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Whistler Turbulence from Particle-in-Cell Simulations S. PETER GARY, Los Alamos National Laboratory, SHINJI SAITO, Nagoya University, YASUHITO NARITA, Technische Universitat Braunschweig — Two-dimensional particle-in-cell simulations of whistler turbulence in magnetized, homogeneous, collisionless plasmas of electrons and protons have been carried out. Enhanced magnetic fluctuation spectra are initially imposed at relatively long wavelengths, and, as in previous such simulations, the temporal evolution shows a forward cascade of magnetic fluctuation energy to shorter wavelengths and preferentially toward wavevectors relatively perpendicular to the background magnetic field $\mathbf{B}_o$. Two new results are reported here. First, the wavevector anisotropy is very different for each of the three components of the fluctuating magnetic field. Second, the magnetic fluctuation energy spectrum at relatively short wavelengths ($kc/\omega_{pe} \sim 1$) is steeper than that predicted by EMHD simulations and theories at relatively long wavelengths. This steep spectrum may correspond to recent solar wind observations of magnetic turbulence spectra at short wavelengths.

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