Geophysical Research Abstracts
Vol. 14, EGU2012-2168, 2012
EGU General Assembly 2012

Spatial Intermittency in Electron Magnetohydrodynamic Turbulence

B.K. Shivamoggi
United States (bhimsen.shivamoggi@ucf.edu)

Fractal and multi-fractal aspects of spatial intermittency in the energy cascade of electron magnetohydrodynamic (EMHD) turbulence is considered. Fractal and multi-fractal models for the energy dissipation field are used to determine intermittency corrections to the scaling behavior in the high-wavenumber (electron hydrodynamic limit) and low-wavenumber (magnetization limit) asymptotic regimes of the inertial range. Extrapolation of the multi-fractal scaling down to the dissipative microscales does seem to confirm in these asymptotic regimes a dissipative anomaly previously indicated by the numerical simulations of EMHD turbulence.