Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Validation of Multi-Mode transport model with a new drift resistive ballooning mode component J. MOKRIS[1], T. RAFIQ, G. BATEMAN, A.H. KRITZ, A.Y. PANKIN, Lehigh U. — The drift resistive inertial ballooning mode (DRIBM) transport model is implemented as a component of the Multi-Mode transport model. Validation of the new transport model is carried out by comparing experimental data from three L-mode discharges with PTRANSP simulations. The DRIBM two-fluid model consists of six coupled reduced Braginskii equations. These equations take into account diamagnetic effects, parallel electron and ion dynamics, electron inertia, magnetic perturbations, gyro-viscous stress terms, electron and ion equilibrium density and temperature gradients, and temperature perturbations. It is found that the model contributes essential transport in the edge region of tokamak plasmas. Comparisons are made, with and without DRIBM, between experimental data and predicted plasma profiles for temperature and current density. The comparison includes the entire profiles from the magnetic axis to the plasma edge. Overall, good agreement is found with experimental data with inclusion of DRIBM as a component of the Multi-Mode transport model.

[1]Permanent Address: Johns Hopkins U., supported by NSF REU grant PHY 0849416

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Date submitted: 16 Jul 2010 Electronic form version 1.4