. Надам се да ћете Ви уче
ствовати на том конгресу. Мени изгледа некако 5 је сувише.

Друга занимљива информација тиче се нашег (са Лазковићем) зајед
ног чланка. Мени је нарочито мило што је све тако испало када,
верујте, када се само једва разликим у прилагођавању резенцента
има готова истина. Поред ја примедбе резенената у вези другог
става не разумем (писао сам једноставно) али када се има у
виду да је овај чланак био намењен часопису који је средио ду
гује ЈБТ (поред врсте часопис из теорије графова - једини број)
онда све постаје јасније (стручна селекција). Зато Вама мислим
да чланак (препринт) нећу објавити на неком другом месту.
За сада ја немам неку идеју и Вама ће изгледа из више претпо
стављам да ћемо се Лазковићем донекле одлуку.

Ваше претходне истраживачке активности ме интересују, али за
сада бар док ми траје обука једино што могу да радим је само ра
у главним цртама упознам Ваш рад. Надам се да ћу ускоро када
ми прође обука имати више и времена и услова да се позабавим
неким математичким проблемом. Мило ми је да чујем
сарадњи са Seidel-ом довели до неких нових резултата. Не чу
дим се да сматрао да ову нашу књигу коју смислите са проф.
Sachs-ом с обзиром да је он био(надам се) болестан. Радујем ја са
и на том плану добра урадили.

Ону публикацију поменуту о којој ме ми писали још увек нисам
разматрао и хоћу ускоро нешто.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Prof. M. Doob
Department of Mathematics and Astronomy
The University of Manitoba
WINNIPEG
Canada R3T 2N2

Eindhoven, January 11, 1976

Dear Dr. Doob,

Thank you for your letter of December 30, 1975. It is nice that we shall meet during the summer. I do not intend to be here during September (maybe a few days if necessary).

Prof. Sachs was very ill during the autumn, but now he is recovered and he has hust sent me the improved versions of four chapters of the book. Now I am a little bit more optimistic about the finishing of the manuscript. I shall soon send you some remarks on your chapter and some proposals how to include results of Prof. Seidel.

The thesis of Mr. Simić is in Serbocroatic but the main results have already been published in English (Publ.Elektrotehn.Fak. no. 498 - no. 541 (1975), 41 - 44, about the equation $L^n(G) = \overline{G}$; Discr. Math. 13 (1975), 315 - 320, about $L(G) = T(H)$; Publ.Inst.Mat. (Beograd) 17 (31) (1974), 37 - 44, about $H = \overline{L(G)}$). The main means are Beineke's forbidden subgroups. There are also a few examples where the spectrum has been used.

Prof. Seidel suggested me to write to you about housing in Eindhoven and similar things.

We have a furnished flat (in a building) with four rooms, kitchen, etc. (area about $60m^2$). Together with the electricity, gas for cooking, water and central heating we pay 535 guilders per month. We only had to buy a second hand televison set (100 guilders) and a washing machine (300 guilders) for which we hope to sell them in the end. (There is no problem for you to use our washing machine if it is convenient for you).

The university has some houses for about 800 guilders per month. You can rent also only one half of such a house but then you would have only two rooms, kitchen and a common bathroom.

There is also a International Neighbours Group which help in domestic questions. You can borow some furniture from the furniture bank connected with this group.

We spend (3 persons) about 800 - 900 guilders per month for food and little domestic thing. Public restaurants are rather expensive but at the university you can dishes fairly cheap.

Please, feel free to ask me about any particular question concerning your coming here.

If you have new papers, send them please. Soon I shall send you some new things.

Sincerely yours,

D. Cvetković.

Вировитица
12. 1. 1976

Драги професоре,

Пре свега хвала вам на писму.

Налазим се на одслужењу војног рока у Вировитици већ 3,5 месеца. Било је до сада писама био у могућности да се информишем о семинарском раду, али сигурно ћу га у фебруару моћи радити осетно и да Вас се са њиме одазовем. Том приликом ћу и поправљени рад у вези са конкуренцијом и пројекцијом, који сте ми претходно (Пишите ми, молим Вас, да ли сте добили) Биографију и коју, само да у том времену урадим осетно и евентуално да се и ова конкурише.

Прочитао сам књ. о машини која ће решавати проблеме из теорије језика, једном приликом мислио сам на механичку машину која ће решавати практичне проблеме. Знам да се то не налази на конкурсу али је то моја специјалност. Колико је само специјализација потребна одређена компетенција, тако је елементарни проблем за Теорију језика? Питање је само колико ће та машина бити поуздана, економична и (исправна).

Имао овде у вези сваког слободно време коришћен на учење енглеског језика, и надам се ће ми нешто помоћи

Интересује ме зашто је прочитао само једно "решен" да Вас молим је ли Вам нешто о томе.

Пуно поздрава и ће
нарочито у 1976. Ђ
Лукић Златомир

15 јануар 1976

Колега Цветковићу,

Јуче сам добио од Гутмана ваш рукопис у коме је он на неким местима поправио по неку хемијску формулу и слично. Хвала.

Не смета што нисте куцали. Ја сам доста брз дактилограф и ако текст буде стварно само 20 куцаних страна – а чини ми се да је дужи – урадићу то за једно послеподне.

Гутман се љубазно понудио да помогне у хемијским аспектима уџбеника, па ћу га замолити да нађе још неке примене и других математичких дисциплина.

Много поздрава,

Ж. Кенкић

20-I-1976

Драги професоре,

Данас, 20-I-1976, одбранио сам успешно мој магистарски рад, и јављајући Вам ово, осећам потребу да још једном изразим Вама своје поштовање и захвалност за Вашу сестрану пажњу, усмеравање и подршку коју сте ми пружали.

Обзиром на Ваш престој у Холандији, Наставничко веће Природно-математичког факултета у Скопљу одлучило је да комисија за одбрану магистарског рада буде у саставу: проф. д-р Г. Чупона, доц. д-р Д. Карпинска и доц. д-р Александар Самарџиски.

Комисија за одбрану је оценила да сам одбранио магистарски рад са одличним успехом.

Данас сам примио пакете и Ваш рад (са F.C. Bussemaker-ом) о повезаним регуларним интегралним графовима, и захваљујем се.

Сада намеравам да радим на задатку који сте ми Ви поставили — о комбинаторној структури графа са графовским разбијањем, као инваријанти графа. Притом, покушао бих да то повежем са Хипотезом Улам-а.

Желео бих пакете да се мало више упознам са комбинаторним делом теорије-

графова – са пребројавањем графова одређених особина или параметара.

Захваљујем Вам се за Ваше мишљење, упутства, сугестије и предлоге за мој завршни рад у теорији графова. Радо бих прихватио уколико имате предлоге неке проблеме, нека подручја за завршни рад.

Са поштовањем,
Ристо Шокаровски

UM

The University of Manitoba

Department of Mathematics and Astronomy

Winnipeg, Canada R3T 2N2

January 26, 1976

Dr. Dragoš Cvetkovic
Department of Mathematics
P. O. Box 513
Technilogical University
Eindhoven, The Netherlands

Dear Dr. Cvetkovic,

Thank you for your letter describing your experiences in Eindhoven and for the reprint of the recent paper by yourself and Bussemaker. I thank you also for the Christmas card which arrived today!

I like the paper on cubic integral graphs. It is especially interesting to find a cubic PING. I notice that if the vertices of G_9 are numbered from 1 to 20 such that 11-12-13-14-15-16-17-18-19-20-11 forms a circuit and 1-4-7-10-3-6-9-2-5-8-1 forms a circuit and i is joined to 10 + i, then G_{10} can be formed by deleting 3-10 and 5-8 and replacing them by 3-8 and 5-10. The subgraph determined by the vertices 2,5,9,10,11,12,19, and 20 then consists of two vertices joined by three distinct paths of length three. This configuration does not occur in G_9 and hence the graphs are non-isomorphic. Are these two switching equivalent?

I have started to work on incorporating the work of Cameron, Goethals, Seidel, and Shult into chapter six of the book, but since you are going to send me some changes, I shall wait until I hear from you before proceding further.

We have made tentative arrangements to fly to Europe on August 1; we should then be in Eindhoven shortly after that, so we should have our reunion early in August.

I am enclosing some recent work of mine on magic graphs as you requested. It has nothing to do with eigenvalues of graphs directly, but I had a lot of fun thinking about these graphs.

My wife and I send best regards to you and your wife. She is looking forward to our getting together again.

Sincerely yours,

Michael Doob

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. R. Askey
Mathematics Research Center
The University of Wisconsin - Madison
MADISON, Wisconsin 53706
U.S.A.

Eindhoven, January 28, 1976

Dear Dr. Askey,

Dr. D. Cvetković would appreciate it if he could receive a copy of your report with M.E.-H. Ismail, "A Combinatorial Sum", MRC Technical Summary Report #1557, July 1975.
Thanking you in advance, I remain,

sincerely yours,

Mrs. H. Rooyackers - Koops,
(secretary to Dr. D. Cvetković).

29-I-1976

Драги професоре,

Примио сам вашe писмо од 21-1-1976 године у којем ми пишете о генерализацији NEPS-а. Прихватам са задовољством ваше сугестије, покушаћу да средим оно што сам о NEPS-и размишљао и да вам касније пошаљем оно што сам урадио.

Вероватно сте већ примили моје писмо од 20-I-1976 године у којем вам јављам да сам одбранио магистарски рад.

Ваш долазак у Београду ја бих свакако желео да искористим за сусрет са Вама. Сигурно да треба да вас информишем о одбрањеном магистарском раду, а исто тако и ради договарања о даљем раду. Том приликом бих Вама показао и моја размишљања о NEPS-у.

Ја бих дошао у Београд у суботу, 7-II-76, ујутру. Надам се да и Ви имате тај дан да одвојите време за сусрет.

Са поштовањем,

Ристо Чокоровски

Dr. R. Laskar
10 Hameau de la Georgerie
91120 PALAISEAU
France.

January 30, 1976

Dear Professor Laskar,

I am spending this academic year at the Eindhoven University of Technology. Unfortunately I received your letter of November 13, 1975 which you sent to Belgrade, only a few days ago. I am just leaving to Belgrade for two weeks and if you answer my letter at once, plaase write to my Belgrade address; otherwise to Eindhoven.

Which are your plans for visiting Belgrade? Maybe after the conference in Hungary in July when I shall be in Belgrade again for a few days?

Yours sincerely,

D. Cvetković.

Dear Professor Dragoš M. CVETKOVIĆ

We are very interested in "Graph Equations for Line Graphs and Total Graphs".
We are doing research on the problem of graph Equations for Middle Graphs and its related graphs, and should appreciate it very much if you would send me a copy of your paper "Spectrum of the total graph of a graph, Publ. Inst. Math. (Beograd) 16(30) (1973) 49-52.

Thanking you in advance for this favor

I remain

Very respectfully yours,

Jin Akiyama.

Dep. of Mathematics.
Japan Medical School
2-297-2, Kosugi, Nakahara,
Kawasaki, 211, Japan

0865-53518

15 CHALFONT ROAD
OXFORD
OX2 6TL

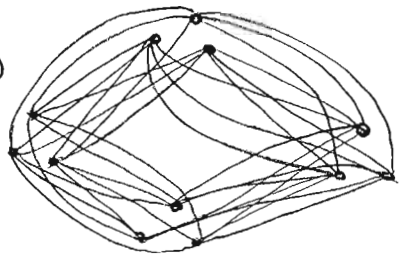
22 Feb 76

Dear Professor Cvetković,

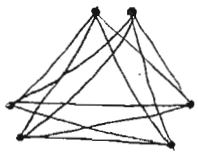
I was wondering if you could help me.

I have to referee a paper in which the author considers the spectral properties of the graphs $C_r(n)$ in which r disconnected graphs with n vertices are arranged in a ring

eg $C_4(3)$



$C_3(2)$



The author proves that if r is odd or 4, 6 or 8, then these graphs are characterized by their eigenvalues. He conjectures that these graphs are characterized by

their eigenvalues for all values of r.

(i) Do you know if his results are new?

(ii) Do you know if his conjecture has been proved?

I should be grateful if you could reply to me as soon as possible.

Yours sincerely,

Robin J. Wilson

Dr. D.A. Waller
University College of Swansea
Dept. of Pure Mathematics
SINGLETON PARK, SWANSEA
Great Britain.

February 23, 1976.

Dear Dr. Waller,

Please find enclosed some recent papers of mine.

If you have any new papers on graph spectra (I suppose you had one on the conference in your country last year) could you please send them to me?

Yours sincerely,

D. Cvetković.

Dr. A, Maté
Secretary of the Organizing Committee
Bolyai János Matematikai Társulat
H-1368 BUDAPEST Pf. 240
Hungary.

February 27, 1976.

Dear Dr. Maté,

I would like to take part in the Fifth Hungarian Colloquium on Combinatorics from June 28 to July 3, 1976. Could you please send me the necessary information?

I would like to present at the Colloquium the following joint paper:

F.C. Bussemaker, D.M. Cvetković and J.J. Seidel, "Graphs related to exceptional root systems".

The corresponding abstract will be send later. In agreement with Prof. J.J. Seidel, who will give a lecture on spherical designs, I propose that my talk comes in the time after the lecture of Prof. Seidel, since both things are related.

I would like to have a ~~simple~~ single room accomodation during the Colloquium.

Yours sincerely,

D. Cvetković

D. Cvetković.

UNIVERSITY OF WALES

University College of Swansea

Telephone 0792 25678

Department of Pure Mathematics

Singleton Park
SWANSEA
SA2 8PP
Great Britain

29 Feb 76

Dear Dr Cvetkovic,

Thank you very much for your letter and papers.

My paper at the British Combinatorial Conf in 1975 had no spectra in it. I have been working more on covering graphs recently, but I will send you copies of these papers as soon as they are available.

Will you be coming with Seidel to the British Mathematical Colloquium in Wales, April 6–10, 1976? I hope so. We can talk, and also I could arrange for you to visit Swansea on your way back if you would like to.

Yours sincerely,

Derek Waller

Dr. R.B. Mallion
Department of Theoretical Chemistry
University of Oxford
1 South Parks Road
OXFORD OX1 3TG
Great Britain.

March 5, 1976

Dear Dr. Mallion,

I am spending this academic year in Eindhoven working together with Prof. J.J. Seidel.

Prof. Sachs told me that you had been so kind as to correct the English in some chapters of our book on graph spectra. Thank you very much indeed for this and also for the remarks you have made in the chapter on chemistry.

Yours sincerely,

D. Cvetković.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Prof. J. Sedlaček
Matematický ústav ČSAV
Žitná 25
PRAHA 1
Csechoslovakia.

Eindhoven, March 2, 1976.

Dear Professor Sedlaček,

I am spending this academic year in Eindhoven working together with Prof.dr. J.J. Seidel.

In a discussion Prof. Seidel and I answered your question from your paper "O Kostrách konečných grafů", Časopis Pěst. Mat. 91 (1966), 221 - 227: do there exist non-isomorphic complementary graphs having the same number of spanning trees? A positive answer is provided by the paper: A.J.L. Paulus, "Conference matrices and graphs of order 26", T.H.-Report 73-WSK-06, Eindhoven, 1973, where a few examples of strongly regular non-isomorphic complementary graphs with the same spectrum are given. Since the number of spanning trees is determined by the spectrum in regular graphs, the answer is clear.

I would appreciate it very much if you would let me know whether your question has already been answered, or give me any relevant information.

Yours sincerely,

D. Cvetković.

The Open University,
Walton Hall,
Milton Keynes,
MK7 6AA.
Telephone: Milton Keynes 74066

THE OPEN UNIVERSITY

FACULTY OF MATHEMATICS

5 March 76

Dear Professor Cvetković,

Thankyou very much for your helpful and prompt reply to my letter. I have recommended that the paper should be published, but I think a substantial rewriting is needed first. I enclose a copy of the paper for you to look at (and keep), but please remember that this is a preprint and that after rewriting, the final version may be rather different.

Thanking you once again for your help.

Yours sincerely,

Robin J. Wilson

Пула 7.3.1976.

Драги Колега Цветковићу,

Најзад сам у правом смислу речи утрабио слободно време да Вам се јавим. Пре г дана завршио сам обуку и то за дивно чудо веома успешно. Успео сам да положим ра електротехничку класу чиме сам и самог себе оријашно изненадио. Мене те ствари н најмање нису интересовале, али ето, уложио сам велики напор и на крају успео. У овим ћеркулима не могу да се не сетим свог магистарског рада; у војсци би та скоро за пре ока „средио", наравно, под условом да се само са њиме могу да позабавим. Сада су ме пребацили у нову касарну, али нажалост, овде ће ми изгледа бити горе него у предходној касарни. Имам неког неталентованог командира чете коме нисам по вољи и од првог трену тка дошло је до не шикањера. Моја несрећа је увећана чињеницом да сада почев од ове године и млађа и старија војска морала да иде заједно на наставу тако да сада ја кажњен до краја ауга проводим кроз све фазе обуке. Како сада стварно стоје планови се да ускоро неће имати слободног времена за неке корисне ствари. Најгора ствар је изгледа што он не подноси математику и по њему ока је нешто као нека вр та јереси. За сада једино ми остаје да се надам да ће ови моји први утисци бит коначно погрешни.

Чуо сам од својих а и од Ваше супруге да сте били код мојих родитеља. Ја сам се некако у то време мрзовољно налазио на терену близу места бубе. По повратку са терена усео сам као и да одем у град знао сам Вас телефоном али нажалост нисте били код куће. Моји су ми писали да сте код њих приликом ранијег сепа рата оној нашој заједничкој рада али да та за сада још нисам видео. Могу само да се надам да нема много шаљивџијских трикова.

За (да још увек нисам стигао да се довољно позабавим разгледницама и одјавама које сте ми послали. Чекам у буквалном смислу лепше сате. Ваљ овде је у Пули прилично хладно, не зна се а војска само пркоса од места до места не би ми се утрејала. Заноси је као и снег пао (вавра није хтео ш Вам ја најзад пишем). Иначе, радује ме чињеница што сте ми слали оне сепарате проф. Seidel-a и веома сам Вам захвалан а и проф. Seidel-у такође. Можете ми и у будуће слати понешто а ја се надам да ћу у скорије вријеме стићи да све то детаљно проучим. Што се тиче оног рада о кубним графовима са инвертираним сегментом, њега сам прилично детаљно прочитао и веома ми се допао. Јавите ми ако има што ново у вези оног проблематичног чланка. Такође би ме интересовало како стоје ствари у вези другог чувеног комплекс теорија графова и њена примена. Да ли је изашла из штампе књига о преференсу? Обрадовао сам се када сам сазнао да је проф. Sachs опоравио од болести и да је најзад направио крупан корак на руко пису књиге. Иначе, писао сам мојима да ми пошаљу Теорему. Кратке ће вре ме да полажем тај испит. Овде ми редовно сама долази да бих ипак тога могао да скинем са руке који велики стан за рад. Једини проблем је онај командир чете који ми никако не излази из главе.

Ја ето не бих имао више нешто сасвим посебно да додам. Надам се да сте Ви и Ваша породица добро, да сте се лепо провели у Београду као и ја. Ваш боравак у Холандији и пријатно и корисно. Надам се ускоро, вероватно у априлу или мају одем на редовно одсуство не бих ли се „повезао са светом". Одсеченост од света ми најтеже пада. Убудуће ћу настојати да Вам се чешће јављам. Иначе ми је сада лакше него раније. Већ помало се навикава војсци тако да ја могу и да подетаљно о ме нико не прочита. Поздравите Младена и супругу.

Много Вас поздравља

Слободан Симић

П.С. Немојте ми замерити што сам овако писао. Мислио сам да ћу исписати и покоју своју мисао али сам нажалост морао да скратим писмо и да идем на ТВ у неку бесмислену емисију.

Од сада ми пишите на адресу: 52002 Pula
V.P 2581/3

TECHNISCHE HOGESCHOOL TWENTE

ONDERAFDELING DER TOEGEPASTE WISKUNDE

Dr. D. Cvetković HG.6.72
Onderafdeling der Wiskunde
Technische Hogeschool Eindhoven
Postbus 513
Eindhoven

ONDERWERP:

KENMERK:
TW76/FW/148/MB

ENSCHEDE,
March 22 1976

Dear Dr. Cvetković:

Enclosed you will find the copy of our report: "Random walks and spanning forests" you asked for. About a year ago the report has been submitted for publication in: Stochastic Processes and their Applications.

Sincerely Yours,

A.A. Jagers.

cc.: Dr. F. Göbel.

ENSCHEDE DRIENERLO POSTBUS 217 TELEFOON 05420 99111 TELEX 44200

Prof. A.T. Balaban
Institute of Physical Chemistry
Str. Dumbrava Rosie 23
BUCURESTI 9
Romania.

March 23, 1976.

Dear Professor Balaban,

Please find enclosed a few of my recent papers. Cospectral cubic graphs on 20 vertices you can find in the manuscript "There are exactly 13 connected cubic integral graphs". I shall soon send you a new paper where you can find cospectral cubic graphs on 14 vertices.

Yours sincerely,

D. Cvetković.

28.3.1976, Skopje

Dragi profesore,

Primio sam Vaše obaveštenje u vezi sa Kolokvijumom o kombinatorici (i teoriji grafova) u Szombathely-u u Mađarskoj, a takođe i o časopisu „Journal of Graph Theory". Što se tiče Kolokvijuma u Mađarskoj, moj Institut mi je dao načelnu saglasnost za učešće. Trebalo bi samo da se pripremim malo bolje da bih racionalno iskoristio učešće na Kolokvijumu, i eventualno da pripremim i saopštenje.

Šaljem Vam, onako kako smo se dogovarali, moj rad o generalisanom direktnom proizvodu grafova. Znatno sam malo, ali trebalo mi je više vremena da malo bolje razradim Vašu doktorsku disertaciju o ostalim radovima o spektralnim svojstvima grafa, da se sprijateljim malo više sa spektrom grafa; da pročitam knjige Marcus-a i Minc-a i knjigu Gantmacher o matricama; da nadem (i sam imam teškoća) radi Imrich-a i Izbicki o asocijativnim proizvodima grafova, i da nadem i obradim i druge radove nje tretirajuće odgovarajuću problematiku.

Zamolio bih Vas da pročitate ovaj skromni rad i da iznesete svoje mišljenje. Vi ćete sigurno objektivno proceniti vrednost ovog mog prvog rada (posle magistarskog) iz teorije grafova i kazati da li je za objavljivanje ili nije. Kasnije ću Vam poslati i prevod rada na engleskom jeziku. Zahvalan bih Vam bio ako biste, u međuvremenu, mogli da mi pošaljete Vaša zapažanja i Vaš stav o radu.

Našao sam Zbornik radova (koji je izašao tek 1973) sa V-og Kongresa matematičara, fizičara i astronoma Jugoslavije u kojem (u tom I – Matematika) je sadržan i integralni tekst Vašeg rada-saopštenja „The Boolean operations on graphs – spectrum and connectedness", te mogu da Vam ga pošaljem kad god kažete. Također, intervenisao sam i na našem Prirodno-matematičkom fakultetu u vezi sa isplatom odgovarajućih premalležnosti koje Vam pripadaju kao mom mentoru-rukovodiocu pri izradi magistarskog rada i drugih predviđenih angažmana.

Nadam se da ćete biti u mogućnosti da u skorije vreme pregledate moj rad i da ćete mi poslati Vaša zapažanja. Ja ću u međuvremenu preduzeti da radim dalje na razradi nekih osobina generalisanog direktnog proizvoda grafova, i očekivati Vaš odgovor.

Sa poštovanjem,
Risto Škrekovski

ČESKOSLOVENSKÁ AKADEMIE VĚD
MATEMATICKÝ ÚSTAV
PRAHA 1, ŽITNÁ ULICE 25
PSČ 115 67

V Praze dne March 29, 1976.

Naše značka:

Věc:

Professor D.Cvetković
Eindhoven University of Technology
Department of Mathematics
P.O.Box 513
E I N D H O V E N
The Netherlands

Dear Professor Cvetković:

Thank you most sincerely for your letter of March 2, 1976. I am glad to hear that the problem of finding non-isomorphic complementary graphs having the same number of spanning trees is solved. The problem was also mentioned in my talk presented at the 1967 Manebach Conference from which I enclose a reprint. As far as I know the question has not been answered.

I wonder if it would be possible for you to write me more about your result? I would also appreciate it if you could send me a copy of A.J.L.Paulus' paper.

Yours sincerely,

J. Sedláček

Vyřizuje

Telefon 22 66 01 - 3

St 02 - 7983 74

The University of Michigan

DEPARTMENT OF MATHEMATICS ANN ARBOR, MICHIGAN 48104

(313) 764-0335

March 29, 1976

Professor D. Cvetkovic
University of Belgrade
Department of Electrical Engineering
P.O. Box 816
11001 Belgrade, Yugoslavia

Dear Dragos:

My paper with Schwenk, "The spectral approach..." has not yet been published. It was supposed to appear in the book of the conference held in Hungary to celebrate the 60th birthday of Erdos, but he forgot to include it. Hence I have recently submitted it for publication in the Pacific Journal of Mathematics.

Yours sincerely,

Frank

Frank Harary

FH/pl

P.S. I hope you had a most interesting visit in Eindhoven.

copy : Dr. Cvetkovic

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. A.K. Kelmans
Institute of Control Sciences
MOSCOW
U.S.S.R.

Eindhoven, April 1, 1976.

Dear Dr. Kelmans,

Recently I received a copy of the article by Arpasarow, Leman and Rozenfeld, and a reprint by yourself. Thank you very much for this sending. I have some comments on the first paper, which I kindly ask you to pass to the authors. In addition, I sent you by separate mail a number of reprints which are relevant to the first paper. As yet, I have nothing to contribute to your own paper, although I am interested (and oriented towards polynomials and eigenvalues of graphs).

My student A.J.L. Paulus published his Report Techn.Univ.Eindhoven 73-WSK-06 in 1973 about "Conference matrices and graphs of order 26". This contains tables of the 10 strongly regular graphs of order 26 and the 15 of order 25. He was unable to prove that these were all. Meanwhile we noticed that this result was obtained by Mrs. Rozenfeld in 1973. I was a little disappointed that there was no reference to Paulus' work in the present paper, since I have send Paulus' and my papers to Mrs. Rozenfeld earlier. In addition, it would have been interesting to mention how the solutions (also of the case 28) are interrelated by switching (formerly called complementation). Indeed, Mrs. Rozenfeld's result also implies that there are exactly 4 regular two-graphs of order 26. For these notions I refer to the following papers, of which I sent you a copy by separate mail.

J.J. Seidel, Strongly regular graphs of L_2-type and of triangular type.
J.J. Seidel, A survey of two-graphs.
J.J. Seidel, Graphs and two-graphs.

I take the opportunity to communicate some recent developments which may be important for graph theory. They are contained in

P. Delsarte, J.-M. Goethals and J.J. Seidel, Bounds for systems of lines, and Jacobi polynomials.

J.J. Seidel, Metric problems in elliptic geometry.

P.J. Cameron, J.-M. Goethals, E.E. Shult and J.J. Seidel, Line graphs, root systems, and elliptic geometry.

In addition, I announce a report on the "enumeration of all cubical graphs of orders ≤ 14, by F.C. Bussemaker, S. Cobeljić, D. Cvetković and myself, to be published soon.

I would be interested in the reactions by yourself and your collaborators on my sendings. In addition, your sending of any papers on graph theory, combinatorics and coding theory would be most welcome here.
In particular, I would like to receive a reprint of your paper "Graphs with the same number of paths of length 2 between adjacent and nonadjacent vertices", Voprosy Kibernetiki M (1973) 70 - 75.

My collaborator F.C. Bussemaker has investigated by computer the 40 graphs of order 29 which are contained in the manuscript which you sent me. He first comfirmed their non-isomorphism. Then he looked which graphs, if extended by an isolated vertex, belong to the same switching class of graphs on 30 vertices. He found that these graphs correspond to 5 regular two-graphs on 30 vertices, namely the following graphs belong to the same switching class:

18 graphs 1, 2, 3, 4, 5, 8, 9, 10, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23
8 graphs 26, 27, 28, 31, 33, 34, 38, 40
6 graphs 25, 29, 30, 32, 35, 37
4 graphs 6, 7, 19, 24
4 graphs 11, 12, 36, 39

There are further relations between the graphs and their automorphism groups.
If I understand the manuscript well, then there is no claim that there are exactly 40 strongly regular graphs of order 29 (in my terminology, there is no claim that there are exactly 5 regular two-graphs on 30 vertices).

In fact, there exists a graph #41, which is the only graph on 29 vertices belonging to a 6th regular two-graph. This is the socalled Paley graph, constructed by use of the Legendre symbol from the Galois field GF(29).

It would be interesting to show that there are no more than 41 graphs (that is, no more than 6 regular two-graphs).

Sincerely yours, Seidel

J.J. Seidel.

MATHEMATISCH INSTITUUT

FACULTEIT DER WISKUNDE
EN NATUURWETENSCHAPPEN
KATHOLIEKE UNIVERSITEIT
NIJMEGEN

Toernooiveld
Driehuizerweg 200, Nijmegen
The Netherlands
Tel. (08800) 5 83 33

2 April

Dear Dr Costervitz,

I was not able to come to the seminar today. (It is to the date of your lecture. all wednesday's in may had been booked in the meantime, so the organiser and I took the liberty of placing you at June 2, assuming that will be right with you.

Having none of your reprints with me at the moment, I apologise if perhaps I misspelled your name

Hope to see you next wednesday,

R. Jeurissen.

Model 111 2000 4 67

UNIVERSITY OF OXFORD

Theoretical Chemistry Department

1 South Parks Road

Oxford OX1 3TG

Telephone Oxford (0865) 53303

5th April, 1976.

Dr. D. Cvetković,
Department of Mathematics,
Technological University,
Eindhoven,
P.O. Box 513,
The Netherlands.

Dear Dr. Cvetković,

Thank you very much for your letter of 5th March. I am delighted to hear that you are spending an academic year in the Netherlands which, after all, is not very far from the United Kingdom! I do hope that there might be a possibility that we can meet during the time you are in Western Europe.

It really was a privilege for me to meet Professor Sachs at the Mathemtics Combinatorial Conference in Aberdeen last summer. He certainly was most charming and very kind to me; it was therefore a pleasure to be able to be of some little help to him (and by virtue of your being the co-author, to you) in commenting on the chapters of your joint book on Graph spectra which he was kind enought to show me. In acknowledging the thanks which you have now also kindly given for my commenting on those chapters, may I just say again that it was a pleasure and a privilege to be able to help in some small way in the production of what will, I am sure, be a most useful contribution to this subject. It is certainly very much appreciated by those of us in England and in the United States that Professor Sachs and you are taking the trouble to write this book in English which, of course, makes it much more easily accessible to lazy anglo-saxons such as myself who have little knowledge of other languages!

Graph theory in Oxford is much less hectic at the moment. Two years ago we had, in one year, visits from Frank Harary, Allen Schwenk, Loel Beinecke and Nenad Trinastić; none of these is here now but I am still doing some little work on graph spectra, in particular with my research student Mr. Michael J. Rigby, who is working on the eigenvalues of certain vertex-weighted bipartite graphs. We are currently preparing a manuscript on this work and when it is ready I shall take the liberty of sending you a preprint of it if you would be interested in this.

In the meantime, with kindest regards,

Yours sincerely,

Roger Mallion

R.B. Mallion

Dr. Zsolt Baranyai
Secretary of the Organizing Committee
V. Combinatorical Colloquium
Bolyai János Mathematical Society
1368 BUDAPEST
P.O. Box 240
Hungary.

April 6, 1976.

Dear Dr. Baranyai,

Please find enclosed a copy of a letter, dated February 27, 1976, that was sent to Dr. A. Maté.
As until now I have received no answer, I send this copy to you and I hope you can give me the necessary information.

Thanking you in advance, I remain,

sincerely yours,

Dr. D. Cvetković.

Editor of
Zentralblatt für Mathematik
D-1000 BERLIN 10 (West)
Otto-Schur-Allee 26-28
Germany.

April 8, 1976.

Dear Sirs,

I am afraid that I am not able to review the enclosed paper well, because it belongs more to set theory than to graph theory. Therefore I am returning it to you, so please send it to a set theorist.

I apologize for the delay but I have done my best.

Yours sincerely,

D. Cvetković.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Prof. B. Devada Acharya
The Mehta Research Institute of
Mathematics and Mathematical Physics
26, Dilkusha, New Katra,
Allahabad-211002
India.

Eindhoven, April 27, 1976.

Dear Professor Acharya,

I am spending this academic year in Eindhoven.

By separate mail I send you my papers you wanted and a few other papers. I would like to have your papers related to operation on graphs such as line graphs, total graphs, (Cartesian) product, etc.

Yours sincerely,

D. Cvetković.

Institut für Angewandte Mathematik
Montanistische Hochschule Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1976-04-28

Prof. D.M. Cvetković

Department of Mathematics
Technical University Eindhoven
Niederlande

Dear Professor Cvetković,

Thank you very much for the report on "Computer investigations of cubic graphs". I found it extremely interesting and wonder how you managed to do it.

I would be very interested in the connection between the spectrum and the group of a graph, especially for transitive graphs. Do you know of recent results in this direction?

Please extend my regards to Professor Seidel.

Sincerely yours,

W. Imrich

P.S.: Could you also send a copy of your report to Mr.L.Babai, Szövetség u.17, H-1074 Hungary

UM

The University of Manitoba

Department of Mathematics and Astronomy

Winnipeg, Canada R3T 2N2

April 29, 1976

Dr. Dragoš Cvetković
Department of Mathematics
P.O. Box 513
Technological University at Eindhoven
Eindhoven, The Netherlands

Dear Dr. Cvetković,

As I am sure you have heard, there is a possibility that my family and I will be using your present flat next year. If this does come to pass, there is a problem about August. I have heard that your family will have returned to Belgrade by that time. When do you want to vacate your flat? If you want to move out before September, we would be happy to move in earlier. Needless to say, we would fully pay the rent that you have contracted for. Could you give me the address of the flat? As I recall, you bought a television and washing machine that you wanted to sell. Do you still want to sell them?

You mentioned in an earlier letter that the International Group has a furnature bank. Since my son is only 10 months old, we will need a crib (a bed with sides that can be raised) for him. Is it possible to get a crib from the furnature bank?

