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**Neoclassical Toroidal Viscosity for Low-Density Ohmic Plasmas in DIII-D**[1] A.J. COLE, C.C. HEGNA, J.D. CALLEN, U. Wisc.-Madison, M.J. SCHAFFER, R.J. LA HAYE, GA — A recent model [1] for field error penetration that includes resonant and non-resonant perturbed 3D magnetic fields has for the first time obtained quantitative agreement with empirical scaling studies of the error-field penetration threshold with electron density. Relevance of the new model relies on the error-field induced neoclassical toroidal viscosity (NTV) being comparable to cross-field diffusive viscosity near a resonant surface of interest. The strength and harmonic structure of NTV for low-density ohmic plasmas on DIII-D are determined from intrinsic vacuum error-field data. Preliminary analysis has shown that NTV in DIII-D is dominated by non-resonant modes. We neglect the plasma response in this initial investigation. An effective cross-field momentum transport owing to NTV is determined, for future comparison with possible cross-field momentum transport rates in ohmic discharges.
[1] A.J. Cole, *et al.,* "Effect of Neoclassical Toroidal Viscosity on Error-Field Penetration Thresholds in Tokamak Plasmas," to be published in Phys. Rev. Lett. (2007).

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