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PEM007-P01

Room:Convention Hall

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Wave-particle interaction between whistler chorus and high-energy electrons: GEMSIS-RB Wave simulation

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Scattering process of high energy electrons by whistler chorus in the dipole field is studied to understand electron microbursts associated with whistler chorus by using GEMSIS-RB Wave code. Whistlers are assumed to propagate parallel to the magnetic field, and typical whistler chorus parameters, such as wave frequency, frequency drift rate, and wave amplitude, are assumed based on the spacecraft observations. By using the observed parameters, the GEMSIS-RB Wave code calculates the wave-particle interactions between whistler chorus and the high-energy electrons bouncing along the dipole magnetic field. The code can calculate the precipitation loss of energetic electrons during a few days, considering the micro wave-particle interactions with a few msec. This study focuses on the high energy electron precipitation loss associated with the scattering by whistler chorus with realistic parameters, and applies to understand a physics of high energy electron microburst.

Keywords: radiation belt, whistler chorus, wave-particle interaction