



## **Structural analysis of Earth's crust GPS horizontal velocities in Azerbaijan**

Rafiq Safarov (1) and Elnare Ahmedova (2)

(1) Geology and Geophysics Institute of Azerbaijan National Academy of Sciences, Geodynamics and Seismology, Baku, Azerbaijan (rafiqsafarov@gmail.com), (2) Baku State University, Baku, Azerbaijan

Azerbaijan GPS network data is used to perform structural analysis of horizontal velocity field. On this purpose, distribution regularities of seismic events, regional faults and tectonic structures, distribution of north and east components of GPS velocity vectors in the territory of Azerbaijan were involved to comparison. Several "domain" areas which behave as rigid block were revealed: Greater Caucasus fold system; Lesser Caucasus fold system; Kur depression; Lower Kur depression-Gobustan-Absheron area; Talish fold system area and Gusar-Shabran back arc depression. "Domains" are the areas which have different GPS velocity characteristics from adjacent areas. The high density of seismic events and the difference of GPS velocity vectors in orientation and in magnitude indicate rapid strain accumulation along the southern slope of Greater Caucasus. The seismic activity observed in Talish mountainous zone interpreted as the result of counteraction to the mass in motion along the Caspian fault zone and high east component rates on ARBI, ASTA, GOSM, YARD and BLVR GPS sites. Structural analysis of GPS rates allow to understand the properties of modern tectonic processes which take place in the Earth's crust and to quantify the related seismic events. This work was supported by Science Development Foundation under the President of the Republic of Azerbaijan Grant № E' IF-KETPL-2015-1(25)-56/27/2.