Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Modeling of Anomalous Transport in Tokamaks with FACETS code A.Y. PANKIN, G. BATEMANN, A. KRITZ, T. RAFIQ, Lehigh University, S. VADLAMANI, A. HAKIM, S. KRUGER, M. MIAH, Tech-X Corp., T. ROGNLIEN, LLNL, FACETS TEAM — The FACETS code, a whole-device integrated modeling code that self-consistently computes plasma profiles for the plasma core and edge in tokamaks, has been recently developed as a part of the SciDAC project for core-edge simulations. A choice of transport models is available in FACETS through the FMCFM interface [1]. Transport models included in FMCFM have specific ranges of applicability, which can limit their use to parts of the plasma. In particular, the GLF23 transport model does not include the resistive ballooning effects that can be important in the tokamak pedestal region and GLF23 typically under-predicts the anomalous fluxes near the magnetic axis [2]. The TGLF and GYRO transport models have similar limitations [3]. A combination of transport models that covers the entire discharge domain is studied using FACETS in a realistic tokamak geometry. Effective diffusivities computed with the FMCFM transport models are extended to the region near the separatrix to be used in the UEDGE code within FACETS.

1. S. Vadlamani *et al.* (2009) within FACETS (this meeting).
2. T. Rafiq *et al.* (2009) Submitted to Phys. Plasmas.
3. C. Holland *et al.* (2008) Proc. of IAEA FEC (Switzerland, 2008)

Srinath Vadlamani
Tech-X Corp.

Date submitted: 13 Jan 2009 Electronic form version 1.4