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Comparison of DIII-D Results with Extended Neoclassical Theory for Rotation and Transport.¹ J. MANDREKAS, W.M. STACEY, Georgia Institute of Technology, W.P. WEST, General Atomics, M. MURAKAMI, M.R. WADE, Oak Ridge National Laboratory — An extended neoclassical theory of plasma rotation and main ion and impurity particle transport² has been used to analyze recent DIII-D experiments. The predictions of this theory for the central rotation velocities and momentum confinement times agree very well with experiment for several DIII-D discharges.^{3,4} In addition, radial distributions of the toroidal and poloidal velocities and the radial electric field, agreed well with the measured profiles in an L-mode DIII-D discharge. In this work, the comparison with experiment is extended to more DIII-D discharges and the predictions of the theory for particle transport are also compared with experiment, including measured particle diffusion coefficients and convective velocities, impurity accumulation, etc.

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²W.M. Stacey, Phys. Plasmas **8** (2001) 158.

³W.M. Stacey, M. Murakami, Phys. Plasmas **8** (2001) 4450.

⁴W.M. Stacey, J. Mandrekas, Phys. Plasmas **9** (2002) 1622.

Prefer Oral Session
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