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Whistler turbulence inverse cascade: Three-dimensional particle-in-cell simulations S. PETER GARY, Space Science Institute, R. SCOTT HUGHES, JOSEPH WANG, OULIANG CHANG, University of Southern California — Three-dimensional particle-in-cell (PIC) simulations of whistler turbulence have been carried out in a magnetized, homogeneous, collisionless plasma of initial $\beta_e = 0.10$. The simulations begin with anisotropic bi-Maxwellian electron velocity distributions with $T_{\perp e}/T_{\parallel e} > 1$, leading to the growth of the whistler anisotropy instability. The simulations follow the temporal evolution of the field fluctuations as they grow and saturate with largest amplitudes at $kbzero$ and $k_\parallel c/\omega_{pe} \simeq 1.0$. The counter-propagating enhanced fluctuations drive an inverse cascade to longer wavelengths at $k_\parallel c/\omega_{pe} << 1$ with $k_\perp > k_\parallel$. Computations have been done at various values of the electron electron temperature anisotropy, and physical interpretations for the results of these simulations will be provided.

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