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Analysis of ionospheric response to great geomagnetic storms during solar cycle 23

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Abstract content
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Using Total Electron Content (TEC) and critical frequency of F2 layer (foF2) over Southern and Northern Hemisphere mid-latitude stations, ionospheric response to great geomagnetic storms will be presented. Four great geomagnetic storm periods were identified using the storm criterion of Dst ≤ -350 nT namely, 29 March - 02 April 2001, 27 - 31 October 2003, 18 - 23 November 2003 and 06 - 11 November 2004 during solar cycle 23. Analysis has shown that ionospheric dynamics during these storm conditions could be due to a number of dynamic and electrodynamics processes in both Hemispheres. In some instances the ionosphere responds differently to the same storm condition in both Hemispheres. Physical mechanisms related to (but not limited to) composition changes and electric fields will be discussed.

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Main supervisor (name and email)
and his / her institution

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