

**EXPERIMENTAL DIFFICULTIES IN DETERMINATION OF THE
SPECTRAL LINE SHAPES EMITTED FROM PLASMA**

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From the plasma radiation and from spectral line profiles it is possible to obtain pieces of information about the plasma conditions. These pieces of information are, for example, concentration of the neutral or charged particles, their temperatures and atomic data. Experimentally obtained data have great importance in plasma diagnostic, theory testing and plasma applications.

During the experimental work many difficulties appear. The aim of this paper is to classify experimental problems and to offer method for their solving.

In this paper, first a review of spectral line broadening causes and corresponding theories is given. The experimental technique and checking and corrections of self absorption are described also. Furthermore, procedure of spectral line halfwidth and shift determination from experimental profiles is given. Finally, the Abel inversion, important for plasma sources with cylindrical symmetry is considered. All of above mentioned techniques and procedures are followed by many experimental examples.