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# Hydrodynamic and geomagnetic anomalies as precursors of earthquakes in Georgia

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During hydro-geophysical observations in the deep boreholes' network on the territory of Georgia, we fixed various anomalies, connected to preparation of earthquakes. Earthquake preparation process cause abnormal effects in such parameters, as the water level and magnetic field variations, which should reflect the state of stress in the Earth crust. Revealing of the mechanism of interrelation between the deformation processes and hydrodynamic variations of underground waters, which precede strong earthquakes, allow explaining preliminary behavior of hydrodynamic variations and developing scientifically founded methods of the earthquakes' forecast. For this purpose, the data of the water level and atmospheric pressure from the Georgian Hydrodynamic monitoring network and data from Dusheti geomagnetic observatory were analyzed. For selecting correct method, we carry out comparative analysis of various methods of processing in order to reveal all possible influencing factors. One of the methods was based on the idea that aquifer property (porosity and conductivity) is changing due to the geodynamic stress. It is found that during normal (aseismic) period parameters were changing according to tidal variation ("background" values), but before and during the seismic event the pattern of tidal variation changed, which is an indicator of anomalous tectonic activity.