

Global DP2 current system observed at geomagnetic equator

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The global magnetometer network surrounding the geomagnetic equator has been constructed as a part of the Circum-pan Pacific Magnetometer Network. This network enables simultaneous observation at geomagnetic equator both in day time and night time. It is also possible to examine globally and minutely the transfer process of the disturbance from the polar region to its final destination, geomagnetic equator. We will present the details of DP2 current system in the global equator region observed at this magnetometer network.

Global magnetometer network in the geomagnetic equator has been scarce compared to high- and mid-latitudes because of the difficulty of setting observation sites there. Since this equatorial magnetometer network has been constructed, it is possible to understand globally and clearly the transfer process of the disturbance from the polar region to the geomagnetic equator along with the details of equatorial electrojet, typical equatorial phenomena. The DP2 current system is the equivalent current system in the ionosphere driven by the polar electric field, which is originated from the solar wind and transferred through the magnetosphere. It is described by the twin-vortex currents located in dawn and dusk side, and the eastward current in the equatorial region flowing in the whole earth. The part of twin-vortex current could be understood by the penetrated electric field through magnetosphere, however, the details and cause of equatorial eastward current are uncertain partly because of sparse observation points. We will present the details of equatorial eastward DP2 current observed at globally equatorial network.