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Toroidal Rotation in the Torpex Magnetized Plasmas BENOIT LABIT, AHMED DIALLO, AMBROGIO FASOLI, IVO FURNO, DAVOUD IRAJI, PAOLO RICCI, CHRISTIAN THEILER, Centre de Recherche en Physique des Plasmas - EPF Lausanne — Rotation and plasma flow in general are closely tied to transport of heat and particles across field lines. Toroidal velocity measurements obtained with a Mach probe and covering the entire poloidal cross-section of the TORPEX device ($n_e \leq 10^{17}\mathrm{m}^{-3}$, $T_e \leq 10\mathrm{eV}$, R=1m, a=0.2m) are presented. It is found that the time averaged toroidal velocity profile does not change when the toroidal magnetic field is reversed. In addition, dependencies of the time averaged toroidal velocity on the vertical magnetic field, the neutral gas pressure and the neutral gas type is investigated and will be compared with theoretical predictions. On TORPEX, a regime has been identified, in which a core plasma is produced and confined on the device high field side, separated from an SOL-like region on the low-field-side. Blobs are observed in this regime to carry plasma from the core to the SOL region. We are investigating the possible impact of the blob propagation on the plasma toroidal rotation using time resolved measurements of the toroidal velocity. It is found that the plasma decelerates when a blob is propagating radially.

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