

Toroidal rotation in RF heated JET plasmas

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Experiments have been carried out on JET aimed at studying rotation in RF heated plasmas with insignificant external momentum input. Both plasmas with Ion Cyclotron Resonance Frequency (ICRF) heating and Lower Hybrid Current Drive (LHCD) have been investigated. The rotation profiles are measured by Charge Exchange recombination spectroscopy, using short diagnostic Neutral Beam Injection (NBI) pulses. Moreover, the temporal evolution of the central rotation could in some cases be deduced from MHD activity. While most of the measurements were focussed on ICRF heating, the LHCD results are interesting since they present the first results from JET using the above technique and allowed studies of the rotation with $q > 1$.

The present measurements indicate that, irrespective of the scenario, the outer part of the plasma rotates in the co-current direction. Hollow profiles were in many circumstances observed in the central part of the plasma, especially at low current and with off-axis ICRF heating. The experimental results are presented together with an analysis of the torque from ICRF heated fast ions.