

GROUND GEOPHYSICAL SURVEYS: MEASURING TOOLS

V.B. Dubovskoi, V.G. Zhilnikov, O.S. Kazantseva, I.I. Kalinnikov,
V.I. Leontyev, A.B. Manukin, V.P. Matyunin, A.V. Sbitnev

Schmidt Institute of Physics of the Earth, Russian Academy of Sciences, Moscow, Russia

Abstract. Some original strainmeters and graviinertial instruments designed in the IPE RAS are considered. The instruments are successfully used for solving a number of applied and fundamental problems of geophysics and geodynamics are considered: the measurement of tilts and deformations of the earth's crust, variations in the Earth's gravitational field for solving problems of stability environmentally hazardous engineering and construction objects (dams, hydroelectric dams, nuclear power plants, oil and gas pipelines, etc.), search for the weakened zones of the Earth's crust, the identification of precursors of natural and technological disasters, studying global characteristics of the Earth (a lunar-solar tides, irregularity of Earth's rotation, the translational oscillations of the Earth's core, the azimuthal shifts of blocks of the lithosphere).

Keywords: geophysical research, deformation monitoring, gravimeter, microleveling, borehole inclinometer, tilt-strainmeter complex, hydrostatic leveling.