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Comparison of Improved Rotation Measurements in DIII-D With Neoclassical Rotation Calculations,* R.W. Johnson, W.M. Stacey, J. Mandrekas, *Georgia Tech*, W.M. Solomon, *Princeton Plasma Physics Laboratory* – We report the application of a recently implemented extended neoclassical calculation [1] of toroidal and poloidal rotation in neutral beam-injected tokamak plasmas to interpret improved rotation measurements recently made in DIII-D taking into account energy dependent cross sections and gyromotion [2]. The measured poloidal rotation was previously found [2] to be considerably larger than is predicted by a standard (NCLASS) neoclassical calculation. The improved calculation model was previously found [1] to predict the measured toroidal rotation to within a factor of 2 in a variety of DIII-D shots in different energy confinement regimes. But this is the first comparison of the predicted poloidal rotation velocity with the improved experimental measurements in DIII-D

[1] W.M. Stacey, et al., *Phys. Plasmas* **13** (2006).

[2] W.M. Solomon, et al., *Phys. Plasmas* **13**, 056116 (2006).

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