

Abstract Submitted
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Scaling of Intrinsic Rotation with Normalized Gyroradius in DIII-D and Comparison to Intrinsic Torque Scaling¹ COLIN CHRYS-TAL, General Atomics, SHAUN HASKEY, BRIAN GRIERSON, Princeton Plasma Physics Laboratory, JOHN DEGRASSIE, General Atomics, CAMERON SAMUELL, Lawrence Livermore National Laboratory — New experiments at DIII-D have investigated the scaling of intrinsic rotation with the normalized gyroradius, ρ^* , by performing a dimensionless parameter scan in electron cyclotron heated H-mode plasmas with no external torque injection. Intrinsic rotation was measured for both the dominant impurity and the main-ion species. The main experimental result is that the Mach no. (toroidal velocity normalized to either the sound speed or the Alfvén velocity) was nearly constant or slightly increasing with decreasing ρ^* . These intrinsic rotation results corroborate the previous measurements¹ of the intrinsic torque and momentum confinement time scaling with ρ^* , which indicates that the fast-ion content from significant neutral beam injection in the previous experiment did not influence those results. The potential effect of neutral particle transport in the pedestal is also investigated. Predictions of the intrinsic rotation in ITER are reviewed.

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