I am most interested in the results concerning exceptional graphs and root systems. I think it would be most appropriate to include this material in Chapter 6 of the book if everyone agrees. I have stopped working on that chapter for the moment; I did write to Sachs for further information about Chapter 7 but thus far I have not received a reply. When we are together I hope we will progress rapidly.

I very much appreciate your help in answering any of the above questions.

Sincerely yours,

Michael Doob

Dr. Z. Baranyai
Bolyai János Mathematical Society
H - 1368 BUDAPEST
P.O.B. 240
Hungary.

May 5, 1976.

Dear Dr. Baranyai,

I agree with your proposal to share a room in the Motel with another participant. If the following persons have been looking for the same type of accomodation, plaese, combine me with one of them (if possible):

Dr. I. Gutman (Zagreb, Yugoslavia),

R. Šokarovski (Skopje, Yugoslavia).

Sincerely yours,

D. Cvetković.

WESTERN MICHIGAN UNIVERSITY

DEPARTMENT OF MATHEMATICS (616) 383-6165 KALAMAZOO, MICHIGAN 49008

May 5, 1976

Professor D. M. Cvetković
University of Belgrade
Department of Electrical Engineering
PO Box 816
1101 Belgrade
YUGOSLAVIA

Dear Professor Cvetković:

Enclosed is the paper "Well-covered graphs" by G. Ravindra which has been submitted for publication in The Journal of Graph Theory. Would you please serve as referee for this paper? The Journal is primarily interested in papers of high quality which are interesting and well-written.

Thank you.

Sincerely,

Gary Chartrand

Gary Chartrand

Encl.

Prof.dr. W. Imrich
Institut für Angewandte Mathematik
Montanistische Hochschule Leoben
A-8700 LEOBEN
Österreich.

May 7, 1976.

Dear Professor Imrich!

Thank you very much for your letter of April 28, 1976.

Concerning automorphism groups and spectra you certainly now a recent paper of L. Lovász (Periodica Math. Hung. 6 (2) (1975), 191 - 195. But I have a feeling that this paper is related to some topics in quantum chemistry (the Hückel theory of conjugated hydrocarbons). There is a wellkknown procedure in chemistry by use of which the adjacency matrix of a graph can be reduced to block diagonal form and then the spectrum of each block can be found separately. Reduction to block diagonal form is performed by means of automorphism group and its irreducible respresentations. A recent paper from this area is B.J. McClelland, Graphical method for factorizing secular determinants of Hückel molecular orbital theory, J.C.S. Faraday II, (1974), 1453 - 1456.

Yours sincerely,

D. Cvetković.

Пула 7.5.'76.

Драги колега Цветковићу,

Жао ми је што сам тако кратко писао два месеца (тачно у дан) да бих Вам се поново јавио. Мени овде у војсци време споро пролази нада, ето кафа је у аншлаку писање писама изгледа да то и није тако споро.

Примио сам од Вас нову верзију нашег рада са Лазковићем као и примерак рада о кубним графовима. Захвалан сам Вам што сте ми их послали. Немам никаквих примедби сем можда да је онај наш рад могао још да се редукује. Засада нисам добио Вашу књигу о транспортној мрежи је у некој руци и добро јер су у војсци карте строго забрањене и ко зна како би се овде гледало на такво нешто.

Овде код мене и нема неких сензационалних новости. Изузетак је поштанска (која је стигла из Индије Не знам да ли сте и Ви добили нешто слично. Наиме два индуса (Naik i Chikkodimath) са универзитета у Бомбају инспирисани нашим радом "Graph Equations For Line Graphs and Total Graphs" написали су рад "Graph Equations For Semitotal Graphs and Line (Total) Graphs". $T_1(G)$ ($T_2(G)$) је семитотални минимални (кубни) граф. $T_1(G)$ се разликује од $T(G)$ по томе што чворови који одговарају чворовима графа G нису суседни. За $\overline{T_2(G)}$ важи исто само у односу на чворове који одговарају гранама графа G У раду су разматрале следеће једнакине:

$L(G) = T_1(H)$, $L(\overline{G}) = T_1(H)$, $L(G) = T_2(H)$, $L(\overline{G}) = T_2(H)$, $T_1(H_1) = T_2(H_2)$, $T_1(H_1) = \overline{T_2(H_2)}$,

$T(G) = T_1(H)$ и $\overline{T(G)} = T_1(H)$ (нерешавају и).

Резултати су елементарни али што се саме технике решавања самих једначина нема ништа суштински ново. Техника забрањених индукованих подграфова је фолклорна. Прва од горњих једначина за коју важи $(\forall H)(\exists G)\, T_1(H) = L(G)$ је елегантно искоришћена да се у свим преосталим може користити поменута техника(в. У приватном писму Dr. S. B. Chikkodimath напомиње да би био веома захвалан ако бих за прочитао чланак и дао као примедбе у вези објављивања. Такође ме моли да ступите контактирам са њима јер су и они заинтересовани за исту проблематику. За сада у овој ситуацији ово писмо ми је створило мале „главобоље". Најбоље ми пада памећења да за сам примедбе у вези објављивања. У садашњој ситуацији будући и да сам некомпетентан за такво нешто једино ми вољна стоји на савести да филолошки пореч неких формалних примедби изразим жељу да се резултати објаве. Лако стићем могао бих да се ослободим и са последње две једначине (писане зеленом бојом).

Пре неки дан сањао сам и да се позабавим једначином $G_1 \times G_2 = \overline{G_1 + G_2}$. Лако се показује да у комплетним графовим једнма решења. Наиме, из тврђења да maxdeg графова $G_1 \times G_2$ и $\overline{G_1 + G_2}$ морају бити једнаки следи

$$\Delta_1 \Delta_2 = p_1 p_2 - \delta_1 - \delta_2 - 1$$

а одатле

$$p_1 p_2 = \Delta_1 \Delta_2 + \delta_1 + \delta_2 + 1 \leq \Delta_1 \Delta_2 + \Delta_1 + \Delta_2 + 1 \leq (\Delta_1 + 1)(\Delta_2 + 1) \leq p_1 p_2$$

ако је

$$\Delta_1 = \delta_1 = p_1 - 1 \quad \text{и} \quad \Delta_2 = \delta_2 = p_2 - 1 .$$

Зар је $K_m \times K_n = \overline{K_m + K_n}$ лако се проверава.

Надам се да у горњем нисам ништа превидео. После осам месеци ово ми је био први контакт са графовима изузимајући неке материјале које сте ми слали.

За сада толико. Могао бих Вам напомињати и да сам се јавио проф. Sachs-у Желим Вам много успеха у даљем раду Ако Вам није тешко јавите ми шта Вам мислите о овом чланку који је стигао из Индије. У случају да је вредан могао бих Вам је и послати.

Поздравите Младена и Ђурђу.

Много Вас поздравља

Слободан Симић

П.С. Да ли сте чули нешто у вези нове изградње куће о (горњи графова и како напредује књига о шаховским графовима?

DEPARTMENT OF MATHEMATICS
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY OF BEOGRAD
P. O. Box 816
11001 Beograd — Yugoslavia

BEOGRAD, 10.V 1976 197...

R.R.Janić

Dragi kolega Dragoše,

Šaljem vam poštu koja je na vašu adresu stigla ovih dana. Ja sam morao baciti koverte zbog pošte, ali šaljem vam adrese pošiljaoca.

Nadam se da ćemo se skoro videti u Beogradu.

Dotle, vama i vašima srdačne pozdrave šalje

Ranko Janić

WESTERN MICHIGAN UNIVERSITY

DEPARTMENT OF MATHEMATICS (616) 383-6165 KALAMAZOO, MICHIGAN 49008

May 14, 1976

Professor D. M. Cvetkovic
Department of Electrical Engineering
University of Belgrade
P.O. Box 816
11001 Belgrade, Yugoslavia

Dear Professor Cvetkovic:

We have been in the process of renegotiating the contract for publication of the Journal of Graph Theory. We are pleased to report that the journal will now be published by John Wiley and Sons. We are firmly convinced that our association with Wiley will result in a high quality journal of which we can all be proud.

We have felt for some time that it is essential to have a dynamic Editorial Board and that it would be extremely beneficial to the journal to have input from a large number of outstanding graph theorists. We have therefore decided to change the dates of initial appointments of each editor to the two year period beginning 1 January 1977. We again would like to emphasize our pleasure and appreciation of your willingness to serve on this first Editorial Board. We welcome your advice and comments. In particular, after the first issue is published in January 1977, we hope that you will send us your suggestions for improvements in the journal.

We are sure you join us in a toast to the success of the Journal of Graph Theory beyond all our expectations.

With our best wishes,

Frank

Frank Harary
Founder-Editor

Gary

Gary Chartrand
Managing Editor

WESTERN MICHIGAN UNIVERSITY
DEPARTMENT OF MATHEMATICS
Chartrand
KALAMAZOO, MICHIGAN
49008

Journal of Graph Theory
Department of Mathematics
Western Michigan University
Kalamazoo, Michigan 49008

AIR Mail

KALAMAZOO MAY 17 '76

Professor D. M. Cvetkovic
Department of Electrical Engineering
University of Belgrade
P.O. Box 816
11001 Belgrade, Yugoslavia

AIR
MAIL

May 15, 1976

Dear Prof. Gvetkovič,

You have two papers announced in the recent issue of the Graph Theory Newsletter that I am interested in.

① The reconstruction problem for characteristic polynomials of graphs (joint with I. Gutman), Univ. Beograd. Publ. Elekt. Fak. Ser. Mat. Fiz No. 498-541 (1975), 45-48.

② Graph equations for line graphs and total graphs (joint with (S.K. Simic), Discrete Math. 13 (1975), no. 4, 315-320.

Since Adrian Bondy and I are writing a survey article on the reconstruction conjecture, I would like to have any other papers of yours dealing with this subject.

In this connection, could you send me I. Gutman's address and ask him to send me any other papers of his on the reconstruction problem?

Sincerely yours, RLH

Robert L. Hemminger

Until Aug. 1
Math. Dept.
University of Reading
Reading, Berks.
RG6 2AX
U.K.

After Aug. 1,
Math. Dept.
Vanderbilt Univ.
Nashville, Tenn. 37235
U.S.A.

Prof. J. Akiyama
Department of Mathematics
Japan Medical School
2-297-2, Kosugi, Nakahara
KAWASAKI, 211, Japan.

May 17, 1976.

Dear Professor Akiyama,

Thank you for your letter which has been sent to me from Belgrade, since I am spending this academic year in Eindhoven.

By separate mail I am sending you the paper you wanted and also a related paper. I would be very interested to see your paper on graph equations as soon as possible.

Yours sincerely,

D. Cvetković.

Prof. M. Doob
Department of Mathematics
University of Manitoba
WINNIPEG, Canada R3T 2N2.

May 17, 1978.

Dear Dr. Doob,

Thank you for your letter of April 29.

I shall give you my flat in August with great pleasure. Washing machine and other things are at your disposal for about one half of the price I paid for them. Of course, you can decide about it when you come. I shall try to find a crib for you if possible.

The manuscript about graphs related to the exceptional root systems is now hand-written (more than 100 pages). It will still take a few weeks before it will be typed. But do not worry, you will be in time with your chapter, since you have only to include some new results. There is now space for detailed proofs since we are near to the limit, the publishers have posed on the size of the manuscript.

Section 7.1 includes general discussion on existence problems for graphs (related to spectra). There are references to Chapter 6 (Moore graphs, etc.). 7.2 the problem of existence of strongly regular graphs and distance-transitive graphs with given parameters is described. 7.3 is devoted to the work pf Prof. Seidel and others related to the problem of equiangular lines. Other sections of Chapter 7 are not related to Chapter 6.

Yours sincerely,

D. Cvetković.

Prof. F. Harary
The University of Michigan
Department of Mathematics
ANN ARBOR, Michigan 48104
U.S.A.

May 20, 1976.

Dear Professor Harary,

Thank you for your letter that has been sent to me from Belgrade. I am stil in Eindhoven for the whole academic year and therefore please send the mail for me to Eindhoven.

Has the first issue of J.C.T. already been published?
Will the members of the editorial board receive a fee copy?

Some time ago I sent you a report on cubic graphs together with another paper.
Sorry for the little criticism concerning some numerical data in your book and one of your papers.

Yours sincerely,

D. Cvetković.

Dr.D.Cvetković
Department of Mathematics
EINDHOVEN UNIVERSITY
OF TECHNOLOGY
P.O.BOX:513
Eindhoven
The Netherlands

May 23,1976

Dear Doctor Cvetković,

Thank you very much for sending me your paper titled "SPECTRUM OF THE TOTAL GRAPH OF A GRAPH" and "Graph Equation $L^n(G)=\overline{G}$". We found them very informative and useful. We also sent our paper(to be published in TRU Mathematics) on graph equations by separate,today only.
We are at present studying graph equation and related matters,so we will very much appreciate if you could supply us any related information which you may posses.

Yours sincerely,

Jin Akiyama

Jin Akiyama
Dep.of Mathematics,
Nippon Medical School,
2-297-2,Kosugi,Nakahara,
Kawasaki,211,Japan

WESTERN MICHIGAN UNIVERSITY

KALAMAZOO, MICHIGAN
49008

May 24, 1976

Professor D. M. Cvetkovic
University of Belgrade
Department of Electrical Engineering
P.O. Box 816
11001 Belgrade,
YUGOSLAVIA

Dear Professor Cvetkovic:

At the recent graph theory conference in Kalamazoo a number of members of the Editorial Board of the Journal of Graph Theory met with Allan Wittman of John Wiley and Sons, which will be publishing the JGT. I would like to mention some of the points which were discussed as well as add a few remarks of my own.

We need your help in refereeing manuscripts. For an average length paper (10-15 pages), we would like to have a report within three months. We would hope that shorter papers or notes might be refereed more quickly and that all papers can be refereed within four months. If, for some reason, you are unable to referee a paper for the JGT, then I would appreciate it if you would send it out for refereeing. In any case, however, the refereeing process should not exceed four months, and we would like to have the vast majority of papers refereed within three months. In many cases, I shall try to obtain two reports on a submitted paper.

It must be our goal to strive for excellence. papers of high quality which are well-written, interesting and informative. I'm sure we all realize that "excellence" is a matter of judgment, but we can only do our best.

Naturally, I hope that you will submit some of your best papers to the JGT. Of course the papers will be refereed. Furthermore, we do not want a backlog to exceed one year. This means that we will probably not be able to publish some very deserving

WESTERN MICHIGAN UNIVERSITY

KALAMAZOO, MICHIGAN
49008

May 24, 1976

Professor D. M. Cvetkovic
University of Belgrade
Department of Electrical Engineering
P.O. Box 816
11001 Belgrade,
YUGOSLAVIA

Dear Professor Cvetkovic:

At the recent graph theory conference in Kalamazoo a number of members of the Editorial Board of the Journal of Graph Theory met with Allan Wittman of John Wiley and Sons, which will be publishing the JGT. I would like to mention some of the points which were discussed as well as add a few remarks of my own.

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It must be our goal to strive for excellence: papers of high quality which are well-written, interesting and informative. I'm sure we all realize that "excellence" is a matter of judgment, but we can only do our best.

Naturally, I hope that you will submit some of your best papers to the JGT. Of course the papers will be refereed. Furthermore, we do not want a backlog to exceed one year. This means that we will probably not be able to publish some very deserving

papers in order to limit the backlog. We also hope that you will consider writing an expository paper (survey paper, or perhaps a paper listing some unsolved problems). Please encourage others to write up their interesting graph theory results and send them to us, or to write an expository paper if this would seem appropriate. It would be helpful if you would referee any paper you solicit for the JGT, but such papers will still be independently refereed.

I have no previous experience as a managing editor and I would sincerely appreciate any advice you might have for me. The next meeting of the Editorial Board is tentatively scheduled during sometime in the period January 4-7, 1977 at the graph theory conference in Barbados.

Sincerely,

Gary Chartrand

Gary Chartrand

GC/slg

P.S. If you are aware of an address change within the next twelve months please notify me.

DEPARTMENT OF MATHEMATICS
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY OF BEOGRAD
P. O. Box 816
11001 Beograd — Yugoslavia

R.R.Janić

BEOGRAD, 29. V 1976.

Dragi kolega Dragoše,

Šaljem vam poštu koja je stigla na vaše ime. Nadam se da ste raniju pošiljku primili.

Vas i vaše srdačno pozdravlja

Rad Janić

WESTERN MICHIGAN UNIVERSITY

KALAMAZOO, MICHIGAN
49008

June 1, 1976

Professor D. M. Cvetkovič
Department of Mathematics
Eindhoven University of Technology
P. O. Box 513
Eindhoven
NETHERLANDS

Dear Professor Cvetković:

I hope you received the two letters I sent to you recently. I was never informed that you were in the Netherlands. Please let me know about any future address changes.

I am sending you Professor Harary's travel plans. He also asked me to answer two of your questions. The first issue of the JGT will be published in early 1977. It is my understanding that each member of the Editorial Board will receive a free copy of the JGT.

I am also enclosing a note titled "On the distance matrix of a directed graph" which has been submitted for publication in the JGT. I would appreciate your serving as referee for it.

Sincerely,

Gary Chartrand

Gary Chartrand

GC/alf

INSTITUUT-LORENTZ
VOOR THEORETISCHE NATUURKUNDE
PROF. DR. P. W. KASTELEYN
NIEUWSTEEG 18, LEIDEN
TEL. (01710) 31725

LEIDEN, June 7, 1976.

Dr. D. Cvetković
Technische Hogeschool Eindhoven
Department of Mathematics
P.O. Box 513
EINDHOVEN

Dear Dr. Cvetković,

It is three weeks since we met, and your Chapter 8 is still on my desk, waiting to be read. I am sorry to tell you that, in contrast with my optimistic expectation, I have not found the time to read it, and I am afraid that the weeks to come will not leave me sufficient time either. A quick glance through your manuscript convinced me, however, that it contains much interesting material.

Since I promised you to return the manuscript within a few weeks, I feel I should no longer keep it. I am sorry that I cannot give you my opinion, as I had hoped to do.

It was a real pleasure meeting you, and talking with you on problems of common interest.

Sincerely yours,

P.W. Kasteleyn

Prof.Dr. P.W. Kasteleyn

Dragi kolega Cvetkoviću, Pula 9.6.'76.

Hvala Vam na materijalu koji ste mi poslali. Nažalost, ja sam posledujih mesec dana bio prilično zauzet (teren, straža taktičke vežbe,...) tako da nisam stigao da Vam odmah odgovorim na Vaša pisma.

Kod mene praktično nema ništa novo. Za mene je jedino važno da dani prolaze. Inače, proučio sam članke indusa i japanaca. Indusima sam odgovorio na pismo. Priložio sam im i listu nekih primedbi na sam rad (imaju dosta nepreciznosti) Sugerisao sam im da i Vama na holandsku adresu pošalju pomenuti rad. Rad japanaca je sadržan u radu indusa i u odnosu na rad indusa je veoma precizan (moje primedbe su se pokazale opravdanim). Što se tiče jednakosti grafova $T_1(G)$, $M(G)$, $Q(G)$ odnosno $T_2(G)$, $R(G)$ u potpunosti delim Vaše mišljenje. U rešavanje jednačina $T(G) = T_2(H)$ i $\overline{T(G)} = T_2(H)$ se nisam upuštao. Za jednačinu $T(G) = T_2(H)$ indusi su bez dokaza najavili da je (K_2, K_2) (zaboravljaju (K_1, K_1)) jedino rešenje ako su G i H povezani grafovi. Za sada toliko o tome. Mogu Vam još samo reći da stvarno nemam sreće u vojsci ni kad je u pitanju matematika. Moje starešine smatraju da bi se čovek u vojsci trebalo da posveti isključivo vojnim stvarima i vojnoj literaturi a da za recimo nešto kao što je matematika čovek ima vremena i posle vojske. Šta mogu, da je matematika neki sport onda bi situacija bila sasvim drugačija.

Za sada kako stvari stoje ja nemam gotovo nikakve šanse da navratim do Beograda pre 10.9.'76. Osuđen sam da eto godinu dana ne mrdnem

iz Pule (naravno, izuzimajući odlaske na teren). Inače u vidu vreme Vašeg boravka u Beogradu nije isključeno da Vas pozovem telefonom. Milo mi je da ćemo na jesen imati dosta materijala za proučavanje, odnosno istraživanje.

Nadam se da je kod Vas sve najbolje. Pozdravite Mladena i suprugu.

Mnogo Vas pozdravlja
Slobodan Simić

P.S. Da li ima šta novo u vezi onog problema iz Math. Montly-ja? Da li su izašli referati za neke naše članke iz teorije grafova?

Prof. R.L. Hemminger,
Mathematic Department,
University of Reading,
READING, Berks. RG6 2AX
United Kingdom

June 9, 1976.

Dear Professor Hemminger,

Please find enclosed the papers you wanted. Neither I nor Mr. Gutman have other papers on the reconstruction problem. Nevertheless I am sending you Gutman's address:

I. Gutman, Grupa Zateorijskv Kemijv,
Inst. "R. Bošković", Bijenička C 54,
41000 Zagreb, Yugoslavia.

I am spending this academic year in Eindhoven.

Yours sincerely,

D. Cvetković.

Prof. S.B. Chikkodimath,
Department of Mathematics,
University of Bombay,
Kalina-Campus, Vidyanagari
Santa Cruz (East),
BOMBAY - 400029,
India

June 9, 1976.

Dear Professor Chikkodimath,

I am very sorry that your letter of 21-4-76 has been sent to me only now (I am spending this academic year in Eindhoven) and the manuscript you wanted is with Mr. Siruić, who is now somewhere in Yugoslavia in military service. But Mr. Siruić informed me about your paper last month, saying that he would soon write to you. I believe he sent you your paper up to now. In any case, I am sending to him a massage in the same time.
I was very interested to hear about your paper and I would like to see it. I am leaving soon for Belgrade, but I shall spend the month of August still here in Eindhoven.
I shall send you a new paper on graph equations by different mail.

Yours sincerely,

D. Cvetković.

~~Varijabilni~~ 61.

ЕЛЕКТРОТЕХНИЧКИ ФАКУЛТЕТ
БЕОГРАД

Обрачун личних примања за 06. ~~април~~ 197 6.

Cvetković Dragoš
име и презиме

Радно место .....

1) Лични доходак 3.516.—
Обуставе .....
Кредит .....
Синдикат 25.—
Секција 2.—
Сол. штедња T.F. 10 —
Каса уз. помоћи .....
Боловање .....
С в е г а обуставе: _____
За исплату: 3.479.—
2) Варијабилни .....
3) Нови Сад (Маш. фак.) .....
4) Жарково (ВП 8115-19) .....
5) Остало .....
6) .....
7) Ауторски хонорар .....
У к у п н о: .....

Copy: Dr D Cvetković.

UNIVERSIDAD TECNICA FEDERICO SANTA MARIA

14.Juni 1976

Professor Dr. J. J. Seidel
Onderafdeling der Wiskinde
Technische Hogeschool
Eindhoven The Netherlands
HOLANDA.

Lieber Herr Professor Seidel !

Ihnen und Ihren Mitarbeitern wünsche ich meinen herzlichsten Dank auszusprechen für die Liebenswürdigkeit, mir ein Exemplar Ihres Berichts über "Computer investigation of cubic graphs" zuzusenden. Auch ich bin stets der Ansicht gewesen, dass unter allen Graphen die kubischen die interessantesten sind, und vielleicht ist Ihnen bekannt, dass ich bereits im Jahre 1949 im "Canadian Journ. of Math.", vol. 1, 365 - 378, eine Arbeit "Graphs of degree three with a given abstract group" veröffentlicht habe (in welcher übrigens die auf S.373 in Theorem 4.1 angebene Anzahl der Knotenpunkte falsch ist). Und gegenwärtig arbeite ich zusammen mit Herrn Coxeter und anderen Freunden an einer Aufstellung derjenigen kubischen Graphen, die wir 0-symmetrisch nennen; das sind Graphen, die gerade noch punktsymmetrisch ("vertex-transitive") sind, d.h. die Ordnung der Automorphismengruppe ist gleich der Anzahl der Knotenpunkte des Graphen. Der kleinste solche Graph, den wir gefunden haben, hat 18 Knotenpunkte und erscheint daher nicht mehr in Ihrem "Report". Trotzdem würde es mich sehr interessieren, mehr darüber zu erfahren, wie Sie mit dem Computer die Ordnungen der Automorphismengruppen bis zu 14 Knotenpunkten bestimmt haben. Ich wäre Ihnen daher sehr dankbar, wenn Sie mir nach dem Erscheinen des auf S.2 erwähnten separaten Berichts ein Exemplar desselben senden könnten.

Da wir unsere Aufstellung 0-symmetrischer Graphen bis zu 120 Knotenpunkten ausdehnen wollen, kommt übrigens für unsere Liste eine Aufzählung aller Kanten praktisch nicht in Frage; da aber alle diese Graphen hamiltonsch zu sein scheinen, wollen wir statt dessen eine ursprünglich von Lederberg vorgeschlagene und von uns modifizierte Kodifizierung verwenden. Ich habe darüber in einer Arbeit : "A canonical representation of trivalent hamiltonian graphs" berichtet, die in dem neuen "Journal of Graph Theory" erscheinen soll, doch habe ich gerade erfahren, dass der erste Band des "JGT" erst im nächsten Jahr herauskommen wird.

Vielleicht wird es Sie auch interessieren, dass durch Ihren Bericht eine Vermutung von mir bestätigt worden ist. Ich fand

vor zwei Jahren einen kubischen Graphen mit 16 Knotenpunkten und Automorphismengruppe der Ordnung 3 und vermutete immer, dass es keinen solchen Graphen mit weniger als 16 Knotenpunkten gibt. Zuerst war ich daher sehr überrascht, als ich auf S.19 Ihres Berichts für den Graphen Nr. 73 mit 12 Knotenpunkten die Ordnung der Automorphismengruppe mit 3 angegeben fand, doch auf Grund der Figur auf S.62 sah ich dann, dass das, was ich für eine 3 hielt, offenbar eine 8 sein sollte!

Mit herzlichen Grüssen und nochmals dem besten Dank verbleibe ich

Ihr

Roberto Frucht

Roberto Frucht

Prof. G. Chartrand,
Western Michigan University,
Department of Mathematics,
KALAMAZOO
Michigan 49008
U.S.A.

June 15, 1976.

Dear Professor Chartrand,

Thank you for your kind letter as well as for the two letters which have been sent to me from Belgrade.
I shal spend the month of July in Belgrade and the month of August again here in Eindhoven. From the 1st of September I am definitly again in Belgrade.

Yours sincerely,

D. Cvetković.

Dr. S.C. Shee,
Department of Mathematics,
Nanyang University,
SINGAPORE 22.

June 15, 1976.

Dear Dr. Shee,

I came across your paper on C-product of graphs in Nanta Math. 7 (1974), 105-108. I studied also several properties of C-product which I call MEPS. Please find enclosed one of the relevant papers; I am not now in the position to send other ones. I would be interested in other results of yours on C-product of graphs.

At the moment I am in Eindhoven and I will be here during the month of August. In July and after the 1st of September I will be in Belgrade at the address as given in the enclosed paper. Is the journal "Nanta Math." available by exchange ? I could propose to my university in Belgrade to send your university our journal (c.f (2)).

Yours sincerely,

D. Cvetković.

Mathematics Dept.
UNITED STATES NAVAL ACADEMY
Annapolis, Maryland—21402

IN REPLY REFER TO:

2 July 76

Dear Prof. Cvetkovic,

Enclosed you will find my manuscript of a result you yourself have already discovered. I derived this independently, and was told of your work by Allan Hoffmann. I then revised my article to give you and Bussemaker due credit. I hope I have accomplished this goal to your satisfaction, and that this final presentation is fair to all of us.

I have heard that you have a listing of all small cubic spectra. Could you possibly send me a copy? I would surely find it interesting, and possibly useful.

Cheers,

Allen J Schwenk

ЗАВЕДУЮЩИЙ ЛАБОРАТОРИЕЙ

кандидат физико-математических наук

Игорь Александрович ФАРАДЖЕВ

ОРДЕНА ЛЕНИНА
ИНСТИТУТ
ПРОБЛЕМ
УПРАВЛЕНИЯ
117342 МОСКВА
ПРОФСОЮЗНАЯ 81
ТЕЛЕФОН 334-91-29

№ 197 г.

I. A. Faradžev
23-1-147 Volgina str.
117437 Moscow USSR

Moscow, July 5

Dear prof. Seidel !

At the present the group of my colleagues and I are working at the problem of constructive enumeration of combinatorial objects by computer. In particular, we have constructed lists of all pairwise nonisomorphic graphs of some classes (regular, regular bipartite, 3-vertex-connected). We are investigating the constructed graphs computing their characteristics almost the same as in the paper about 14-vertex cubic graphs which You sent to Dr. Kelmans.

I send You the text of my paper, the last paragraph of which contains the list of our results. I intended to make this report at the simposium "Combinatorics and Graphs Theory" (Paris, July) and I hope to publish it in Proceedings of this simposium. Our results about numbers of regular graphs was already published and I send You the reprint.

I believe we could cooperate with You in this area and I shall be glad to recieve Your suggestions about possible ways of our collaboration.

Sincerely Yours

Igor Faradžev

Igor A. FARADZEV
Docteur ès sciences Directeur du dèpartement

Institut des Problèmes de Gestion
de l'Académie des Sciences de l'URSS
81. Profsojouznaja Moscou, URSS

tel. 334-88-79

INDIANA UNIVERSITY - PURDUE UNIVERSITY
AT FORT WAYNE
2101 COLISEUM BOULEVARD EAST
FORT WAYNE, INDIANA 46805

DEPARTMENT OF MATHEMATICAL SCIENCES

July 15, 1976

Dr. Dragoš Cvetković
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
11.001 Beograd
Yugoslavia

Dear Dr. Cvetković:

I would be very grateful if you would send me copies of your paper on the eigenvalues and the spectrum of a graph. Thank you very much.

Yours sincerely,

Lowell W. Beineke

Lowell W. Beineke

LWB:lss

Dr. V. R. KULLI
Department of Mathematics
Karnatak University
Post Graduate Centre
Gulbarga 585105
India

No. UPGCG-Math/1540/901

July 26, 1976

27 JUL 1976

Dear Professor Cvetković

I should greatly appreciate it if you would send me reprints or preprints of your papers on Graph Theory.

Thank you.

Yours Sincerely,

(V. R. Kulli)

1. Spectrum of the total graph of a graph, Publ. Inst. Math. 16 (30) 1973 49-52.
2. (With S.K. Simić) Graph equations for line graphs and total graphs. Disc. Math. 13 (1975) 315-320.

and also of any other related papers.

3. (with S.K. Simić) Some remarks on the Complement of a line graph Publ. Inst. Math. (1974) 37-44.
4. On spectral structure of graphs having the maximal eigenvalue not greater than two. Publ. Inst. Math (1975) 39-45.

BY AIR MAIL

AEROGRAMME

Professor D.M. CVETKOVIĆ
Faculty of Electrical Engineering
University of Belgrade
BELGRADE
Yugoslavia

SENDER'S NAME

Dr. V.R. Kulli
Department of Mathematics,
Karnatak University,
Post-Graduate Centre,
GULBARGA-585106
India

Despatched
Karnatak University,
Post-Graduate Centre

Prof. L.W. Beineke
Dept. of Mathematics
Purdue University
FORT WAYNE, Indiana 46805
U.S.A.

July 30, 1976.

Dear Professor Beineke,

Thank you for your letter in which you ask for a paper of mine about spectra of graphs. I have many such papers and now I am sending you my thesis only (by separate mail). If you are interested in other papers, please write to me on the address in Belgrade.

Sincerely yours,

D. Cvetković.

Prof. G. Chartrand
Western Michigan University
Department of Mathematics
KALAMAZOO, Michigan 49008
U.S.A.

August 5, 1976.

Dear Professor Chartrand,

Please find enclosed my review of the paper "On the distance matrix of a directed graph" and the paper itself.

Due to my staying in Yugoslavia last month and due to the fact that I received some letters via Belgrade, I am a little late in refereeing. I apologize and promise to send you the review of another paper very soon.

Yours sincerely,

D. Cvetković.

Editor of
Zentralblatt für Mathematik
D-1000 BERLIN 10-West
Otto-Schur-Allee 26-28
Germany.

August 6, 1976.

Dear Sirs,

I inform you that my address after 1-9-1976 will be as earlier:

D.M. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Sincerely yours,

D. Cvetković.

Prof. A.J. Schwenk
Mathematics Department
United States Naval Academy
ANNAPOLIS, Maryland 21402
U.S.A.

August 13, 1976.

Dear Professor Schwenk,

Thank you for your letter of July 2, 1976. Your paper on cubic integral graphs is very nice and I appreciate it very much that you have pointed out the work of Bussemaker and me.

By separate mail I am sending you our report on cubic graphs up to 14 vertices.

I would like to ask you to send me your papers "On moments and coefficients in spectral graph theory" and "New derivations of spectral bounds for the chrometic number" or at least exact bibliographical data about them. I would also be interested in other new papers of you concerning graph spectra.

After September 1, 1976 my address will be:
Lamartinova 44, 11 Belgrade, Yugoslavia.

Sincerely yours,

D. Cvetković.

ZENTRALBLATT FÜR MATHEMATIK

Herausgeber: Akademie der Wissenschaften der DDR
Heidelberger Akademie der Wissenschaften

Schriftleitung: Dr. Walter Romberg
1199 BERLIN-ADLERSHOF, Rudower Chaussee 5
Telefon: 670 28 41

Prof. Dr. Bernd Wegner
1000 BERLIN 10, Otto-Suhr-Allee 26-28
Telefon: 341 91 35

Berlin, den August 17, 1976

Dear Professor Cvetković,

this is to thank you very much for your kind letter of August 6, 1976 and for your review of the paper No. 534606.

According to your information we have noted in our files that at the end of this month you will return to Beograd.

Thank you once again very much for your consideration and support.

Sincerely yours,

B. Wegner

4.76 4000

Mrs. M.C. Heydemann
Université de Paris-Sud
Centre d'Orsay, Mathématique, Bâtiment 425
91405 ORSAY
France.

August 20, 1976.

Dear Mrs. Heydemann,

I would appreciate it very much if you would help me in the following way in connection with my book on graph spectra. Probably you can find the thesis of Isaac Samuel, Paris 1957, (Chemistry). There are some indications that the thesis contains coefficients theorems for characteristic polynomial of a graph which have been given by H. Sachs (cf. my thesis, Theorems 1.1 and 1.2).
Please let me know if it is true or send me the copies of at least corresponding pages of Samuel's thesis. Do not consider the matter as very urgent.

