Abstract

Total Electron Content (TEC) data from GPS are now used as tools for identifying an impending earthquake. The extraction of earthquake induced features from this parameter needs elaborate processing because it involves filtration of data with respect to disturbed day variations, contribution from multi path effects and also normal day-to-day fluctuations even during quiet days. In this paper we introduce, a peak detection algorithm, an automatic pattern matching approach and artificial neural network for processing GPS generated TEC record in where a template is framed from the time series of quiet day data for extraction of pre – seismic parameter. This matching algorithm is adopted to find deviation in TEC time series prior to an impending earthquake from the template and would be used as an index of earthquake induced signature. A few case studies using these techniques are presented in this paper. Work is based on TEC data collected from GPS at Gauhati (26° 10’ N, 91° 45’ E).
References

- M. Devi, A. J. D. Sarma, S. Kalita A. K. Barbara and A. Depueva (2011), Adoptive techniques on extraction of pre-seismic parameters on Total Electron Content (TEC) at anomaly crest stations using GPS data Geomatics, Natural Hazards and Risk DOI:10. 1080/19475705. 2011. 595831
Index Terms

Computer Science

Keywords
Total Electron Content (tec)  Gps  Pattern Matching Algorithm  Earthquake