

Model of field-aligned beams in plasma sheet boundary layer

Daisuke Nagata[1]

[1] Dept. of Geophysics, Kyoto Univ.

<http://www-step.kugi.kyoto-u.ac.jp/~nagata/>

Magnetotail of the Earth consists of two lobes which are connecting to the northern and southern polar caps and the hot plasma sheet between them.

Plasma sheet boundary layer (PSBL) is the transition region between the lobe and the plasma sheet.

Inside PSBL, field-aligned beams are sometimes observed.

These beams play important roles to couple the magnetotail and the polar ionosphere.

Field-aligned beams were investigated by many satellites and were also theoretically studied.

T. G. Onsager proposed a model based on the existence of the reconnection in the plasma sheet.

This model succeeded in the qualitative explanation of observations and enable us to infer the location of reconnection region.

Onsager constructed the model under the steady state assumption.

We tried to make some modifications of the model and report them.