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Seismic Hazard Assessment for Georgia

Gulum Tanircan (1), Nino Tsereteli (2), Tamaz Chelidze (2), Otar Varazanashvili (2), Emili Tsereteli (2), and Alexander Gvencadze (2)

(1) KOERI,BU, Istanbul, Turkey (birgore@boun.edu.tr), (2) Institute of Geophysics, Department of Seismology and experimental geophysics, Tbilisi, Georgia (nino66_ts@yahoo.com, 995 32 332867)

In the frame of a NATO SFP project "Seismic Hazard and risk Assessment for Southern Caucasus – Eastern Turkey Energy Corridors" a comprehensive seismic hazard study was performed for Georgia. Study region was divided with polygons characterized by similar seismicity considering seismotectonic information. The statistical analysis was done for each zone and each zone was characterized by slope of recurrence law and by Mmax; Preliminary studies for soil classification from geo engineering map were also performed.
On the basis of obtained area seismic sources probabilistic seismic hazard maps were calculated showing spectral accelerations at 0, 0.2, 1, 2, 4 sec periods, PGV and PDG for 10% probability and 2% probability in 50 years using two attenuation relationships: Boore and Atkinson (2008) and Campbell and Bozorognia (2008); Results indicate max PGA of 0.7g, and max Intensity IX on Abul fault zone and Dmanisi fault zone, respectively. We also compared our results with existing Seismic Hazard Maps of Georgia.
Site response to seismic events were calculated along "hot spots" of the pipeline, i.e where the pipeline technical characteristics (pumps, gauges, kinks) or geological conditions change drastically.
PSHA disaggregation was studied for these "hot spots". Based on disaggregation results a deterministic seismic hazard for the scenario earthquake with Ms = 7 at epicentaral distance 3 km for the most vulnerable site was also conducted. Results show max PGA of 0.56g for this site.