I am going back soon to Yugoslavia and so please write me to the Belgrade address.

With kind regards,

D. Cvetković.

Mr. J. Straight
Mathematics Department
Western Michigan University
KALAMAZOO, Michigan 49008
U.S.A.

August 24, 1976.

Dear Mr. Straight,

I would like to ask you to send "Graph Theory Newsletter" to my new address:

D. Cvetković, Lamartinova 44
11000 Beograd, Yugoslavia.

In a few days I shall send the subscription for Volume 6.

Sincerely yours,

D. Cvetković.

Prof. Jin Akiyama
Department of Mathematics
Japan Medical School
2-297-2, Kosugi, Nakahara
Kawasaki, 211, JAPAN.

August 24, 1976.

Dear Professor Akiyama,

Thank you very much for the papers you sent me some time ago.

Concerning the equation $\overline{L(G)} = L(H)$ I would suggest to the authors to consult the paper:

L.W. Beineke, Derived graphs with derived complements, Recent trends in graph theory (ed. M. Capobianco etc.), Berlin etc. 1971, 15-24.

After September 1, 1976 my address will be:
Lamartinova 44, 11000 BEOGRAD, Yugoslavia.

Yours sincerely,

D. Cvetković.

Mathematical Reviews
University of Michigan
611 Church Street
ANN ARBOR, Michigan 48104
U.S.A.

August 27, 1976.

Dear Sirs,

I wish to inform you that my address after September 1, 1976 will be:

D. Cvetković, Lamartinova 44
11000 Beograd, Yugoslavia.

Sincerely yours,

D. Cvetković.

UNIVERSITÉ DE PARIS-SUD
CENTRE D'ORSAY
91405 ORSAY - France

MATHÉMATIQUE
Bâtiment 425

Tél. : 907 78-21

Dear Professor Cvetkovic',

I hope you had a pleasant return journey to Beograd.

I send you the two versions of my paper about $C_n[S_n]$ I have read the proofs and computed again the spectra of the involved graphs without finding any error

There might be a misunderstanding. By the term "three positive eigenvalues", I mean "$p^+(G) = 3$" and not "three distinct positive eigenvalues".

Then the graph G_9 of your article "there are exactly 13 connected cubic integral graphs" is not a counter example since $p^+(G_9) = 10$.

I also think that it is impossible to find a counter example, as you suggested me, by taking $G = H \wedge K_2$ with H connected, regular of degree r.

If $\mathrm{Spec}\, H = \{ a^1, b^1, r^1, 0^c \}$ $(abr \neq 0)$

then $\left.\begin{array}{l} a+b+r = 0 \\ -r \leq \inf(a, b) \end{array}\right\} \Rightarrow \sup(a, b) < 0$

so that $p^+(H) = 1$ Therefore $H \simeq K_{m,m,m}$ or $C_3[S_m]$

and $H \wedge K_2 = C_6[S_m]$.

Isn't it ?

UNIVERSITE DE PARIS-SUD
CENTRE D'ORSAY
91405 ORSAY - FRANCE
MATHEMATIQUE
Bâtiment 425
Tél. : 907 78-21

I would be very happy to know your opinion

Thank you very much

Sincerely yours

C Huydenaar

P.S: I sent my revised version to J.C.T on 14.5.76, but J.C.T wrote me only on 22-6-76 to inform me that my paper returned to the referee.

Tel. No. 533386

University of Bombay

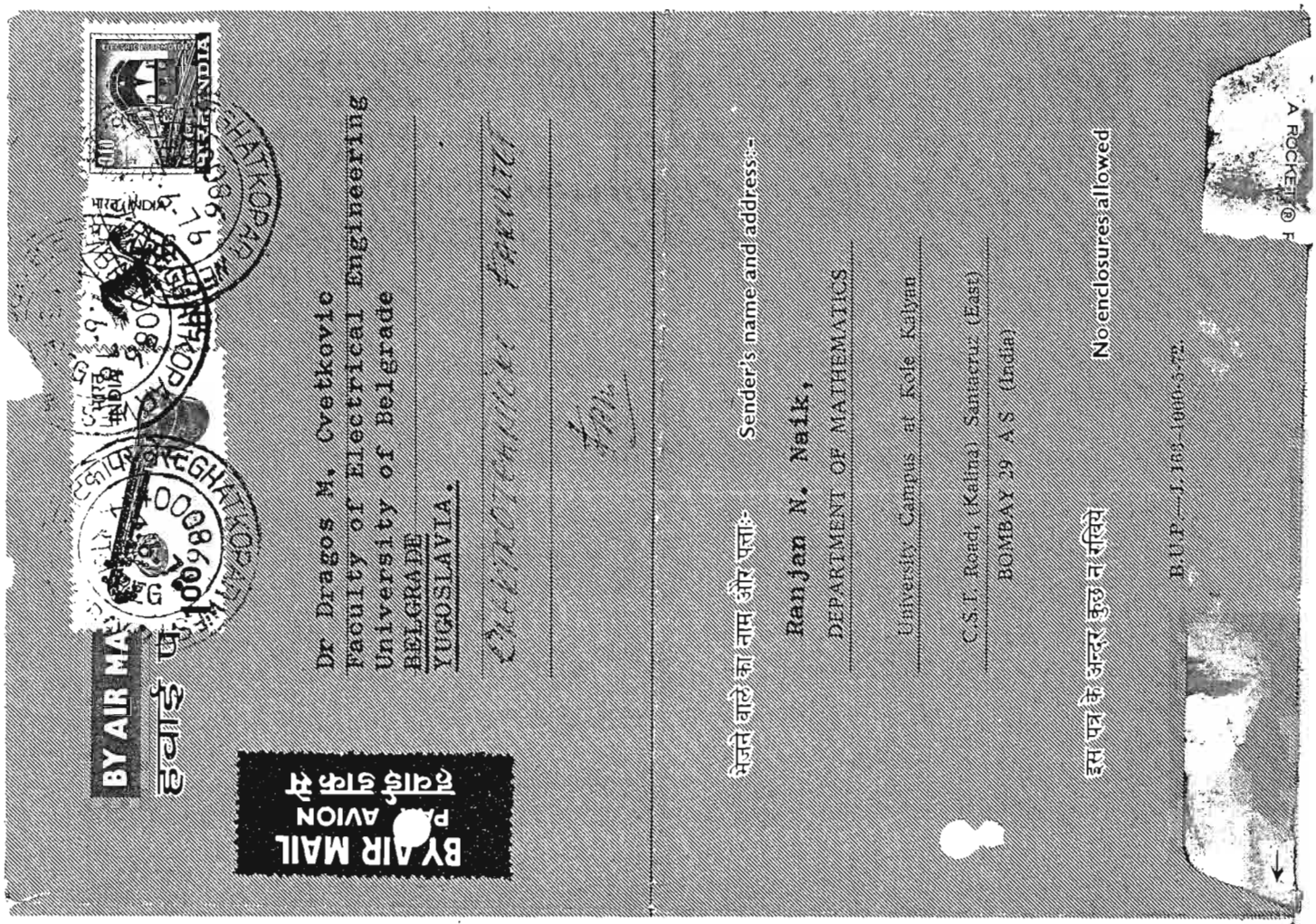
Banjan N. Naik,
DEPARTMENT OF MATHEMATICS
University Campus at Kole Kalyan
C. S. T. Road (Kalina)
Santacruz (East)
BOMBAY 29 AS (INDIA).

No.

Dear Dr. Cvetkovic',

My colleague Dr. chikkodimath told me that, Prof. Holton has sent you one of my paper "Graph* Equations for Semitotal Graphs and Line Graphs (Total Graph for your Comments and advise in connection with its publication. According to your recent letter to Dr. chikkodimath we understood that after going through the paper, to have sent the paper to Dr. Simic for is comments. we have received your paper "Graph Equations, Graph Inequalities and a fixed point theorem" (with Dr. Simic & Dr. Lackovic'), which is accepted in Publ. Inst. Mat. (Beograd). We have yet to go through the paper. The notion of semitotal Graphs was introduced by Dr. E. Sampathkumar and Dr. Chikkodimaths and Dr. chikkodimath's Ph.D Thesis is completely devoted in studying some properties of these Graphs. At the time of writing the paper *, I had not got the solutions for the equations $T(G) = \overline{T_1(H)}$ and $t(G) = \overline{T_2(H)}$ Recently I have got the solution to these two equations The technique involved in solving these equations are entirely different from those employed in solving other equations in the paper *.

Second fold here दूसरा मोड़



First fold here पहला मोड़

I am eagerly waiting for your comments along with the paper *.
After adding the new two equations $T(G_1) = T_2(H)$, $T(G_2) = T_1(H)$
in that paper *, I shall send the same to you for publications.

To say frankly, my fields of research are Frequency partitions of Graphs, Degree sequences and Variegated Graphs etc. Some of my papers in frequency partitions and Variegated Graphs are being accepted for publication in Discrete Mathematics. I shall send to you one set of my papers in the form of preprints/reprints as early as possible. I kindly request you to send me your other papers on Graph Theory and Combinatorial Mathematics.

I await for your earliest convenience.

With best regards,

Yours Sincerely,
Ranjan N. Naik
(Ranjan N. Naik)

Prathad, R.
Dept of Maths.
IIT Bombay 76

20-9-76.

Dear Prof Cvetkovic

I received a copy of the reprint of your paper 'Graph equations for line graphs and total graphs'. At the end of the above paper you have remarked that you are planning to consider other graph equations in future papers. As I want to work on graph equations I would like to know what are the graph equations you are considering in future papers?

I also wish to have copies of the reprints of the following papers by you.

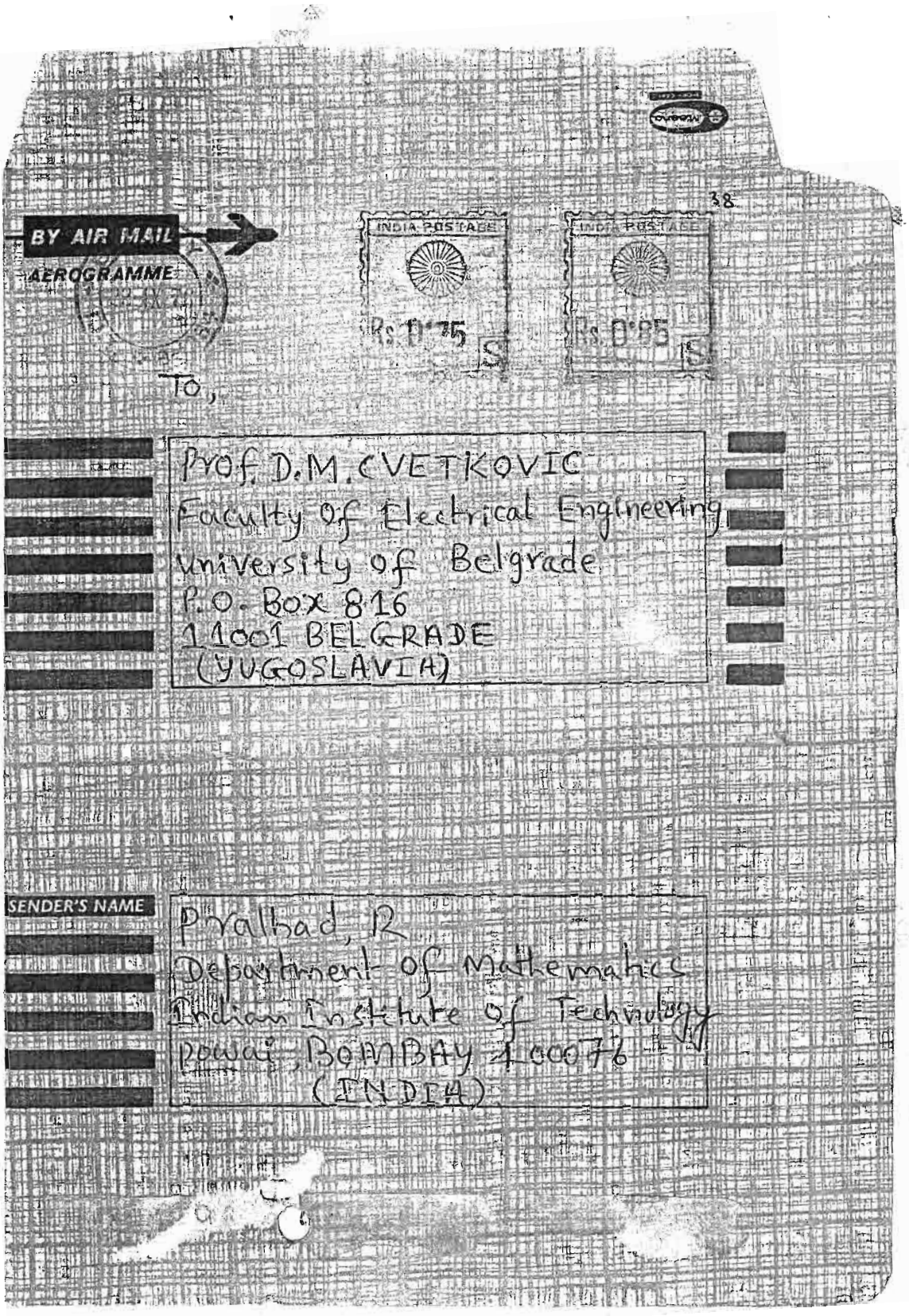
1 cubic integral graphs
2. The reconstruction for characteristic polynomials of graphs
3. Some remarks on the complement of a line graph.
4 spectrum of the total graph of a graph.

~~However I can~~

Eagerly awaiting your kind reply

yours Sincerely

Prathad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38
To,
Prof. D.M. CVETKOVIC
Faculty of Electrical Engineering
University of Belgrade
P.O. Box 816
11001 BELGRADE
(YUGOSLAVIA)
SENDER'S NAME
Pralhad, R
Department of Mathematics
Indian Institute of Technology
Powai, BOMBAY 400076
(INDIA)

南洋大學
NANYANG UNIVERSITY
UPPER JURONG ROAD, SINGAPORE, 22.
REPUBLIC OF SINGAPORE
CABLE ADDRESS: NANYANGUNI

數學系
DEPARTMENT OF MATHEMATICS
TEL: 651744

24th September, 1976

Dr. D.M. Cvetkovic,
Faculty of Electrical Engineering,
University of Belgrade,
11001 Belgrade,
P.O.B. 816,
Yugoslavia.

Dear Dr. Cvetkovic,

I am extremely sorry for the delay in my reply to your letter dated June 15th 1976. This is due to the fact that I was away to France for several months on an exchange scheme. Thank you very much for sending me a reprint of the paper "On a Graph Theory Problem of M. Koman". I have done nothing further on the C-product of graphs, because I have been assigned to teach two new courses : Operational Research and Modern Algebra. Most of my time have been devoted to preparing lectures. The paper you sent me have kindled again my interest in this topic.

Our Nanta Mathematica is available by exchange. The exchange between our Nanta Mathematica and the journal of your University is most welcome. Once the exchange is approved by your University we will send our Nanta Mathematica(including some back numbers) to your University.

Yours sincerely,

Shee Sze Chin

.....

Dr. S.C. Shee

UNIVERSITE DE PARIS-SUD

CENTRE D'ORSAY
91405 ORSAY - France

MATHEMATIQUE
Bâtiment 425

Tél. : 907 78-21

Orsay, Sept 24.

Dear Professor Cvetkovic',

I send you a copy of Samuel's thesis. It contains really coefficient theorems for determinants of symmetric matrices with applications to chemistry. (Perhaps, it concerns better you friend I. Gutman than you !)

I hope, you get it not too late

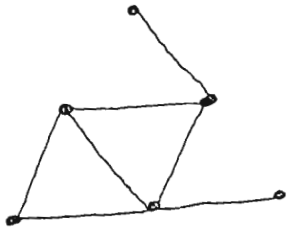
Sincerely yours

M Claude

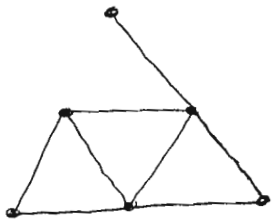
Eindhoven, 25-10-76.

Dear Dr Cvetković

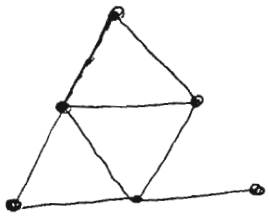
Thank you very much for your nice postcard!
As you may remember we studied a problem (P 234) of the Canadian Mathematical Bulletin in our seminar and found the following solution on 6 points:



G_3



G_1



G_2

G has only the trivial automorphism, and G_1 and G_2 are isomorphic. (as O.P. Lossers)
We sent this solution to the editor, and he published Conway's solution on 7 points, with the editorial remark which is evidently false.
So my question to you is: Do you have any argument that our solution is the smallest?
Thank you for thinking about it!

With kindest regards and
greetings from everybody

Karel Post.

(Karel Post.)

However, for fixed p, the function $(p^{2a_p+1}-1)p^{-a_p}(p^{a_p+1}-1)^{-1}$ is a decreasing function of a_p (with limit 1). So this function attains its maximum value for $a_p=1$. Consequently

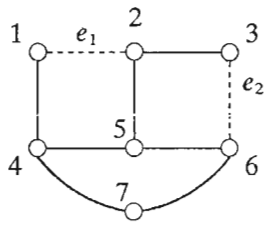
$$\limsup \sum (n^2)/\sum (n) = \prod_p \frac{p^3-1}{p(p^2-1)} = \prod_p \frac{(1-p^{-2})^{-1}}{(1-p^{-3})^{-1}} = \frac{\zeta(2)}{\zeta(3)}.$$

Also solved by the proposers.

P.234. Let $G=(V, E)$ be a graph with vertex set $V=\{1, 2, \ldots, n\}$ and edge set E. Supposed that $e_1=\{i_1, j_1\}\notin E$, $e_2=\{i_2, j_2\}\notin E$ where $1\le i_1<j_1\le n$, $1\le i_2<j_2\le n$. If $G_1=(V, E\cup\{e_1\})$ is isomorphic to $G_2=(V, E\cup\{e_2\})$ does there exist an automorphism π of G such that $\pi(e_1)=e_2$?

E. C. Milner,
University of Calgary

Solution by J. H. Conway, Cambridge, England. No. Let G be the graph with 7 vertices shown.



Then the graphs G_1, G_2 obtained by adjoining the edges $e_1=\{1, 2\}$ and $e_2=\{3, 6\}$ respectively are isomorphic, but there is no automorphism of G which maps the pair $\{1, 2\}$ onto $\{3, 6\}$.

Also solved by Fred Galvin, Branko Grunbaum, O. P. Lossers, J. Schaer and the proposer. (The above example is probably the smallest, Ed.)

P.236. For each line l of the plane, A_l is a segment of l. Show that the set $\bigcup_l A_l$ contains the sides of a triangle.

P. Erdös,
Mathematical Institute of the Hungarian Academy of Sciences

Solution by D. Hammond Smith and J. B. Wilker, University of Exeter, Exeter, England

Let c be the cardinality of the real numbers. If a countable union of sets has

Hrvatsko kemijsko društvo, Sekcija za teorijsku kemiju, Marulićev Trg 19, 41000 Zagreb,

i

»RUĐER BOŠKOVIĆ« INSTITUTE

41001 Zagreb, Croatia, Yugoslavia

POB 1016
PHONE: (041) 424-355
TELEX: 21-383

Dr.
Dragoš Cvetković
Lamartinova 44
11000 Beograd

Dragi Dr. Cvetković,

Bili bismo sretni ako bi našoj Sekciji za teorijsku kemiju, a i širem članstvu Hrvatskog Kemijskog Društva, održali predavanje pod (orijentirnim) naslovom:
PLANIRANJE U KEMIJSKOJ INDUSTRIJI.
Nadamo se da bi Vam za posjetu Zagrebu odgovarao neki datum za vrijeme zimskih praznika. Kako ćemo u veljači 1977. biti zauzeti Sastankom kemičara Hrvatske, slobodni smo Vam predložiti da predavanje održite u drugoj polovini siječnja 1977. , i to nakon 20.-tog siječnja.
Ukoliko imate primjedbi na datum posjete ili pak na naslov Vašeg predavanja, molimo Vas da nam pišete.
Sa naše strane, u okviru naših skromnih mogućnosti, mi smo spremni da Vam predavanje honoriramo (u iznosu od 500. N.D.), što je i prihvaćeno na II. sjednici Upravnog odbora Hrvatskog Kemijskog Društva od 08. studenog 1976. god.

Radujemo se Vašoj posjeti.
Sa poštovanjem,

Ante Graovac

Dr. Ante Graovac,
Pročelnik Sekcije za teorijsku kemiju
Hrvatskog Kemijskog Društva u Zagrebu.

U Zagrebu, 09. studeni 1976.

UNIVERSITY OF WALES

University College of Swansea

Telephone 0792 25678

Department of Pure Mathematics

Singleton Park
SWANSEA
SA2 8PP

10 Nov. 1976

Dear Dr Cvetkovic,

Would you please send me copies of your 1976 papers, in particular

Spectra of graphs formed by some unary operations

The determinant concept defined by graph theory

Computer investigation of cubic graphs

and related work.

Best Wishes,

Derek Waller

D.Cvetković

2.12.1976

Dr. Isaac Samuel
22, avenue de la Porte-Brunet
75019 Paris, France

Dear Dr. Samuel,

I would appreciate your kindness in sending me a list of your papers concerning the "polygonal method", i.e. procedures for graphical interpretation of the characteristic polynomial of a matrix. If available please send reprints of the papers if not, please forward to me the complete bibliographical data about papers.

Thanking you in advance,

Yours sincerely

D.Cvetković

15. prosinca 1976.

»RUĐER BOŠKOVIĆ« INSTITUTE
41001 Zagreb, Croatia, Yugoslavia

POB 1016
PHONE: (041) 424-355
TELEX: 21-383

Dragi Dr. Grelkovi,

Hvala na odgovoru na naš upit. Naime bi najviše odgovaralo ako predavanje održite u utorak, 25.01.1977. god., koje ćemo oglasiti pod pretpostavkom naslova ("O primjenama teorije grafova u planiranju u industriji i drugim djelatnostima").

Ja i Gutman otputovat ćemo oko 19.01.1977. u Beograd na simpozij o organskoj kemiji, na kojem će govoriti mnogi stručnjaci i naš nobelovac Prof. V. Prelog. Nadamo se da ćemo se tada i sa Vama vidjeti.

Primite mnogo srdačnih pozdrava, a Vama i Vašoj obitelji mnogo sreće u Novoj godini želi Vaš

Ante Graovac.

P.S. Ukoliko za predavanje potrebe trebate neki službeni papir, pišite mi.

Nedavno smo, ja i Gutman, načinili računanja o ukupnoj pi-elektronskoj energiji (koja je prihvaćena u kemiji), a sada spremamo dva nova rukopisa, jedan o determinanti molekularnog grafa, a drugi o graf-te-

Babai László, H-1074 Budapest, Szövetség u. 17.

Professor D.M.Cvetković

1.1.1978

Dear Professor Cvetković,

Thank you for your letter of December 2. Unfortunately, things go very slowly on their way and so I cannot visit Belgrade in January. Some time around the middle of March seems to be more appropriate.

Recently, I have got a letter from Dr. Graovac from the Theoretical Chemistry Group at Ruder Boskovic Inst., Zagreb. He and some of his colleagues also invite me for 1-2 days. I would like to adjoin the two visits, and travel from Belgrade to Zagreb /or conversely/.

Please inform me which days would be appropriate for you in March.

I am sorry for the delay. With the best wishes for the new year,

Yours sincerely

László Babai

I hope to hear about your young friend who obtained results on automorphism groups of planar graphs.

László

D.Cvetković 5.1.78

Mr. L.Lovász
JATE Bolyai Intézet
H- 672o Szeged
Aradi Vértanuk tere 1

Dear Mr. Lovász,

By my letter dated 14.11.77 addressed to you I accepted your kind invitation to the Szeged Conference.

At present I wish to inform you that my intention is to deliver an address under the title "Some possible directions in the further investigations of graph spectra". Please consider this title as a tentative one. How long my address may be?

Please find enclosed herewith the filled in form of the Congress.

Yours sincerely

Dragoš Cvetković

St. John's University
300 HOWARD AVENUE
STATEN ISLAND, NEW YORK 10301

TELEPHONE:
(212) 447-4343

Division of Mathematics and Science

January 6, 1978

D. Cvetković
Lamartinova 44
11000 Belgrade, Yugoslavia

Dear Prof. Cvetkovie,

Many thanks for the reprint of your paper with Lacković and Simić, Graph equations, graph inequalities and a fixed point theorem. Although I haven't read your paper yet, I can see that indeed we seem to be doing the same sorts of things! I am enclosing a preprint of my paper, which is now being refereed for the Proceedings of the Second New York International Conference on Combinatorial Mathematics. This conference will be held, incidently, April 4-7.

You will note in my paper that I also mention Aigner's result, and then give my result that $L(D) = \overline{D}$, D a digraph, has exactly three solutions. Your paper looks most interesting, and I look forward to reading it carefully. I think that it is fascinating that we both started working on the same idea. I was completely unaware of your work. In my case it was a result of working on a book I am doing with a colleague, John Molluzzo, entitled, "EXAMPLES AND COUNTEREXAMPLES IN GRAPH THEORY," being published by Elsevier North Holland and coming out in ~~February.~~ I happened to have written the chapter in Graph-Valued Functions, and that got me started on graph equations.

ARCH

I hope we can meet sometime. I travel easily, speak a few languages, and enjoy visiting foreign countries very much. Last May I lectured at the University of Lund in Sweden, having been invited to give a series of seminars there. If you or any of your colleagues can get here, it would be my great pleasure.

With Best Wishes,

Michael F. Capobianco, Ph.D.

MFC/dcw

Budapest, 12.01.78

Prof. D.M.Cvetković
11000 Beograd
Lamartinová 44
Jugoslavija

Dear Mr. Cvetković,

Thank you for your letter of Jan. 26 and the enclosed copy of your letter of Dec.13 which I did not receive. So , may I ask you to send me a copy of the paper of Mr. Marušić.

/Eventually, Mr. Marušić might send me the shortened version, if he has completed it./

From my point of view, it would be the most convenient if I arrive in Belgrade early in the morning on Friday, March 16 and return on Sunday afternoon. I have to ask at the railway station whether there is a couchette on the night train. If not, I might arrive on Friday afternoon - but this might be too late to give a talk.
Another possibility would be to arrive on Sunday, March 19, and to return on Tuesday, March 21 - but this version does not look so well.

It seems that I won't have ~~any~~ time to visit Zagreb at the same time. However, I would be pleased to look for another possibility to travel to Yugoslavia in order to visit the Theor.Chemistry Group in Zagreb, if they send me an invitation.

I hope to see Dr. Gutman in Belgrade, too.

Sincerely yours

László Babai

UNIVERSITÉ DE PARIS-SUD
CENTRE D'ORSAY
LABORATOIRE DE RECHERCHE
EN INFORMATIQUE

Bâtiment 490 - 91405 ORSAY Cédex
Tél. 941.66.29

ORSAY, le January 15, 1978

to D. Cvetkovič
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11001 Beograd Yougoslavie

Dear D. Cvetkovič

I received for reviewing for Zentralblatt an article of Akiyama J, Hamada T and Yoshimura I, Tru. Mathematics 12-2 (1976) 35-43 ; they determined the graphs G, H such that $\overline{\angle(G)} = \angle(H)$.
Do you have also solved this problem ? In this case can you give me the reference. Can you send me also (if it is possible) the survey you give in Oberhof last year.
Best wishes for a happy new year.

J-C BERMOND

Please note my new administrative address : Université de Paris Sud
Informatique, bât 490
91405 - Orsay cedex
France.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković

Lamartinova 44
11000 BEOGRAD

Yugoslavia.

Eindhoven, January 24, 1978.

Dear Dr. Cvetković,

On behalf of Dr. W. van der Meiden (editor of the bookreviews of the "Mededelingen van het Wiskundig Genootschap"), I would like to ask you if you are willing to review the following book:
"Combinatorial Mathematics V. Proceedings of the Fifth Australian Conference, held at the Royal Melbourne Institute of Technology, August 24-26, 1976" - edited by C.H.C. Little.
If your answer is positive I'll send the review copy as soon as possible.

Kind regards and best wishes for 1978.

Yours sincerely,

Harma

Harma Rooijackers.

Beograd 26.1.1978.

Dear Mr. Seidel,

Thank you very much for the reprints of the paper in J. Comb. Theory as well as for the copy of your letter to Doob, concerning my and Doob's joint paper. Thank you very much for your suggestions.

Some time ago I also received some reprints of our paper in J.C.T (about 50). So if necessary, I shall send your reprints back to you or give you them at Szeged conference.

Now I have a little request to you. Please, find enclosed herewith the copies of some financial documents. The papers denoted by an asterisk have been sent to my Eindhoven address in the last few months. A compatriot of mine, Mr. Mutanović (who also had the fellowship of your University), was living in that flat after Doob and he returned recently to Belgrade and gave me the mentioned letters. If I have understood well, I have to pay some 13 guilders to the bank. The remaining enclosed copies are the copies of the last documents I received from the bank during my stay in Eindhoven.

I would ask you most kindly to ask somebody (who is living in the nearness of Castorstraat) to go to the bank to settle this matter for me. At the same time I

would ask you to pay for me these 13 guilders and I will give you them back at Szeged conference. My account in the bank should also eventually be canceled. I am thankfull to you in advance for considering this matter.

I am looking forward of meeting you in Szeged. Since Szeged is only some 200 km far from Belgrade, that would be a good occassion that you visit Belgrade once more. So, I invite you and your wife to a short visit to Belgrade before or after the conference. Will Mr. Bussemaker be at the conference? What about Prof. van Lint? Please, let me know about your plans and about the persons from Eindhoven who will be at the conference. I would consider the possibility to invite all them to Belgrade.

I would have again a question for Mr. Bussemaker. The question is again about his exceptional graphs on 6, 7 and 8 vertices. Let us call the graphs on 6 vertices by $A_1, A_2, \ldots, A_{20}$. Let $B_1, B_2, \ldots, B_{110}$ be graphs on 7 vertices and let $C_1, C_2, \ldots, C_{443}$ be graphs on 8 vertices.

Is there any B_i such that for no A_j the relation $A_j \subset B_i$ holds? And similarly, is there any C_k such that for no B_j the relation $B_j \subset C_k$ holds?

With kind regards to you and to your wife

Yours sincerely

Dragoš Cvetković

Beograd 26.1.1978

Dear Mr. Babai,

Thank you for your letter of 1.1.1978. It seems that you have not received my letter of 13.12.1977 at that time. Please find enclosed herewith a copy of it. Probably you received it in the meantime. If not let me know; I shall send you then again a copy of Marušić's paper.

Concerning your visit about the middle of March, at the moment I am not able to specify any term which would be more preferable than the others since at the moment the lecturing time table for the summer term is not known. According to the time table of the winter ~~sem~~ term a Friday would be convenient for some interested persons. (The time table will probably not changed to much). So feel free to propose the term of your stay here.

Sincerely yours

Grgur Vuković

Beograd 26.1.1978.

Dear Mr. Bermond,

Thank you very much for your letter January 15.
Please find enclosed our review on graph equations. The information you are interested is on p. 8, equation 1. You have to review our reference [29] which is incompletely stated. In the meantime we also received a reprint of [29].

Please give my regards to Mrs. Heydemann. For the purpose of my book on graph spectra (the manuscript is already given to the publishers) I would like to know the bibliographical data of her second paper on graph spectra which is in Proc. of Orsay Conf. Are these proceedings out of the print?

With kind regards

Yours sincerely

Dragoš Cvetković

Faruk M. Turčinhodžić
Energoinvest, IRCA
P.O.Box 158
71ool Sarajevo

Sarajevo, 31.1.1978.

Dragi Dragoš,

Šaljem Ti ovaj rad uz sljedeću molbu.
Naime, želio bih, da prije nego što prijavim tezu, zamolim nekoliko prijateljai poznanika da mi pregledaju rad i daju svoje mišljenje i sugestije.
U tom smislu obračam se i Tebi.
Ne znam koliko si familijaran sa problematikom koju obradjuje teza, ali vjerujem da možeš sagledati osnovnu ideju rada, a posebno materijal koji se odnosi na grafove.
U tom kontekstu predložio bih Ti da rad , prvo, prelistaš u cjelini (uvod, postavka zadatka, naslove rada, zaključak i priloge dodatka), a da detaljno razmotriš prvo i drugo poglavlje, sobzirom da se u tom materijalu koriste grafovi.
Dodatak "B" i dodatak "C" odnose se, takodje, na ovu problematiku pa bi i njih trebao pročitati. Ako poznaješ tehniku Principa Maksimuma zamolio bih Te da pogledaš i poglavlje četiri zajedno sa dodatkom "G".
Sa mog aspekta,najosjetljiviji materijal odnosi se na peto i šesto poglavlje teze u kojem se koristi teorija sistema.Kako ne znam da li si Ti upoznat sa teorijom sistema, zamolio bih Te da se raspitaš ko se bavi ovom problematikom i da li bi mogao da mi pregleda ovaj dio rada.
Nadam se da Ti moja molba neće oduzeti suviše vremena, jer znam koliko si angažovan. Nazvaću Te za desetak dana pošto razmisliš o svemu ovom.
Zahvaljujem Ti se u naprijed uz srdačan pozdrav Tvojoj supruzi i Tebi

Faruk Turčinhodžić

INSTITUT FÜR STRAHLENCHEMIE
im Max-Planck-Institut für Kohlenforschung

Institut für Strahlenchemie · Stiftstraße 34-36 · D-4330 Mülheim-Ruhr 1 Telefon (0208) 31073 · Telex 856741 mpstrd

Dr. D. Cvetković
Faculty of Electrical
Engineering
University of Belgrade
YUGOSLAVIA.

Ihr Zeichen | Ihre Nachricht vom | Unser Zeichen | Datum

Betreff:

2nd February, 1978

Dear Dragos,

Herewith I enclose a reprint of a joint paper of mine with Professor R. B. King on some new chemical applications of spectral theory. This is the paper I mentioned in my last letter to you; so now you have the full reference.

I am presently in the process of preparing some other papers which treat similar themes. One of these has just been accepted for Theoretica Chimica Acta. Another I am writing together with Professor Balaban of Bucharest. Please let me know if these would also interest you. I'm sure Ivan Gutman will be happy to explain to you the significance of this work, if it is not already clear to you.

