

Statistical analysis of EMIC waves in the inner magnetosphere from the Akebono observations

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Electromagnetic ion cyclotron (EMIC) waves in the inner magnetosphere are important since EMIC waves cause the pitch angle scattering of ring current ions as well as relativistic electrons of the radiation belts. Although the spatial distributions of EMIC waves have been investigated by several spacecraft such as CRRES, THEMIS and AMPTE, there have been little studies on their latitudinal distributions. Up to this point, we developed the automatic detection algorithm to use the magnetic field data observed by the ELF instrument on board the Akebono satellite, and demonstrated that EMIC waves exist inside the plasmasphere. Since the Akebono satellite measures the thermal plasma density, we investigate the f_p (plasma frequency)/ f_c (cyclotron frequency) dependence and derive the resonance energies of the observed EMIC waves. In this presentation, we report the spatial distributions of EMIC waves, and discuss the dependence of f_p/f_c and the resonant energy.

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