Variations of ULF frequencies observed at ground based geomagnetic conjugate pair

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We investigate the daily variations of ULF frequencies using the ground based magnetic data observed at geomagnetic conjugate pair.

Important characteristics of the quarter wave at conjugate pair are following: 1. asymmetry of the wave amplitude, 2. high coherency of the wave forms. The merits of the observation at conjugate stations are to be able to confirm such characteristics directly. We discuss the physics of such frequency variations.

In the past, there are some studies on the daily variations of frequencies of ULF pulsations (e.g. Poulter et.al.,1988, Budnik et.al.,1998).

Budnik et.al.,[1998] found out a jump of ULF frequencies recorded by GOES6. They suggested that such a jump of frequencies may reflect a jump of wave modes of field line oscillation from the second harmonic half wave to the fundamental quarter wave (Allan and Knox,1979). But the mechanism of such a mode transition is still open to discussion.

In this study, we investigate the daily variations of ULF frequencies using the ground based magnetic data observed at geomagnetic conjugate pair.

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