

## INTERNATIONAL CONFERENCE ON THE PROBLEMS OF INDUCED SEISMIC INFLUENCE ON SEISMICITY AND OIL OUTPUT

An International Conference on the Problems of Induced Seismic Influence on Seismicity and Oil Output was held in Baku during June 4-6, 1991.

Organizers of the Conference: Academies of Sciences of USSR and Azerbaijan Republic.

In the conference 25 delegates participated representing India, CSFR, Azerbaijan and Georgian Republics, scientists of Academy of Sciences of USSR have participated. 10 lectures have been delivered, dedicated to the problems of the induced seismicity, inducing the earthquakes, land slides microseismicity and the investigation of the vibroseismic influence on oil and gas containing media.

During the Conference, for the first time, the results of underground nuclear and chemical explosions influence on seismicity and microseismicity of various extensive territories have been presented to the attention of a large scientific community.

These investigations have been carried out independently in Geological Institute of the Academy of Sciences of Azerbaijan Republic (I. G. Kerimov) and the Institute of Earth's Physics, Academy of Sciences of USSR (A. V. Nikolaev). In particular, in the data recorded by the Geological Institute, the structure of the microseismic wave field has changed considerably beginning from the 15 of January 1991. This change has been continuously observed during the past several months. This fact is pointing out to the possible connection of bombing during the Gulf war and seismicity of the adjacent regions.

Professor H. Gupta (India) has delivered a lecture on the results of induced seismicity investigations undertaken in the various countries, criteria of induced seismicity discrimination and estimation of the maximum magnitudes of the Induced earthquakes.

Doctor Prochazkova (CSFR) presented results of investigations of various kinds of induced seismicity sources and a description of how the mining exploration regime can trigger land slides, particularly on mountain slopes.

Lecture of Georgian seismologists M.A. Alexidze and M.S. Ioseliani have been dedicated to the problems of the induced seismicity in injury electric power plant and the conditions of the source mechanism of Racha earthquake. They have strongly objected to any possibility of this event being induced.

I. G. Kisin (IPE AS USSR) has formulated the main results of the investigations of the vibroseismic influence on oil and gas deposits and oil output, and proposed the idea about the possible changes of the oil output of oil wells in destructed oil deposits in Kuwait, which has lead to the increased oil output.

Interesting data about the correlation of the seismicity with Caspian Sea level variation have been presented by the scientist of Geological Institute of Azerbaijan Academy of Sciences (Kadirov F.A.).

G. E. Muzaffarov and M. I. Abbasov (IPDOGD AS Azerbaijan) have presented the results of the vibroseismic influence experiments on physical properties of oil and gas: viscosity, border corner of moistening, density, temperature.

B. M. Panahi (Geological Institute of AS Azerbaijan) have presented the data pointing the connection between seismicity and mud volcanoes eruptions.

I. A. Beresnev (IPE AS USSR) has presented new results, not published before, on the peculiarities of inducing seismic emission by vibroseismic influence and noise signals evolution in seismically active medium.

During discussion, several proposals were made:

A. V. Nikolaev – about the necessity of the widening the ranges of the problems of induced seismicity, investigations of vibroseismic influence, widening the range of magnitudes up to seismic emission, and also investigations of the effects of complex influence of induced seismicity.

D. Prokhazkova – has stressed the importance of induced seismicity problems in connection with ecology and pointed out the necessity of involving the scientists from the various countries. She also proposed the idea of preparing the necessary data on influence of Iraq's bombardment on the structure of the microseisms and suggested that various groups of scientists should process the data.

I. G. Kerimov – has pointed out the necessity of the cooperation of the geophysicists of Transcaucasia with Turkey, Iraq, Iran, India, Egypt and stressed the necessity of the development of a joint international investigation program.

M. A. Alexidze – about the necessity of carrying out a wide range of theoretical investigations together with the experiments on investigations of induced seismicity.

H. Gupta – about the necessity of the creation of an international program on investigating the possible influence of the Gulf war on the seismicity and oil output; about the necessity of establishing a commission or a working group under the aegis of IASPEI with support from ICL and UNESCO; about expediency of detailed investigations of seismicity of Gazli region, which is suspected to have been influenced by the natural gas extraction and nuclear explosions in Semipalatinsk. This work could be undertaken under the joint Soviet-Indian scientific collaboration.

Conference decided to:

1. Approve the proposition about the widening the range of problems of induced seismicity investigations.

2. Apply to IASPEI, ICL and UNESCO with the proposition about organization of a working group on the problem of the induced seismicity, in context of the present meeting.
3. Apply to the geophysicists of Asia and Africa with the proposal of participating in investigations of the possible changes of seismicity and oil output, caused by massive bombardment of Iraq and Kuwait.
4. Carry out the consideration of the problem of induced seismicity during General Assembly of IUGG in Vienna.
5. Organize and entrust to D. Prokhazkova the preparation and interpretation of the sample data on microseisms.
6. Send the Conference materials to all participants invited before.
7. Publish, under the aegis of the Seismological Council of the USSR, the proceedings of this conference.

Participants have expressed their gratitude to the Azerbaijan geophysicist for the fine organization of the Conference and hospitality, and the Science Academies of the USSR and Azerbaijan for the initiative and support.