

## On the field line length dependence of variations in anisotropies for pitch angle distributions of keV electrons at dipolarization sites in the tailside

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Previous studies had reported observations from various satellite missions on changes in pitch angle distributions of electrons during dipolarization periods at Earth's tailside associated with geomagnetic activities. In this study, we quantitatively analyzed the variations in anisotropies for pitch angle distributions of electrons based on observations from 2008 to 2011, by particle instruments ESA and SST onboard the probes of THEMIS mission, at dipolarization sites in the inner plasma sheet. The ratio of this anisotropy during dipolarization to that before dipolarization is found to overall exhibit an increasing trend on its upper limit as the length of field line the probe located increases, specifically for electrons with energies on the order of keV. The effectiveness of Fermi acceleration at different field line length may account for this feature. We will present these results on the aspects of observations as well as theories.

Keywords: pitch angle distributions, dipolarization, THEMIS mission