It would be much appreciated if you would let me have your comments and criticisms regarding the enclosed paper.

With my kindest personal regards, I am,

Yours sincerely,

Dennis Rouvray

Dennis Rouvray.

Niš, 5.II 1978.

Poštovani kolega,

Konačno Vam šaljem članak koji je izašao u Zborniku radova nastavnika Pedagoške akademije u Pirotu. Neke grublje štamparske greške sam pokušala da ispravim. Zahvaljujem na recenziji za članak "Karakteristike n-kuba". Postupili smo prema Vašim poslednjim sugestijama.

Nabavila sam drugo izdanje Vaše i Milićeve knjige i trenutno je izučavam. Članak koji ste mi poslali je interesantan i pokušavam za sada da povežem neke svoje rezultate sa tim.

Srdačan pozdrav

M. Danković
Niš, ul. Zetska 6/36

Poštovani profesore,

u prilogu Vam šaljemo Ugovor o delu u četiri primerka, koje Vas molimo da potpišete i popunite podatke koji nisu uneti.

Potpisane Ugovore pošaljite na adresu:

Zajednica viših škola SR Srbije, Beograd, ul. 27. marta br. 149.

Unapred Vam se zahvaljujemo i koristimo još jednom priliku da Vam se zahvalimo na uspešno održanom interesantnom predavanju .

Sekretar str. sekcije

(Šević Ljubica, prof.)

N. S. Anniyer
Department of Mathematics.
Karnatak University P. G. Centre.
GULBARGA-585105,
India.

6. 2. 1978

Dear Dr. / Prof. Cvetković

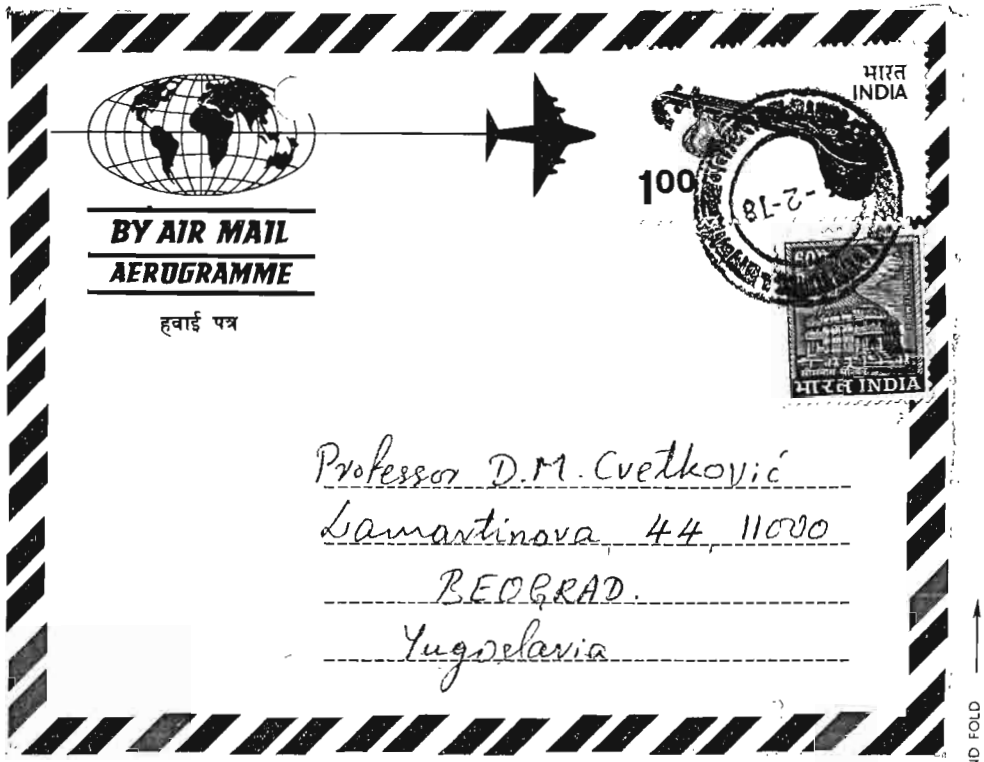
I would greatly appreciate receiving reprints of your following papers and other related papers.

	Title	Appeared in
1.	The reconstruction problem for characteristic polynomials of graphs.	Univ. Beograd. Publ. (1975-)
2.	Graph equations for line graphs and total graphs.	Discrete Math. 13 (1975-)
3.	Spectrum of the total graph of a graph.	
4.	Graph equations, graph inequalities and a fixed point theorem.	Publ. Inst. Math. (1976)
5.	An elementary proof of Loyd's theorem.	

Thank you for your kindness.

Very truly yours,

N. S. Anniyer



Professor D.M. Cvetković
Lamartinova 44, 11000
BEOGRAD.
Yugoslavia

THIRD FOLD

SECOND FOLD

SENDER'S NAME AND ADDRESS:-

N. S. Annigeri
Teacher Fellow,
Dept. of Mathematics,
K. U. P. G. Centre,
GULBARGA-585105 [India]

भारत INDIA

NO ENCLOSURES ALLOWED

TO OPEN CUT HERE

Dragoš Cvetković

9.2.1978

Prof. J.J. Seidel
Department of Mathematics
Technological University Eindhoven
POB 513
Eindhoven
The Netherlands

Dear Mr. Seidel,

Please find enclosed herewith a copy of the preface (4 pages) for the book:

D.M.Cvetković, M. Doob, H. Sachs, Spectra of graphs - A monograph, Deutscher Verlag der Wissenschaften, Berlin, in press.

The complete manuscript has been given to the Publishers and I may hope that the book will come out in the course of this year.

I would ask you most kindly to tell me whether you agree with the formulations in the preface concerning you and your University.

I would like to thank also your typists who typed Chapter 7 in Eindhoven. Are their names correct: Miss Th. J.M. van den Hurk and Mrs. A.M. Janson- Jansen? Please give my regards to both of them.

I hope you received my letter of January 26.

With kind regards,

Yours sincerely

Dragoš Cvetković

D.Cvetković 1o.2.1978

Professor Dragoslav Šiljak
The University of Santa Clara
California 95053

Dear Professor Šiljak,
Thank you for your mail of December 29 which I received only a week ago when I stopped by to the Mathematical Institute. My address is the one quated at the head of the present letter or: 11ooo Beograd, Lamartinova 44(home address).

I have a lot of papers on graph theory and the best way for you to get an impression of them is probably to look at my thesis: Graphs and their spectra, Univ. Beograd, Publ. Elektrotehn. Fak. Ser.Mat. Fiz. No. 354-356 (1971), 1-5o. I would like to draw your attention also to the forthcoming book:D. M.Cvetković, M. Doob, H.Sachs, Spectra of graphs, A monograph. Deutcher Verlag der Wissenschaften, Berlin, in press. The book is due to come out in the course of this year. Finally, I shall send you soon the book: D.Cvetković, M.Milić, Graph theory and its applications (in Serbo-Croat), Beograd, 1977. Section 1o.3 of this book will give you an idea of my work.

Yours sincerely

Dragoš Cvetković

ZAJEDNICA VIŠIH ŠKOLA SR SRBIJE
B E O G R A D
Ulica 27 marta 149/III
Telefon: 435-517

Broj: 179/2
13. februar 1978.

Dr DRAGOŠ CVETKOVIĆ, profesor

B E O G R A D

Zahvaljujemo se na veoma uspešnom i za učesnike izuzetno interesantnom predavanju koje ste održali na VI Seminaru za nastavnike matematike viših škola u Prizrenu (Landovica) 24. januara o.g.

Očekujemo otkucani tekst Vašeg predavanja radi objavljivanja u Zborniku predavanja. Nadamo se da ćemo i ubuduće moći da računamo na Vašu pomoć.

Pozdravljamo Vas.

ZAJEDNICA VIŠIH ŠKOLA SRBIJE BEOGRAD

SEKRETAR ZAJEDNICE
Mrkić Gavrilo

St. John's University
300 HOWARD AVENUE
STATEN ISLAND, NEW YORK 10301

TELEPHONE:
(212) 447-4343

February 15, 1978

Dear Prof. Cvetković,

Many thanks for your letter of January 30th. I was very surprised that you do not seem to have received a letter I sent some time ago together with a preprint of my paper. I sent it to a different address (Lamartinova 44) so in case it got lost, I am enclosing another preprint of the paper.

I explained, in the letter referred to above, that indeed we are working on the same things. In fact I also mention Aigner's solution to $L(G) = \bar{G}$ and I present my solution to $L(D)=\bar{D}$ where D is a digraph. (It has exactly three solutions.) I have done no work with graph inequalities, and there isn't too much "overlap" in our work. I started working on this topic as a result of my writing the chapter on Graph-Valued Functions in my book with John Molluzzo, "Examples and Counterexamples in Graph Theory". This is being published by Elsevier North-Holland and is scheduled to be out next month. Gary Chartrand has written the Foreward.

I also stated that it would be a great pleasure for me to meet you in person. I travel easily, and enjoy visiting foreign countries. Last May I gave a series of seminars at the University of Lund in Sweden. I would be so delighted to speak at your university if it could be arranged. You are perhaps aware of the Second International Conference on Combinatorial Mathematics sponsored by the New York Academy of Sciences which will take place in New York, April 4-7, 1978. You really should come if at all possible. Molluzzo and I will be conducting one of the problem session, and we would be very happy to see you there.

Very best regards,

Michael F. Capobianco, Ph.D.

MFC/dcw

D.Cvetković 21.2.1978

Babai László
H-1074 Budapest
Szövetség u.17

Dear Mr. Babai,
Thank you for your letter of February 12.

Please find enclosed herewith the paper of Marušić. I have not yet received the shorthand version.

As far as your arrival is concerned, your proposal is quite good. You may use couchette and come in the morning on Friday, March 16, or you may come on Thursday in the afternoon. I would announce your lecture for Friday, March 16, at 1 o´clock p.m. Please confirm finally whether you accept this and let me know the exact time of your arrival so that I (or Mr. Simić) could wait for you at the railway station.

If for any reasons we do not meet at the station the telephone number at my home is 437-263. If the telephone connection is impossible you should take taxi and come to Elektrotehnički fakultet (Faculty of Electrical Engineering), Bulevar Revolucije 73, ground floor, room 99, (in the morning). In the afternoon you should better come to my home: Lamartinova 44.

Yours sincerely

D.Cvetković

Dragoš Cvetković 22.2.1978

Dr. Michael B. Capobianco
St. John's University
300 Howard Avenue
Staten Island,
New York 10301

Dear Dr. Capobianco,

Thank you for your letter of February 15. It seems that your previous letter is lost.

Concerning graph equations, it is interesting how the people from different parts of the world come to similar ideas. I am enclosing herewith an expository paper on graph equations of Mr. Simić and myself which was presented on the International Conference on Graph Theory and Its Applications(Ilmenau, German Democratic Republic, April 1977) and will be published in the corresponding proceedings. Please find enclosed also a paper of mine where a paper of yours is cited.

It is encouraging that new books on graph theory appear continuously. In this year also my monograph (together with M. Doob and H.Sachs) entitled "Spectra of graphs" should come out. The publishers are Deutscher Verlag der Wissenschaften, Berlin, GDR. We could exchange complimentary copies of our books if possible.

Unfortunately, I am not able to come to your Conference in April but there are some plans that I make a trip to the continent of America about the middle of June. If these plans become true I shall inform you and may be we could meet in New York.

If you are once somehwere in the nearness of us you may stop by and deliver a lecture here in the Mathematical Institute or at the University, that could be arranged, perhaps with some little financial support. Since there are only a few people here doing graph theory and since this theory is not so well-known here, a series of seminars, like you had in Sweden, seems to be not possible to arrange. Please consider this information not as an official one.

Yours sincerely
Dragoš Cvetković

UNIVERSITÉ DE PARIS-SUD
CENTRE D'ORSAY
LABORATOIRE DE RECHERCHE
EN INFORMATIQUE

Bâtiment 490 - 91405 ORSAY Cédex
Tél. 941.66.29

ORSAY, le February 23 1977

to D. Cvetkovic'

Dear D. Cvetkovic',

I thank you very much for your letter and your preprint, which is very interesting. I join you a copy of the reviewing I have done.

Concerning the article of M-C. Heydemann the reference is M-C. Heydemann: Caractérisation spectrale du joint d'un cycle par un stable, ~~Colloque~~ in Problèmes Combinatoire et Théorie des graphes, Colloque International C.N.R.S. Orsay 1976, C.N.R.S. Publ. 1978, - .

We are at the stage of proofs; we are waiting to receive the proofs corrected by the printer for a last corrections. Then I hope the book will be out of print in June ?. If you want to mention the "editors" they are: J.C. Bermond, J.C. FOURNIER, M. LAS VERGNAS and D. SOTTEAU.

Many thanks and best wishes

J.C.B.

László BABAI, H-1074 Budapest, Szövetség u. 17, Hungary

March 3, 1978

Prof. D.M. Cvetković
11000 Beograd
Lamartinová 44
Jugoslavija

Dear Mr. Cvetković :

According to our telephon talk yesterday evening, I shall arrive in Belgrade by Pannonia express on Sunday, March 19, at 13.49. I shall return by Pannonia express departing at 15.15, Tuesday, March 21.

My talk might be "On the complexity of graph isomorphism testing".

Thank you for the copy of the MS by Mr. Marusić.

Looking forward to seeing you,
sincerely yours

László Babai

St. John's University
300 HOWARD AVENUE
STATEN ISLAND, NEW YORK 10301

TELEPHONE:
(212) 447-4343

Division of Mathematics and Science

March 10, 1978

Prof. Dragoš Cretković
Faculty of Electrical Engineering
University of Belgrade
Bulevar Revolacije, 73
Box 816
1101 Belgrade, Yugoslavia

Dear Dragoš,

Thank you very much for your letter of February 22nd and the paper with Simić. It looks like an excellent piece of work. I look forward to reading it. I find it fascinating that even when I was doing my first research in graph theory (on Tensor products) I was solving graph equations.

I hope we will be able to exchange books. Yours does sound quite interesting. Hope to meet you sometime.

Very truly yours,

Mike

MFC/dcw

Michael F. Capobianco, Ph.D.

Univerza v Ljubljani

ODSEK ZA MATEMATIKO
61001 Ljubljana, Jadranska c.19
p. p. 543, tel. št. 61 432, 61 564

Ljubljana, 15.3.1978

Dr. Dragoš Cvetković
Lamartinova 44
11ooo BEOGRAD

Dragi profesor Cvetković,

Hvala na pismu od 14.11.1977. Pogotovo vam zahvaljujem za poslatu knjigu, koja je u ovom novom obliku još zanimiljivija. U medjuvremenu knjiga je stigla i u našu biblioteku, pa ju naši studenti rado koriste. Ovde smo prilično zauzeti obavezama na fakultetu pa nisam uspeo ranije pisati, kamo li da dodjem u Beograd, mada bi to želeo.
U smislu naše saradnje šaljemo vam dva još neobjavljena članaka. Smatramo, da je rad "On partially directed eulerian multigraphs" sazreo za publikaciju, te vas molimo da razmotrite mogućnost za njegovo objavljivanje u "Publ. Elektrotehn. Fak." ili nekom srodnom časopisu. Drugi rad još je u fazi razvoja pa bi vas molio za eventualne primedbe. Oba su rada bila izneta na našem seminaru. Ako vas interesira možemo vam ubuduće slati sve seminarske materiale (seminar se bavi numeričkom analizom, diskretnom matematikom i računarskim naukama, i mnogi materiali su na slovenskom), ili samo one iz oblasti teorije grafova. Toliko za sada.
Srdačno vas pozdravljaju

Vlado Batagelj
Tomaž Pisanski

Beograd 27.3.1978.

Dragi Faruk,

Pre neki dan sam sreo Dr Radivoja Petrovića koji je letimično pregledao Tvoju tezu. Iz kratkog razgovora sam razumeo da bi on imao izvesne primedbe koje bi zahtevale dorade ako bi on bio u komisiji. On tvrdi da u Tvojoj postavci problema ima nedorečenosti, da bi se izvesni novi pojmovi morali precizirati definisati itd. Ja se nisam upuštao u diskusiju. Iz svega sledi da bi imao dosta problema a koda bi ovde prijorio rad.

U pismu Ti šaljem fotokopije odgovarajućih stranica iz knjige ~~[K21] (videti moju knjigu~~ [K43] (videti moju knjigu, specijalno str. 62). Ja ove strane tek sada čitam i vidim dosta sličnosti sa Tvojim postavkama. Evo malog objašnjenja.

Rukopis moje knjige je predat za štampu u avgustu 1975 neposredno pre moga odlaska u Holandiju. Do toda ja knjigu [K43] nisam imao u rukama. Ono što sam napisao na str. 62, napisao sam prema usmenom saopštenju Prof. H. Sachsa koji je boravio u

Beogradu 1974 god. i koji mi je pričao što ima u [K43]. U Holandiji sam naišao na knjigu [K43] i ne interesujući se više za stvar prekopirao ove stranice koje Ti šaljem za svaki slučaj. Tvoj tekst sam stavio u Prilog pošto sam Te prethodno molio za odobrenje. Tekst sam skratio imajući u vidu da u knjizi o teoriji profora treba istaći one delove koji se neposredno odnose na profore.

Sada se u tekstu koji Ti šaljem pojavljuje referenca [54] koju ne mogu da rekonstruišem jer nemam knjigu [K43]. Molio bih Te da uzmeš u obzir ove stvari u onoj meri u kojoj se one tiču Tvog doktorata.

Dobio sam u međuvremenu i Tvoj članak na engleskom jeziku. Prvi utisak je da je on prepisan i da su skraćenja potrebna. Pročitaću ga još jednom pa ću Ti eventualno preporučiti šta se može da radiš.

Mnogo pozdrava

Dragoš Cvetković

Beograd 27.3.1978.

Dear Mr. Bussemaker,

I am preparing now a paper for the Szeged conference in which I shall try to explain theoretically the ordering of graphs according to the eigenvalues. Your computational material on cubic graphs (connectivity and l_2) graphs with maximal girth) will be of a certain help. I ask you most kindly to permit me to use this material in my paper, of course, with the reference to your name. When possible, I shall explain you the situation in more details.

In a letter to Prof. Seidel I posed a little problem for you about exceptional graphs on 6, 7, 8 vertices:

Let us call the graphs on 6 vertices by $A_1, A_2, \ldots, A_{20}$. Let $B_1, B_2, \ldots, B_{110}$ be graphs on 7 vertices and let $C_1, C_2, \ldots, C_{443}$ be graphs on 8 vertices.

Is there any B_i such that no A_j is an induced subgraph of B_i? Is there any C_k such that no B_j is an induced subgraph of C_k?

If you have all these graphs on cards there will be no problem for you to make a little progra

and to answer these questions.

Prof. Seidel told me that he would present at Szeged conference also a paper joint with you. Will you personally be present at that conference?

Kind regards to you, to your family and to Prof. Seidel

Yours sincerely
Dragoš Cvetković

27.3.78

Prof. W.T. Tutte
Faculty of Mathematics
University of Waterloo
Waterloo, Ontario
Canada N2L 3G1

Dear Professor Tutte,

I would appreciate very much if you would send me the copy of your paper "All the king's horses".

Thanking you in advance,

Yours sincerely

Dragoš Cvetković

6.4.1978

Mr. Pralhad R.Rao
Department of Mathematics
Indian Institute of Technology
P O I I T Bombay
Powai,Bombay, 400076

Dear Mr. Rao,
We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.78

Mr. B.D. Ackanya
The Mehta Research Institute
26 Dilkusha, New Katra,
Allahabad, 211002

Dear Mr. Ackanya,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publications, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

Княгиня Евгения,

Молим Вас када будете имали времена,
пошаљите нам дефектаже и фото-
графије радова за наше следеће
објекте којима су обилазили.

Ивана Гундулића

А. Недељковић

6.4.1988

Mr. J.M.S. Simoes-Pereira
Western Michigan University
Department of Mathematics
Kalamazoo, Michigan 49008
USA

Dear Mr. Simoes,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints of preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

Mr. W. Imrich
Institut fur Mathematik
Montanistische Hochschule A-8700
Leoben, Austria

Dear Mr. Imrich,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we woul appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

PS. Due to several circumstances
it seems the best to plan your visit to Belgrade in the next academic year. Will you participate the conference in Szeged this August? What about the Australian colleague /Godsil or McKay?/? Will he come to Belgrade? He could give a lecture here /and probably receive some little financial support/ but I should know the time of his arrival a couple of weeks before. On the other hand, it seems that I shall not be in Belgrade between June 20 and August 15.

Slobodan Simić

6.4.78

Mr. S.K. Gupta
Computer Centre
Indian Institute of technology
Hauz Khas
New Delhi 11oo29
India

Dear Mr. Gupta,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, pplease provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

J. Akiyama
L. W Beineke
M. Doob
F. Harary
W. Imrich
J. M. S. Simões-Pereira
H. Sachs
J. C. Bermond
R. L. Hemminger
C. F. Capobianco

7.4.1978

Mr. L.W.Beineke
Indiana University
Purdue University
2101 Coliseum Boulevard East
Fort Wayane
Indiana 46805

Dear Mr. Beineke,

We are just preparing an extensive bibliography of graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with oomplete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Very sincerely yours

Dragoš Cvetković

Slobodan Simić

7.4.78

Mr. F. Harary
The University of Michigan
Department of Mathematics
Ann Arbor, Michigan 48104

Dear Mr. Harary,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

PS. Our bibliography will probably contain about 100 references and will be arranged like the bibliography on reconstruction problem in the Fall Number of JGT. There will be also a few pages with comments. If you have any further suggestions, please let us know.

7.4.1978

Mr. J. Akiyama
Department of Mathematics
Nippon Ika University
2-297-2 Kosugi Nakahara-ku
Kawasaki, 211
Japan

Dear Mr. Akiyama,

We are preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

7.4.1978

Mr.H.Sachs
Am Wenzelsberg 12
NT 25/58
DDR 63 Ilmenau

Dear Mr. Sachs,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance

With kind regards

Yours sincerely

Dragoš Cvetković

Slobodan Simić

(408) 984-4482

THE UNIVERSITY OF SANTA CLARA • CALIFORNIA • 95053

THE SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

April 7, 1978

Professor D. Cvetković
Department of Mathematics
Faculty of Electrical Engineering
Post Office Box 816
11001 Beograd
Yugoslavia

Dear Professor Cvetković:

Thank you very much for your letter of February 10, 1978 and a copy of your book on Graph Theory with M. Milic. I had a chance to brace through the book and I find it very interesting and well written, especially Chapter 2, On Graph Theory, where I found certain information I have not seen in other books on the subject. I hope I will soon have time for a more detailed reading of the book.

I plan to visit Beograd at the end of June this summer and I would like to meet with you if possible.

Enclosed please find a copy of the announcement of my book on Large-Scale Systems (to be out soon), which makes some use of graphs and interconnection matrices.

Best regards to Mirko Milić.

Sincerely,

Dragoslav Šiljak

Dragoslav Šiljak
Professor

DS:laj

Enclosure

Beograd 10.4.1978.

Poštovana koleginice Đukorić,

Zbog velike zauzetosti evo tek sada stižem da odgovorim na Vaše pismo od 20.12.77. u celosti. Recenziju za rad "Konkretistička n-kocka" sam Vam poslao. Vi ste mi odgovorili. Sada nabolite reči o radu "Jedan oblik primene izvoda na n-kocki" (Naslov bi možda mogao biti: "Jedna mogućnost definicije izvoda na prstu i prst n-dimenzionalnog kuba").

Rad mi izgleda simpatičan, u stilu Vaših ranijih radova. Mada nisam proverovao sve detalje, izgleda da su rezultati tačni. Ako imate primedbi da rad nešto objasnite (konstrukciju mod) ja bih to podržao.

Male primedbe se odnose na početni pasus u radu. Trebalo bi malo jasnije definisati pojam događaja. Na primer, skup nekih delova prostora je skup elementarnih događaja a događaj je ~~skup~~ neki podskup skupa elementarnih događaja. Matrica $\mathcal{L}$ je matrica incidencije između skupa događaja i skupa elementarnih događaja (videti moju knjigu, odeljak 10.1).

Vidim da se Vi dosta zanimate za n-kub.
Lani sam se i ja, po njemu članku
pomenuo taj prof. Želim Vam taj članak, na
str. 139 je znojena formula za broj stabala
sadržanih u grafu k-dimenzionalne rešetke.
Za $n=2$ taj prof se vratio na k-kub.

Mnogo pozdrave

Dragoš Cvetković

Eindhoven, April 13, 1970.

Dear Dr. Cvetković,

Thank you very much for your kind letter of April 5, 1970. I passed on your review to Dr. van der Meiden. Enclosed please find the November issue of the "Mededelingen van het Wiskundig Genootschap". On page 267 is your review printed.
Everything is well here at the University and also with myself. My husband and I finished working in the house, we are now enjoying a well-deserved rest. Our holiday-plans are not made yet, but we'll probably stay in Holland. It is too difficult for us to travel with our two dogs over such a distance. Anyway, if we are planning to go on holiday outside of Holland we'll certainly think of Yugoslavia. Our neighbours go there every year and they are very enthousiastic about your country!
At the university things are going well. We have several guests here o.a. Prof. Higman and Dr. Taylor. From Prof. Seidel I have heard that you will go to Canada to Michael Doob. I hope it will be a nice experience for you.
Prof. Seidel sends his regards. Also from me of course and from the group. It was nice to hear from you again.

Yours sincerely,

Hanna Rooyackers.

Mailing address:

L. LOVÁSZ
JATE Bolyai Intézet
H-6720 Szeged
Aradi vértanuk tere 1.

International Colloquium on
ALGEBRAIC METHODS IN GRAPH THEORY
August 25-31, 1978
SZEGED /HUNGARY/

April 15, 1978

Dear Professor Gotthard,

We were happy that you accepted our invitation to be one of the invited speakers at the conference. Please fill in and return the enclosed forms. Of course the Organizers cover your participation fee and the costs of accommodation in Szeged.

Yours sincerely

László Lovász
Chairman of the
Organizing Committee

78/2527 MTESZ HNy.-Bp.

D.Cvetković 20.4.1978

Prof. Dr.J.J. Seidel
Department of Mathematics
Technological University Eindhoven
POB 513
Eindhoven
The Netherlands

Dear Mr. Seidel,

Please find enclosed the copies of my mails of 16th January and February 9 to you. It seems that either you have not received these letters or your answers are lost.

As already known to you, Doob invited me to Winnipeg for this Summer. I shall go there on 23rd June and return on 7th August. I did not schedule to break my flight in the Netherlands, because we shall meet in Szeged a couple of weeks later.

My lecture in Szeged will be mainly expository including a few new results of mine concerning ordering of graphs by eigenvalues, constructions of some graphs etc. While preparing the paper I found the following observation about E8. Let the vertices of a graph G be all $\binom{10}{3} = 120$ triples of 10 symbols. Let two vertices be adjacent if the corresponding triples have exactly one common symbol. Graph $\overline{G}$ is strongly regular with eigenvalues 56, 8, -4; hence it is cospectral to the graph G(E8) mentioned on p.8 of our report "Graphs related to exceptional root systems". Is this known to you?

I would use in my lecture Bussemaker's computational results and Haemers' Memorandum 1976-11 "Partitioning and eigenvalues". Is this report published anywhere?

Kind regards to you to Bussemaker and Haemers.

Sincerely yours
Dragoš Cvetković

WESTERN MICHIGAN UNIVERSITY

DEPARTMENT OF MATHEMATICS (616) 383-6165 KALAMAZOO, MICHIGAN 49008

April 21, 1978

Dear Profs. Cvetkovic & Simic:

Thank you for your letter dated 6.4.1978.

I enclose a list of my papers where I have marked the ones which bear some connection with graph eqs. Note that this is not always explicit on the papers if you read them! But the problems may be stated in terms of equations!

If you need reprints write to me!

Yours

D. M. S. Simões Pereira.

Address after 15 May 1978:
Av. Afonso Henriques, 27
Coimbra - Portugal

Poštovani Dr. Cvetković

Interesira me Vaš rad pod nazivom "Graphs and their spectra". Na poticaj Dr. Trinajstića slobodan sam da Vas zamolim kopiju tog rada.

Unaprijed zahvaljujem, uz pozdrav

Damir Kasum
Miramarska 15d(Ivanetić)
41ooo Zagreb

St. John's University
300 HOWARD AVENUE
STATEN ISLAND, NEW YORK 10301

Division of Mathematics and Science

TELEPHONE:
(212) 447-4343

April 24, 1978

Dragos Cvetkovie
Dept. of Mathematics
Faculty of Electrical Engineering
University of Beograd
Box 816
11011 Beograd, Yugoslavia

Dear Dragos,

This is in response to your letter of April 4 requesting information about any papers of mine on graph equations. You already have preprints of my latest paper, GRAPH EQUATIONS. It will be published in the Annals of the New York Academy of Science, and should be in print by September. I am sorry I cannot give you a more detailed reference.

I am enclosing a reprint of my paper in which it is shown that

$$G_1 \wedge G_2 = T$$

where T is a tree and $\wedge$ denotes conjunction, has no solutions. The theorem is not stated in terms of a graph equation. I also call your attention to references (2) and (3) in this paper, and publications 8 and 9 in my resumé.

Good luck with this project. I certainly would like a copy of the bibliography.

Michael Doob mentioned to me that you will be in Winipeg in June. I would like very much to meet you. Please keep in touch, and we will see what can be arranged. If you can not get to New York perhaps I can go to Winipeg. Happy to hear that my other letter has arrived.

Very truly yours,

Mike

MFC/dcw

Michael F. Capobianco, Ph.D.

ISR

INSTITUTE FOR SOCIAL RESEARCH / THE UNIVERSITY OF MICHIGAN / ANN ARBOR, MICHIGAN 48106

April 25, 1978

Dr. Dragoš Cvetković
Department of Mathematics
University of Beograd
P.O. Box 816
11001 Beograd, YUGOSLAVIA

Dear Dragoš:

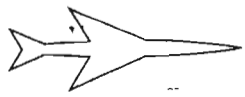
Thank you for your letter of 7 April. I am looking forward very much indeed to receiving when ready your annotated bibliography on graph equations for JGT. Please give my best regards to Mr. Simić and tell him that he has my best wishes for his doctorate.

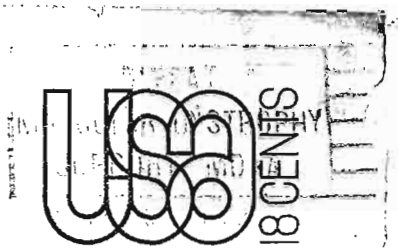
Kind regards,

Frank

Frank Harary

FH/lg





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Dr. Dragos Cvetkovic
Department of Mathematics
University of Beograd
P.O. Box 816
11001 Beograd, YUGOSLAVIA

AEROGRAMME • VIA AIRMAIL • PAR AVION

(2) **Second fold**

Dr. Dragoš Cvetković
Department of Mathematics
University of Beograd
P.O. Box 816
11001 Beograd, YUGOSLAVIA

Additional message are

Beograd,1978.04.27.4.

Poštovani kolega,

U vezi s nagradom AVNOJ-a koja mi je dodeljena 1976. godine, slobodan sam Vas pozvati da 1978.05.05.6. u 20 časova dodjete na večeru u Klub univerzitetskih nastavnika, Šafarikova br. 7.

Ako slučajno na večeru ne možete doći (što bi mi bilo vrlo žao) molim Vas da o tome obavestite ili na telefonski broj 639-015 (drugarici Borki Jonović) ili na moj kućni broj 632-630.

Kurepa dr Djuro
Zagrebačka 7
11000 Beograd

University of Bombay

DEPARTMENT OF MATHEMATICS

Ranjan N. Naik
Tel. No. 532241-45 } 10 lines
547021-25 }
Lokmanya Bal Gangadhar Tilak Bhavan,
Vidyanagari, Vidyanagari Marg,
BOMBAY 400 098 (INDIA).

April 29, 1978

Dear Prof. Cvetkovic,

I have received your letter dated April 6. I am very glad to know that you and Dr. Simic are preparing an extensive bibliography on graph equations. My paper "Solutions to some feather graph equations" is almost accepted in Discrete Mathematics. Due to some technical difficulties I could not send the revised version of this paper to the editor of Discrete Mathematics. I hope that I will send it soon to the editor Profs. Hammer.

I thank you very much for your comments and suggestions on this paper, given in your earlier letter to me. I am sorry that could not write you immediately. At present I am working as a postdoctoral fellow in the department of Mathematics, University of Bombay. I did not write further

BY AIR MAIL

Dr. D. Cvetkovic
Faculty of Electrical Engineering
University of Belgrade
Bulevar Revolucije 73
P.O.Box 816
11001 Belgrade, — YUGOSLAVIA

Sender's name and address:

Dr. Ranjan N. Naik,
DEPARTMENT OF MATHEMATICS
Lokmanya Bal Gangadhar Tilak Bhavan,
Vidyanagari, Vidyanagari Marg.
BOMBAY-400-098 (India).

No endorsements allowed

A ROCKET ® PRODUCT

in graph equations. Because I could not yet crop problems in that area. Recently I wrote a paper "On Intersection graphs (Linegraphs) of t-uniform linear hypergraphs" with Prof. S.S. Shrikhande, Dr. S. Rao ad Dr. N.M. Singhi. Dr. Singhi is at present in University of Wyoming as a visiting Professor. He will be back to India in July 1978. For some more time I shall be working on Linegraphs of t-uniform Hypergraphs.

Kindly send me some recent papers on graphtheo

This request stands for Dr. Singh also. Can you suggest me some problems in graph theory? Thanking you in advance,

With kind regards,

Yours sincerely,

N. Naik

From:

Dr.V.R.Kulli,
Department of Mathematics,
Karnatak University,
Post-Graduate Centre,
GULBARGA-585105.
INDIA.

May 1, 1978

Dear Professor, Cvetkovic',

I am sending herewith an abstract of my ~~the~~ paper "GRAPH EQUATIONS FOR LINE GRAPHS, TOTAL BLOCK GRAPHS & SEMITOTAL BLOCK GRAPHS". (Preprint)

ABSTRACT.

We solve graph equations $L(G) = T_B(H)$, $\overline{L(G)} = T_B(H)$ and $\overline{L(G)} = T_b(H)$. Furthermore we obtain some pairs (G,H) of graphs G,H which satisfy a graph equation $L(G) = T_b(H)$.

