Abstract Submitted
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Analysis of Particle Transport in DIII-D H-mode Plasma with a Generalized Pinch-Diffusion Model[1] L.W. OWEN, Oak Ridge National Laboratory, W.M. STACEY, Georgia Tech, R.J. GROEBNER, General Atomics, J.D. CALLEN, U. Wisconsin-Madison, X. BONNIN, LIMHP — Interpretative analyses of particle transport in the pedestal region of H-mode plasmas typically yield diffusion coefficients that are very small (<0.1 m^2/s) in the steep gradient region when a purely diffusive particle flux is fitted to the experimental density gradients. Previous evaluation of the particle and momentum balance equations using the experimental data indicated that the pedestal profiles are consistent with transport described by a pinch-diffusion particle flux relation [1]. This type of model is used to calculate the diffusion coefficient and pinch velocity in the core for an inter-ELM H-mode plasma in the DIII-D discharge 98889. Full-plasma SOPLS simulations using neutral beam particle and energy sources from ONETWO calculations and the model transport coefficients show good agreement with the measured density pedestal profile.

[1] W.M. Stacey and R.J. Groebner, Phys. Plasmas **12**, 042504 (2005).

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