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## A PASSIVE CHARGE EXCHANGE DIAGNOSTICS AT ADITYA TOKAMAK FOR ION TEMPERATURE ESTIMATION USING ELECTROSTATIC PARALLEL PLATE ANALYZER [EPPA]

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Passive CX-NPA has been designed and developed for the Aditya tokamak ion temperature measurement. Ion temperature measurements have been carried out by the energy analysis of passive Charge Exchange (CX) neutrals escaping out of the ADITYA-tokamak (Minor radius  $a = 25$  cm, major radius  $R = 75$  cm) plasma using a 45-degree Electrostatic Parallel Plate Analyzer [EPPA]. The upgraded the EPPA with its tested UV-rejection capabilities was found to perform during the APPS Plasma discharges with a fairly good signal to noise ratio of  $\sim 50$ .

Temporal evaluation of Ion temperature has been presented during the flat top of the plasma current and ion temperature for some recent APPS discharges were found to be typically  $200 \pm 30$  eV ( $\sim 40\%$  to  $45\%$  of the central electron temperature). The results for the ICRH heating along with ohmically heated plasma discharges have also been discussed.

Key words: Tokamak, Ion temperature, Electrostatic Parallel Plate Analyzer [EPPA].

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