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Seismic Tomography of Siyazan – Shabran Oil and Gas Region Of Azerbaijan by Data of The Seismic Stations

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The main purpose of the research was to build a reliable 3D model of the structure of seismic velocities in the earth crust on the territory of Siyazan-Shabran region of Azerbaijan, using the data of seismic telemetry stations spanning Siyazan-Shabran region (Siyazan, Altiagaj, Pirgulu, Guba, Khinalig, Gusar), including 7 mobile telemetry seismic stations.
Interest to the problem of research seismic tomography caused by applied environmental objectives, such as the assessment of geological risks, engineering evaluation (stability and safety of wells), the task of exploration and mining operations. In the study region are being actively developed oil fields, and therefore, there is a risk of technogenic earthquakes.
It was performed the calculation of first arrival travel times of P and S waves and the corresponding ray paths. Calculate 1D velocity model which is the initial model as a set of horizontal layers (velocity may be constant or changed linearly with depth on each layer, gaps are possible only at the boundaries between the layers). Have been constructed and analyzed the horizontal sections of the three-dimensional velocity model at different depths of the investigated region. By the empirical method was proposed density model of the sedimentary rocks at depths of 0-8 km.