Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

A new drift wave model for anomalous transport: Verification and validation using the PTRANSP code A.H. KRITZ, F.D. HALPERN, G. BATEMAN, A.Y. PANKIN, T. RAFIQ, Lehigh U., D.C. MCCUNE, R.V. BUDNY, PPPL — Recent developments in the PTRANSP integrated modeling code allow comparison of predicted plasma profiles obtained using different anomalous transport models. A new multi-mode model for drift-wave turbulence driven transport is introduced. The new model is based on the Weiland model for ITG and TEM and includes contributions from the Horton model for ETG modes. Results obtained with this new model are compared in PTRANSP simulations with those obtained using GLF23, MMM95 and the mixed-Bohm/gyro-Bohm model. Transport equations are solved self-consistently with sources and sinks of particles, angular momentum, thermal energy, and non-inductively driven current. The density, temperature, and width of the H-mode pedestal are predicted using a theory based model, while the edge rotation is taken from experimental data. An objective of this work includes the validation of the models for anomalous transport. This objective is pursued by comparing simulation results for the density, momentum and temperature profiles against experimental data.

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Date submitted: 22 Jul 2008 Electronic form version 1.4