

Abstract Submitted
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Direct Measurement of the First Wall Recycling Coefficient on RFX mod ROBERTO CAVAZZANA, MATTEO AGOSTINI, LORELLA CARRARO, PAOLO INNOCENTE, LIONELLO MARRELLI, PAOLO SCARIN, GIANLUCA SPIZZO, MONICA SPOLAORE, NICOLA VIANELLO, MATTEO ZUIN, Consorzio RFX (CNR, ENEA, INFN, Universita' di Padova, Acciaierie Venete SpA) — A diagnostic for the direct measurement of the Deuterium particle fluxes and the recycling coefficient $R = \Gamma_{in}/\Gamma_{out}$ at the first wall has been recently installed on RFX-mod. The system is composed by a set of combined diagnostics. Two sets of Langmuir probes (LP) are mounted on a on a movable graphite tile; one is configured as a triple probe (measuring T_e, n_e), while the other set uses two floating potential for the measurement of the electric field and plasma flow velocity transverse components. The two LP sets can be also combined as a Mach probe for estimation of the parallel flow velocity, allowing the separation between the convective and the turbulent contributions. A set of spectroscopic measurements (calibrated D_α , C-II and Li-I emissions), a single point thermal infrared sensor and a fast camera in the visible range aimed at the graphite tile, are used to evaluate the particle influx and the response of the graphite sample at different plasma conditions. The intent is to determine the behavior of the asymmetry of the recycling coefficient due to the geometry of the magnetic field. Furthermore it will be possible to establish the role of the particle source in the density accumulation effect induced by magnetic islands present at the edge.

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