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4.26 Plasma rotation measurement using UV/Visible spectroscopy on ADITYA-U tokamak

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A high-resolution spectroscopic diagnostic for the measurement of plasma rotation and ion temperature is designed, developed and implemented on ADITYA-U tokamak, which is built to have diverter configuration by Upgrading ADITYA tokamak [1]. The diagnostic is viewing the plasma along the toroidal direction through six lines of sights from midplane tangential port using optical fibers and collimating lenses and covering the plasma from center to the half radius of the plasma. The UV and visible emission lines are at 229.69, 227.09 and 529.01 nm from C2+, C4+, and C5+ have been selected for the measurement. A high-resolution 1m f/8.7 spectrometer equipped with 1800 g/mm is used along with a CCD for the measurement. Initial measurements to using the diagnostic have been carried out during the ADITYA-U operation. In this presentation, the details on the development of the diagnostics and initial result will be discussed [1] J Ghosh et al, proceeding FEC 2016

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