Kindly send your article entitled "survey on graphs equations".

With kind regards.

Yours sincerely,

(V.R.KULLI).

bsb:

Professor,D.M.Cvetkovic'
Faculty of Electrical Enginnering,
University of Belgrade,
Belgrade, YUGOSLAVIA.

Dr.V.R.Kulli,
Department of Mathematics,
Karnatak University,
Post-Graduate Centre,
GULBARGA-585105.
Karnataka - State,
INDIA.

BY AIR-MAIL
AEROGRAMME

SENDER'S NAME

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11001 BEOGRAD
Yugoslavia.

Eindhoven, May 2nd, 1978.

Dear Dragos,

I received your letter of April 20, 1978. I did receive your earlier letters, I did something about it, but I forgot to answer you. I apologize. Times are rather hectic, for instance by my travels to Columbus and to New York. There I heard from Michael that he invited you to come to Winnipeg this summer. That is really very nice; you and Zora will enjoy this!

Haemers' memorandum will be published in the Proc.Kon.Ned.Akad.Wet. = Indag.Math., probably in the fall or in the winter, so you can refer to that, to be published. I did settle the financial matters after you wrote to me in January. I paid the 13 guilders and had your account closed. I do not want you to pay me back (apart from a beer), since I owe you interest because of the long delay of last year. As for your question to Bussemaker, he told me that he had already answered you. As for the preface of your book, I wanted to consult Alan Hoffman about your mentioning our names. I showed it to him, and we decided not to protest and to join Goethals' name, although we are not very confident that we shall ever finish such an undertaking. Michael Doob knows about this. I thank you for your kind words in the Preface. I passed your greetings on to the typists.

We did not hear further news from Szeged, but Erdös told me in New York that the conference certainly would be held. I only know about the first communication. I am planning to come. However, I will not go to Helsinki.

Enclosed you find preprints of my lectures in Columbus and New York, together with the abstracts of the New York meeting. The lecture about graph equations did not bring anything new; the speaker introduced the subject and mentioned you and some of your results.

Your observation about $\binom{10}{3}$ is in Taylor's thesis. I quote:

Theorem. If T is a 4-regular two-graph with N=136, a=64 and a coherent set of 10 points, then T is isomorphic to $O^+(8)$ and Aut T=Sp(8, 2).

From the description of $O^+(8)$ obtained above we see that Σ_{10} acts on $O^+(8)$ with orbits of length 10 and 126. The inclusion $\Sigma_{10} \subset Sp(8, 2)$ was also obtained earlier. It follows that Σ_{10} acts on the two-graph $O^-(8)$. The 120 points of $O^-(8)$ can be identified with the 120 three-element subsets of a set of 10 elements. If we join two such subsets whenever they have just one point in common we obtain a strongly regular graph with $n=120$, $n_1=63$. This gives rise to a regular 2-graph which must be $O^-(8)$. Another strongly regular graph with the same parameters is obtained from the rank 3 representation of Sp(6, 2) on $P\Gamma U(3, 3^2)$. It is possible to prove that the corresponding regular two-graph is not $O^-(8)$.

Maybe this is also in Taylor's paper in Proc. London Math.Soc., which I do not have here. Now I think to have answered all your questions. Just one remark. Is it true that you made corrections in our paper for Kesthely long ago (like I did for Eutactic Stars), but that the Proceedings have not appeared? It looks like the Rome Proceedings!

Kind regards from house to house.

Jaap Seidel

J.J. Seidel.

3.5.1978

Mr. C. Johnson
Institute of Physical Science add
Technology
University of Maryland, College
Park
Maryland, 20742, USA

Dear Mr. Johnson,

I would appreciate very much your kindness in sending me a copy of the preprint of your paper entitled

C.Johnson, M. Newman, A note on cospectral graphs,

Thanking you in advance, I remain, Sir,

Yours sincerely

D.Cvetković

Combinatorics and Optimization Department
University of Waterloo
Waterloo, Ontario
N2L 3G1, Canada

Dr. D.M. Cvetkovic
Electrical Engineering Department
University of Belgrade
11001 Belgrade
P.O.B. 816
Yugoslavia

Dear Dr. Cvetkovic

Enclosed is a listing of papers of yours concerning paths and cycles in graphs. I have included papers on bipartite graphs and perfect graphs, but have chosen to exclude papers dealing with the shortest path problem.

I should be grateful if you would carefully check the listing, fill in any missing details (such as the journal in which the paper appeared) and let me know of any errors or omissions. I should also appreciate receiving reprints of those papers marked with an asterisk, if such are still available, and of any relevant papers omitted from the listing. (If you responded to my previous request for reprints, thank you.) Finally, could you please arrange to send me copies of your work on this topic in the future.

Thank you for your help.

J.A. Bondy

J.A. Bondy

7.5.1978

Mr. J.C. Bermond
Université de Paris - Sud
Centre d'Orsey
91405 Orsay, Cedex, Batiment 490

Dear Mr. Bermond,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards

Yours sincerely

Dragoš Cvetković

Slo-odan Simić

Beograd, 8.5.1978.

Dear Mr. Babai,

I am apologizing for having not written to you so long after your visit here. As you may imagine, I had many duties at the University and elsewhere.

Among many interesting things you mentioned here, there is your observation that the "star-like" graphs have maximal largest eigenvalue among graphs with a fixed number of vertices n and edges m ($m < \frac{3}{2}n$). You claimed that this holds also without the restriction $m < \frac{3}{2}n$ but I was not able to see it so directly. This topic fits into my lecture for Szeged conference where I shall speak, among other things, about ordering of graphs by eigenvalues. I would ask you most kindly to write down your results precisely and allow me to use it as a private communication (especially, if you do not want to work further on this problem).

I did not hear anything from Marušič. Prof. Mitrinović still wanted to have Marušič's answer to our requirement to shorten his article and, hence, there is nothing new in publishing his paper.

With kind regards

Yours sincerely

Dragoš Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Department of Mathematics
Fac. of Electrical Engineering
University of Beograd
P.O. Box 816
11001 BEOGRAD
Yugoslavia.

Eindhoven, May 8, 1978.

Dear Mr. Cvetković,

In your letter of March 27, 1978 you posed several questions, one of which you have posed more as one time. I will try to answer this question first. You called the exceptional graphs on 6, 7 and 8 vertices $A_1, A_2, \ldots, A_{20}$ resp. $B_1, B_2, \ldots B_{110}$ resp. $C_1, C_2, \ldots, C_{443}$. And then you asked whether there was any B_j such that no A_i is an induced subgraph of B_j. In my letter of November 30, 1977, I explained you the procedure, which is used to get these graphs. We got the graphs $B_1, B_2, \ldots, B_{110}$ by adding one vertex in all possible ways to the graphs $A_1, A_2, \ldots, A_{20}$, and then reducing this list of graphs in several ways. But this last part of the procedure doesn't need concern us, the crucial point here is, that all graphs we got in this way, have at least one A_i as an induced subgraph. On these graphs there was not performed some switching operation, so, for the resulting graphs $B_1, B_2, \ldots, B_{110}$ it is still valid that every B_j contains at least one A_i as an induced subgraph. And in the same way I can state that every C_k contains at least some B_j as an induced subgraph. I hope you will be satisfied by this answer.

Naturally, you can use the material, concerning the cubic graphs with maximal girth, and the other material on cubic graphs, just as you like it. But tell me, what you have planned to do with this material?

You referenced several times the Szeged conference. I will not be present there. But possible I will see you still this year because it is the intention of Joos and me to visit Hungary, Yugoslavia and possibly Romania in our holidays in July.

Please send the greetings of me and my wife to your wife and to Mbladen.
With kind regards, also from Prof. Seidel and Harma, I remain,

sincerely yours,

F.C. Bussemaker.

D.Cvetković 16.5.1978

Mr. F.C. Bussemaker
Eindhoven University of Technology
Department of Mathematics
POB 513
Eindhoven
The Netherlands

Dear Mr. Bussemaker,

Thank you very much for your letter of May 8, 1978.

I apologize for going back again to the question of those exceptional graphs, but I am not yet sure that you have answered my question. In your letter of November 30, 1977, you explained the following? You found 35 graphs on 6 vertices, then you extended them by one vertex and you got 171 graphs on 7 vertices. Later, you have thrown out 15 graphs on 6 vertices and 61 graphs on 7 vertices and you got graphs $A_1, A_2, \ldots, A_{20}$ and $B_1, B_2, \ldots, B_{110}$. Are you now sure that each B_j has at least one A_i as an induced subgraph? Namely, it may happen that among 15 deleted graphs on 6 vertices all subgraphs of some B_j are deleted!

My paper for Szeged is not yet ready. But I am sending herewith an excerpt of that paper in which you can see how your materil is included.

I am glad that you plan to visit Yugoslavia this Summer. Unfortunately, I should visit Mr. Doob in Canada between June 23 and August 8. My wife will also be in Canada between July 8 and August 8. If you come either earlier or later with respect to that laps of time I will be very happy to shake hands with you here.

With kind regards,

Yours sincerely

Dragoš Cvetković

D.Cvetković 16.5.1978

Prof. Dr. J. J.Seidel
Eindhoven University of Technology
Department of Mathematics
POB 513
Eindhoven
The Netherlands

Dear Mr. Seidel,

Thank you very much for your letter of May 2nd, 1978 for the enclosed material and for settling the matter with the bank. Your letter of May 4 came yesterday and I am thankful to you also for that.

The Szeged conference will be held; in the meantime you have certainly received the second communication about the Conference. Concerning our paper in the Kesthely volume, you made the corrections and you sent me a copy of the proof. A couple of months ago Dr.Babai delivered a lecture here and be told me the Kesthely proceedings would appear very soon.

I received from Bussemaker a letter and I shall write to him.

With kind regards,

Yours sincerely

Dragoš Cvetković

19.B. 1978

Prof. A.J. Schwenk
Department of Mathematics
United States Naval Academy
Annapolis, Maryland 21402

Dear Mr. Schwenk,

I have noticed in Graph Theory Newsletter your announcement of a paper on four versions of spectral graph reconstruction problem. I would appreciate very much if you would send me a preprint of that paper or explain shortly which variants of the reconstruction problem you are considering.

I shall visit Prof. M.Doob in Winnipeg in the period between June 23 and August 7 and I would ask you to send your answer there.

With kind regards

Yours sincerely

D.Cvetković

D.Cvetković 22.5.1978

Mr.M.F. Capobianco
St. John's University
300 Howard Avenue
Staten Island, New York 20301

Dear Mr. Capobianco,

Thank you very much for your letter of April 24, We shall certainly use your data in our bibliography.

Concerning my trip to America, I would certainly like to come to New York. But Mr. Boob arranged my itinerary so that I directly fly from Europe to Winnipeg and vice versa. I am happy to hear that we still could meet in Winnipeg. I shall be there between June 23 and August 7.

With kind regards

Yours sincerely

Dragoš Cvetković

1-3 Smith Lane, Apt 2A
Syracuse NY 13210
USA
May 22, 1978

Dear Professor Cvetkovic,

As I think you already know, I shall be travelling in Europe this summer. I would very much like to visit you in Belgrade.

From what I understand of your plans it appears that the most convenient time would be during the week August 19 to August 26. (I will probably be returning to Australia immediately after this). If this time was suitable I would arrive in Jugoslavia around August 13, since my wife & I hope to do some sight-seeing.

Would you please send your reply to me, care of Wilfried Imrich, Institut für Angewandte Mathematik, Montanuniversität, A-8700 Leoben. (I shall be in Leoben from about July 24 to August 7). However if you require a reply from me before July 24, then I can be reached at

c/o Mr J. Goff
163 Broadway North
Walsall WS1-2QB
West Midlands
U.K.

Yours sincerely
Chris. Godsil

C. Godsil
106 Smith Lane, Apt 2A
Syracuse NY 13210
U.S.A

usa 22c

SYRACUSE, N.Y.
PM
3 MAY

Professor D. Cvetković
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816, 11001 Beograd
YUGOSLAVIA

AEROGRAMME
VIA AIRMAIL
PAR AVION

(2) Second fold

4

Additional message area

WESTERN MICHIGAN UNIVERSITY

KALAMAZOO, MICHIGAN
49008

May 24, 1978

Dear Professor Cvetković:

As you may recall, I am working on a graph theory book with G. Chartrand and M Behzad We are currently attempting to update all references The following reference appears as indicated:

Cvetković, D.M , Doobs; M., and Sachs, H., Spectra of Graphs - a Monograph Deutscher Verlag der Wissenschaften, Berlin. To appear.

Is this correct now, or has it appeared? If this reference needs to be changed, please let me know

Thank you very much.

Sincerely,
L. Lesniak - Foster

P S I will be at Western Michigan for the next year

SIMON FRASER UNIVERSITY, BURNABY, B.C., CANADA V5A 1S6
DEPARTMENT OF MATHEMATICS; 291-3331, 291-3332

May 24th, 1978.

Dr. D. M. Cvetković ,

Elektrotehnički Fakultet

Beograd, Yugoslavia.

Dear Dr. Cvetkovic,

I am currently in the process of updating my collection of reprints. I now have reprints of your papers per the enclosed list. Would you mind mailing me any of your reprints in the general area of discrete mathematics that are not included on the list. Would you also mail me future reprints. I thank you for your help.

Sincerely yours ,

Dr. Brian Alspach

Cvetković, Dragoš M.

74. Die Zahl der Wege eines Grafen, Glasnik Matematički, 5(1970), 205-210.

75. New characterization of the cubic lattice graph, Pub. Inst. Math. (Beograd), 10(1970), 195-198.

CHANGE OF ADDRESS

We are pleased to announce that we have accepted positions at the City University of New York.

Starting September 1st, 1978, our addresses are as follows:

Christina Maria Zamfirescu
Assistant Professor
Department of Mathematics
Hunter College - City University of New York
695 Park Avenue
New York, N. Y. 10021

J. M. S. Simões-Pereira
Associate Professor
Department of Mathematics
Hunter College - City University of New York
695 Park Avenue
New York, N. Y. 10021

Sincerely

J. M. S. Simões-Pereira

Until September : Av. Afonso Henriques, 27
Coimbra - Portugal

University of Waterloo

Waterloo, Ontario, Canada
N2L 3G1

Faculty of Mathematics
Department of Combinatorics
and Optimization
519/885-1211

NOTICE OF TEMPORARY CHANGE OF ADDRESS

Between May 15 and August 31, 1978 I will be at:

Bell Laboratories,
Room WB1G306,
Holmdel, NJ 07733,
U.S.A.

Tel. (201) 229-6850 ext. 2144

After that, I will be spending a year (as of September 15, 1978) at:

Université Scientifique et Médicale,
Mathématiques Appliquées - Informatique,
B.P. 53 Centre de Tri,
38041 Grenoble Cedex,
France.

Tel. 76 54 81 45 ext. or ext. 466
or 76 42 11 98.

Please continue to send every correspondence regarding Discrete Mathematics to my Waterloo address but any other correspondence directly to me.

Yours sincerely,

Peter L. Hammer

PLH/ms

9.6.1978

Prof. L. Lesniak- Foster
Western Michigan University
Kalamazoo, Michigan 49008

Dear Mrs. Lesniak- Foster,

Thank you for your letter of May 24. Your data about our monograph is correct except for the name of the second author. He is M.Doob and not Doobs. The book is in the press and is scheduled to come out at the beginning of the next year.

I am wondering what is your book about.

Between June 23 and August 7 I shall be visiting the University of Mintoba, Winnipeg, Canada (i.e. Professor M.Doob).

With kind regards

Yours sincerely

D.Cvetković

9.6.1978

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY OF BELGRADE
BULEVAR REVOLUCIJE, 73
P.O. Box 816
11001 BELGRADE — YUGOSLAVIA

Dr. Brian Alspach
Simon Fraser University
Department of Mathematics
Burnaby, B.C. Canada

Dear Dr. Alspach,

Thank you very much for your letter of May 24 and for your interest in my papers. I thought it is the best to send you the list of my papers (and books), which is enclosed in this letter. For the majority of papers in English and German I have got the reprints. If you are interested in some papers more than in the others, please let me know the corresponding numbers and I shall send you them, if possible.

Please reply immediately, since I am leaving for Canada on June 23. I shall be visiting the University of Manitoba (Professor M.Doob) till August 7, 1978.

Yours sincerely

D. Cvetković

D.Cvetković

Dear Dr Cvetković:
Thank you for the list. Would you please send me #6, 12, 18, 19, 23, 24, 25, 36, 41, 47 in JCT, 57
Say hello to Mike Doob for me

Brian Alspach

9.6.1978

Dr. Brian Alspach
Simon Fraser University
Department of Mathematics
Burnaby, B.C. Canada

Dear Dr. Alspach,

Thank you very much for your letter of May 24 and for your interest in my papers. I thought it is the best to send you the list of my papers (and books), which is enclosed in this letter. For the majority of papers in English and German I have got the reprints. If you are interested in some papers more than in the others, please let me know the corresponding numbers and I shall send you them, if possible.

Please reply immediately, since I am leaving for Canada on June 23. I shall be visiting the University of Monitoba (Professor M.Doob) till August 7, 1978.

Yours sincerely

D.Cvetković

Institut für Angewandte Mathematik
Montanuniversität Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1978-06-12

Prof. Dr. Dragos M. Cvetkovic
Department of Mathematics
Faculty of Electrical Engineering
University of Beograde
P.O. Box 816
YU- 11.001 Beograd

Sehr geehrter Herr Professor Cvetkovic !

Die mathematischen Institute der Universität und der Technischen Universität Graz veranstalten alljährlich das Steiermärkische Mathematische Symposium in Stift Rein bei Graz. Die diesjährige Tagung ist der Algebraischen Graphentheorie sowie ihren Anwendungen gewidmet und wird vom 25. bis 28. September 1978 stattfinden.

Ich erlaube mir, Sie herzlichst dazu einzuladen an dieser Tagung einen dreistündigen Vortrag über ein Thema Ihrer Wahl zu halten.

Es sollte sich um einen für Mathematiker mit mittlerem Ausbildungsniveau verständlichen Übersichtsvortrag über ein Teilgebiet der Angewandten Graphentheorie handeln. Der Zuhörerkreis besteht aus absolvierten Mathematikern, Studenten im Dissertationsstadium und vielleicht auch einigen Chemikern oder Physikern.

Es ist ein bescheidenes Vortragshonorar sowie der Ersatz der Aufenthaltskosten und der Reisekosten vorgesehen.

Wir würden uns sehr freuen, wenn es Ihnen möglich wäre die Einladung anzunehmen.

Mit vielen Grüßen

W. Imrich

Wilfried Imrich

P.S.: Gutman und Balaban haben bereits zugesagt.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetkovic
Lamartinova 44
11000 Beograd
Yugoslavia

Eindhoven, 19th June 1978

Dear Mr. Cvethovic,

Thank you very much for your letter of May 16.
Concerning the question of the exceptional graphs I first did not see what was the trouble but since your last letter, it is now clear to me. I put the problem on the computer. The results of the machine are that indeed each B_j has at last one A_i as an induced subgraph, and each C_k has at least one B_j as an induced subgraph. If you want to, I can send the output of the machine from which you can see an induced A_i for each B_j and an induced B_j for each C_k.
Thank you for the excerpt of your paper for Szeged. If that paper is ready, can I get one copy from that paper?
It is a pity that our holiday is fixed. So we cannot meet you in Yougoslavia. We then decided to go to Yougoslavia in another year, and this year we will spend our holidays in Germany and Austria.
Please send my greetings to Mr. Doob.
I hope you and your wife will have a good time in Canada.
With kind regards, also of Prof. Seidel and Harma, I remain

sincerely yours

F.C. Bussemaker

Beograd, 1978, June 22

Dear Mr. Godsil,

Thank you very much for your letter of May 22. I am glad that you will come to Yugoslavia this summer and I am looking forward at meeting you in Belgrade during the week August 19 to August 26. Please, let me know in which way you plan to arrive. For further correspondence you should use my home address:

D. Vetkorić, Lamartinova 44,
11000 Beograd, Yugoslavia.

Telephone number at home is 437-263 in Beograd and 011-437-263 outside.

I shall return from Canada on August 8 and shall be in Belgrade only a couple of days. The week August 12 to August 19 I shall spend on the seaside. On August 19 in the evening I should be in Belgrade.

Incidentally, if you will be driving a car from Austria along the Adriatic cost towards Belgrade, you could stop by at the place where me and my family will be between August 12 and August 19. The place is called UMAG and is at the very word of Croatian

cost. We booked apartments "SAMOA" in the campus "POLINEZIJA" somewhere outside Umag.

With kind regards

Yours sincerely

Dragoš Ivekrić

Beograd, 1978, June 22

Dear Professor Jurich,

Thank you very much for your letter of June 12 with the kind invitation to 10. Steiermärkisches Mathematisches Symposium. I accept with great pleasure this invitation and will speak, as you proposed, on spectre of graphs. I would point out those parts which have applications in chemistry, physics and other branches of science.

In August or in September I will be able to inform you about my lecture with more details.

With kind regards

Yours sincerely
Dragoš Cvetković

Beograd, 1978, June 22

Dear Mr. Zurich,

Excuse me for this hand written letter. Our typist is absent today and I am leaving for Canada tomorrow. I shall visit Prof. M. Doob and my address will be:

The University of Manitoba, Department of Mathematics and Astronomy, Winnipeg, Manitoba, Canada, R3T 2N2,

till August 7.

Enclosed find my answer to your kind invitation and a letter for Mr. Godsil. Read this letter and decide whether you will send him it immediately or just wait till he comes to you.

With kind regards

Yours sincerely

Dragoš Cvetković

University of Waterloo

Waterloo, Ontario, Canada
N2L 3G1

Faculty of Mathematics
Department of Pure Mathematics
519/885-1211

5 juli 1978

Dragi kolega Cvetkoviću:

Vidim da ćete i vi ići na konferenciju u Segedinu krajem avgusta meseca. Pošto ću i ja skiću u Beograd 23-eg avgusta pade mi na pamet da bi možda mogli ići zajedno iz Beograda za Segedin. Tu će biti i još jedan moj kolega U.S.R. Murty i mi ćemo verovatno ići zajedno. Ukoliko vi nemate drugih planova i ako ste saglasni javite mi šta o tome mislite.

Ja ću prvo ići u Helsinki a zatim u Beograd; posle konfesencije u Segedinu opet se vraćam za Beograd gde ću ostati do 7-og Septembra. Ako i vi dolazite u Helsinki, ja ću vas potražiti tamo.

Pozdravite ostale kolege na fakultetu a posebno prof. Mitrinovića i Mihailovića.

Srdačan pozdrav,

D. Ž. Đoković.

July 6, 1978

Professor M.F. Capobianco,
St. John's University,
300 Howard Avenue,
Staton Island, New York 10307
U.S.A.

Dear Professor Capobianco:

Please find enclosed herewith a copy of our bibliography on graph equations. Any comments would be greatly appreciated.

Concerning our possible meeting, it seems that the things with visas cannot be settled and so I cannot come to New York although I wanted to. It would be very nice if you can come here. I shall be here until August 7 but I shall likely visit other places in Canada during my stay. Possible dates of you coming here could be arranged by correspondence.

King regards,

Yours sincerely,

DC/bp

Dragoš Cvetković

Reading, 12/7/1978

Poštovani profesore,

Tek sada stižem da vam se javljam. Nisam uspeo da pronađem i završim svoj članak 'Minimal planar cyclic graphs'. Tokom godine vam bio nekako veoma zauzet u školi, a posle toga nisam uspeo da mu nađem dovoljno slobodnog. To što vam sada šaljem je tek jedno peto ili šesto verzija od one poslednje od septembra.

Dobio sam pismo L. Babaia, sa dokazom jedne hipoteze pa sam dosta promenio moju verziju.

Na kraju (str. 9) spominjem pismo Quindera i njegov članak svoj je napisao pošto i jednim matematičarom. Pošto sam zaboravio ime ovog poslednjeg bih vas molio da mi to napišete.

Sad mi želite pisati onda mi pišite na kućnu adresu (GLAGOLJAŠKA 1c, 6600 KOPER). Tamo ću biti od sredine jula do 25. avgusta (sad odlazim

na Medicinu. Kao što sam saznao i ni cele
listi bismo se li se u dom primem mogli bismo
da povezgovaramo.

Sa poštovanjem

Dragan Ilanović

19-7-1978

Dear Dr. Dragoš Cvetković and
Dr. Slobodan Simić,

Thank you very much for your letter dated 6-4-1978. I came here in April 1978 and so I could not write to you earlier.

I have not worked on graph equations. one of my former students Dr. Ranjan Naik, Dept of maths, University of Bombay, kalina, BOMBAY has worked on graph equations. Hope you are in touch with him. If you have written a survey paper on Graph equations, I shall be grateful if you can send to you me the same.

Shortly I will be sending some of my reprints to you.

With kind regards

Yours Sincerely
E. Sampathkumar

From
E. SAMPATHKUMAR
POST BOX 637
EL-BEIDA, LIBYA (North Africa).

بالبريد الجوى
BY AIR MAIL

رسالة جوية مطوية
AEROGRAMME

Dr. Dragoš Cvetković
Dept of MATHEMATICS
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY of BEOGRAD
P.O.Box 816, 11001 BEOGRAD
YUGOSLAVIA

إغلاق الرسالة

Sender's name and address إسم وعنوان المرسل
E. SAMPATHKUMAR
POST BOX 637
EL-BEIDA
LIBYA (North Africa)

إذا وضع أى شئ بداخل هذه الرسالة
فانها ترسل بالبريد العادى.

IF ANYTHING IS ENCLOSED THIS LETTER
WILL BE SENT BY ORDINARY MAIL

Leoben
31.7.78

Dear Professor Loetkovic,

I am writing to tell you that we will be arriving in Belgrade by train on August 20 (not August 19). The train is scheduled to arrive at 13.55, we will be boarding it at Zagreb.

Yours sincerely
Chris. Godsil

AEROGRAMME

D. Cvetković
Lamartinova 44
11000 Beograd

(Bestimmungsort – Lieu de destination)

YUGOSLAVIA
(Bestimmungsland – Pays de destination)

AUSTRIA

NICHTS EINSCHLIESSEN, SONST KEINE BEHANDLUNG ALS AEROGRAMM

Absender – Expéditeur:

C. Godsil
Inst. Applied Math, Montanuniversität
A-8700 LEOBEN
Postleitzahl
Code postal
AUSTRIA

H. B. Walikar,
Dept. of mathematics,
Karnatak University,
Dharwar-580003.
India.

10th, August, 1978

Dear Sir,

I will highly appreciate, if you send the reprints of the following papers:

(1) Graph equations of a Line graph and Total graph,
(2) Graph equations of a Line graphs, middle graph and Total graph and
(3) A Survey article on graph equations.

I am very much need of the Survey article. Please send me as possible as earlier.

Thanking you Sir,

Sincerely yours

(H. B. Walikar)

हवाई पत्र
Aerogramme

भारत INDIA 160

To

Prof. DRAGOŠ. M. CVETKOVIC'

FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITY OF BELGRADE,

BELGRADE, YUGOSLOVIA.

दूसरा मोड़ SECOND FOLD

भेजने वाले का नाम और पता:-
Sender's Name and Address:-

H. B. Walikar,
Dept. of mathematics,
Karnatak University,
Dharwar-580003.
(India)

इस पत्र के अन्दर कुछ न रखिये
No Enclosures Allowed

TECHNISCHE HOCHSCHULE ILMENAU

Sektion Mathematik, Rechentechnik und ökonomische Kybernetik

Herrn
Dr. D. M. Cvetković
Universität Belgrad
Fakultät für Elektrotechnik
Institut für Mathematik

YU - 11000 B e o g r a d

Jugoslawien

16. Aug. 1978

Sehr geehrter Herr Dr. Cvetković!

Wir erlauben uns, Ihnen ein Exemplar der

"Beiträge zur Graphentheorie und deren Anwendungen"

(Vortragsauszüge vom Kolloquium in Oberhof, 1977) sowie die entsprechenden Sonderdrucke für den von Ihnen gehaltenen Vortrag kostenlos zuzuschicken.

Werden von Ihnen noch zusätzliche Exemplare gewünscht, so können Sie diese zu einem

Stückpreis von 24,50 Mark

von uns erhalten.

Walther

Doz. Dr. H. Walther

Drahtwort: TH Ilmenau | Fernruf: Ilmenau 740 App. ..... | Bank: Staatsbank der DDR, Kreisfiliale Ilmenau 4761–22–12703 2 Postscheckkonto Erfurt 134 50 | Fernschreiber: Teha Ilm 62 84 23

D.Cvetković 3.9.1978

Prof. W. Imrich
Institut für Mathematik
Montanistische Hochschule
A - 8700 Leoben, Austria

Dear Mr. Imrich,

Unfortunately my wife cannot come to Austria this September. I shall come very likely by train to Graz on Sunday, September 24, at 18.58 together with Gutman. If you do not find me at the railway station, I shall get to the Conference place at my own.

Yours sincerely

Dragoš Cvetković

D.Cvetković

3.8.78

Susan D´Amato
Department of Chemistry
University of South Carolina
Columbia, South Carolina 29208
USA

Dear Mrs. D´Amato,

Due to Summer trips I am only now in a position to meet your request for reprints of July 18 and 26. By a separate mail I am sending you the reprints you wanted. In the paper "Graphs and their spectra" you can find early references on cospectral graphs. Concerning further references, I would draw your attention to the forthcoming monograph "Spectra of graphs" written by M. Doob, H. Sachs and myself. The book should come out in March next year and the Publishers are Deutcher Verlag der Wissenschaften, Berlin (GDR) and Academic Press.

If I can help you with any further information, please feel free to write to me again.

Yours sincerely

Dragoš Cvetković

D.Cvetković 7.9.78

Prof. A.J. Hoffman
Thomas J. Watson Research Center
POB 218
Yorktown Heights, N.Y. 10598

Dear Mr. Hoffman,

Please find enclosed herewith five pages from the bibliography of our book on graph spectra. They include your papers and I would ask you most kindly to check the correctness and the completeness of the data. The book is now in print but we shall have soon an occasion (in proof reading) to change something or add something. Please, add the necessary things or comment just on these sheets and retunn them back. The most recent papers will be displayed on an additional list and therefore the date (and preprints) of any recent paper on graph spectra of yours (or your colleagues or students) would be wellcome.

By the way, I would ask you about my joint paper with Michael Doob entitled "ON spectral characterizations and embeddings of graphs" which we have submitted to Linear Algebra and Appl. Is it accepted or do you have any other news about it?

Thanking you in advance for your kindness, I remain,

Yours sincerely

Dragoš Cvetković

D.Cvetković

8.9.78

Prof. J.H. van Lint
Department of Mathematics
Technological University Eindhoven
POB 513
Eidenhoven, The Netherlands

Dear Mr. van LInt,

I hope that Mr. Seidel has already given you a bibliography on graph equations which I had given to him for you in Hungary. I have marked there those papers which are relevant to the graph equation L(G) = G. Mr. Simić and I had an intention to comment John Hall's problem in more detail, but unfortunately we had no time to do that. However, we would be interested in material you received from the readers about that problem and if it is available we would appreciate very much receiving it. Of course, if everything will be published soon, it is not necessary to send us it before.

Please find enclosed herewith a survey article on graph equations which could be at some use for you.

With kind regards,

Yours sincerely

Dragoš Cvetković

D.Cvetković 8.9.78

Prof. E. Sampathkumar
POB 637
El-Beida,Libya (North Africa)

Dear Mr. Sampathkumar,

Thank you very much for your letter of July 19, 1978 as well as for your mail containing reprints. Due to Summer trips I am only now in a position to reply.

Please find enclosed herewith a copy of the survey article on graph equations you wanted. If you are familiar with some other results on graph equations not mentioned in that article, please let me know them.

With kind regards

Yours sincerely

Dragoš Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D.M. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, September 8, 1978.

Dear Dragos,

Van Lint saw your literature about line graphs. He found out that the whole problem was treated in

B.L. Schwartz, On interchange graphs, Pac.J.Math. 27 (1968), 393 - 396.

This article is missing in your bibliography!

My wife was delighted with the cook book, but she did not yet try it out on me.

Greetings from house to house,

Seidel

J.J. Seidel.

J-C. Bermond – M-C. Heydemann
UNIVERSITÉ DE PARIS-SUD
CENTRE D'ORSAY
LABORATOIRE DE RECHERCHE
EN INFORMATIQUE

Bâtiment 490 - 91405 ORSAY Cédex
Tél. 941.66.29

ORSAY, le September 11, 1978

Dear M² Gerkovič,

We will be very pleased to receive the article of your lecture in Szeged (some possible directions in further investigations of graph spectra) and also your last article.

We join you some papers on line graphs which are related to graph equations.

With kind regards.

Yours sincerely

J.C. Ber C. Heydemann

P.S: Excuse me to have not answered to your letter for a bibliography on graph equations: except the article with J-C. Meyer that I join you again, I think my other papers are not related to the subject.

J.C.B.

P.S: I give my new personal address:

M.C. Heydemann
6 Avenue de la Gare
78470 SAINT-RÉMY-LES-CHEVREUSE

M Claude

UNIWERSYTET M. KOPERNIKA
INSTYTUT MATEMATYKI
ul. Chopina 12/18
87-100 Toruń, Roland
Jerzy Topp

Dear Professor

I should greatly appreciate receiving a reprint of your paper entitled "Graphs and their spectra"/ Thesis, University of Belgrade/.

I should also be glad to receive any other reprints or preprints on the same subject wich you may have available.

Thank you in advance.

Toruń, September 12. 1978

Sincerely yours

Topp

copy: Dr Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Mr. M.B. Knežević
č. Minderovića 2/7
11030 BEOGRAD
Yugoslavia.

Eindhoven, September 11, 1978.

Dear Mr. Knežević,

I received your letter and enclosures d.d. August 1978. You ask my opinion about your work. Well, I think that you should study the achievements which have been obtained by several mathematicians, and that you should obtain some knowledge of the existing literature. For the first purpose there is an excellent book:

P.J. Cameron, Parallelisms of complete designs, London Math. Soc. Lecture Note Series, 23 (1976), Cambridge University Press.

This little book (140 pages in a cheap series) provides a good introduction to the matters which interest you, but it is by no means an easy book.

