

## **T1.5-P49. VARIATIONS IN GRAVITATIONAL FIELD, TIDAL FORCE, AND EARTHQUAKES (SHEKI-GREATER CAUCASUS)**

Azerbaijan is caught in the active continent-continent collision of the Arabian plate with Eurasia. These regional tectonic processes give rise to earthquakes that have devastated the Caucasus throughout recorded history. Collision and seismic processes involve changes in the underground mass distribution with consequent modification of the gravity. Gravity measurements are able to detect such changes providing information suitable to the understanding the physical sources of such phenomena. The time dynamics of gravity signal measured in Sheki, (Azerbaijan), where mainly crust deformation processes are present, is investigated by using the power spectrum method and the multifractal detrended fluctuation analysis. Our findings indicate presence of two main periodicities (12 and 24 hours) in gravity signal embedded within an antipersistent structure at any timescale. The analysis of the second order fluctuation function reveals the signal is antipersistent, with an excess (with respect to the simple linear behaviour) of fluctuation variation between about 9 hours and 2 days. It is still not very clear the nature of such excess of fluctuation at these timescales; maybe there is some correlation with the Earth's gravity and the last stage of earthquake preparation which occurred in the region.

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