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Active stress field of Greater Caucasus

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Recent geodynamics of the Black Sea-Caspian Sea region as a whole are determined by its position between the stillconverging Eurasian and Africa-Arabian plates. N-Sconvergence reduces theGPS rateto 11mm/yr across Lesser Caucasus and to 4 mm/yr across Greater Caucasus (GC)(Reilinger et al., 2006). The geometry of tectonic deformation in the Black Sea-Caspian Sea region is largely determined by the wedge-shaped rigid Arabian block, that intensively moves into the relatively mobile minor Asian-Caucasian region.All structural–morphological lines have a clearly expressed accurate northwardconvex configuration reflecting the contours of the Arabian block. However, further north the geometry of the fold thrust belt is somewhat different, such asthe Achara-Trialeti fold thrust belt trends W-E, whilethe Great Caucasian fold–thrust belt extends in WNW-ESE direction. This complicated feature causesstrong deformation resulting in moderate and strong earthquake occurrence. In the present work, we attempt to show a detailed picture of the state of stress in the Greater Caucasus by evaluating the spatial distribution of earthquake foci using an updated version of the seismic catalog up to 2016, updated macroseismic intensity data, earthquake focal mechanism solutions, and the resulting stress field. We are able to delineate the kinematics of the main seismogenic faults and the general neotectonics of this complex mountain belt.