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## EX/P4-26: Modification of Toroidal Flow in the STOR-M Tokamak

*Wednesday, 10 October 2012 14:00 (4h 45m)*

Flow measurements using ion Doppler spectroscopy (IDS) have been recently used to study toroidal flow velocities of impurity ions. By selecting ion species, such as a CIII line (464.7 nm) with emission intensity peaking at the radial location near  $r=7$  cm, an OV line (650.0 nm) at, and CVI line (529.0 nm) near the plasma core, an estimated radial resolution of flow velocities can be achieved through a single line of sight along the tangential direction of the torus. During nominal ohmic discharges, the toroidal flow is in the counter-current direction in the core region at  $r=0$  cm (CVI line) and  $r=4$  cm (OV line) and changes to co-current direction towards the edge at  $r=7$  cm (CIII line). In the extreme edge and scrape-off-layer (SOL), the flow is also in the co-current direction as measured by a movable Mach probe. Resonant magnetic perturbations (RMP) using a set of resonant helical coils in the  $m/n=2/1$  configuration [1] or tangential compact torus injection [2] changes the flow towards the co-current direction in all regions, while during the improved confinement phase triggered by fast gas puffing, the flow changes towards the counter-current direction.

[1] ELGRIW S., LIU D., ASAI T., HIROSE A., XIAO C., Nucl. Fusion 51, 113008 (2011).

[2] XIAO C., SEN S., HIROSE A., Phys. Plasmas 11, 4041 (2004).

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