ON THE PLASMA BROADENING AND SHIFTING
OF NON-HYDROGENIC SPECTRAL LINES

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Abstract. The present status of the experimental studies of plasma broadening and shifting
of non-hydrogenic neutral atom and positive ion spectral lines will be discussed with an
emphases to the plasma diagnostic applications. Short overview of the available theoretical
results will be followed by the description of experimental techniques for the line shape and
shift measurements. The influence of other broadening mechanisms to the Stark width and
shift determination will be discussed. To select higher accuracy experimental data for plasma
diagnostic purposes the available experimental results are analyzed and the uncertainty of
recommended ones is estimated. The procedure for application of selected lines for plasma
electron density diagnostics will be described. In order to test theories the selected data
are compared with results of various Stark width and shift calculations. Neutral atom lines
asymmetry and new techniques for ion-broadening parameter measurements will be reviewed.
The studies of line widths and shifts along isoelectronic sequences of multiply ionized atoms
will be discussed also.