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Directional multi-scale statistics of quasi-static magnetohydrodynamic turbulence[1] NAOYA OKAMOTO, Center for Computational Science, Nagoya University, Nagoya, 464-8603, Japan, KATSUNORI YOSHIMATSU, Department of Computational Science and Engineering, Nagoya University, Nagoya, 4648603, Japan, KAI SCHNEIDER, M2P2-CNRS & CMI, Aix-Marseille Universite, Marseille, France, MARIE FARGE, LMD-IPSL-CNRS, Ecole Normale Superieure, 24 rue Lhomond, 75231 Paris Cedex 05, France, MULTISCALE METHODS FOR TURBULENCE COLLABORATION — Anisotropy and intermittency of quasi-static magnetohydrodynamic (MHD) turbulence in an imposed magnetic field are examined, using three-dimensional orthonormal wavelet analysis. This analysis is applied to two turbulent MHD flows computed by direct numerical simulation with 512^3 grid points and with different intensities of the imposed magnetic field. It is found that the imposed magnetic field leads to a substantial amplification of intermittency in the velocity field, especially in the direction of the imposed magnetic field. The Eulerian and Lagrangian accelerations are also examined by applying directional multi-scale analyses.

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