Another useful little booklet might be:

Th. Beth, On resolutions of Steiner systems, Arbeitsberichte des Instituts für Informatik, 11 no. 4 (1978), Universität Erlangen, Martenstrasse 3, 8520 Erlangen, West-Deutschland.

To illustrate your lack of knowledge of the literature, I enclose a paper by Lindner and Rosa about 3-(16, 4, 1) designs. The easiest example for such a design is provided by the planes of the affine 4-dimensional geometry over the binary field.

It seems to me that if you want to continue your researches (and it may very well be that certain algorithms useful for the computer are hidden in your thoughts), that you should study the literature referred to above.

Sincerely yours,

Prof.dr. J.J. Seidel.

Enclosure.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Faculty of Electrical Engineering
University of Belgrade
Bulevar Revolucije, 73
P.O. Box 816
11001 BELGRADE
Yugoslavia.

Eindhoven, September 13, 1978.

Dear Cvetković,

Thank you for your letter of 8-9-1978 and the reprint. Seidel has shown me your bibliography and it was quite useful for me. Actually it helped me to find a paper which is not in your list but which I believe will interest you:

B.L. Schwartz, On interchange graphs, Pacific J. of Math. 27 (1968).

This paper gives the solution to Jon Hall's problem. No correct solution was submitted to Nieuw Archief so this is the only information I can send you. I could not look up your reference [48] since we do not have the journal before 1968.

Regards to your wife and son.

With best wishes,

J.H. van Lint.

19.9.78

Prof. J.A. Bondy
Faculty of Mathematics
University of Waterloo
Waterloo, Ontario
Canada N2L 3G1

Dear Professor Bondy,

Due to Summer trips I am now in a position only to answer your letters.

Thank you for your letter of August 15 with a paper by A.J. Schwenk. I hope I shall be able to send you the referee report in a reasonable time.

I few days ago I sent you some reprints and some data about my papers for you bibliography.

Yours sincerely

Dragoš Cvetković

10. STEIERMÄRKISCHES MATHEMATISCHES SYMPOSIUM

Stift Rein bei Graz

25. - 28. September 1978

Algebraische Graphentheorie und ihre Anwendungen

Anwendungen in der Chemie

Prof. Dr. A.T. Balaban, Bukarest: Konstitutions- und Reaktionsgraphen

Doz. Dr. D. Cvetkovic, Belgrad: Spektren von Graphen

Dr. I. Gutman, Kragujevac: Über die Energie von Graphen

Numerische und Angewandte Mathematik

Prof. Dr. G. Baron, Wien: Graphentheoretische Verfahren in der Numerischen und in der Angewandten Mathematik

Algebraische Anwendungen, insbesondere in der Gruppentheorie

Dr. A.D. Gardiner, Birmingham: Abstandstransitive Graphen

Prof. Dr. G. Sabidussi, Montreal: Algebraische Graphentheorie

Dr. R. Weiss, Berlin: Sehr symmetrische Graphen

D.Cvetković 29.9.78

Mr. R.C. Bose
Colorado State University
Department of Mathematics
Fort Collins, Colorado
80523 USA

Dear Professor Bose,

As you told me in Szeged, your student R. Miskimins had weakened the conditions in previous characterization of the cubic lattice graph (of yours and R. Laskar). I would appreciate very much if you could send me his work since I was also once interested in that problem. (As you probably know I have also weakened these conditions in the paper New characterizations of the cubic lattice graph, Publ. Inst. Mat. (Beograd), 1o(24) (1970), 195- 198).

Thanking you in advance,

Yours sincerely

Dragoš Cvetković

D.Cvetković 2.1o.1978

Mr. J. Topp
Universitet M. Kopenika
87-1oo Torun

Dear Mr. Topp,

By a separate mail I am sending you my paper "Graphs and their spectra". Please find enclosed herewith a list of my papers. If you are interested in some particular papers please let me know the corresponding numbers and I shall send you then the reprints.

Yours sincerely

D.Cvetković

Koper, 2.10.1978

Dragi kolega Cvetković,

Šaljem Vam crteže na papiru. Crteže za druge slike (t.j. Fig. 2) ne izrađujem ofsetnim putem nego ručno. Ako Vam je prihvatljivo ne bi želio da je prihvatljivo ne bi želio. Rok koji odgovara do 11/10 za onda odlazim za Englesku. Moja adresa tamo je:

MATHMATICS DEPARTMENT
UNIVERSITY OF READING
WHITEKNIGHTS AREA
READING RG6 2AX
ENGLAND

Olakšate mi malo ako mi Vi sada dopodi u vezi sa tim Conlonom. Pored toga bih vas molio za fotokopiju one slike o "spektru i grupi automorfizama" o kojoj smo razgovarali na putu iz Segeda te (ako možete) još za jedan kompjuterski program iz Segeda.

Sa prijateljskim

Dragan Marušič

Clarkson

Department of Mathematics and
Computer Science

October 3, 1978

Dr. D.M. Cvetković
Fac. of Electrical Engineering
University of Belgrade
Bulevar Revolucije, 73
P.O. Box 816
11001 Belgrade
Yugoslavia

Dear Dr. Cvetković:

I am beginning a study of algebraic graph theory, and I would be most grateful if you would send me copies of the following articles.

1. Graphs and their spectra.
2. Cubic integral graphs.
3. Spectra of graphs formed by some unary operations.
4. Conjugated molecules having integral graph spectra.

Your collaborator, Dr. F.C. Bussemaker, has kindly supplied me with the article, "There are exactly 13 cubic integral graphs," and your address.

I thank you in advance for your cooperation.

Sincerely,

David Powers

David Powers

jhd

10.4.1978

M. Borowiecki
The Institute of Mathematics and
Physics of the College of Engineering
in Zielona Gora
Zielona Gora, Poland

Dear Mr. Borowiecki,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards

Yours sincerely

Dragoš Cvetković

Slobodan Simić

7.4.78

Mr.M.Doob
The University of Manitoba
Department of Mathematics
and Astronomy
Winnipeg Canada
R3T 2N2

Dear Mr. Doob,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.1978

Mr. R.L. Hemminger
Vanderbilt University
Department of Mathematics
Nashville, Tennessee 37235

Dear Mr. Hemminger,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much of you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance

With kind regards

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.78

Mr. C.F. Capobianco
St. John's University
300 Howard Avenue
Staten Islands
New York, 10301

Dear Mr. Capobianco,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.1978

Dr.M.R. Sridharan
Department of Mathematics
I.I.T.Kanpur 208016
India

Dear Dr. Sridharan,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible; otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slo-odan Simić

6.4.1978

Mr. Ranjan N. Naik
Department of Mathematics
University Campus at Kole Kalyan
C.S.R. Road (Kalina)
Santacrus (East)
Bombay 29 AS (INdia)

Dear Mr. Naik,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.78

Mr. N.S. Annigeri
Department of Mathematics
Karnatak University P.G. Centre
Gulbarga 585105
India

Dear Mr. Annigeri,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Slobodan Simić

Dragoš Cvetković

D.Cvetković

6.4.1978

Dr. V.R. Kulli
Department of Mathematics
Karnatak University
Post Graduate Centre
Gulbarga 585105
India

Dear Dr. Kulli,

We are just preparing an extensive bibliography on graph equations. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

6.4.1978

Dr.E. Sampathkumar
Department of Mathematics
Karnatak University
Dharwar 580003
India

Dear Dr. Sampathkumar,

We are justpreparing an extensive bibliography on graph equation. Since you were interested in this topic, we would appreciate very much if you could inform us about the most recent papers of yours (or of your colleagues) on graph equations. We would like to have reprints or preprints of your papers if possible: otherwise, please provide us with complete data about your papers (authors, place and stage of publication, short abstracts).

Thanking you in advance,

With kind regards,

Yours sincerely

Dragoš Cvetković

Slobodan Simić

UNIVERSITÄT HAMBURG

J. M. S. Simões-Pereira

Mathematisches Seminar
2 Hamburg 13, Bundesstraße 55

MATHEMATISCHES SEMINAR

Herrn D. M. Cvetkovic
Faculty of Elect. Eng.
Lamartinova 44
11000 BEOGRAD, Jugoslawien

Fernsprecher: 41 23 - 5194 } Durchwahl
Behördennetz: 9.09 (")
Telex-Nr.: 2 14732

Datum und Zeichen Ihres Schreibens | Aktenzeichen (bei Antwort bitte angeben.) | Datum Jan. 13, 1977

Betreff

Dear Dr. Cvetkovic.

Please send to me, if possible, a reprint of your paper

Spectrum of the total graph of ...

Publ. Inst. Math. (Beograd) 16 (1973), 95-92.

and also reprints of other items on graphs.

Yours truly

J. M. S. Simões-Pereira

P.S. And your right address!!!

INSTITUT »RUĐER BOŠKOVIĆ«
41001 ZAGREB — JUGOSLAVIJA
Bijenička c. 54 - Poštanski pretinac 1016
Telefoni: 38-541, 38-542, 38-543, 38-544, 424-355
Telex: 21383
Telegrami: INSTRUBO, Zagreb

Broj:

Zagreb, 20. siječnja 1977.

Dragi Dr. Cvetković,
Primio sam Vaš telegram i otkazao predavanje, što nije prošlo bez problema jer su već bili poslani pozivi. Ipak, veselit će nas ako budete mogli mogli održati ovo predavanje u proljeće. Žao mi je što se ovaj put nismo mogli vidjeti u Beogradu; ja sam se u utorak poslovnim vlakom vratio u Zagreb.
Do susreta u proljeće srdačno Vas pozdravlja

Ante

Ante Graovac.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Professor D. Cvetković
Lamartinova 44
11000 Beograd
Yugoslavia.

Eindhoven, January 20th 1977.

Dear Professor Cvetković,

Professor Seidel suggested that you are the ideal person to referee the enclosed paper,

"The number of edge-sequences of digraphs expressed by eigenvalues of the adjacency matrix"

by John Einbu, which he wants me to communicate to Journal of Combinatorial Theory (B).

In particular his work seems to be connected with your paper "The generating function for variations with restrictions and paths of the graph and self-complementary graphs" (1970).

You would certainly oblige me very much if you could referee this paper. If you cannot do this within a month or so, please feel free to refuse.

Yours sincerely,

N.G. de Bruijn.

»RUĐER BOŠKOVIĆ« INSTITUTE
41001 Zagreb, Croatia, Yugoslavia

POB 1016
PHONE: (041) 424-355
TELEX: 21-383

Samobor, 24.1.1977.

Dragi Dragoš

Šaljem Ti rezultate koje sam postigao u vezi našeg zajedničkog problema. Pre svega, smatram da pristup preko matrice A^{-1} nije najcelishodniji, tako da sam to ostavio za sam kraj, a kao osnovnu uzimam definiciju da su dva čvora p i q u grafu f(G) povezana onda i samo onda ako graf G-p-q ima 1-faktor. To je potpuno opšta definicija.

Čini mi se da bismo f(G) mogli nazvati "faktor graf grafa G". Šta Ti misliš o tome?

Dokaze, ako sam ih uopšte i naveo, sam samo skicirao. Oni su svi prilično jednostavni. Ako bismo od ovog materijala hteli da napravimo publikaciju, svakako da bismo i teoreme i dokaze formulisali na pogodniji način.

U svakom slučaju nadam se da će materijal koji šaljem poslužiti kao osnova za našu dalju saradnju.

Srdačni pozdravi

Ivan

Драги професоре,

Завршио сам семинарски рад на тему „Производ са K_2". Питање ми гласи да ли тема существује још и даље рад да предам на факултет.

Имам идеју коју сам користио при решавању карактеризације K_1G може се користити за две основне операције. Да ли да радим на тој теми?

Примећујем да ја (као и) врло интересантну особину производа (конјугује):

Ако G_1 и G_2 имају по n чворова тада су оне изоморфне ако и само ако граф $G = (G_1 \wedge G_2) \vee (\bar{G}_1 \wedge \bar{G}_2)$ има једнозначно изоморфан са K_n.

Чак више: у графу G могуће подграфове сви антиморфизми G_1 према G_2 ако су изоморфни. Доказ је као (идеја исто једно) у овој карактеризацији.

Ове ствари нисам у стању да изведем. По Волкеву (али моли се професоре енглеског и немачког језика али се нико не усуђује да преведе).

Връзка ми се изгуби да
се консултирам нека намерим
карта да решаваме проблеми с
нея офиса. Пишете ми колко
е тло време.

Пуно поздрави
Цветелин Владимиров

VANDERBILT UNIVERSITY
NASHVILLE, TENNESSEE 37235
TELEPHONE (615) 322-7311
Department of Mathematics • Direct phone 322-6672

January 27, 1977

Dear Prof. Cvetkovic

Lowell Beineke and Robin Wilson are editing a graph theory book that will treat several topics in graph theory at a greater depth than is normal in textbooks. Lowell and I are writing the chapter concerned with the line graph and the line digraph. Attached you will find my first attempt at a complete bibliography on these two subjects. Will you see if the listings of your publications are correct and complete? I am especially interested in learning of articles dealing with these subjects that are missing from the bibliography.

While the material in the book will not cover all of the topics represented in this bibliography, I hope to publish the final version of the bibliography somewhere (perhaps in the Graph Theory Newsletter) so as to benefit us all.

The deadlines for the book are in the Spring (rough drafts) and Summer (final versions) so a prompt response will be very much appreciated.

I have put an asterik (*) beside each entry for which I have a reprint (or preprint). Would you please send me copies of your papers that I do not have?

Sincerely yours,

Bob

Robert L. Hemminger

RLH:ljt

P.S. The complete bibliography is following by surface mail. I would greatly appreciate your sharing it (if possible) with Prof. Simić since the expense of mailing it to everyone in the bibliography was too great. However, I have enclosed your individual entries and would greatly appreciate knowing of errors and additions (or deletions) and receiving missing reprints.

Thank you

Bob

Драги професоре

Данас сам Вам послао рефе. које сам Вам обећао прошле недеље.

После сусрета са Вама ишао сам на ПМФ али нисам успео да нађем Журнал Полске Академије наука. Реферативни ружнички сам почео али не видим везу ових радова са онима којим ћемо се позабавити. Молим Вас да потражите Реф. журнал (1B259 и 1B546) 7 или 71. У Београду ћу даћу усмено детаљније што ћу Вам јавити телефоном.

Пуно поздрава

Ваш Владимир

D. Cvetkovic.

This paper may be interesting for you!
with kindest regards

Marcel Post.

D.Cvetković

4.2.1977

Prof. W.T. Tutte
University of Waterloo
Department of Combinatorics,
and Optimization
Waterloo, Ontario, Canada

Dear Professor Tutte,

I would appreciate very much if you would send me your Research Report CORR 76-37 entitled

"All the king's horses"

Yours sincerely

D Cvetković

9.2.1977

Prof. Dr.J.J. Seidel
Technological University Eidenhoven
Department of Mathematics
PO B 513
Eindhoven,
The Netherlands

Dear Professor Seidel,

As I already mentioned to you, during last term, I have written the lecture notes on "D$screte mathematical structures" for computer science students (sets, relations, logic, algebra, combinatorics, including something from graph theory, coding theory, block designs, projective planes, etc). Now I shall apply for publishing these notes as a proper book.

I have an idea to include as an appendix to that book a Serbian translation of your article "The mathematical education of engineers, and the education of mathematical engineers" in the Netherlands. I would ask you most kindly to give the permition for such a publication. (provided the book would be really published). Of course, you would have some fees (not too high).

With kind regards,

Yours sincerely

D.Cvetković

9.2.1977

Prof. Dr.J.H. van Lint
Technological University Eidenhoven
Department of Mathematics
PO B 513
Eindhoven
The Netherlands

Dear Professor van Lint,

Thank you very much for sending me a copy of your paper "Codes and designs".

Concerning the problem of determining the graph whose complement and line graph are isomorphic, please find enclosed a paper of my student S.K. Simić. The solutions of the problem are given on Fig. 1 and that is a result of M. Aigner /3/. Mr. Simić has generalized Aiger's result (see Theorem on p. 43).

If you think it would be useful, please forward this information to the editors of Nieuw Arch. v. Wisk.

With kind regards,

Yours sincerely

D.Cvetković

11.2. 1977

Robert L. Hemminger
Vanderbilt University
Nashville, Tennessee 37235
Department of Mathematics

Dear Professor Hemminger,

Thank you very much for your letter of 27.1.1977.

I am sending you back the listings of Simić's and my papers with little additions and deletions.

Please find enclosed herewith the new paper of us dealing with line graphs. Also you can include in your biliography the paper:

F.C. Bussemaker: D.M. Cvetković,J.J. Seidel, Graphs related to exceptional root systems, Proc. V Hungarian Colloquium Comb. (in print).

With kind regards,

Yours sincerely

D.Cvetković

D.Cvetković

14.2.1977

Prof. Dr.N.G. de Bruijn
Technological University Eindhoven
Department of Mathematics
PO B 513
Eindhoven, The Netherlands

Dear Professor de Bruijn,

Thank you very much for your letter of 20.1.1977 containing the paper of J.M. Einbu.

I am sending back to you the paper together with the referee-report for it and some relevant papers.

With the kind regards,

Yours sincerely

D.Cvetković

On graph equations:

NW Arch v Wisk. 25 (1977) #1 (to appear)

Problem 459 by M R Best:

Determine all graphs whose complement and line graph are isomorphic.

Leo Versloot

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Eindhoven, February 17, 1977

Dear Dragos,

At last my travel plans are becoming clearer. As things stand now, we will travel by auto from Eindhoven to Athens in the latter part of March. In particular, we could arrive in Belgrade the evening of March 23 and leave on the morning of March 27. Is that good timing for you? If it is, could you reserve hotel accomodations for us? We need beds for three people (we have a special travelling crib for Brian and hence we need no bed for him). If these dates are not good for you, I can pass through Belgrade on our way back to Eindhoven at the end of April.

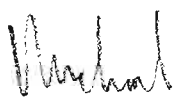
I received a letter from Sachs which indicated (I think) that he does not expect to be finished with his part of the book until next summer. Is he still feeling healthy? I know he was recently ill, but from his earlier letter I thought he had recovered.

I have been busy here as I can guess you can imagine. Among other things I have been looking into the structure of E_8 in some detail to better understand the exceptional graphs. I think that I have a better understanding of E_8 but I still have a long way to go with the graphs. We'll talk about it when we meet again.

It is very wet but very warm here. It's quite a contrast with Canada which is very cold but very dry. We do enjoy living here in the Netherlands, though.

I hope you are all well. Judy and I look forward to meeting you and your family again.

Sincerely yours,



D.Cvetković 23.2.1977

Dr. M. Doob
Eindhoven University of Technology
Department of Mathematics
PO B 513
Eindhoven,
The Netherlands

Dear Michael,

Thank you for your letter of February 17. Your proposal for coming to Belgrade is quite good for me, which in no case means that you cannot stop by again in Belgrade on your way back.You can have a double room (in the hotel where Prof. Seidel was) for about 270 dinars a day and thee bed room for about 400. (1 guilder is now about 7,3 dinars). There will be now problems with booking and I shall book for you in these days a two-bed room, since the porter suggested that the question of the third bed can be chepper settled when you came here. But the reservation can be changed if you want.

In these days I realized that, due to some bed circumstances, at our faculty, some of my mails had not been sent (although I thought they had been sent). Do you have the feeling that you received all my letters to you? Would you be so kind please, asto ask: 1. Prof. Seidel, whether he received my letter with the request for translating one of his articles and the letter where I inform him that my bank had sent some money to his bank back; 2. Professor de Bruijn, whether he received the answer to his letter; 3. Prof. von Lint, whether he received my letter concerning graph equation L(G) = G.

I expect you with bring me to Belgrade my papers which I gave you last August, as well as my copies of Chapter 6 of our book.

Looking forward to see you again,

Yours sincerely

Dragoš Cvetković

PS: Please, write to my
home address:
Lamartinova 44
11000 Belgrade,
Yugoslavia

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Professor D. Cvetković
Lamartinova 44
1100 Beograd
Yugoslavia

Eindhoven, February 21, 1977.

Dear Professor Cvetković,

Thank you very much for your quick reply and for your report on that manuscript by Mr.Einbu.

I of course followed your suggestion and refused the paper.

Sincerely yours,

N.G. de Bruijn.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, February 28, 1977.

Dear Cvetković,

Enclosed you find some information about the money. I finally found out that the Nederlandse Credietbank is the Dutch representative of Chase Manhattan, and since then they have been very helpful. I passed them your information. There must have been misunderstandings between Jugobanka and Chase Manhattan, but it seems that things will work, eventually. I am very sorry that you have to wait so long.

I did send a copy of our report to Sachs, who wrote a very nice report about our Cubical graphs in the Zentralblatt. I understand that meanwhile you have been corresponding with Michael Doob.

I would feel honoured if you would reproduce the paper "The mathematical education etc. in the appendix of your book. If there would be any fee, then I authorize you herewith to cash it, and to buy some flowers for your wife.

Confidentially, I do not expect Doob to fix up the proof of the results of our fat report. You may be interested in the following comment which R. Liebler sent me:

> II. The new thing .....
> ..... The only one of that cardinality?
> (see accompanying copy).

I would like you to consider the question of this letter. I wonder whether we can give some answers, perhaps by use of the computer.

Goethals, Cameron and I are making good progress with out paper "Strongly regular graphs with strongly regular subconstituants", and a little less progress with a more general paper on association schemes. Richard Wilson is visiting here, and gives a series of lectures. Haemers is doing well, and is beginning to find nice little results. He generalized Hoffman's coclique inequality to arbitrary graphs, and generalized the Higman-Sims inequalities (cf. his notitie). *

Many regards from house to house,

sincerely yours,

Seidel

J.J. Seidel.

Dear Dr Gethouré, *

Haemes nutritii will be
send to you as soon as it is
finished.

Kind regards,

Harma

28.2.1977

УНИВЕРЗИТЕТ У БЕОГРАДУ
ЕЛЕКТРОТЕХНИЧКИ ФАКУЛТЕТ
Булевар Револуције 73
Пошт. фах 816
11.000 БЕОГРАД

Dr. D. Cvetković

Uskoro treba da bude dato u štampu novo izdanje knjige

MATEMATIKA U OBLIKU METODIČKE ZBIRKE ZADATAKA SA REŠENJIMA
I knjiga

Vi ste bili saradnik u prethodnim izdanjima. Molim vas da učinite sledeće:

1. Da ukažete na štamparske ili stvarne greške,
2. Da predložite promene, tj. šta treba odbaciti, a šta ubaciti u novo izdanje,
3. Posebno bi trebalo da vi pregledate poglavlje:

Napomena: Svakog od saradnika sam molio da posebno pregleda jedno poglavlje. Uvod i Matrice i determinante

Odgovor na ovo pismo trebalo bi dostaviti do prvog maja 1977.

S pozdravom,

D.S.Mitrinović

D. S. Mitrinović

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, March 7, 1977.

Dear Dr. Cvetković,

On behalf of Dr. W. van der Meiden (editor of the bookreviews of the "Mededelingen van het Wiskundig Genootschap, since September 1, 1976), I would like to ask you if you are willing to review the following book: "Combinatorial Mathematics IV. Proceedings of the Fourth Australian Conference, held at the University of Adelaide, August 27 - 29, 1975" - L.R.A. Casse, W.D. Wallis (editors).
Prof. Seidel mentioned you as possible reviewer.
Would you please let me know what your decision is?

Kind regards,

Harma.

СОЦИЈАЛИСТИЧКА РЕПУБЛИКА МАКЕДОНИЈА
УНИВЕРЗИТЕТ „КИРИЛ И МЕТОДИЈ"
МАТЕМАТИЧКИ ИНСТИТУТ СО НУМЕРИЧКИ ЦЕНТАР
Бр. 119
1. III 1977 год.
СКОПЈЕ

Poštovani Profesor Cvetković,

Čast nam je da Vas pozovemo da kao gost održite jedno ili nekoliko predavanja u našem Institutu.

Ukoliko prihvaćate naš poziv, molimo da temu predavanja i vreme posete odaberete sami.

S poštovanjem,
Sekretar na Komisija za naučna rabota,
S. Zdravkovska

14.3.77

Dear Mrs. Rovijackevs,

Thank you very much for your letter of March 7.
I shall be very glad to review the book "Combinatorial Mathematics IV". Unfortunately, I do not have any copy so that you must send me one.

I hope to complete the review in one month period upon the receipt of the book.

Yours sincerely

D.Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Eindhoven, March 14

Dear Dragoš,

Thank you for your recent letter. The arrangements that you have made are quite acceptable for us. Concerning letters sent to Eindhoven,

(1) Your letter of 23.2.1977 was the first that I received from you since you left last summer (I did receive a Post Card).
(2) Professor Van Lint did receive your letter
(3) Professor Seidel did receive your letter
(4) Professor de Bruijn has not been in so I am not sure about that letter.

Again, thanks for making arrangements for me. I look forward to meeting you again.

Sincerely yours,

Marchal

23.3.77

Prof. J.J.Seidel

Dear Mr. Seidel,

Thank you for your letter of February 28.

Thank you very much for the permission to translate your article. My wife was delighted with flowers. I shall inform you later about the publication of the book.

These days I expected Doob to come here. That will be an occasion for me to think again about root systems and I shall try to say something related to your questions.

Please find enclosed a paper you already have seen in the manuscript. Together with Mr. Simić I have just finished the investigation on a graph equation related to the switching. As soon as possible I shall send you the manuscript which may be of some interest to you.

With kind regards also to your wife,

Yours sincerely

D.C.

Dragoš Cvetković

PS: It turned out that Doob did not receive any one of a few letters I sent him during last automn. There are some possibilities that you, too, did not receive some letters of mine since I have not got the replies ~~to some answers~~.

23.3.77

Prof. J.J.Seidel

Dear Mr. Seidel,

Thank you for your letter of February 28.

Thank you very much for the permission to translate your article. My wife was delighted with flowers. I shall inform you later about the publication of the book.

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Yours sincerely

D.C.

Dragoš Cvetković

PS: It turned out that Doob did not receive any one of a few letters I sent him during last automn. There are some possibilities that you, too, did not receive some letters of mine since I have not got the replies ~~to some answers~~.

СОЦИЈАЛИСТИЧКА РЕПУБЛИКА МАКЕДОНИЈА
УНИВЕРЗИТЕТ „КИРИЛ И МЕТОДИЈ"
МАТЕМАТИЧКИ ИНСТИТУТ СО НУМЕРИЧКИ ЦЕНТАР
Бр. 164
24.03. 1977 год.
СКОПЈЕ

Poštovani Profesor Cvetković,

Veoma Vam zahvaljujem na pismu od 17.03.1977.

Drago nam je svima u Institutu što ste se ljubazno odazvali na poziv da održite predavanje. Čekaćemo krajem aprila konkretni program.

Srdačan pozdrav,

S. Zdravkovska

5.4.77

Dear Professor Bondy,
Please find enclosed herewith 5 of my papers dealing with walks in graphs. Some additional things can be found in my thesis: Graphs and their spectra, Univ. Beograd, Publ. Elektrotehn. Fak. Ser.Math.Fiz. No. 354-No. 356 (1971), 1-50.

I have the following papers on bipartite graphs:

1. Bipartetness and the spectrum of a graph (Serbo-Croatian) Mat.Bibl. 41, Beograd, 1969, 193-194.
2. (With I.Gutman) The algebraic multiplicity of the number zero in the spectrum of a bipartite graph, Mat. Vesnik, 9(24) (1972), 141-150.

Unfortunately, I do not have any reprints of these papers.

Yours sincerely

Dragoš Cvetković

Beograd 4.5.1977.

Poštovana koleginice Zdravkovska,

U vezi naše ranije prepiske predlažem da moj dolazak u Skopje bude u petak 13.5. ili u ponedeljak 16.5. Pošto bih rano ujutro došao u Skopje zgodno bi bilo da se predavanja zakažu u 11 časova. Održao bih dva predavanja od po 45 minuta sa sledećim temama:

1. Savremeni razvoj teorije grafova ;

2. Pregled nekih novijih rezultata u spektralnoj teoriji grafova.

Ja planiram da u Skopju ostanem samo jedan dan ali bih u slučaju potrebe mogao da ostanem jeoš jedan dan.

Molim Vas da mi odmah javite koja je od predloženih alternativa povoljnija.

Srdačan pozdrav

Dragoš Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, May 4, 1977.

Dear Cvetković,

I was very glad to learn from your postcard that the money which you borrowed me finally arrived. There have been many misunderstandings between the banks, but at last things have turned out all right. I hope that this long delay did not cause you too much trouble. Thank you again for your help and for you patience.

Was the German conference interesting?

Enclosed you find a copy of the proof sheets of our paper in the Hungarian proceedings. I hope that you agree that I handled it off.

Also enclosed is a preprint of a paper which Goethals, Cameron and I just finished. I must ask you to keep it confidential, since we have not even submitted the paper. It contains certain techniques on matrices and vector sets which will interest you. Also the results are a success for the linear algebra approach.

You will find the most interesting news the following representation of the 240 vectors of E_8 within the space $R^{9,1}$ of signature (9,1). Consider the vector space of dimension 10 over the reals, and define the indefinite inner product

$(\underline{a}, \underline{b}) = -a_0b_0 + a_1b_1 + \ldots + a_9b_9$

for $\underline{a} = (a_0;a_1, \ldots, a_9)$ and $\underline{b} = (b_0;b_1, \ldots, b_9)$. Consider the following

84 + 72 + 84 vectors:

$(1; 1^3 0^6)$, $(0; 1, -1, 0^7)$, $(-1; (-1)^3 0^6)$.

These vectors constitute E_8. This can be checked by looking at the inner products of the vectors, using the first representation in the paper by Cameron c.s.

Of course the question is whether this representation is useful for our purposes, in finding the graphs within E_8. It was only recently, by reading Vinberg's papers, that I understood this easy representation. I wonder how Bussemaker, you and me can exploit this. Please help us thinking, and write your reactions.

Kind regards,

Seidel

J.J. Seidel.

Skopje, 5.5.1977

Poštovani Profesor Cvetković,

Zahvaljujem Vam na pismu od 4.5.1977. Posle kraće konsultacije sa ostalim matematičarima, zaključila sam da bi petak 13.5. bio zgodniji datum (što dokazuje da nisam sujeverna). Medutim, zamolila bih Vas da predavanje počne u 12^{15} jer smo skoro svi zauzeti u 11^{h}, a i da javite tačno vreme Vašeg dolaska. Drago bi nam bilo da ostanete još jedan dan ukoliko Vaši drugi angažmani to dopuštaju.

Srdačan pozdrav,

S. Stankovska

Tel. No. 533386

University of Bombay

DEPARTMENT OF MATHEMATICS
University Campus at Kole Kalyan
C. S. T. Road (Kalina)
Santacruz (East)
BOMBAY 29 AS (INDIA).

No.

7th May, 1977.

Prof. D. M. Cvetkovic,
Faculty of Electrial Engineering,
University of Belgrade,
Belgrade, Yugoslavia.

Dear Prof. Cvetkovic,

I shall be sending you seperately one of my paper 'Solutions of some further Graph Equations' after adding two more equations $T_2(H) = T(G)$ and $T_2(H) = T(G)$, to the my earlier paper. 'Graph Equations for Line Graphs, Total graphs and Semitital graphs' , which was sent to you by Dr. S.B. Chikkodimoth, who was my colleague in the department. As you and Dr. Simić are working on graph equations, you will be the right person to judge the quality of my paper'Solutions of some further Graph Equations'. I am thinking to send it for publication in Discrete Mathematics or any one of the Indian Journals.

I have received your paper (with Dr. Lacko vic and Dr. Simic) Graph Equations, Graph Inequalities and a fixed point Theorem (appeared in Publications De L Institute Mathematique, 20(34), 1976, pp 5966) which was sent to Dr. S.B. Chikkodimath.

I kindly request you to send your other papers on Graph Theory. I have submitted the thesis to University of Bombay for the award Ph. D. Degree. The thesis contains the following papers which are accepted for publications.

1. Frequency Partitions: Forcibly Pancyclic degree sequences and Forcibly Non Hamiltonian degree sequences (to appear in Discrete Maths.

2. Characterizations of Frequency Partitions of Eulerian graphs (to appear in Proceedings : Seminar on Graph Theory, Indian Statistical Institute, December 76, India).

3. Further results on 2-Variegated Graphs (to appear in Utilita Mathematica.

4. Characterizations of 2-Variegated Graphs and of 3-Variegated Graphs (to appear in Discrete Maths.)

At present I am working on the Problem of Characterizing the Line graph of 3-uniform Hyper graph with Dr. N.M. Singhi (who met you last year). Most of the results are in hand.

Thanking you,

Cordially yours,
Naikrapan
(Ranjan N. Naik).

BY AIR MAIL

हवाई पत्र

Prof. D. M. Cvetkovic.

Faculty of Electrical Engineering,

University of Belgrade,

Belgrade, Yugoslavia.

Second fold here दूसरा मोड़

भेजने वाले का नाम और पता:- Sender's name and address:-

Mr. Ranjan N. Naik.
DEPARTMENT OF MATHEMATICS

University Campus at Kole Kalyan

C.S.T. Road, (Kalina) Santacruz (East)

BOMBAY 29 A.S. (India)

इस पत्र के अन्दर कुछ न रखिये No enclosures allowed

D.U.P.—1.163-1000-5-72.

To open cut here

A ROCKET ® PRODUCT

Skopje 24. 5. 1977

Poštovani kolego Cvetković,

Zahvaljujem Vam na pismu, reprintu i knjigama. Tek sam se vratila iz Zagreba, pa Vam se zato javljam sa malim zakašnjenjem. Avionsku sam kartu predala u računovodstvo – oni Vam šalju zahvalnicu. Još nisu pronašli novac Ristovoj supruzi pa sam ih zamolila kad to učine da Vam jave.

