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PEM027-04 Room: Function Room B Time: May 24 14:30-14:45

Microburst precipitation of energetic electrons associated with chorus wave generation

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Electron microbursts, which are short-duration (< 1 sec) bursts of energetic electrons that precipitate into the atmosphere, comprise an important loss process from the outer radiation belt. By means of a self-consistent full-particle simulation, we show that microburst precipitation of electrons of energies 10 keV - 100 keV accompanies the generation of discrete bursty chorus wave emissions. Specifically, we demonstrate a one-to-one correspondence between the electron microbursts and the generation of discrete chorus elements. This simulation study establishes such an exact correlation between electron microbursts and the generation of chorus elements.

Keywords: chorus emission, wave - particle interaction, nonlinear scattering, particle precipitation