

Analysis on anisotropy variations for pitch angle distributions of electrons with various parameters at dipolarization sites in the inner plasma sheet

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During geomagnetic activities, dipolarization of geomagnetic fields can be found to occur at tailside. In this study, we investigate variations in anisotropies of pitch angle distributions for electrons at 63 observed dipolarization sites around distance of $10 R_E$ (Earth radii) near the magnetic equator in the inner plasma sheet when auroral electrojet AL index decreases. Observational data from 2008 to 2011 for electrons below ~ 26 keV from the instrument ESA (ElectroStatic Analyzer) onboard of THEMIS mission are adopted. Followed from our previous presentation in which the dependence of these variations on field line lengths (FLL) was focused on [Wang *et al.*, 2018], we present new analysis results concentrating on the dependence of the changes as well as the rates of changes in FLL, magnetic field strengths, and dipolarization angles, during a dipolarization period. Comparisons between the anisotropy variations in pitch angle distributions of electrons and the associated bounce time of electrons, event dipolarization time, and measured environmental electric fields will also be presented and discussed.

References

Wang, K., Z. R. Lang, C. H. Lin, T. Hada, A. B. C. Chen, Y. Nishimura (2018). On the field line length dependence of variations in anisotropies for pitch angle distributions of keV electrons at dipolarization sites in the tailside. PEM16-25, JpGU Meeting 2018, Chiba, Japan.

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