

cusp-magnetosheathにおけるショックの消長と substorm の関係 (2)

藤田 茂 [1]; 田中 高史 [2]; 渡辺 正和 [3]

[1] 気象大; [2] 九大・国際宇宙天気科学教育センター; [3] 九大・理・地惑

Variations of the dayside magnetosheath and the cusp and their relations to the substorm sequence (II)

Shigeru Fujita[1]; Takashi Tanaka[2]; Masakazu Watanabe[3]

[1] Meteorological College; [2] REPPU code Institute; [3] Earth & planetary Sci., Kyushu Univ.

In the last JpGU meeting, we explained the physical mechanisms of formation of a transient shock in the magnetosheath during the growth phase of a substorm, and its disappearance after the growth phase by using a global MHD simulation and its relation to the substorm sequence. In that talk, we clearly explained formation of the shock in the magnetosheath, but it was not so clear to explain the disappearance mechanism. This mechanism seems to be related to plasma depression in the near-Earth plasma sheet in the substorm expansion phase. We will investigate this mechanism based on the simulated plasma behavior. In addition, we notice that the plasma depressions in the near plasma sheet appear so frequently. This will be also touched in the talk. In the talk, we will summarize the formation mechanism of the shock, and present new findings about the plasma disturbances which cause disappearance of the shock.