

Industrial activity in the tension-sensitive regions

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Abstract

The problems of inter-influence of the intensive industrial activity and seismic processes are investigated in this paper. The necessity and importance of seismic control of the induced effects caused by industrial activity in order to exclude negative ecological consequences and economic wastes is emphasized. Analysis of the developments of seismic process at Apsheron-Cheleken threshold of Caspian Sea, where the main oil-fields of Azerbaijan are situated, shows that high level of stress state of medium in the region is caused by intensification of oil extraction. This factor leads to disturbance of geodynamical balance, increasing of seismic activity and considerable downfall of oil extraction's level.

Investigation of stress fields, which are created in medium under the influence of external natural or artificial factors, is important and necessary while analyzing geodynamical situation in regions with high industrial activity. The assessment of tension-sensitivity of that regions for durable period of time is one of the parameters that allows to judge the character of processes in medium, reveal tendencies in their development and find not factors which have influence on variations of stress state of medium.

The problem of induced seismicity becomes more and more actual in connection with increasing industrial activity. Our investigations show that intensification of seismic activity in Azerbaijan over the last 35-40 years is mainly caused by induced effects of large industrial works in that region, such as water-reservoir constructions, chemical explosions, oil-gas fields exploitation, etc. as well as nuclear explosions in Semipalatinsk which considerably amplify and "stir up" this effects. For instance erection of Mingechaur water reservoir in the middle of Azerbaijan without taking into account the system of active and inactive in that period faults led to increasing of average seismicity in republic.