Investigation thermal structure of the inner plasmasphere

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Electron temperature is one of the most important parameters to investigate thermal structure of the inner plasmasphere. There are a limited number of data on electron temperature in the plasmasphere by satellite observations, and most of these data were obtained below 4000km altitudes. Therefore, it is not possible to investigate the energetics of the upper plasmasphere based on the electron temperature. Akebono satellite, launched in 1989, has an eccentric orbit whose periapsis and apoapsis are 200km and 10000km, respectively, and it provides electron temperature data in higher altitudes. In our study, we try to investigate the thermal structure of the inner plasmasphere by using Akebono data.