

File Description

1. Wave file: 'flr_torpol_100_krhoi_01_10_f1.txt'

The file contains the location, plasma parameters and unscaled amplitude quantities for each of the 100 mode solutions at each point along the geomagnetic field at $L=5.7$. The header within the file describes the content and format.

2. Particle Files:

'electron_b_specf1_100_500kev_pa45_2_neg_vz.txt'

For a 500 keV electron with initial equatorial pitch-angle of 45 degrees. Each row of the file contains the time (seconds), location of the particle (Earth_radii, radians; r , θ , ϕ), its velocity (m/s; v_r , v_θ , v_ϕ) and the electric (V/m; E_r , E_θ , E_ϕ) and magnetic fields (T; b_r , b_θ , b_ϕ) at that location in spherical coordinates and in the following order:

time, r , θ , ϕ , v_r , v_θ , v_ϕ , E_r , E_θ , E_ϕ , b_r , b_θ , b_ϕ

There is a file for each energy and pitch angle considered with sizes ranging from 3.3 GB up to 7 GB and totaling over 200 GB. Given the size of these data files only that used to produce Figure 2 and the corresponding parts of Figure 3 is supplied. The others are available on request.

3. Diffusion files:

'diffusion_coeffs_d[quantity]_[eq_pitch_angle]_[bounces]_2.txt'

Derived from the particle files. The filename indicates the quantity considered [L , θ (θ_{eq}), or scalar momentum (p)] the initial pitch-angle at the equator in degrees and the number of bounces over which the distribution of shifts is evaluated. Each file is comprised of three columns and 9 rows. The columns are energy in keV, the width of the Gaussian fits to the distribution of shifts in the quantity considered, and the diffusion coefficient defined as described in the text. Each row provides these results at energies from 50 keV to 5 MeV as identified by the entries in the first column. L is unitless, θ is in degrees, and momentum is in kgms^{-1} .