

# Transition region between the near-earth magnetosphere and the magnetotail

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In this study we investigate the transition region between the near-Earth magnetosphere and the magnetotail. The near-Earth region is characterized by the dipole-like field (large  $B_z$ ), high particle temperature, high particle intensity, and small fluctuation. On the other hand, the magnetotail is characterized by tail-like field configuration (small  $B_z$ ), low temperature, low particle intensity, and large fluctuation. As pointed out by recent studies (Shiokawa, 1998; Zelenyi, 2000, 2002), the transition region between them may play an important role in dynamics of the magnetosphere. In this paper, we examine the position of the transition region using the Geotail and the Akebono spacecraft. Our results show that (1) the transition of particle signatures is often rapid but not gradual, (2) the geocentric distance of the transition region is 10-13  $R_e$ , and (3) the number of observations depends on MLT. From these results, we discuss dynamics of the magnetosphere and mapping the auroral regions to the magnetosphere.