



Relativistic Electron Pitch Angle Distributions in the Inner Magnetosphere

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Relativistic electron pitch angle distributions (PADs) in the trapped inner region of the magnetosphere are a sensitive measure of many processes that govern the dynamics of these particles. We report here on statistical observations of relativistic electron PADs from the REPT (Relativistic Electron/Proton Telescope) instrument aboard the Van Allen Probes mission, which show an unexpected dawn/dusk asymmetry that seems to be a persistent feature during quiet times of $Dst > -20$ nT. The observed PADs show a more peaked pancake distribution at dusk compared to dawn for energies above 1.8 MeV only. Energies from a few 100 KeV to 1 MeV do NOT show these asymmetries, ruling out magnetic field model effects. These observations hint at persistent processes that can act on relativistic electrons on timescales on the order of the outer radiation belt drift period (10 minutes).