

内部磁気圏におけるコーラス励起のシミュレーション

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Evaluation of chorus generation in a global simulation of the inner magnetosphere

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In this study, we use the relativistic-RAM electron model to evaluate where and when we observe non-linear chorus waves. These assessments can be used to consider the observation strategy for satellite missions. The data measured by LANL/MPA is used as a boundary condition at $L=6.6$ to simulate the period for the SBz/NBz- high speed streams. The SBz/NBz-high speed stream events are discriminated by considering the Russell-McPherron effect, and chorus waves tend to enhance and continue for a few days during the SBz-high speed streams. We simulate the evolution of the electron distribution function as well as the ambient plasma density from the relativistic-RAM model, which will be used for the estimation of the non-linear triggering process. Based on the threshold of the non-linear growth and the optimum wave amplitude, we discuss an assessment of non-linear whistler wave growth. The regions for the non-linear growth are different from that for the intense linear growth, and non-linear whistler mode waves excitation continues for a few days after the stream interface crossing. We will show the dynamical evolutions of the global distribution of non-linear chorus waves associated with the high-speed streams.