

Abstract Submitted  
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**Nonlinear Simulations of the inhomogeneous magnetic electron drift vortex mode turbulence** P.K. SHUKLA, Ruhr University Bochum, Germany, DASTGEER SHAIKH, The University of Alabama in Huntsville, B. ELIAS-SON, Ruhr University Bochum, Germany — A simulation study of the magnetic electron drift vortex (MEDV) mode turbulence in a magnetoplasma in the presence of inhomogeneities in the plasma temperature and density, as well as in the external magnetic field, is presented. The study shows that the influence of the magnetic field inhomogeneity is to suppress streamer-like structures observed in previous simulation studies without background magnetic fields. The MEDV mode turbulence exhibits non-universal (non-Kolmogorov type) spectra for different sets of the plasma parameters. In the presence of an inhomogeneous magnetic field, the spectrum changes to a  $7/3$  power law, which is flatter than without magnetic field gradients. The relevance of this work to laboratory and cosmic plasmas is briefly mentioned.

Dastgeer Shaikh  
The University of Alabama in Huntsville

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