Baš sam sad vidjela da će 11–15. 7 ove godine u londonu (Royal Holloway College; University of London) biti VI Britanska kombinatorna konferencija. Vi to vjerovatno već znate (govorice Buekenhout (Brussels), Cameron (Oxford), Conway (Cambridge), Kastelejn (Leiden), Lovász (Szeged), Ray-Chaudhuri (Ohio), Sloane (Bell Laboratories), Woodall (Nottingham), White (Kalamazoo) i dr.) ali Vam šaljem za svaki slučaj. Za informacije se treba obratiti P Rado, Dept. of Math., Royall Holloway College, Egham, Surrey (TW20 0EX) Engleska. Također sam primetila da Derek A Waller, (Dept. of Pure Math., University College, Swansea SA2 8PP, United Kingdom) traži reference (ili još bolje članke) koje se odnose na kategorički produkt grafova (ponekad nazvan

kroneckerov produkt, tenzorski produkt ili kardinalni produkt)
ili morfizme grafova. Njemu to treba jer će
kompilirati bibliografiju svih delova Teorije grafova
gde se koriste kategorično-teoretski ~~pristup~~ pojmovi i
metodi. Sve sam ovo videla u Notices AMS Vol 24 N° 1
Jan 1977

Mnogo pozdrava

Emilka Zdravkovska

P.S. Šaljem Vam pismo na kući mu adresu, jer
onaj poziv niste bili dobili na fakultetu -

Institut für Angewandte Mathematik
Montanuniversität Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1977-05-24

Herrn
Prof. Dr. Dragos M. Cvetkovic
Department of Mathematics
Faculty of Electrical Engineering
University of Beograde
P.O. Box 816
11.001 BEOGRAD
JUGOSLAWIEN

Sehr geehrter Herr Kollege !

Im Auftrag der Gesellschaft zur Förderung der wissenschaftlichen Zusammenarbeit zwischen Jugoslawien und der Steiermark möchte ich Sie gerne zu einem Vortrag über ein Thema Ihrer Wahl in Graz einladen. Für Vortragende aus Belgrad ist die Gesellschaft in der Lage einen Unkostenersatz von S 3.500,-- zu leisten. Wenn Sie die Einladung annehmen können, möchte ich Sie bitten mir mitzuteilen, ob Sie noch im Juni oder lieber erst im Wintersemester, das bei uns am 1. Oktober beginnt, vortragen möchten.

Weiters erlaube ich mir, Ihnen mit separater Post ein Manuskript über Untergruppensätze und Graphen zu senden. Im letzten Kapitel dieses Manuskripts wird das Problem erwähnt eine scharfe Schranke für den Satz von Howson zu finden. Dieses Problem hängt, wie dort erläutert wird, sehr eng mit Produkten von Graphen zusammen. Es erscheint mir sehr interessant, aber leider auch sehr schwierig zu sein.

Ich würde mich sehr freuen, Sie hier recht bald begrüßen zu können.
Mit vielen Grüßen an Sie und Ihre Frau Gemahlin

Ihr

W. Imrich

25.5.77

Dear Mr. Naik,

Thank you for your letter of May 7, and for a new version of the paper on graph equation.
I think the paper should be published.
Please find enclosed a new paper on graph equation by Mr. Simić and myself.
It seems that you did not receive a letter of us explaining the delay in answering your earlier letters. Enclosed to it was the old manuscript.
Mr. Simić joins his regards to mine.
Please convey my regards to Mr. Singhi.

Yours sincerely

D.Cvetković

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr.D.Cvetković
Faculty of Electrical Engineering
P.O.Box 816
11001 Belgrado
Yugoslavia.

Eindhoven, June 8, 1977.

Dear Dragos,

I just came back from Oberwolfach where I attended a meeting on Groups and Geometrics, Next week Weisfeiler will be here and I shall ask him for details about hyperbolic geometry. I will be away from june 22 till july 15, for a vacation (which will be inferior to the one last year) and another Oberwolfach meeting on Discrete Geometry, but after that I will be home.

"The methods of organized complexity" means the following. A phenomenon with many many variables, an enourmous amount of data, a big network, a graph on 1000 nodes, etc. is called complex in the sense that it is not simple to analyse it. One could use statistics for the analysis, but then one does not distinguish between the individual elements. Another method is to try to discover structure of some kind. Then one tries to organize the complex phenomenon, and sometimes one speaks of organized complexity. In fact, that is what we are doing all the time!

./. Enclosed you find the letter from and my answer to B.McKay. If he does not send you his papers, then please drop me a note, and I will send my copies to you.

I was interested to see that you still work on your graphic equations in in relation to switching. We recently finished our paper on strongly regular graphs with strongly regular subconstituents, which was a hell of a job. I'll send you a copy. Please keep it confidential for a while, since it has not yet been accepted. You should look at the Smith graphs. They are 3-strongly regular, in the sense that the behavior with respect to any 3 vertices of a given type only depends on that type. In terms of the spectrum this means

$$(r-s+r(r+1),)\ k + s((2r+1)(r-s)-r(r+1)) = 0$$

for $r,s \in \mathbb{Z}$. They provide spherical 3-designs.

Regards from house to house

Jaap Seidel

J.J.Seidel.

26.5.77

Mr. J.J. Seidel
Eindhoven University of Technology
Department of Mathematics
P O Box 513
Eindhoven
The Netherlands

Dear Mr. Seidel,

Thank you very much for your letter of May 4.

The German conference had about 50 participants among whome some 1o-2o known names (Erdös, Lovasz, Guy, Sobidussy, Simonowitz etc). From my point of view a lecture by L. Babai on the relations between the spectrum and the automorphisme group was interesting.

Unfortunately, I was not able to see how your new representation of E_8 can help in our proofs. It seems that for a strightforward proof we need complete classification of "root systems" in a hyperbolic space.

Non-officially I know that my new text book on discrete mathematics has been accepted. Concerning your article "The mathematical education..." which is translated into our language, we were not able to translate the term "the methods of organizing complexity" which appears near the end of your article. Would you be so kind to explain what you had in mind?

I promised you a result on graph equations with switching. We still have not finished the work but roughly the result is about the following:

Which graphs G are switching equivalent to L(G), i.e. what are the solutions of "graph equation" L(G) G? The only solutions of graph equation L(G) = G are regular graphs of valency 2. They are, of course, the solutions of L(G) G, too. Let us call such solutions ordinary. We have also some "expectional" solutions:

It seems that there are no much more such "exceptional" solutions.

I had a lecture at the University of Skoplje some ten days ago. I explained in some details the root system story, I also mentioned at several other places something of your (and my work) including the conference in Germany.
With kind regards

Yours sincerely

D.Cvetković

Institut für Angewandte Mathematik
Montanuniversität Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1977-06-10

Herrn
Prof. Dr. Dragos M. Cvetković

Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P.O. Box 816
11.001 BEOGRAD

JUGOSLAOWIEN

Lieber Herr Cvetkovic !

Vielen Dank für Ihre Karte vom 5. Juni. Es freut mich sehr, daß Sie in der Lage sind die Einladung anzunehmen. Sobald Ihre offizielle Zusage einlangt, werde ich Sie an Herrn Prof. Domiaty in Graz weiterleiten, der die Kontakte mit der Gesellschaft zur Pflege der wissenschaftlichen Beziehung mit Jugoslawien an den steirischen Hochschulen aufrechterhält.

Die Einzelheiten des Besuchs können aber wir beide allein fixieren.

Mit vielen Grüßen

Wilfried Imrich

R. L. Hemminger
VANDERBILT UNIVERSITY
NASHVILLE, TENNESSEE 37235

Department of Mathematics

June 10, 1977

Dear Prof Cvetkovic,

According to J.C. Bermond you have an article entitled "Graph equations, graph inequalities, and a fixed point theorem" jointly written with I.B. Lakovic and S.K. Simic. I would very much appreciate having a copy of this if there are any available as well as publication information.

Thank you

Bob Hemminger

14.6.77

Mr. Imwich
Institut fur Angewandte Mathematik
Montanuniversitat Leoben
A- 8700 LEOBEN

Dear Professor Imwich,

Thank you very much for your letter of May 24. I am apologizing for the delay in answering; in the meantime I was ill and I had to be outside Belgrade.

I accept with pleasure your invitation to give a lecture in Graz. I would prefer a term after October 1 which we can fix later by the correspondence.

The title of my lecture could be "Characterization of graphs by their spectra". With a little more effects I can prepare the lecture in German. Please let me know whether delivering the lecture in English would be a big problem. Am I expected to speak 45 minutes or 90 minutes?

Are the travelling expenses covered by the amount of S 3500? The amount is obviously sufficient for travelling expenses and, say, two days of stay in Graz.

Thank you also very much for the papers you sent me.

With kind regards,

Yours sincerely

Dragoš Cvetković

Ниш, 24. VI 1977.

Поштовани колега Цветковић,

Заинтересовани смо за сарадњу са Вама па вас позивамо 29. VI на Електронски факултет у Нишу у заказано време (око 14 часова).

Много поздрава

Милица М. Јанковић
18000 Ниш, Зетска 6/36

ДОПИСНИЦА-DOPISN
ПОШТЕНСКА КАРТИ

Др Драгош Цветковић,
доцент Е. П. Ф. Београд
11000 Београд
ПОШТАНСКИ БРОЈ-POSTANSKI BROJ-POŠTNA ŠTEVILKA
Ламартинова 44

30.6.77

Mr. Robert L. Hemminger
Vanderbilt Universityy
Nashville, Tennessee 37235
Department of Mathematics

Dear Professor Hemminger,

I acknowledge the receipt of your letter of lo.6.77. Unfortunatly it seems that you did not receive my letter of 11.2.77, so that I am enclosing herewith the copy of that letter as well as a reprint of the paper which you asked for.

I would like to make a remark on your bbbliography list. In the paper "New characterizations of the cubic lattice graph" there is nothing about line graphs.

In the meantime we have obtained some new results related to line graphs. Simić and I have found out all graphs which are switching equivalent* to their line graphs. Besides, Simić has a result about the planarity of the complementary line graphs.

Yours sincerely

D.Cvetković

* It is understood as Seidel's sense.

6.7.77

Dear Professor Akiyama,
I would like to know whether your article (with T. Homodo and I. Yosȷimura) "Graph equation for line graphs, total graphs and middle graphs" is published up to now. I would appreciate very much your quick response. Of course, I am also interested in other papers of yours on similar topics.
Mr. Simić and I wrote an expository paper on graph equations which contains some 100 equations and some 70 references.

Yours sincerely

Dragoš Cvetković

THE UNIVERSITY OF THE WEST INDIES
DEPARTMENT OF MATHEMATICS

CABLES: "STOMATA" PORT-OF-SPAIN

ST. AUGUSTINE,
TRINIDAD, W.I.

OUR REFERENCE:_____

July 11, 1977.

Dr. Dragos M. Cvetkovic,
Lamastinova 44,
Yu.11.000 Beograd,
YUGOSLAVIA.

Dear Dr. Cvetkovic,

Enclosed is a copy of a letter which I received from the journal Discrete Mathematics, in response to a paper "Circuit Polynomials and Characteristic Polynomials of Wheels and Ladders" which I submitted a few months ago.

I would appreciate it very much if you can send me any references or papers which you might consider to be relevant to what I have done. I hope that my request would not impose any difficulties or inconveniences on your part.

Thanking you in anticipation,

Yours sincerely,

E.J. Farrell

Encl:

Dragan Marušič
Glagoljaška 1c
66000 Koper

Koper, 14. jula 1977

prof. Dragoš M. Cvetković
Katedra matematike,
Elektrotehnički fakultet
11001 Beograd, poštanski fah 816

Poštovani profesore,

Uzeh da vam napišem ovo pismo po savetu profesora R. Fruchta iz Čila. Moje glavno zauzimanje i rad predstavlja teorija grafova. U svom diplomskom radu (pre pola godine u Ljubljani) bavio sam se sa problemima minimalnosti grafova sa cikličkim grupama avtomorfizma. Na tom području prvi je važniji rezultat teorema R. Fruchta iz 1938 godine:

- za svaku konačnu grupu A postoji takav konačan graf G, da je njegova grupa avtomorfizma A(G) izomorfna A.

Odavde izlazi mnogo problema, a možda najinteresantniji (bar za mene) je sledeći:

- za dati pozitivan ceo broj n nadji onaj najmanji broj $\alpha(n)$ da je još moguće konstruisati graf sa $\alpha(n)$ čvorova (tačka ?) i sa cikličkom grupom sa n elemenata (to je: n-ciklički graf sa $\alpha(n)$ čvorova).

Ovaj problem rešio je 1963 američki matematičar R.L. Meriwether. Ja sam u svom diplomskom radu rešavao sličan problem:

-za dati pozitivan ceo broj n nadji onaj najmanji broj c(n) da je još moguče konstruisati planaran n-ciklički graf sa c(n) čvorova.

Prevod diplomskog rada sam poslao profesoru Fruchtu,koji mi je odgovorio,da je moj problem nov i da se obratim vama, jel ćete me vi savetovati gde da ga objavim,da li kod nas ili negde drugde.

Šaljem vam (za sad) stariju verziju,u kojoj je dato rešenje za potencije prim brojeva,a za ostale brojeve tek gornja granica za funkciju c. U medjuvremenu sam uspio dokazati,da je ova granica prava vrednost u slučaju neparnih brojeva.Za parne brojeve to još ostaje samo hipoteza.

Šta ćete mi vi savetovati?Ne znam ako sam vam uspeo dobro objasniti?

Početkom i krajem avgusta prolazit ću kroz Beograd pa bi ako je moguće svratio kod vas na razgovor,jer me zanimaju još neke druge stvari.Molio bih da mi javite ako ste slobodni u ovom periodu (3.-8. avgust ili 25.- 30. avgust).

Sa poštovanjem

Dragan Marušič

20.7.77

Dear Mr. Seidel,

Thank you very much for your letter of June 8,1977.

Your correspondence with B. McKay is very interesting. Unfortunately, I have not received anything from B. McKay up to now.

Please find enclosed herewith my new manuscript on graph equation L(G) G (together with S.Simić). It seems that the exceptional solutions correspond to exceptional root systems. Could the result be derived using root systems?

Mr. Simić is preparing now his P.H.D. thesis under the working title " Contributions to the investigation of operations on graphs" which includes also graph equations. One of the questions he is considering is the problem of characterizing generalized line graphs in terms of forbidden subgraphs. Among the forbidden graphs are the exceptional graphs we were working on them as well as the exceptional graphs with the least eigenvalue -2 which were found by Bursemaker by the use of computer.

You have certainly already seen the Hournal of Graph Theory. If not I can send you a copy of the first issue. In spite of your possible objections, I would recommend it for your library.

We are still in Belgrade making short excursions in the neighbourhood. Only in the second half of August we shall go to the seaside.

With kind regards to you and to your wife, also from my family,

Yours sincerely

Dragoš Cvetković

Belgrade, 1977 August 2

Dear Prof. Akiyama,

Thank you very much for your letter as well as for reprints of your papers.

I am glad to see that you are still working on graph equations. Please find enclosed the paper "Graph equations" by Mr. Simić and myself, which was presented at the International Conference of Graph Theory and Its Applications, Oberhof 1977, April 10-16, GDR, and should be published in the Proceedings of the conference. As you can see on p. 6, equations 10-12, Mr. Simić solved the equation $L(G)=G^n$ and some similar ones. His paper /63/ is ready for publishing. Since, you with Prof. Kaneko and Mr. Simić found independently the same result in approximately the same time, Mr. Simić had an idea to propose to a joint publication which would include all three above mentioned equations. If you agree with such a proposal, please, write to Mr. Simić directly (the same address).

Mr. Simić has Master of Sciences degree. His thesis includes the results on graph equations you already know. He is now working on his P.H.D. thesis under working title "Contributions to the investigations of operations on graphs" which would again include graph equations, among the other things.

Have you already seen "Journal of graph theory", the first issue of which has just been published? It is published by Wiley-Interscience, a division of John Wiley&Sons, Inc., 605 Third Avenue, New York, N.Y. 10016. Subscription note for a year is $ 35+4 (one half of this ammount for personal subscriptions). As the member of Editorial Board I have some copies of the first issue at my disposal and I can send you one if you do not have it already.

With kind regards

Yours sincerely
Dragoš Cvetković

Referee Report on the Paper "Circuit Polynomials and Characteristic Polynomials of Wheels and Ladders" by E.J. Farrel

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~~detailed remarks~~.

I doubt that the author is right assuming that certain of his results about characteristic polynomials are new: To my knowledge Dr. D.M. Cvetković from Beograd is capable of general methods allowing to reduce the characteristic polynomial of a graph, which can be represented as a "product" (suitably defined) of simpler components, to characteristic polynomials of the factors, and the short and the long ladder might be treated in such a way.
I think that "factorizing methods" (as those of Cvetković) could be extended to circuit polynomials. As the author quotes only one single paper on characteristic polynomials (no. 5 of the reference list) one is lead to believe that he is not aware of the work of Cvetković (and others); therefore I would suggest to contact Dr. Dragos M. Cvetković (Lamastinova 44, Yu 11.000 Beograd, Yugoslawia) prior to a possible resubmission of his manuscript, probably he will obtain stimulating hints which after being considered can increase the value of his paper substantially.

I recommend to hand back the manuscript to the author together with suggestions in the above sense.

Beograd 2.8.1977.

Dear Mr. Walther,

About the middle of May Mr. Srnić and I sent you our paper "Graph equations" for the publishing in the Proceedings of the Oberhof conference. Since you have not confirmed the receipt of our mail up to now, we are sending you by this mail a new copy of the paper.

This copy differs in some little details from the previous one. If your typist is already typed the text make the corrections according to this new copy, please.

If you have not received our mail in May, I would drow your attention to the fact that one can save some space by retyping the text in the way which is indicated. If the text is still too long please inform us and we shall try to publish it elsewhere. If the paper is acceptable for publishing we would like to have an official confirmation about the acceptance for the publication.

With kind regards

Yours sincerely

Dragoš Cvetković

Beograd 8.9.1977.

Dear Mr. Farrell

That the characteristic polynomials and spectra of wheels and ladders can be expressed in terms of ch. p. and s. of circuits C_n and paths P_n If we use the operation + from the enclosed paper of mine, then $C_n + P_2$ and $P_{n-1} + P_2$ are ladders. The wheel can be obtained as $C_n \nabla K_1$, where ∇ denotes the join of graphs (see Harary's book). If G_1 and G_2 are regular graphs on n_1 and n_2 vertices with degrees r_1 and r_2, then

$$P_{G_1 \nabla G_2}(\lambda) = \frac{P_{G_1}(\lambda)\, P_{G_2}(\lambda)}{(\lambda - r_1)(\lambda - r_2)} \left[(\lambda - r_1)(\lambda - r_2) - n_1 n_2 \right].$$

This is a formula from the paper: H.-J. Finck, G. Grohmann: Vollständiges Produkt, chromatische Zahl und charakteristisches Polynom regulärer Graphen I, Wiss. Z. Techn. Hochsch. Ilmenau 11(1965), 1-3.

It is also mentioned in my thesis:

D. M. Cvetković, Graphs and their spectra, Univ. Beograd, Publ. Elektrotehn. Fak. Ser. Mat. Fiz. N° 354 - N° 356 (1971), 1 - 50.

I would certainly recommend you my thesis since it contains a survey on graph spectra. If you cannot find our journal I shall try to find a copy for you.

I have many other papers on the characteristic polynomials and spectra and, together with M. Doob and H. Sachs, I am preparing a monograph on this topic.

Please, send me if possible your other papers on related topics.

With kind regards

Yours sincerely

Dragoš Cvetković

Please, use better my home address:

Lamartinova 44

11000 Beograd, Yugoslavia

Dear Prof. Dragoš Cvetković

I am so happy to receive your letter and know that you and Dr. Simić have written the expository paper on graph equations. I'd surely like to see your paper on this topic as soon as possible.

Prof. Kaneko and I, fortunately could generalize the paper on graph equation $L^n(G)=\overline{G}$ by S.K.Simić, you sent me last year. We will very much appreciate if you or Dr. Simić read through our manuscript, which will be sent by a separate mail, and give me any suggestions about it.

Besides this, we are doing research on a few new graph equations and as soon as we finish these, we are planning to send these to you.

Sincerely Yours,

Jin Akiyama

Jin Akiyama

P.S. We sent papers "Graph Equations for L(G), T(G) and M(G)" and "A Solutions of Graph Equation for L(G)" which you want.

Prof. Jin Akiyama
Dept. of Math.
Nippon Ika University
2-297-2, Kosugi, Nakahara
Kawasaki, 211.
Japan

9th August, 1977

Professor Dragoš M. Cvetković
Department of Mathematics
Faculty of Electrical Engineering
University of Beograd
P. O. Box 816
11001 Beograd--Yugoslavia

Dear Professor Cvetković.

Thanking you very much for your letter as well as a reprint of your paper manuscript on graph equations. Your paper brought a lot to us.

As soon as we got a good news from you, we wrote a letter to Mr. Simic and mentioned that we are willing to accept his considerate proposal to make our paper a joint publication.

As for the Journal of Graph Theory we have already got a copy of it.

I surely appreciate your kindness and everything.

Yours sincerely

Jin Akiyama

.....

Jin Akiyama

Beograd 15.8.77.

Dragi kolega Pisanski,

Onih dana je kod mene u Beogradu bio kolega Marušič Dragan iz Kopera, od njega sam saznao da se Vi i još neke kolege interesujete za teoriju grafova. Stoga Vam šaljem reklamni primerak novog časopisa "Journal of Graph Theory" sa molbom da razmotrite mogućnost da se Vaš fakultet pretplati na taj časopis. (Pojedinci se mogu pretplatiti po ceni od 18 dolara godišnje.)

Na Elektrotehničkom fakultetu u Beogradu postoje postdiplomske studije i daju se doktorati iz matematike, između ostalog i iz teorije grafova. Ja se i inače interesujem za mladje matematičare koji bi se bavili teorijom grafova. Ukoliko Vi ili neki od kolega imaju interesa možete mi se javiti.

Sa drugarskim pozdravom

Dr Dragiš Cvetković,
docent El. teh. fak. Beograd

Adresa:
Lamartinova 4/1
11000 Beograd

THE UNIVERSITY OF THE WEST INDIES
DEPARTMENT OF MATHEMATICS

CABLES: "STOMATA" PORT-OF-SPAIN

ST. AUGUSTINE,
TRINIDAD, W.I.

OUR REFERENCE: _____

17th August 1977

Dear Dr Cvetkovic,

Thanks for your letter and the enclosed paper. I really appreciate your quick response. It is not difficult to see that wheels and ladders can be expressed as functions of circuits and paths. What I would like to know is this. Is there a simple formula for $P_{G_1+G_2}(\lambda)$? If there is, then perhaps I could use it to obtain the results for ladders, and compare them with what I already have.

I would deeply appreciate receiving any material which might be relevant to what I am doing. I have enclosed some of ~~my~~ other papers on graph polynomials. You might observe that I am not particularly interested only in characteristic polynomials, but in all kinds of graph polynomials. My results on characteristic polynomials are all deductions from the more general circuit polynomials. The circuit polynomials are themselves special cases of the even more general F-polynomials. All of this will become clear when you look at the enclosed papers.

Once again, thanks for everything. I hope to hear from you soon.

Sincerely, Saf Farrell

Univerza v Ljubljani

T. Pisanski
ODSEK ZA MATEMATIKO
61001 Ljubljana, Jadranska c.19
p. p. 543, tel. št. 61 432, 61 564

Ljubljana, 19.8.1977

Dr. Dragoš Cvetković
Lamartinova 44
11ooo Beograd

Dragi dr. Cvetković,

Vaše pismo u kome ste mi poslali prvi broj časopisa Journal of Graph theory veoma me je obradovalo. Na našem fakultetu već smo pretplačeni na taj časopis i sa velikim nestrpljenjem očekivali smo prvi broj. Molim, da mi saopštite kome i kako da se obratim, da bi kao pojedinac dobivao taj časopis po ceni od 18 dolara a ne 35 dolara kako piše u kolofonu.

Ja bi vas najlepše zamolio, da mi pošaljete što više informacija o postdiplomskom studiju na vašem fakultetu. Interesiraju me propozicije za doktorat. Momentalno radim na magistarskom radu iz topološke teorije grafova. Iduće jeseni verovatno idem za godinu dana u SAD.

Mislim, da kod vas radi Simić, jedan moj drug. S njim smo se zajedno takmičili na matematičkim takmičenjima u srednjoj školi. Molim, da ga u moje ime srdačno pozdravite.

Sa drugraskim pozdravima

Tomaž Pisanski

Beograd 31.8.1977

Dragi kolegnice Petrićić,

Šaljem Vam reklamni primerak prve sveske časopisa Journal of Graph Theory (o kojem sam Vas obavestio u Banja Luci) sa molbom da razmotrite mogućnost da se Vaš fakultet pretplati na taj časopis. Ako se jedna institucije pretplati na JGT, članovi te institucije se mogu individualno pretplatiti uz povlašćenu cenu od 18 + 4 dolara.

Obaveštavam Vas unapred da u septembru izlazi iz štampe druga izdanje moje knjige (sa M. Miličem) Teorija grafova i njene primene. Izdavač je Naučna knjiga, Beograd.

Mnogo pozdrava

Dragoš Cvetković

Beograd 31.8.1977.

Dragi kolega Pisanski,

Hvala na pismu od 19.8. koje sam za-
kasno jučе kada sam se vratio sa mora.

Mada nemam detaljna uputstva o tome
čini mi se da za povlašćenu pretplatu za Journal
of Graph Theory treba postupiti na sledeći način.
Pišaljite na označenu adresu 18+4 dolara uz
napomenu da je to povlašćena pretplata za JGT. U
jednom pismu na istu adresu napišite da se Vaš fa-
kultet pretplatio na časopis i da ste Vi poslali no-
vac za povlašćenu pretplatu. Ako nemate drugi izvor
za ove informacije pozovite se na moje pismo.

Na postdiplomskim studijama na Elektrotehnič-
kom fakultetu postoje razni smerovi; između ostalih
smer za primenjenu matematiku. U okviru tog smera
možete birati razne predmete. Treba položiti četiri is-
pita (+ dva strana jezika, marksizam i sl.). Kod mene
je par postdiplomaca studiralo po programu: Teorije
grafova, Kombinatorika, Algebra i logika, Verovatnoća.
Posle toga se radi magistarski rad koji treba da sadrži
nešto originalno.

Kandidati koji imaju stepen magistra mogu
da prijave doktorat To mogu učiniti i oni kandidati

koji nemaju stepen magistra ali imaju objavljene radove. Tema doktorata koju predloži kandidat prihvata se na sednici Veća na predlog komisije koje se formira za svaki konkretan slučaj. Naravno da je poželjno da kandidat pre prijave doktorata konsultuje nastavnike koji su po svojoj struci najbliži temi doktorata.

Koristim priliku da Vas obavestim da će u toku septembra izaći iz štampe drugo izdanje moje knjige (zajedno sa prof. M. Milićem) Teorija grafova i njene primene. Drugo izdanje je duplo veće po obimu od prvog a i noviji tekst je prevođen. Izdavač je Naučna knjiga, Beograd. Bio bih Vam zahvalan ako bi o ovoj knjizi obavestili kolege koje bi mogle biti zainteresovane za nju.

Sa pozdravom

Dragoš Cvetković

D.Cvetković

14.9.77

Mr. F. Harary
The University of Michigan
Department of Mathematics
Ann Arbor
Michigan 48104

Dear Mr. Harary,

Congratulations on the journal of Graph Theory. Indeed, I think that we all needed such a journal since combinatorics is now a very broad area and a little bit of specialisation was necessary. Some other things I explained to Professor Chartrand; you probably know this correspondence.

Please find enclosed herewith a new paper of mine: "The main part of the spectrum, decisions and switching of graphs". Since it is related to one of yours hitherto unpublished papers which was known to me, I would like to know whether you have any objections to the formulations in the paper. I intend to submit the paper to one of our journals in Belgrade.

Some time ago I sent to you a reprint of /5/. Thank you for the reprint which I received from you.

With kind regards,

Yours sincerely

Dragoš Cvetković

Beograd 15.9.77.

Poštovana koleginice Zdravković,

Hvala na Vašem pismu 24.5.77. i informacijama o konferenciji u Londonu.

Šaljem Vam reklamni primerak novog časopisa "Journal of Graph Theory" sa molbom da razmotrite mogućnost da se Vaš institut pretplati na taj časopis. Napominjem da sam još prilikom boravka u Skopju spomenuo prof. Čuponi da časopis uskoro izlazi u štampe pa se konsultujte sa njim da nije on već naručio pretplatu. (Za pojedince pretplata je 18 dolara).

Sa drugim pozdravima

Dragoš Cvetković

Lamartinova 44,
11000 Beograd

INSTITUT FÜR STRAHLENCHEMIE
im Max-Planck-Institut für Kohlenforschung
Stiftstraße 34-36 · D-4330 Mülheim a.d. Ruhr 1
Telefon (0208) 31073 · Telex 856741 mpstr d
German Federal Republic

Dr. D. Cvetković
Faculty of Electrical
Engineering
University of Belgrade
Belgrade
YUGOSLAVIA.

20th September, 1977

Dear Dragos,

Although we have not corresponded for a long time I am still very much interested in graph theory, especially in its applications to problems of chemical interest.

My purpose in writing this letter is to let you know that I shall be in Belgrade on Friday (30th September) and Saturday (1st October) this year. I would be happy to call in to see you at this time if it is convenient for you. I enclose an itinerary of my trip to the Balkans. From this you will see that I shall be visting Professor Trinajstić in Zagreb before I come to Belgrade. I would ask therefore that you let him know if you are able to see me; I am sure that he would be very willing to pass on to me any message that you may leave for me.

In conclusion I send you very best wishes and hope that we shall have an opportunity to meet up soon.

Yours sincerely,

Dennis Rouvray

Dennis Rouvray.

EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, September 20, 1977.

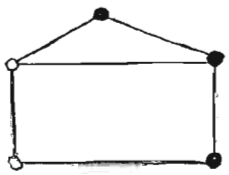
Dear Mr. Cvetković,

Thank you very much for your postcard which you sent from Trogir. This year, there was a good opportunity for us to go to England for holidays. Otherwise we had liked to go to Yugoslavia.

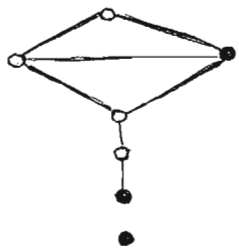
Mr. Cvetković, some time ago I saw the letter which you wrote to Prof. Seidel on May 26 this year. In that letter you mentioned the fact that you were busy with the graph equation $L(G) \sim G$.
I became interested in this problem, and I also tried to find all solutions.

Later Prof. Seidel told me, he had received another letter from you in which was enclosed your manuscript on that graph equation. When I compared the exceptional solutions you had found with those I found, I saw, that there were 2 graphs in my set of solutions which did not appear in your manuscript.

These exceptional solutions are respectively:



and



I have seen that in lemma 2.6 of your manuscript you got these solutions (case a: $\ell_1 = 0$; case b: $\ell_2 = 2$, $\ell_3 = 0$), but for some reason you rejected them.

I found my set of solutions partly with the aid of the computer (using the device of odd triples).
Now I am busy to try to get a short method which uses combinatorial reasoning and also the device of the odd triples.

Please, send my greetings and the greetings of my wife to your wife and to Mbladen.

With the best wishes,

yours sincerely,

Frans C. Bussemaker.

P.S. What about my computer output concerning Cubic graphs of maximal girth of order ≤ 30?

Koper, 23. 9. 1977

Dragi profesor Cvetković,

Hvala za vašu dopisnicu, koju sam dobio prije nekoliko dana. Nešto sam zakasnio sa tom novom verzijom. Sada vam šaljem otprilike prva polovinu; ostalo vjerujem da ću vam moći poslati početkom idućeg tjedna.

Dosta sam toga promenio, pa i notaciju. Odlučio sam se za notaciju koju predlaže Robert Frucht u "How to describe a graph" (on ima i jedan članak u prvom broju "Journal of graph theory", gdje upotrebljava tu notaciju, tamo je data i opširna referencija). Jer sam se sada setio, da je ipak nepotrebno objašnjavanje što ova notacija znači (na str. 3, 4.) Jučer sam bio u Ljubljani i na fakultetu primio jedno pismo od Quintasa iz New Yorka, koje više nisam ni očekivao. Naime, prije skoro pola godine sam poslao onu prvu verziju njemu i Fruchtu (bivši mnoji Frucht savetovao da se obratim njima). U tom pismu prof. Quintas kaže, da je upotrebio neke moje rezultate za rešavanje problema "po granama minimalnih nehalčkih grafa" (ja mislim da je to bio Theorem 3.2. u mojoj verziji, a koga se zapravo može reći da je problem za potencije prvih brojeva). Piše dalje da mu

požaljem, ako imam nešto novo s čim se vesti. Obrisat ću, da se liti leži čekaš štampan knjd vas u Beogradu.

Ja odlazim u Englesku 30. septembra. Molim vas pišite mi ako je nešto novo, pa i interesuje me ako ste dobili ovo pismo i šta vi mislite o svemu tome. Zasad još nisam siguran koja će biti moja adresa u Engleskoj, no početkom idućeg meseca ću vam je sigurno poslati. U Jugoslaviji dolazim za mjesec dana ako 15. decembra, pa bi se mogla opet javiti knjd vas ako bi bilo potrebno.

Puno pozdrava

Dragan Marušić
Glagoljaška 1c
66000 Koper

Springer
Springer-Verlag
Berlin Heidelberg New York

Dr.Dragos Cvetkovic

Lamaritnova 44

YU-11ooo Belgrad

September 26, 1977

Dear Dr. Cvetkovic,

The idea of launching a general mathematics journal - comparable perhaps to "Science" or "Nature" - was behind the informal "Mathematical Intelligencer" which first appeared in 1971 and shortly afterwards reached a distribution of over 6000. After several years of hesitation, we have now decided to publish a new journal (retaining the old name). You will receive a copy of the pilot issue under separate cover.

Produced with the means of the old "Intelligencer" and not yet with official editors, the pilot issue has the appearance of the more professional journal we intend. However, it falls a little short in some respects, chiefly in that it has necessarily been made without the broad participation that we hope to achieve.

We are well aware that our ambitious new plans will require more effort, more professionalism, and more money. The journal will be edited by Bruce Chandler (City University of New York) and Harold Edwards (New York University). They share our basic ideas and we are confident that they will make the "Mathematical Intelligencer" an interesting and useful medium. You will understand that the journal can no longer be distributed free of charge, and we trust you will consider it worth its price (see our special offer in the pilot issue).

However, we are not only inviting your subscription. Your familiarity with the old "Intelligencer" encourages us to ask for your comments, suggestions, and contributions.

We would appreciate very much your showing the pilot issue to your friends and colleagues who may not have received a copy.

Yours sincerely,

K. Peters
Mathematics Editorial

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27.9.77

Dear Mr. Seidel,

Thank you very much for your and Mr. Bussemaker's joint mail of September 20, 1977.

