

ULF wave environment of the inner magnetosphere

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The magnetosphere is filled with ULF waves in the Pc3-5 pulsation band and these waves are considered to play an important role in the formation and decay of the ring current and the radiation belts. In this presentation, we will first review our current understanding of the morphology and generation mechanisms of ULF waves in the inner magnetosphere (geostationary orbit and inward). Examples from studies using AMPTE/CCE, CRRES, GOES, and THEMIS will be used to illustrate how the state of the solar wind and the magnetosphere affects the amplitude, frequency, polarization, and field line mode structure of ULF waves. We will then identify outstanding remaining questions, and discuss how observations with the recently launched Van Allen Probes can be used to answer the questions.

Keywords: ULF waves, Inner magnetosphere, Spacecraft observations