

Structure of plasma temperature in plasma sheet

Tomomi Nio [1], Wenchien Chou [2], Toshifumi Mukai [1], Susumu Kokubun [3]

[1] ISAS, [2] RIST, [3] STEL, Nagoya Univ.

It is important for magnetospheric physics that the hot plasma in plasma sheet originate in, but still unknown.

Using the GEOTAIL data from January 1995 to May 1998, we have found that in the near-Earth plasma sheet ($-30\text{Re} < X < -10\text{Re}$), the temperature distribution is asymmetry, which means the y -dependence. On the dusk side the mean temperature is higher on the dawn side, which is caused by the heating of dawn-dusk current. And plasma sheet comprised of cold and hot two-component at the y -midpoint, which is considered grow out of the reconnection.

Taking these results into account, it is considered that high energy particle in the plasma sheet relate the heating mechanism, so we discuss non-adiabatic particle motion and non-isotropic distribution.