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Seismic Network and Earthquake Catalogue

Seismic networks are source of valuable data for seismological research. Since 2010 in cooperation with French CEA/DASE broadband seismic network in Armenia has been upgraded. Among various tasks in seismological research, modern network allows to improve the quality of the catalogue. The seismicity of Armenian Upland relates to the Arabian-Eurasian plates' collision, which is characterized by diffusive distribution of shallow earthquakes of various magnitudes. The strong shallow earthquakes are expressed by well pronounced active surface faulting. Comparison of seismicity of Armenia and the Caucasus with tectonic setting shows that all the strong earthquakes are associated with the active blocks, their edges and junctions. The analysis of the focal mechanisms of earthquakes with various magnitudes shows the presence of all fault types in Armenia: strike-slip, normal, reverse, thrust, oblique, normal faulting with various components, and with prevailing strike-slip faulting. The combinations of exposure depend on the relatively neighboring blocks' movements. The quality of the Armenian National Catalogue is discussed and the representativeness is described. A unified and homogeneous earthquake catalog is a base for analysis—determination of catalogue completeness, recurrence and activity rates etc., which are the key input parameters for probabilistic seismic hazard assessment.

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