

Abstract Submitted
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Broken Symmetry and Coherent Structure in MHD Turbulence

JOHN SHEBALIN, NASA Johnson Space Center — Absolute equilibrium ensemble theory for ideal homogeneous magnetohydrodynamic (MHD) turbulence is fairly well developed [1]. Theory and simulation indicate that ideal MHD turbulence is non-ergodic and contains coherent structure. The question of applicability to real (*i.e.*, dissipative) MHD turbulence is examined. Results from several very long time numerical simulations on a 64^3 grid are presented. It is seen that coherent structure begins to form before decay dominates over nonlinearity. The connection with inverse spectral cascades and selective decay will also be discussed.

[1] J. V. Shebalin, *J. Plasma Phys.*, **72**, 507-524, 2006.

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