Geophysical Research Abstracts
Vol. 15, EGU2013-1710, 2013
EGU General Assembly 2013

Site classification map for Tbilisi using seismic prospecting methods

Nino Goguadze (1), Aleko Gventcadze (1), Vakhtang Arabidze (2), Emil Tsereteli (3), and Giorgi Gaphrindashvili (3)

(1) Iv.Javakhishvili Tbilisi state University, M.Nodia institute of Geophysics Georgia (ninogoguadze2@gmail.com), (2) Georgian Agriculture University, (3) Iv.Javakhishvili Tbilisi state University,Insituty of Geografy

This aspect deserves major attention since it plays considerable role in the definition of the seismic impact to be considered in the design and retrofitting of structures. The most important parameter of soil maps of seismic site conditions, the shear wave velocity in the upper 30 m section of the ground (VS30) on regional scales are relatively rare since they require substantial investment in geological and geotechnical data acquisition and interpretation. Work presented here was initiated by working package wp5 of regional projects EMME (Earthquake Model for Middle East Region). In the frame of the project geophysical field work were done in some parts of Tbilisi. Seismic prospecting measurements were done along some profiles. In seismic= prospecting RAS-24 was used and obtained data is processed by Winsism V.12 (refraction analysis). Second version of soil classification for Tbilisi city was done on the basis of new geo-engineering map of 1: 25 000 scales. For this the number of engineering-geological researches and generalization on the territory of Tbilisi were processed, All the Geological and Engineer-geological reports, that were collected and processed. Since in the geological reports less attention is paid to the genesis of the quaternary sediments and their lithological description, and in this regard the territory of Tbilisi is very difficult and multi-spectrum, it was necessary to conduct additional field surveys in 10 districts to specify information. Finely combining information that comes from seismoprospecting measurements and geo-engineering map the new site classification map expressed in Vs30 were derived for Tbilisi city.