Geophysical Research Abstracts
Vol. 20, EGU2018-5744-1, 2018
EGU General Assembly 2018

Stable Isotopes and hydrochemical application for Assessment water resources of Karstic aquifer in the East Georgia

Sopio Vepkhvadze (1), George Melikadze (1), Peter Malik (2), and Mariam Todadze (1)

(1) Iv.Javakhishvili Tbilisi State University, M.Nodia Institute of Geophysics,Research Department of Hydrogeophysic and Geothermy. Tbilisi, Georgia (sophievepkhvadze@gmail.com), (2) Štátny geologický ústav Dionýza Štúra – Geological Survey of Slovak Republic.Bratislava,Slovakia(peter.malik@geology.sk)

Main purpose of this research is to investigate spatial and temporal distribution of environmental (18O and 2H) and geochemical (major ions) tracers in karstic groundwaters and setup their sustainable monitoring network on the territory of Kakheti (East Georgia). Use to the data for investigation of the karstic aquifer belt along the Southern slope of Great-Caucasus for assessment of potential drinking water resources. During the field work, took samples from boreholes, springs and rivers, from the recharge and discharge areas. Groundwater and surface water samples were analyzed in order to study physical parameters, composition of major ions and stable isotopes (18O, 2H). Monitoring of precipitation have been organized in the recharge area (air temperature, humidity and amount of precipitation) and water level and temperature of rivers, on the discharge areas of aquifers. All data were coupled for assessment origin and flow, estimate the groundwater age and renewal rate in these aquifers for potential water supply of the adjacent cities. Methodical recommendations to water resources management in Kakheti region will be elaborated for sustainable utilization.