

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

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Auroral latitude Pc 5 pulsations have a good correlation with the solar wind velocity [Baker et al. (2003) and Mathie and Mann (2001)]. Mathie and Mann (2000) found that auroral latitude Pc 5s are related to relativistic electron flux variations in the radiation belt. There are many studies about the characteristics of auroral latitude Pc 5s, while equatorial Pc 5s received little attention. MAGDAS/CPMN network (Kyushu University) has many observation points located in the equatorial region. 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.

Reeves et al. (2003) suggested that different types of relativistic electron flux variations were observed after geomagnetic disturbances such as magnetic storms (i.e. increase type, no change type and decrease type). We analyzed equatorial Pc 5 pulsations during the three type electron flux variations. As a result, we found that the amplified dayside Pc 5s continue for several days in the increase type event (2011/05/27~2011/06/02). In contrast, the amplitude of dayside Pc 5s slightly increase and immediately decrease in the other types events (the no change type event: 2010/06/14~2010/06/20, the decrease type event: 2010/11/26~2010/12/02). We discuss the possibility of dayside equatorial Pc 5 as the proxy of monitoring the relativistic electron flux.