Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

PEM024-02 Room: Function Room A Time: May 26 14:00-14:15

The first 10-min interval of Pi2 onset during expansion of energetic ion regions from dusk to dawn sector

Osuke Saka[1*], Kanji Hayashi[2]

[1]Office Geophysik, [2]University of Tokyo

We show that substorm current wedge model may not be applied in the magnetosphere for the first ten-minute interval of Pi2 onset where dipolarization and reduction of field magnitudes occurred simultaneously. We found that MHD processes accompanied by earthward plasma flows and associated bi-directional flows prevailed during the first ten-minute interval. The field line changes referred to as substorm current wedge appeared after the first ten-minute interval accompanied by expansion of energetic ion regions from dusk to dawn sector, probably related to reappearance of the outer radiation belts.

Keywords: Substorm, first 10-min interval of Pi2, particle injection, geosynchronous altitudes, violation of magneto-hydrostatics, Dipolarization