



Volcano Popocatepetl, Mexico: geomagnetic observations at Tlamacas station, 2001-2005

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Results of anomaly ULF geomagnetic emissions observed at the station Tlamacas ($98^{\circ} 37' 41'' W$, $19^{\circ} 04' 01'' N$) in relation to seismic events, occurring at volcano Popocatepetl (active volcano, $98.62^{\circ}W$, $19.02^{\circ}N$) for the period 2001-2005 and their analysis are presented. The geomagnetic data were collected by 2 instruments: 3-coordinate torsion magnetometer MVC-1DS (12.5 Hz sample frequency, GPS system for data synchronization), designed in St.Petersburg division of IZMIRAN Institute, Russia, and 3-coordinate fluxgate magnetometer designed at UCLA, (1 Hz sampling rate frequency, GPS). 24-hours (whole day) intervals have been used for the analysis due to the low level of the noise interference at the observation site that could be regarded as chance occurrences in our study. Continuous component study includes 2 analysis. Variations of spectral densities for horizontal and vertical components, polarization densities and spectrograms of magnetic field, their derivatives are analyzed as a part of traditional analysis. Fractal characteristics of spectra were analyzed in the conception of SOC (Self-Organized Criticality). The retrospective analysis of the pulse component for the geomagnetic data reveal some geomagnetic micropulsations both continuous and irregular ones, not related to magnetospheric activity. Some of the observed events in the continuous and pulse component may have relation to the migration character of the local seismic events during volcano activity. In order to exclude the intervals with a high geomagnetic activity from analysis we referred to Ap indices.