

Abstract Submitted
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Global Gyrokinetic Simulation Model for Laboratory Magnetosphere HUA-SHENG XIE, WEI-KE OU, School of Physics, Fusion Simulation Center, State Key Laboratory of Nuclear Physics and Technology, Peking University, YI ZHANG, SHI-KANG DU, ZI-CONG HUANG, School of Physics, Peking University, BO LI, School of Physics, Fusion Simulation Center, State Key Laboratory of Nuclear Physics and Technology, Peking University — A global gyro-kinetic particle-in-cell code (GKD) is developed to study the micro-instabilities driven turbulent transport for magnetic dipole configuration. This configuration is relevant to several experiment devices, such as LDX at MIT, CTX at Columbia University and HDX at Harbin Institute of Technology. The major electrostatic drift instability in this system is entropy mode, which can be unstable even when ideal interchange mode is stable. For comparison, we also show the nonlinear results in Z-pinch and linear results with benchmark to linear eigenvalue solution.

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