Abstract Submitted
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Drift-kinetic simulations of axisymmetric plasma transport at the edge of a divertor tokamak[1] M. DORF, M. DORR, D. GHOSH, J. HITTINGER, LLNL, W. LEE, UCSD, R. COHEN, Retired — Eulerian kinetic calculations are presented for the axisymmetric cross-separatrix transport of plasma at the edge of a tokamak. The simulations are performed with a high-order finite-volume code COGENT that solves the full-F drift-kinetic equation for the ion species including the effects of fully-nonlinear Fokker-Plank ion-ion collisions. The ion kinetic response is coupled to two-dimensional self-consistent electrostatic potential variations, which are obtained from the vorticity equation with the isothermal fluid electron model. The paper also presents recent progress toward the full-edge turbulence code. The slab-geometry 5D version has recently become available and is successfully verified in simulations of the collisionless drift-wave instability.

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