Geophysical Research Abstracts
Vol. 14, EGU2012-13231, 2012
EGU General Assembly 2012

Intermittent plasma fluctuation in the terrestrial foreshock

P. Kovács, G. Vadász, and B. Heilig
Eötvös L. Geophysical Institute, Earth Physics, Budapest, Hungary (kovacs@elgi.hu)

In the paper the intermittent plasma fluctuation in the terrestrial foreshock is studied, using the FGM magnetic records of the Cluster mission. It is argued that the intermittent state of the plasma regime can be adequately measured in certain space and time through the fourth statistical moments, i.e. the flatness of the incremental magnetic records. It is emphasized that using the simultaneous multi-spacecraft observations, the intermittency can be revealed not only in temporal, but also in spatial scale. By computing the flatness along the orbit of the Cluster mission we present the spatial variation of the intermittent state of the foreshock plasma in terms of the distance from the terrestrial bow shock (BS) and the angle of incidence of the IMF line to the BS normal. The relation between the level of intermittent plasma state and the varying solar wind parameters (bulk speed, Alfvén Mach number, dynamic pressure) is also studied.