

A correlation between the EEJ amplitude and the magnitude of interplanetary electric field (IEF)

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The magnetic equatorial region is considered as the terminator of the energy flow in the Sun-Earth connection system. Thus, the study of the equatorial electrojet (EEJ) is very important to understand the solar wind-magnetosphere-ionosphere-thermosphere coupling system (Uozumi et al., 2008, Yumoto and the MAGDAS Group, 2006).

Space Environment Research Center (SERC), Kyushu University constructed MAGDAS/CPMN (MAGnetic Data Acquisition System/Circum-pan Pacific Magnetometer Network) along the 210 deg. magnetic meridian and the magnetic equator. Data obtained by this system is useful to study the EEJ, and ultimately the interaction among the solar wind, magnetosphere, ionosphere and thermosphere.

The EEJ is usually the most predominant at magnetic equatorial stations, and believed to be produced by the iono-atmospheric dynamo. It is known that the EEJ amplitude fluctuates from day to day. In the present paper, in order to understand the relation between the EEJ amplitude and the magnitude of interplanetary electric field (IEF), we will examine the correlation between the EEJ amplitude and the IEF magnitude by using MAGDAS/CPMN data.