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2.30 Observation of global atmosphere and lithosphere disturbances by means of spatially distributed strainmeters, gravimeters and tiltmeters

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The results of investigation and use of new instrumental method for precise geophysical monitoring of strain-stress media condition are summarized. The method is based on application a system of spatially distributed strainmeters, gravimeters and tiltmeters. Laser strainmeters ensure accuracy the order of $10(-2)$ - $10(-3)$ nm under measuring common displacements of media parts on 1-400 m bases. Capacitive seismogravimeters have resolution of 0.5 uGal under measuring the gravity variations while seismotiltmeters have correspondently 0.1 milliarcsecond (mas) in tidal band and 0.01 mas in seismic band of periods. Distance between the separate system components of the spatially distributed instruments is $10(2)$ - $10(3)$ km. The linear and area deformations of earth surface exited of seismic events, as well as their interrelation with powerful processes in atmosphere, ionosphere and magnetosphere of the Earth, are studied. It is shown, that increase of amplitude variations of recorded signals in the frequency range of $10(-6)$ - $10(-3)$ Hz, as a rule, is accompanied by increase of the Earth's seismic activity and forerun large earthquakes $M=7-9$. Applicability of these results for hazard evaluation of powerful seismic and other natural disasters is analyzed.