

Characteristics of equatorial Pc 5 observed by the MAGDAS network under high-speed solar wind conditions

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While investigating auroral latitude Pc 5 pulsations, Baker et al. (2003) and Mathie and Mann et al. (2001) found that these pulsations have a good correlation with the solar wind flow speed. Also, Mathie and Mann et al. (2000) found that auroral latitude Pc 5 is related to relativistic electron flux variation in the radiation belt. There are many studies about the characteristics of auroral latitude Pc 5, while equatorial Pc 5 received little attention because there are fewer observation points in the equatorial region. So, we investigated the characteristics of equatorial Pc 5 under high-speed solar wind conditions by using the data from dip equator stations of the MAGDAS/CPMN network (Kyushu University) during 2005/01/01 ~2013/12/31. We found that electron flux enhancement is preceded by an intense activity of Pc 5 at the dayside equatorial MAGDAS stations during 2010/08/24~2010/08/27. Reeves et al. (2003) showed that different types of relativistic electron flux variation are observed after geomagnetic disturbances such as magnetic storm (i.e. not only increase type but also no-change type and decrease type). We statistically analyzed the dependence of equatorial Pc 5 pulsations on the relativistic electron flux variation.

Keywords: MAGDAS, dip equator, Pc 5