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NATO ADVANCED RESEARCH WORKSHOP

**Inducing of Earthquakes by Underground Nuclear
Explosions:
Environmental and Ecological Problems**

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ABSTRACTS

and

SCIENTIFIC PROGRAM

Weak Seismicity Influence on the Stressed State Medium

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The problem of induced earthquake (IE) exposed by underground nuclear explosions (UNE) is discussed long years since the proof of the direct connection between them is difficult enough. The main reasons are the absence of reliable world seismic network, imperfection of our notions about the medium, about energetic interactions between different mediums and regions of Earth and so on.

Our laboratory's investigations of IE started in 1978 when we first pointed out to anomalous manifestation of Gazli earthquakes.

It is accepted that variations of seismicity after UNE are aftershock activity, however, it seems to us that they are quite another processes. Mechanism of IE exposed by single UNE is the triggering effect. Mechanism of IE after the series of UNE can be explained as the process of energy accumulating and discharging in medium in large areas. UNE² carried out for a long time are able to activate geodynamic processes on the territories with the radius of thousands km.

The results of long-term investigations of the effects of weak signals impact on the medium are analyzed in paper: seismicity changes exposed by MHD-generators, weak explosions in near (<200 km.) and remote (<1000 km.) areas, uncontrolled industry activity and so on. They witnessed that the influence of essentially more strong events such as UNE on medium is evident.

The laboratories investigations over the last years shown that even weak influences lead to changes in earthquakes preparation processes, and the questions of the control and protection of environment are more complicated than it seems before. The interconnection of the seismicity of Caucuses and Middle Asia and the largest water reservoir - the Caspian Sea is concerned from the new point of view and it allows to understand the mechanism of activation of geodynamic processes after nuclear tests in Semipalatinsk.