Contribution ID: **21** Contribution code: **S10-MG-201** Type: **Poster presentation**

Investigation of the Dst variations in X component at mid latitudes during geomagnetic storm in 3 February 2022

Monday, 29 August 2022 18:00 (1h 30m)

The main idea of this study is to investigate the Dst variations in the X component of the Earth's magnetic field and their latitudinal distribution in the conditions of geomagnetic disturbance in February 3, 2022. For this purpose, data from the world database of geomagnetic observatories INTERMAGNET were used. Three sectors have been selected: (i) East Europe, (ii) West Europe, (iii) East Asia, which meet the requirement for a sufficient number of stations close in longitude and magnetic longitude. For each sector, changes in the X component were considered and Sq variations were previously removed, based on data for 5 quite days determined by the Helmholtz Center Potsdam, GFZ German Research Center for Geosciences. The results allow to propose a methodology for filtering Dst variations in the X component for the considered geomagnetic observatories. In the concluding part of this work, an analysis of the relationship between variations in the X component and the equatorial ring current represented by Dst is proposed. The obtained linear regression coefficients for each of the sectors show the well-known dependence, expressed in the reduction of the influence of Dst on the changes in the X component as it moves from the equator to higher northern latitudes.

Primary author: Dr BOJILOVA, Rumiana (National Institute of Geophysics, Geodesy and Geography -Bulgarian Academy of Sciences)

Co-author: Mr MUKHTAROV, Plamen (National Institute of Geophysics, Geodesy and Geography -Bulgarian Academy of Sciences)

Presenter: Dr BOJILOVA, Rumiana (National Institute of Geophysics, Geodesy and Geography -Bulgarian Academy of Sciences)

Session Classification: Poster session

Track Classification: Scientific Sections: S10 Meteorology and Geophysics