

# Prospects for the Development of Systems for Monitoring Seismodynamics Rock

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*Abstract:* Lunar-solar tides occur on the Earth surface under the influence of gravitational forces of the Sun and Moon not only with ocean water, and with soil and rock. These oscillation movements may be harbingers of earthquakes and of other seismic events. So far, the monitoring of these oscillations is not disseminated widely enough. It does not allow reliably predict the time and location of upcoming earthquakes or other seismic activity of the Earth. Among the reasons for the lack of prevalence of these devices along with the lack of mines for their installation, another important reason there is the high cost and the uniqueness of such sensors. This reduces the reliability of their work and do not allow to accumulate sufficient statistical data for scientific forecasting. These sensors use laser interferometer method of measuring of the increments of the interferometer arms. Gas lasers and highly sensitive interferometers are extremely expensive and not reliable enough. The solution can be based on the use of inexpensive laser (such as semiconductor ones), as well as the use of the efficient optical measuring systems and highly intelligent signal processing methods that will improve the reliability of these measurements and ensure the production of certified sensors models for widespread use. The proposed methods can reduce the demands on the optical part of the device due to the higher complexity and extend the functionality of electronic part and software of these devices, which will increase their accuracy and reliability, and lower their price. Therefore, the proposed recommendations for further modification of such devices will expand their application and increase the reliability of seismic forecasts.

*Key words:* interferometer, displacement measurement, vibration measurement, laser

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