

ABSTRACT

The MAGnetic Data Acquisition System (MAGDAS) is the global real-time magnetometer array operated by the Space Environment Research Center (SERC), Kyushu University. This array includes two latitudinal chains; one is along the 210-degree magnetic meridian (210MM in the East Asian region since 2005). And the other is along the 96-degree magnetic meridian (96MM in the African region since 2008). The objective of this paper is to describe the longitudinal difference of the ionospheric current system using the MAGDAS data observed along the two different longitudinal chains. We analyzed the data recorded during the latest solar minimum (2008-2010) when the Sun was abnormally quiet. Our analysis shows some important characteristics of the equivalent current system over the African region: (1) From May to September, the current vortex in the Northern Hemisphere penetrates into the Southern Hemisphere in the morning hours as deeply as 40-degree at the dip latitude. (2) During this period, the strength of the equatorial electrojet becomes weaker than during other periods. These features are seen only in the current system over the African region. In the presentation, we will explain more details of the longitudinal difference of the ionospheric current system.