



TEC variations over Mediteranean before and during the strong earthquake (M=6.2) of 12th October 2013 in Crete, Greece

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In this paper the Total Electron Content (TEC) data of 9 Global Positioning System (GPS) stations of the EUREF network, which are being provided by IONOLAB (Turkey), were analysed using Discrete Fourier Analysis in order to investigate the TEC variations over Mediteranean before and during the strong earthquake of 12th of October 2013, Which occur in western of Crete, Greece. In accordance to the results of similar analysis on the occasion of earthquakes in the area (Contadakis et al 2008, 2012a,2012b) the main conclusions of this analysis are the following. (a) TEC oscillations in a broad range of frequencies occur randomly over a broad area of several hundred km from the earthquake and (b) high frequency oscillations ($f \geq 0.0003\text{Hz}$, periods $T \leq 60\text{m}$) seems to point to the location of the earthquake with a questionable accuracy but the fractal characteristics of the frequencies distribution, points to the locus of the earthquake with a rather higher accuracy. We conclude that the LAIC mechanism through acoustic or gravity wave could explain this phenomenology.

Key words: GPS network, ionospheric total electron content, wavelet analysis

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