

Abstract Submitted
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Spectrum of weak MHD turbulence¹ STANISLAV BOLDYREV, U. Wisconsin-Madison, JEAN CARLOS PEREZ, U. Wisconsin-Madison — Turbulence of magnetohydrodynamic waves in nature and in the laboratory is generally cross-helical or non-balanced, in that the energies of Alfvén waves moving in opposite directions along the guide magnetic field are unequal. We propose that such turbulence spontaneously generates a condensate of the residual energy $E_v - E_b$ at small field-parallel wave numbers. As a result, the energy spectra of counter-propagating Alfvén waves are generally not scale-invariant. In the limit of infinite Reynolds number, the universality is asymptotically restored at large wave numbers, and both spectra attain the scaling $E(k) \propto k_{\perp}^{-2}$.

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Stanislav Boldyrev
U. Wisconsin-Madison

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