

R008-05

C会場 : 9/25 PM1 (13:45-15:30)

14:45~15:00

低域混成波高調波の励起および非線形発展に関するパラメータ依存性

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Parameter dependence of excitation and non-linear development of harmonic lower hybrid waves

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The harmonic structure of lower hybrid waves (or harmonic lower hybrid waves) is a characteristic structure in the wavenumber-frequency ($k - \omega$) spectrum resulting from non-linear wave-wave interactions of large amplitude lower hybrid waves. In the simplest case, harmonic lower hybrid waves can be generated at a specific wavenumber and frequency, $(mk_1, n\omega_1)$, due to the lower hybrid wave with (k_1, ω_1) . In recent years, increasing attention has been paid to the harmonic lower hybrid waves because of their possibility to efficiently accelerate background ions in the polar region. In order to clarify this, general conditions for generating the harmonic lower hybrid waves should be investigated, but not yet.

In this meeting, we report the parameter dependence of excitation and non-linear development of the harmonic lower hybrid waves driven by ring-like energetic ions. We mainly focus on two parameters: the ratio of the electron plasma frequency to electron cyclotron frequency and the ratio of the ring velocity of energetic ions to the Alfvén velocity. The favorable condition of generating the harmonic lower hybrid waves is discussed.