



## **Solar Wind Entry into The High-Latitude Magnetospheric lobes: Cluster Observations**

Xiaochen Gou, Quanqi Shi, and et al.

Shandong University, Institute of Space Science, Weihai, Shandong, China (sqq@sdu.edu.cn)

During the quiet times when the interplanetary magnetic field (IMF) is northward, using Cluster multi-spacecrafts observation data between August to October each year from 2002 to 2004, Shi, et al. [2013] reported an unexpected discovery observation of regions of solar wind entry into the Earth's high-latitude magnetosphere tailward of the cusps where the solar wind plasmas may penetrate into magnetosphere through the mechanism of high-latitude magnetic reconnection. Through From statistical analysis, they found that the IMF  $B_x$  component may influence the solar wind entry into the magnetosphere by changing the occurring conditions of high-latitude magnetic reconnection. Based on their studies, in this paper we used another period Cluster data which is between January to April each year from 2001 to 2006 to do a some further study, . as As a result, the influence of the IMF  $B_x$  component is consistent with the results from Shi, et al. [2013].In addition, we also found that the IMF  $B_y$  component influenced affects the events changed with along with the IMF  $B_x$  component, which is conform consistent with the Parker Spiral of the IMF.