

# Modern earthquakes on the East European Craton?

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The small aperture seismic array (MSA) “Mikhnevo” , as a section of the Geophysical Observatory “Mikhnevo” of the Institute of Geospheres Dynamics RAS, has carried out continuous monitoring of seismic events on the East European Craton since 2004. The goal of setting up the seismic group is detection and control of natural seismicity on the background of the intense industrial activity in the region. During the period of observations MSA “Mikhnevo” has recorded more than 1500 seismic events of different origin, the most part of them belongs to industrial explosions and quarry blasts. A database of waveforms, associated with existing quarries, is created using modern methods of digital data analysis, including waveform cross-correlation and wavelet analysis. Still there are several recorded events, which cannot be associated with explosions according to a number of known criteria. They can have different origin – tectonic, technogenic or technogenic-tectonic. To analyze the possible reason of the occurrence of events with presumably tectonic or technogenic-tectonic origin we use geological, geomorphological and remote sensing data. The above mentioned events are located in the structures of the basement – deep faults, the borders of aulacogens, ancient suture zones and gradient zones. At modern and neo-tectonic stages of evolution the geodynamic activity of these structures is expressed in peculiarities of the relief, the pattern of lineaments and characteristics of geophysical fields. The appearance of technogenic and technogenic-tectonic events may be related to the constantly growing urban expansion and impact of industrial activity in the form of explosions and quarry blasts.

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