Inhomogeneous two dimensional whistler turbulence[1] DASTGEER
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Whistler turbulence is investigated by including electron density perturbation in
two dimensional fluid model. We find that electron density couples with the wave
magnetic field and leads to to finite compressibility effects in whistler turbulence.
Interestingly it is found from our simulations that despite strong compressibility
effects, the density fluctuations couple only weakly to the wave magnetic field fluc-
tuations. In a characteristic regime where large-scale whistlers are predominant,
the weakly coupled density fluctuations do not modify inertial range energy cascade
processes. Consequently, the turbulent energy is dominated by the large-scale eddies
and it follows a Kolmogorov-like spectrum, where k is a characteristic wavenumber.

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