DYNAMIC EVOLUTION OF THE RADIATION BELT PHASE SPACE DENSITY

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We present radiation belt relativistic electron Phase Space Density (PSD) is obtained using the data assimilative VERB code combined with observations from GEO, CRRES, and Akebono data. Reanalysis of data shows the pronounced peaks in the phase space density and pronounced drop outs of fluxes during the main phase of a storm. Reanalysis results clearly show that persistent peaks in PSD independent of the assumed magnetic field model. Simulations with the 3D VERB code accounting for the violations of all three adiabatic invariants is presented. The results of the reanalysis are discussed and compared to the simulations with the recently developed VERB 3D code.

Keywords wave-paritcle interactions

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