

Equatorial Enhancement of Magnetic H-component Variations related to substorm during the Main Phase of Storms

Ami Kuramitsu[1]; Kentarou Kitamura[2]; Kiyohumi Yumoto[2]

[1] Earth and Planetary Sci., Kyushu Univ.; [2] Space Environ. Res. Center, Kyushu Univ.

In order to understand the development and decay processes of ring current during magnetic storms, we analyzed magnetic data from the CPMN stations. Using magnetic H-component data at middle, low, and equatorial latitudes, we examined a latitudinal dependence of the magnetic H-component variations of the ring current. We also investigated the development of ring current in the longitudinal direction. We analyzed 9 storm events during the period from 1994 to 2001. From the analysis, we found that several events show the equatorial enhancement of magnetic H-component variations just after the main phase of storms. The equatorial enhancement was predominantly observed around 10h LT. The same 10h LT equatorial enhancement of Main Impulse was seen at the beginning of storm. From these results, we suggest that the equatorial enhancement may be driven by an ionospheric electric field formed newly on the polar region during the substorm time.