Concerning our note in Journal of Combinatorial Theory, I noticed that the data about T.H. Report 76-WSK-01 (namely the letters WSK) are not given with the same type of letters in the abstract and in the list of references. But that it not too important. Furthermore, at the end of my story in Eindhoven I proposed to add at the end of the note, besides Faradžev's papers also the paper:

A.T. Balaban, Chemical graphs, XIV, Valence isomors of /12/ annulene. Revue Roumaine de Chimie 17(1972), 865-881.

This paper contains a table of 85 cubic connected graphs on 12 vertices and Prof. Balaban drew my attention to it when I went him our report. I leave to you to decide shall we include also these data.

Please find enclosed herewith the paper "Graph equations" which will be published in the proceedings, of the Oberbof conference, and the paper "The main part of the spectrum, divisors and switching of graphs". A part of the material in the last paper you know from my lecture in your seminar last year. By the way, one of Harary's conjectures is disproved in this paper.

I am sending you also a table of trees on 10 vertices with the corresponding spectra and characteristic polynomials. The table was produced by D. Maksimović, an undergraduate student. For trees on n vertices only n/2 or (n/2)+1 eigenvalues are given. The trees are ordered lexicographically according to the eigenvalues. So that is an initiation to our report on cubic graphs. Can this material give you or Mr. Bussemaker any idea for doing something?

In the meantime I received the expected mail from B. McKay with a lot of material about graph spectra.

Please give my regards to Mr. Bussemaker. I am very thankful to him for finding an error in the paper on L(G) G. I shall write him soon.

With kind regards

Yours sincerely

Dragoš Cvetković

ITINERARY OF TRIP TO YUGOSLAVIA AND ROUMANIA

Monday, 26 Sept.	Depart from Mülheim. Drive to Munich. ca. 500 km.
Tuesday, 27 Sept.	Depart from Munich. Drive through Austria (Salzburg to Villach) to Yugoslavia (Zagreb). ca 500 km.
Wednesday, 28th Thursday, 29th	In Zagreb at Rugjer Bosković Institute. Delivery of lecture.
Friday, 30 Sept.	Depart from Zagreb. Drive to Belgrade. ca. 200 km.
Saturday, 1 Oct.	Depart from Belgrade. Drive to Kragujevac. ca. 120 km.
Sunday, 2 Oct.	In Kragujevac. Work with Ivan Gutman.
Monday, 3 Oct.	Depart from Kragujevac. Drive to Portile de Fier (Roumanian frontier), arriving at 1.00 p.m. Drive to Bucharest via Craiova and Alexandria. ca 600 km.
Tuesday, 4 Oct. Wednesday, 5th Thursday, 6th Friday, 7 Oct.	In Bucharest with Professor Balaban. Delivery of lecture.
Saturday, 8th	Depart from Bucharest. Drive to Belgrade. ca. 600 km.
Sunday, 9 Oct.	Depart from Belgrade. Drive to Munich. ca. 500 km.
Monday, 10 Oct.	Depart from Munich. Arrive in Mülheim. ca. 500 km.

Поштовани пријатељу,

Захваљујем на вашој књизи о графовима. Књига ми је занимљива али мислим да ми није на енглеском језику. Било би захвалујући на томе ако бисте ми могли послати још једну о графовима. Теореме ми нису биле познате раније. Покушаћу да их испробам. С поздравом

Димитрије Јанковић
11000 Београд
Змајева 6/56

Универзитетски
професор Др. Зоран Ђ. Ђорђевић
11000 Београд
Ламартинова 44

ПОШТАНСКИ БРОЈ POŠTANSKI BROJ POŠTNA ŠTEVILKA

Dr. L. Babai,
Department of Algebra and Number Theory
Eötvös Loránd University
Muzeum krt. 6-8,
H-1088 Budapest, Hungary

Dear Dr. Babai

On the behalf of the Faculty of Electrical Engineering I invite you to deliver a lecture on graph theory at our faculty. The title and the time of your lecture is to be chosen by yourselve. Please contact Dr. D. Cvetković for arranging the details of your visit.

Our faculty will cover your hotel expenses for two days in Beograd as well as travelling expenses from Yugoslav-Hungarian border to Beograd and back.

Yours sincerely

Beograd

Prof. Dr. Jordan Popo-Jordanov,
the dean of the Faculty
of Electrical Engineering

Dragoš Cvetković 30.9.77

Prof. Dr.W. Imrich
Institut für Mathematik
Montanistische Hochschule

Dear colleague,

With the reference to our previous correspondence relevant to my lecture in Graz I am free to propose now the following term. I would come to Graz on Wednesday, October 26, in the evening (or on October 27 in the morning) and my lecture could be delivered on Thursday or ~~Wednes~~Fri day. If it is not convenient to you, any other term (more or less) would be good for me, only I need to know it a few weeks in advance in order to plan my duties.

Please find enclosed herewith the manuscript concerning the topic of the lecturer which I have delivered in Oberhof.

With kind regards,

Yours sincerely

Dragoš Cvetković

Koper, 30. 9. 77

Poštovani profesore,

Šaljem vam drugu polovinu. Moja adresa u Engleskoj je:

DRAGAN MARUŠIČ
WESSEX HALL
WHITEKNIGHTS ROAD
READING RG6 2BQ
ENGLAND

Svakako ću vam još pisati ako ću doći do kakve promjene.

Puno pozdrava

Dragan Marušič

Koper, 30. 9. 77

Poštovani profesore,

Šaljem vam drugu polovinu. Moja adresa u Engleskoj je:

DRAGAN MARUŠIČ
WESSEX HALL
WHITEKNIGHTS ROAD
READING RG6 2BQ
ENGLAND

Svakako ću vam još pisati ako ću doći do kakve promjene.

Puno pozdrava

Dragan Maruš

3.1o.77

Dr. L. Babai
Department of Algebra and
Number Theory
Eotvos Lorand University
H-1o88 Budapest

Dear Dr. Babai,

Our Faculty has decided to invite you to deliver a lecture in Belgrade. Soon you will receive an official invitation. The title of the lecture and the time of your coming is to be chosen by yourself. (Only the end of October would not be suitable because I should go to Austria at the invitation of Professor Imrich). The Faculty has decided to cover your traval expenses from the Yugoslav-Hungarian border to Belgrade and back and to pay the hotel expenses for two days. Please let me know whether you wish to have a train ticket sent to you or you wish to buy it and receive the money later.

Please find enclosed herewith the manuscript "Graph equations" of Mr. Simić and myself. That is in fact my Oberhoflecture. So our interest is now graph equations and of course, graph spectra together with the applications in Chemistry (You will meet here also Mr. Gutman who is at the University of Kragujevac in the vicinity of Belgrade).

Except for a few of us who are directly interested in graph theory you may expect at your lecture some people from electrical engineering who use graph theory and some mathematicians dealing in other fields of mathematics (mainly analysis).

With kind regards

Yours sincerely

Dragoš Cvetković

6.1o.77

Prof. F. Harary
The University of Michigan
Department of Mathematics
Ann Arbor, Mich. 481o4
USA

Dear Mr. Harary,

Please find enclosed herewith the manuscript "Graph equations" by Mr. Simić and myself. The manuscript will be published in the proceedings of the Oberhof Conference. We just wanted to keep you informed on our work which you have encouraged once by suggesting us to submit one of first our papers of the same topic to "Discrete Mathematics".

With kind regards,

Yours sincerely

Dragoš Cvetković

6.1o.77

Mr. F.C. Bussemaker
Technological University Eindhoven
Department of Mathematics
BOB 513
Eindhoven, The Netherlands

Dear Mr. Bussemaker,

Thank you very much for your letter of . Mr. Simić and I are very thankful to you for finding the mistakes in our paper. We shall correct the text and add an aknowledgement to you. You will receive the new manuscript.

When Mr. Doob was here, in Belgrade, we made an appointment to write a joint paper about the graphs with the least eigenvalue - 2. In this paper we shall use your computer work for exceptional graphs on 6,7 and 8 vertices (obtained by extending Beineke's graphs). Although we had some correspondence about this matter we do not have a manuscript at this moment. Of course, we shall inform you about this matter.

Your material on cubic graphs with external girth is very interesting but I did not do any work sufficiently related to this topic and so I did not use it up to now. Once I should certainly consider it carefully.

With kind regards

Yours sincerely

Dragoš Cvetković

Institut für Angewandte Mathematik
Montanuniversität Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried I m r i c h

Leoben, 1977-10-07

Herrn
Prof. Dr. Dragos M. Cvetkovic
Faculty of Electrical Engineering
University of Belgrade
Bulevar Revolucije, 73
P. O. Box 816
11001 BELGRADE

Sehr geehrter Herr Cvetkovic !

Vielen Dank für Ihren Brief vom 30. Sept. 1977, der mich dazu veranlaßte Ihren Vortrag, im Einvernehmen mit den Kollegen in Graz, auf Donnerstag, den 27. Okt. 1977, um 18 Uhr c.t festzulegen. Wie die meisten Gastvorträge soll er im Hörsaal 34 des Mathematischen Instituts der Universität Graz in der Halbärthgasse 1 stattfinden.

Um nicht nur die ziemlich dünn gesäten Graphentheoretiker anzusprechen, möchte ich Sie bitten über "Graphs and their Spectra" zu sprechen. Über Gleichungen von Graphen können wir uns ja in einem kleineren Kreis unterhalten.

Es wäre nett, wenn Sie mich im Rahmen Ihres Aufenthalts auch in Leoben besuchen könnten. (Wir könnten etwa gemeinsam von Leoben nach Graz zu Ihrem Vortrag fahren.) Bitte teilen Sie mir auch mit, ob und für welche Zeit Sie eine Zimmerreservierung wünschen.

Mit vielen Grüßen, Ihr

W. Imrich

Wilfried Imrich

P.S.: Ich bitte um sofortige Antwort, damit die Einladung zum Vortrag noch rechtzeitig verschickt werden kann.

P.P.S.: Title: "Characterization of graphs by their spectra", Length: 60 minutes.

Beograd 10.10.1977

Dear Prof. Jurich,

Thank you very much for your letter of 7.10.1977. I agree with all the your proposals.

I shall probably come to Graz on October 26 in the evening together with Mr. Simić and probably with my wife. On the 27-th my wife could go to see the shops in Graz and Mr. Simić and I could come to you to Leoben if it is convenient to you. After having a discussion we could return to Graz together with you for my lecture. In the course of Friday we could start back to Kupalonic. If necessary we can ~~stay~~ use also Friday morning for discussions

We have not yet decided in which way to travel (by car or by train). So I would ask you to explain me in which way to reach Leoben from Graz if we are without a car (probably by train). Also let me know which time would be the most convenient to you for our arrival to Leoben and where to find you in Leoben.

If I do not write you something else, please do not book the rooms for us.

With kind regards

Yours sincerely,

Beograd 10.10.1977.

Dragi kolega Marusić,

Hvala na pismima od 23.9. i 30.9. Vaš rad sam predao prof D.S. Mitrinoviću za objavljivanje u Publikacijama Elektrotehničkog fakulteta (Univ. Beograd, Publ. Elektrotehn. Fak. Ser. Mat. Fiz.). On je odmah odredio mene za recenzenta i ja sada dovršujem pregled rada. Izgleda će trebati da dođe do izvesnih skraćenja. Javiću Vam o tome uskoro.

Pošao bi mi bio dobrodošao ako bi mi poslali preprint (ili fotokopiju) R. Fruchta i L.V. Quintasa.

Srdačno pozdravi

Dragoš Cvetković

Institut für Angewandte Mathematik
Montanuniversität Leoben
A-8700 Leoben
Vorstand: o. Prof. Dr. Wilfried Imrich

Leoben, 1977-10-20

Dear Prof. Cvetkovic,

Thank you very much for your letter of October 10,1977. As you see from the enclosure the time of your lecture has been slightly changed and there will be a second lecture shortly afterwards, tea being served in the break.

It would be very fine if Mr. Simić and you could spare the time to come up to Leoben. There are not too many trains from Graz to Leoben. I think the most convenient one for you would be leaving at 9:15 from Graz; arriving in Leoben at 10:18. If you do not notify me otherwise I will wait for you at the railroadstation. (It is only a three-minute-walk from my office to the railroadstation.) If you have some other means to transportation you can reach me at the University any time between 9 and 12.

In case you come by train we would all leave for Graz by car shortly before 2 o'clock since I have to lecture from 3:15 to 4.

Leoben is a small place and almost everybody knows the Montanuniversität, which is very easy to find. However, if you run across somebody who does not know the University, ask for the railroadstation which is face to face with the new wing of the University.

I am looking forward to an interesting talk of yours.

Sincerely yours,

W. Imrich

Wilfried Imrich

P.S.: My telephone-number at the University : (0 38 42)25 55 Ext. 420 or 421.

Ljubljana, 24.1o.1977

Tomaž Pisanski
Vidmarjeva 25
61ooo Ljubljana

Poštovani prof. Cvetković,

Primio sam vaša pismo pa i karticu. Hvala! Čitavo vreme sam tražio vašu knjigu o teoriji grafova. Medjutim nikako nisam uspio da ju pronadjem. Jedino u jednoj knjižari imali su pet primeraka koji su bili odmah rasprodati pa su sada naručili nove. Knjiga nije stigla ni u našu biblioteku, o čemu sam odmah obavestio odgovorne.

Kolega Dragan Marušič odputovao je u Veliku Britaniju ali dosada još mi se nije javio. Izgleda, da se mora prvo dobro snači.

Ovaj semestar držim studentski seminar iz topološke teorije grafova. Seminaru prisustvuje oko lo studenata, koji su već prošle godine odabrali seminar kod mene iz osnova teorije grafova. Prošle godine razradjivali smo Hararijevu knjigu. Ove godine radimo na osnovu knjige: White, Graphs, Groups and Surfaces.

Ako budete, dragi prof. Cvetković prolazili kroz Ljubljanu, molim javite mi, kako bismo mogli razgovarati, i kako bi organizovali npr. vaše predavanje na našem fakultetu.

Molim vas da razmotrite mogućnosti saradnje, naprimer u obliku kontinuiranog seminara Beograd-Ljubljana-?-?, ili pak da se jednom godišnje sastanemo za par dana.

Pozdravlja vas

INSTITUT FÜR STRAHLENCHEMIE
im Max-Planck-Institut für Kohlenforschung
Stiftstraße 34-36 · D-4330 Mülheim a.d.Ruhr 1
Telefon (0208) 31073 · Telex 856741 mpstr d
German Federal Republic

Dr. D. Cvetković
Faculty of Electrical
Engineering
University of Belgrade
Belgrade
YUGOSLAVIA.

26th October, 1977

Dear Dragos,

Now that I have had a chance to settle down again after my very interesting trips to Yugoslavia and Roumania and a further trip to Oxford I should like to take this opportunity of thanking you and your wife for so kindly receiving me during my recent visit to your home. It was a great pleasure for me to meet you personally and to have the possibility of discussing with you topics of mutual interest.

Herewith I am enclosing a selection of my publications which I feel will be of especial interest to you because of their mathematical content. I should mention that after talks with Ivan Gutman after I left you I became aware that you would be interested also in the reprint I enclose written jointly by King and myself. This paper deals with an exciting new application of spectral theory and I think you may well want to mention it in your book. It is due to appear very soon in the Journal of the American Chemical Society. The exact significance of this paper will be explained to you by Ivan Gutman, so there is no need for me to go into detail here.

In conclusion I send my very best wishes to you and your family and I hope we shall have the opportunity of meeting up again sometime in the future. If you feel that I can be of further help (with reprints, etc.) please do not hesitate to write to me.

Yours sincerely,

Dennis Rouvray

Dennis Rouvray.

László BABAI, H-1o74 Budapest, Szövetség u. 17

1. 11. 77.

Prof. D.M.Cvetkovic

Dear Professor Cvetković,

Thank you very much for your kind letter of Oct.3 as well as the invitation by the Faculty. I am planning to visit the Faculty in January. To do so, I need the approval from our Ministry. I took the necessary steps. As soon as I know more about this, I shall write you.

I am planning to talk "On testing graph isomorphism". What is the length of the talk to be given ?

With best regards

László Babai

2.11.77

F.C. Bussemaker
Department of Mathematics
Technological University Eindhoven
POB 513
Indhoven,
The Netherlands

Dear Mr. Bussemaker,

Mr. Boob has given me the computer output with 20 graphs on 6 vertices, 110 graphs on 7 vertices and 443 graphs on 8 vertices. As he explained to me these should be the graphs having the least eigenvalue -2 which are not generalized line graphs. Since Mr. Simić and I are trying to characterize the generalized line graphs by forbidden subgraphs, your answers to the following questions would be of some helpt to us:

1. In which way did you produce this list? I suppose that you started with Beineke's graphs but in which way did you delate generalized line graphs occurring in that way?

2. Are,perhaps, the graphs on 6 vertices (from your list) induced subgraphs of the graphs on 7 vertices and are those on 7 vertices subgraphs of graphs on 8 vertices?

Our new version of the paper "Graphs which are switching equivalent to their line graphs will soon be ready.

Thanking you in advance I remain with kind regards,

Sincerely yours

Dragoš Cvetković

4.11.77

Dr.L. Babai
Department of Algebra and
Number Theory
Eotvos Lorand University
Muzeum krt. 6-8
H - 1088 Budapest, Hungary

Dear Dr. Babai,

A young compatriot of mine has submitted a paper for publication in which the following result is given:

Let c(n) (c*(n)) be the least number of vertices of a planar (connected) graph whose authomorphism group is the cyclic group of order n. If n is odd and if $n = p_1^{k_1}\ldots,p_1,\ldots, p_r$ being primes, then $c(n) = 3 \sum p_i^{k_i}$ and c*(n) = c(N) for r=1 while c*(N) = c(N)+1 for r > 1. It is conjectured that the same holds for n even.

I would appreciate very much if you would tell me your opinion whether this is a new result.

If you have new results on graph spectra I would ask you most kindly to inform Prof. Sachs and me about them because these days we are completing the manuscript of our book and we would like to incorporate, if possible, the newest results.

You have certainly received an invitation of the dean of our Faculty to deliver a lecture here, as well as my letter regarding the same topic. Needless to say, the formulation that our Faculty would cover your hotel expenses for two days means that you are our guest for these two days.

Looking forward to your news,

Sincerely yours

Dragoš Cvetković

Beograd 7.11.77.

Dragi kolega Marušič,

Upravo sam primio obavesna stižem tek danas da Vam se javim. Hvala na pošiljci i kopija sa pismima Fuchs i Runtasa Vá me javite šta da uradim sa tim pismima.

Ja još nisam poduzeo prof. Mitrinoviću izveštaj o Vašem članku ali sam došao do zaključka da je potrebno napraviti reviziju članka tj skratiti ga tako da ima ne više od 10 kucanih strana. U tom pogledu predlažem Vam sledeće:

1. Kucajte redom sve delove članka: naslov, abstract, uvod, t.d. bez ostavljanja praznog prostora ili prelaska na drugu stranicu.

2. Izbegavajte pisanje formula u posebnom redu gde to nije neophodno. Kod definicija i teorema kucajte tekst od kraja do kraja reda. Kod dokaza teorema ne-mojte ceo red upotrebiti samo za reč proof.

3. Izbacite ili skratite sva opšta mesta, poređenja, komentare i stvari koje nisu potrebne u daljem tekstu. Na primer, dalazu u obzir za izbacivanje:

str. 1 prvi pasus (ovaj kraj za def. grupe automorfizama nije neophodno)

str. 2 dve rečenice u zadnjem redu iza zapete

str. 3-4 notacija Fuchsa

str. 8 Remark

str. 19-20 sasvim izbaciti ili znatno skratiti.

7. str. 10 red 4-5 · Trebalo bi pisati

Thus the subgraph induced by $\{x, x_1, x_2, y, y_1, y_2\}$ is $K_{3,3}$..

8. Str. 10 i dalje: sliku obeležiti brojem 4.1 a

Fig 4.1

9. Mozda bi samo glavni rezultat trebalo nazvati teoremom. Medurezultate bi bilo lemе ili se mogu naciti se "Propozicijom".

Molio bih Vas da uzmete i moj rezultat te prekodite članak. Budite spremni i na izradu ortežje (tusem na "pausu" ili "kamenu", uvecani 2-3 puta) ali to cu Vam javiti kada članak bude definitivno prihvaćen za štampu.

Sa pozdravom

Dragoš Cvetković

Reading, 12. 11. 1977

Dragi profesor,

Hvala na vašim pismima. Drago mi je što stvari sad idu dobijaju neki oblik. Iznos sam, da ću morati mnogo toga promeniti i zato to neće predstavljati neki lični napor. Vaše preporuke dobro će mi doći i mislim, da neće biti većih problema. Sećam ću izbaciti str. 19, 20 a sve dokaze pokušat ću urediti što kraće. Što se Eulera tiče ja sam tu nejednakost pomenuo samo napisao, jer je to u stvari nejednako. Možda je ipak bolje da i ova nejednakost dobije korektan oblik.

Svakako bih želeo što pre prevesti ovaj članak. No ne znam hoćete li biti sa ostalim obavezama na fakultetu. U svakom slučaju do školskog raspusta 15. decembra sve će biti u redu. Od tad pa do 15. januara biću kod kuće u Kopru (u slučaju da me nešto trebate).

Pisanci iz Ljubljane pisao mi je, da se vaše knjige ne dobije u Ljubljani. Šta vi o tome znate? Mislim da bi Zavod kod nas mnogo ljudi rado video ovu knjigu (poeziju).

Sa pozdravom

Dragan Marušič

Mailing address:
L. LOVÁSZ
JATE Bolyai Intézet
H-6720 Szeged
Aradi Vértanuk tere 1.

International Colloquium on
ALGEBRAIC METHODS IN GRAPH THEORY
August 25 - 31, 1978
S z e g e d /Hungary/

Dear Professor Welhaut,

Enclosed please find the preliminary announcement of the International Colloquium on Algebraic Methods in Graph Theory. / Szeged /Hungary/, August 25-31, 1978 /.

We have the pleasure to invite you to deliver one of the principal addresses at the Colloquium. The Bolyai Society will be able to cover your expenses during your stay in Szeged, including participation fee.

Being aware that it is difficult to answer this request so much ahead of time, it would help organization matters if we could get a tentative answer from you at your earliest convenience. This of course will mean no obligation from your part.

Hoping very much that you can accept our invitation,

Yours sincerely,

László Lovász
Chairman of the
Organizing Committee

77/4046 MTESZ HNy.-Bp.

14.11.77

L. Lovász

JATE Bolyai Intézet
H-6720 Szeged
Aradi Vertanuk tere 1

Dear Mr. Lovász,

Thank you very much for your invitation to deliver one of principal addesses at the Colloquium on Algebraic Methods in Graph Theory. I accept with great pleasure this invitation, at least in principle and I hope to be in a couple of months in position to give you a more precise answer as well as some preliminary date on my lecture.

With kind regards,

Yours sincerely

Dragoš Cvetković

Beograd 14.11.1977.

Dragi kolega Pisanski,

Hvala na pismu od 24.10.1977.

Sa zadovoljstvom prihvatam saradnju koju nudite. Za početak - šaljem Vam jedan primerak moje knjige

Za sada ne znam kada bih mogao da dođem u Ljubljanu ali će kolega Slobodan Simić, kome Vi znate od ranije, možda uskoro doći na-mjestiti pa bi on mogao da uspostavi prvi ćvršći kontakt sa Vama. Mogli biste predložiti da on na Vašem seminaru ili drugde prikaže neke od svojih radova. Kolegu Simića sam obavestio o ovome tome i on je obećao da će Vam pisati.

Naravno, ako Vi dolazite u Beograd bilo bi dobro da zajedno sa Simićem, eventualno sa Bratislavom (koji koristi teoriju grafova; sada u Kragujevcu) prodiskutujemo o zajedničkim problemima. Takođe i putem korespondencije možemo razmenjivati informacije.

Simić i ja radimo najviše oko algebarske teorije grafova (spektri grafova, karakteristične jednačine, itd.) sa primenama u hemiji (Hückelova teorija nezasićenih ugljovodonika).

Sa pozdravom Dragoš Cvetković

Dragoš Cvetković 15.11.77

Mr. Farrell
The University of the West Indies
Department of Mathematics
St. Augustine,
Trinidad, W.1.

Dear Mr. Farrell,

Thank you very much for your mail of August 17 which I received, may be, a month ago. Due to many duties and some travels in the meantime I am answering your letter only now.

If $\lambda_1,\ldots,\lambda_n$ are eigenvalues of G_1 and if $\mu_1,\ldots,\mu_m$ are the eigenvalues of G_2, then G_1+G_2 has the eigenvalues $\lambda_i+\mu_j$, $i=1,\ldots,n$, $j=1,\ldots,m$. P_2 $(=K_2)$ has eigenvalues 1 and -1. So G_1+P_2 has eigenvalues $\lambda_1+1,\ldots,\lambda_n+1$, $\lambda_1-1,\ldots,\lambda_1-1$ and $P_{G_1+P_2}(\lambda) = P_{G_1}(\lambda-1)P_{G_2}(\lambda+1)$. So you really can express characteristic polynomials of ladders in this way.

Incidentally, Dr. I. Gutman, a chemist working in graph theory, has now in print in Publ. Inst. Math (Beograd) a paper which is very similar to your paper on matching polynomials. The address of Mr. Gutman is: Department of Chemistry, Faculty of Sciences, University of Kragujevac, R. Domanovića 12, 34000 Kragujevac, Yugoslavia.

I would appreciate very much if you would inform me which of your papers are published or will be published soon. Since my co-authors and I are trying to produce a nearly complete bibliography on graph spectra for our book, we would include your papers there.

With kind regards,

Yours sincerely

Dragoš Cvetković

László BABAI, H-1o74 Budapest, Szövetség u. 17, Hungary

November 21, 1977

Dear Professor Cvetković:

Thank you for your letter of 4.11.77. I send you ~~a two~~ 3 preprints under separate cover. One of them is the result about cospectral graphs with given automorphism groups, to appear in the proc. of the Oberhof meeting. The more complete version, entitled "Automorphism group and category of cospectral graphs", will appear in Acta Math. Acad. Sci. Hung. May I call your attention to §1 and to Corollary 5.6 /p.26/ of that paper. The third preprint contains my lecture held at the conf. "Fundamentals of Computation Theory", Póznan 1977 /it did not appear in the proc. because I was late in sending it to the Organizers.

We observed with P.P.Pálfy that the cyclic group of order 2p possesses cospectral Cayley-graphs if and only if p is not of the form 2q+1 /p,q primes/. The smallest such graph has thus ~~12~~ 26 vertices. /Note that a Cayley graph of order p, p prime, is the same as to take an arbitrary graph of order p with transitive automorphism group.*/ The result isn't written down, but we can do so if you are interested, it is quite short - apart from a reference to another result on isomorphisms of Cayley graphs.

The result of your compatriot on planar graphs with cyclic automorphism groups is relatively interesting, and definitely new. I hope his ~~result~~ proof is not a tedious case-by-case investigation. Please tell him that I am interested in reading his proof. - Especially interesting is the compact result - I would have expected a more complicated one.

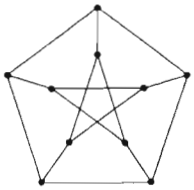
Sincerely yours

László Babai

László Babai

* Such graphs are never cospectral by the result of Turner (JCT 9 (1970), 297-307)

P.S. I hope I gave you a copy of my paper "Spectra of Cayley graphs", to appear in JCT-B (1979)



Journal of Graph Theory

November 28, 1977

Dr. Dragos Cvetković
Department of Mathematics
University of Beograd
P.O. Box 816
11001 Beograd, YUGOSLAVIA

Dear Dragos:

Thank you very much indeed for your letter of 14 September which only just reached me recently. Of course I appreciate your good words about JGT. Here are some comments on your paper which you enclosed:

1. Please change the last sentence of your first paragraph on page 2 to the following: It is independently discovered also in [11], where it was used to find the number of dissimilar walks of length n.

2. On the last line of page 2 you should change the word shortly to briefly.

3. On the last line of page 3 change spectra to spectrum.

4. On page three, fourth line from bottom, change $i \neq j$ to $i = j$.

5. On page 5 line 6, you should begin the sentence with the word Then rather than with a symbol. Exactly the same comment applies to the sentence which begins in the second line of the last paragraph of page 7. A sentence should not begin with a symbol

Hearty congratulations on these nice results! I am glad to know them. The paper [11] with Schwenk has not yet appeared in Pacific Journal of Mathematics even though we wrote it five years ago.

I hope these comments are helpful to you. I am only writing them in detail as you are a good friend.

Best regards, and to your wife, and to Simić

Frank H

Frank Harary

FH/lg

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EINDHOVEN UNIVERSITY OF TECHNOLOGY

Department of Mathematics

P.O.Box 513
Eindhoven
The Netherlands

Dr. D. Cvetković
Lamartinova 44
11000 BEOGRAD
Yugoslavia.

Eindhoven, November 30, 1977.

Dear Mr. Cvetković,

In your letter of November 2, 1977, you asked me how Mr. Doob and I got the graphs having least eigenvalue > -2 which are not generalized line graphs. I will try to explain to you the procedure which we used.

As you already supposed, we started with the Beineke graphs. We used the fact that the spectrum of an induced subgraph interlaces the spectrum of the graph, hence: smallest eigenvalue graph ≤ smallest eigenvalue induced subgraph.

So we had to start with all graphs of same order n with smallest eigenvalue > -2, and add one vertex in all possible ways. In this way we got a number of candidates, from which the graphs of order n+1 with least eigenvalue ≤ -2 were deleted. Proceeding in this way we got the following results:

1 Beineke graph of order 4 ⇒ 4 graphs of order 5
1 Beineke graph of order 5
5 graphs of order 5
⇓
29 graphs of order 6
6 Beineke graphs of order 6
35 graphs of order 6
⇓
171 graphs of order 7
⇓
705 graphs of order 8.

Call A the (0, 1) adjac. matrix. Finally, for the graphs of the orders 6, 7 and 8 we determined det (2I+A), and then deleted all graphs for which det ≠ 9 - order. In this way we arrived at the 20 graphs on 6 vertices, the 110 graphs on 7 vertices and the 443 graphs on 8 vertices.

I now hope to have answered your questions.

With kind regards also from Prof. Seidel and Harma, I remain,

sincerely yours,

J. C Bermond

THE UNIVERSITY OF THE WEST INDIES
DEPARTMENT OF MATHEMATICS

CABLES: "STOMATA" PORT-OF-SPAIN

ST. AUGUSTINE,
TRINIDAD, W.I.

November 30, 1977

OUR REFERENCE: _____

Dr. Dragoš Cvetković,
Department of Mathematics,
Faculty of Electircal Engineering,
University of Beograd,
P.O. Box 816,
11001 Beograd,
YUGOSLAVIA.

Dear Dr. Cvetković,

Thank you for your letter. I will contact Dr. Gutman. Thanks for his address. I am very much interested in finding out what he has done.

I think that I have followed your point about characteristic polynomials.

None of my papers on graph polynomials have been published as yet. However, two of them have been accepted for publication and should appear soon. They are:

1. On a General Class of Graph Polynomials; J. Comb. Theory Series B.
2. Introduction to Matching Polynomials; J. Comb. Theory Series B.

The following paper has been revised and should be officially accepted soon:

3. On a Class of Polynomials Obtained from the Circuits in a Graph and its Application to Characteristic Polynomials of Graphs; Discrete Mathematics.

Sincerely,

E. J. Farrell

2.12.77

Mr. Laszkó Babai
H-1o74
Budapest

Dear Mr. Babai,

Thank you very much for your letter of November 1, as well as for your mail with some papers of yours.

I am glad that you have an intention to visit us in January next year. I would suggest to you to come in the first half of January because the period between January 15 and February 15 is foreseen for the examinations of students. For instance, you could come on Thursday, January 12 and deliver the lecture on Friday, January 13. If this date is not convenient to you, please propose any other term, including the second half of January or even February,

With kind regards,

Yours sincerely

Dragoš Cvetković

St. John's University
300 HOWARD AVENUE
STATEN ISLAND, NEW YORK 10301

TELEPHONE:
(212) 447-4343

Division of Mathematics and Science

December 12, 1977

D.M. Cvetkovie
University of Belgrade
Dept. of Electrical Engineering
Box 816
11.001 Belgrade
Yugoslavia

Dear Sir:

Could you please send me a reprint or preprint of your paper, Graph equations, graph inequalities and a fixed point theorem. I am very interested since I recently submitted a paper entitled Graph Equations, am wondering if we are investigating the same thing.

Many thanks.

Very truly yours,

MFC/dcw

Michael F. Capobianco, Ph.D.

13.12.1977

Mr. László Babai
H-1074
Budapest
Szövetség u.17
Hungary

Dear Mr. Babai,

Thank you for your letter of November 21. In myprevious letter I confirmed the receipt of your preprints.

Please find enclosed herewith a copy of the paper "Vertex-minimal planar cyclic graphs" by D. Marušić, Mr. Marušić is now in England with Professor Nash-Williams. I suggested to Marušić to rewrite and to shorten it. If you have some essential comments, let me know, please.

Mr. Gutman told me that the people from the theoretical chemistry group of the Institute "Rudjer Bošković" in Zagreb would be interested to invite you to deliver a lecture also there during your visit to Yugoslavia. Of course, your expenses would be covered. If it is convenient to you Mr. Gutman would arrange the things including an official invitation.

Sincerely yours

Dragoš Cvetković

Niš, 20.XII 1977.

Poštovani profesore,

Šaljem Vam ovaj rad "Jedan oblik primene izvoda na n-kubu" s molbom da ga pogledate. Ujedno Vas molim da mi dostavite kratku recenziju za rad "Karakteristike n-kuba" čiju konačnu verziju Vam takođe šaljem.

Srdačan pozdrav,

Milica M. Danković, NIŠ, ul. Zetska 6/36

Danković Milica

(408) 984-4482

THE UNIVERSITY OF SANTA CLARA • CALIFORNIA • 95053

THE SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

December 29, 1977

Dr. D. Cvetković
Matematicki Institut Beograd
Knez Mihailova 35
11000 BEOGRAD
Yugoslavia

Dear Dr. Cvetković:

During his visit here at the University of Santa Clara, Professor Milić mentioned you and your work on graph theory. I would appreciate it very much if you would send me copies of your papers on the subject.

Enclosed please find copies of our papers that make use of directed graphs and interconnection matrices, and may be of some interest to you.

Sincerely yours,

Dragoslav Šiljak

Dragoslav Siljak
Professor

DS/ms
Enclosures