

Ionospheric response to geomagnetic storm during low solar activity

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The main objective of this investigation is to study the ionospheric F-region response due to moderated geomagnetic storm which took place during 22-23 July, 2009. During the period studied the geomagnetic Dst index reached minimum value of -79 nT at 1000 UT on 22 July and Kp index reached 6⁻. This investigation is carried out using a chain of 15 GPS stations and another chain of 3 digital ionosondes stations. Both chains are located in the South American sector and the instruments cover from low-latitudes to equatorial region. The total electron content (TEC) recorded during the disturbed period presented both positive and negative storm phases. Also, the ionospheric sounding data showed presence of traveling ionospheric disturbances (TIDs) during the recovery phase. The present geomagnetic storm is very interesting because it took place during atypical low solar activity (LSA) period, this low solar cycle was one of longest and presented very high number spotless solar days.

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