

PEM029-P13

Room: Convention Hall

Time: May 26 17:15-18:45

## A statistical study of IMF Bz fluctuations : Alfvenicity and Higher order statistics

Shinsuke Tanizaki<sup>1\*</sup>, Takeshi Fukuda<sup>1</sup>, Yasuhiro Nariyuki<sup>1</sup>

<sup>1</sup>KNCT

The fast stream of plasmas (solar wind) quasistationarily blows out from the solar surface. The solar wind always influences the planet in the solar system, such as the earth. It is well known that the geomagnetic activity is associated with the direction of the interplanetary magnetic field (IMF) : the southward directed IMF allows solar wind plasmas into the magnetosphere due to the occurrence of the day side reconnection. On the other hand, while it is well known that the intensity of IMF fluctuations (AC component) is of the same order to that of the ambient DC component of IMF, most past studies have not discussed the geoeffectiveness of the AC component.

In the recent study, the "Alfvenic" IMF fluctuations often correspond to the occurrence of the auroral storm. However, it is unclear why the Alfvenicity is often geoeffective. In the present study, we statistically discuss the IMF Bz component observed by ACE space craft from February 1998 to August 2009 using the higher order statistics in order to clarify the characteristics of the IMF fluctuations. The present analysis shows that the normalized counts of Alfvenicity depend on the solar activity. Moreover, we find that the value of kurtosis converge at a certain value with increasing Alfvenicity.

Keywords: solar wind turbulence, IMF, higher order statistics, Alfvenicity