

**TEC Disturbances Related to the Haiti Earthquake,
Jan. 12, 2010**

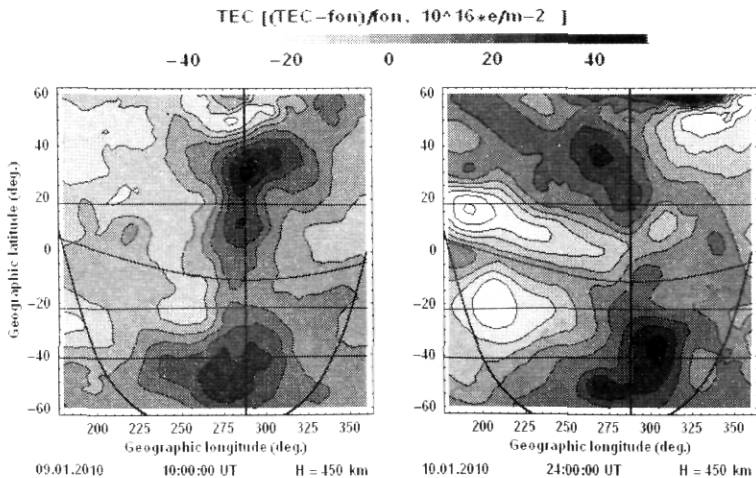
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We have analyzed features of the TEC (total electron content) deviations from quiet background conditions possibly associated to the Haiti earthquake (Jan. 12, 2010, 21:53UT; 18.46°N, 72.5°W; M 7.0) as seismo-ionospheric precursors. We define this sesmo-ionospheric shock event precursors as anomalous local long-living

TEC deviations from the non-disturbed level constantly linked to some geographical position at the near-epicenter area.

We have calculated and analyzed differential TEC maps for a few days before and after the Haiti earthquake utilizing the NASA IONEX products [1]. We have used running median for 7 days before the current calculation moment as quiet background conditions. Geomagnetic situation was relatively quiet for the considered period.

TEC deviations maps show long-living (of about 4 days) positive structures existing during Jan. 10, 22UT – Jan. 12, 08UT reaching values up to $\sim 40\%$ at the near-epicenter area and more than 50% at the magnetically conjugated region (see Fig. 1). The precursor's manifestation maximum was observed in Jan. 12, 06UT. This anomalous positive structures that we considered as seismo-ionospheric precursors had disappeared for about ~ 10 hours before the main shock event release. No disturbances were observed at the moment of earthquake.



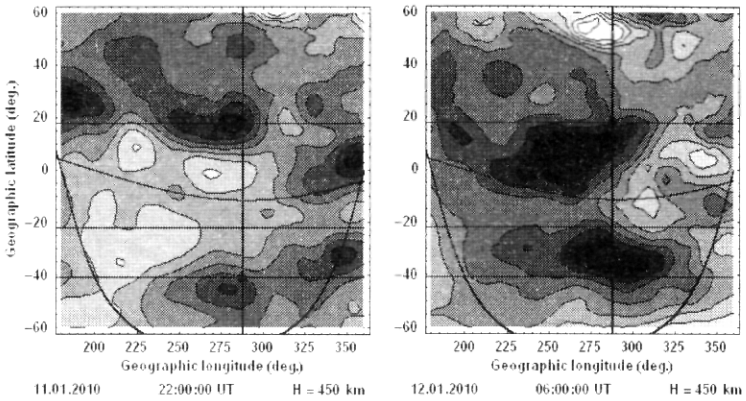


Fig.1 Differential TEC maps for 09.11.2010, 10UT till 12.01.2010, 06UT. Black dot – the EQ epicenter position. Magnetically conjugated point is in Southern hemisphere.

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1. <ftp://cddisa.gsfc.nasa.gov/pub/gps/products/ionex/>