Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Implementation of GTNEUT for Analysis of the Effect of Neutral Particles on Edge Phenomena in DIII-D[1] Z.W. FRIIS, W.M. STACEY, Georgia Tech, R.J. GROEBNER, General Atomics, T.D. ROGNLIEN, Lawrence Livermore National Laboratory — In order to establish an accurate and computationally economical code for routine analysis of the effects of neutral atoms on edge phenomena in DIII-D, the Georgia Tech 2D Neutral Transport (GTNEUT) code [1], which can use an arbitrarily complex two-dimensional grid to represent the plasma edge geometry, is being implemented in an integrated system. The grid generation capability built into the UEDGE code [2], which utilizes equilibrium-fitting data taken from experiment, is being incorporated. GTNEUT requires the background plasma temperature and density distributions. Measured background plasma data (Thomson, Langmuir probe, CER, and reflectometer) will be supplemented with calculated parameters from a coupled core plasma and "2-point" divertor model.

[1] J. Mandrekas, J. Computer Phys. Comm. 161, 36 (2004).
[2]T.D. Rognlien, et al., User Manual of UEDGE Edge-Plasma Transport Code (2007).

[1]Work supported in part by the US DOE under DE-FC02-04ER54698 and DE-AC52-07NA27344.

Z.W. Friis
Georgia Tech

Date submitted: 18 Jul 2008 Electronic form version 1.4