



IONOTERRA - the interdisciplinary project to monitor earthquake precursors in Vrancea zone

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We present the first stage of the interdisciplinary project called "IONOTERRA" on the experimental range creation in the vicinity of Vrancea seismic zone. It is interdisciplinary project using the multiparameter monitoring approach to reveal the precursory period for strong earthquakes in Vrancea zone where the leading role is assigned to the ionospheric precursors. The data of ionospheric parameters monitoring will be collected using several techniques: vertical and oblique ground-based ionospheric sounding, GPS TEC measurements of individual GPS receivers and Global Ionospheric Maps (GIM) technology, spaceborn instrumentation using the local plasma probes on CSES-1, SWARM and COSMIC satellites, and topside sounding from Russian IONOSONDE constellation. The experimental range will be organized at the territory of Republic of Moldova and will include the mobile geophysical observatory to measure in addition to ionospheric measurements the gamma spectrometer for radon activity monitoring, vertical electric field measurements, electromagnetic emissions in VLF and VHF bands, meteorological parameters (air temperature and humidity) and aerosol optical thickness. Together with ground-based meteorological measurements the satellite data on local thermal anomalies will be used.

It is double purpose project: it will validate the physical concept of LAIC model, and simultaneously will develop the practical applications for automatic detection of the short-term earthquake precursors and to make decision on the precursory period initiation. The project will unite efforts of three groups of scientists having years of experience on ground-based and spaceborn monitoring of the short-term earthquake precursors and the Lithosphere-Atmosphere-Ionosphere Coupling Model development. Some results of the Vrancea zone earthquake precursors monitoring registered by different techniques will be demonstrated.