Abstract Submitted
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Analysis of plasma particle and energy fluxes to material surfaces from tokamak edge turbulence simulations[1] M.V. UMANSKY, B.I. COHEN, T.D. ROGNLIEN, LLNL, J.A. BOEDO, D.L. RUDAKOV, UCSD — Recent BOUT simulations of edge plasma turbulence in L-mode regime in the boundary region of DIII-D tokamak have demonstrated reasonable match with key edge diagnostics [1]. Order-of-magnitude level agreement has been found in the characteristic amplitude, wavenumber, and frequency of turbulent fluctuations, as compared with experimental data from reciprocating edge Langmuir probe and Beam Emission Spectroscopy systems. Owing to this encouraging agreement, output data from these simulations are analyzed to get insights on physical mechanisms and properties of plasma particle and energy fluxes to material surfaces. Of particular interest is plasma turbulence propagating into, or generated in, the far scrape-off layer region where plasma interacts with material walls. Results of statistical analyses of simulated turbulence plasma transport will be presented and physical implications will be discussed.

[1] B.I. Cohen et al., APS-DPP 2012

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M.V. Umansky
LLNL

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