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PEM027-P05

会場:コンベンションホール

時間: 5月24日17:15-18:45

ホイッスラーモードコーラス波の非線形発展に関する研究

Nonlinear Evolution of Whistler-Mode Chorus Waves

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We analyze the mechanisms of whistler-mode chorus emissions in the Earth's magnetosphere using model chorus equations. Chorus waves with rising frequency are generated at the magnetic equator, and propagate to a higher-latitude region. During propagation, there occurs nonlinear wave evolution due to interaction with the resonant electrons. From the model equations, we reproduce the time evolution of the chorus wave at the equator. By taking into account the adiabatic variation of the energetic particle distribution, we determine the resonant current. Then by solving general wave equations numerically, we obtain the time evolution of the chorus wave frequency and amplitude along the static dipole magnetic field.