

Improvements of the High-Precision Tiltmeter's Instrumental Complex Installed in the Northern Caucasus Geophysical Observatory of IPE RAS

Tuesday, June 20, 2023 10:00 AM (1 minute)

During last year a large volume of tasks was made in our high-precision tiltmeter's instrumental complex installed in the underground geophysical laboratory of IPE RAS situated at deep adit in Andirci mountain not far from of the Elbrus volcano. The main scope of work was devoted both to improving the instrumental park of the laboratory and to carrying out a set of works on precision spatial orientation of geophysical measuring equipment on pedestals in the adit. Now the instrumental complex of laboratory consists of the main unique instruments (a two-axial high-precision tiltmeter and quartz tiltmeter) and the electronic 24 bits data acquisition, processing, and storage systems. There are installed round-the-clock monitoring of the parameters of the environment around the tiltmeters, including precision measurement of the temperature of the ambient air with a relative measurement accuracy of about 0.001 degrees Celsius, the pedestal and body of the tiltmeter, the measurement of humidity and atmospheric pressure. In addition, the highly sensitive and eye-safe LIDAR system is helped to monitor the aerosol emitted by cracks at the installation site of the complex. The achieved orientation of the actual position of the pedestals was made with an accuracy of $\pm 00^{\circ}02'$.

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Promotional text

The instrumental tilt-measuring complex system installed in the laboratory of deep underground geophysical research near the Elbrus volcano is described and the complexity of conducted tasks about precision orientation of geophysical measuring equipment on pedestals.

Oral preference format

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Session Classification: Lightning talks: P1.2-1, P3.1, P3.4, P4.5

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.1 Seismic, Hydroacoustic and Infrasound Technologies and Applications