

Spectral Line Profile Analysis Using Higher Diffraction Order in Vacuum Ultraviolet Region

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ABSTRACT

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Using a one meter VUV spectrometer and a MCP coupled to a CCD detector on TCABR tokamak, ion temperatures from impurity species have been measured and much better spectral resolution was obtained using higher order diffraction lines. Due to very small Doppler effect in the VUV region compared to large instrumental broadening, ion temperatures obtained from first order diffraction present large errors. The use of second, third and fourth order diffraction emissions increases the line broadening and results in lower error temperature measurements. ©2008 American Institute of Physics