

Project Details

ROSES ID: NNH05ZDA001N

Selection Year: 2006

Program Element: Independent Investigation

Topic: Storm effects on the global electrodynamics and the middle and low latitude ionosphere

Project Title:

Relativistic Electron Acceleration and Transport: CRRES and SCATHA Observations in the Inner Magnetosphere

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Project Member(s):

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Summary:

Observations by the NASA/USAF SCATHA and CRRES satellite missions will be used to test candidate mechanisms for the acceleration and transport of radiation belt electrons in the energy range 0.05-6 MeV. Radial profiles of the measured energetic electron phase space density will be constructed at constant first and second adiabatic invariants. The profiles at a range of values for the second invariant, from near zero to large values, will help determine whether local wave particle interactions actively contribute to the electron acceleration. Electron and wave data from SCATHA and CRRES will also be used to test diffusion models of the wave-particle interactions in pitch angle and energy. The effect of magnetic and electric shell splitting will be investigated by examining the local time asymmetries of SCATHA and CRRES electron observations of in comparison with other available satellites.

Publication References:

no references