Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Comparisons of anomalous and collisional radial transport with a continuum kinetic edge code[1] K. BODI, S. KRASHENINNIKOV, UCSD, R. COHEN, T. ROGNLIEN, LLNL, ESL TEAM — Modeling of anomalous (turbulence-driven) radial transport in controlled-fusion plasmas is necessary for long-time transport simulations. Here the focus is continuum kinetic edge codes such as the (2-D, 2-V) transport version of TEMPEST, NEO, and the code being developed by the Edge Simulation Laboratory, but the model also has wider application. Our previously developed anomalous diagonal transport matrix model with velocity-dependent convection and diffusion coefficients allows contact with typical fluid transport models (e.g., UEDGE). Results are presented that combine the anomalous transport model and collisional transport owing to ion drift orbits utilizing a Krook collision operator that conserves density and energy. Comparison is made of the relative magnitudes and possible synergistic effects of the two processes for typical tokamak device parameters.

[1]Prepared by LLNL under USDOE Contract DE-AC52-07NA27344.

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Date submitted: 13 Jan 2009 Electronic form version 1.4