

Abstract Submitted
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Noise driven diffusion in gyrokinetic PIC simulations IGOR HOLOD, ZHIHONG LIN, University of California, Irvine — The detailed statistical analysis of discrete particle noise in global gyrokinetic PIC simulations has been carried out. Based on the correlation function of electrostatic potential fluctuations, the diffusion coefficient is calculated, using the simple expression with no resonance broadening effects. It's value is compared with the one obtained directly from the simulations. The theoretical tool deployed in this study is useful for monitoring the physics fidelity of gyrokinetic PIC simulation of turbulent transport in magnetized plasmas.

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