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Gravimetric investigations at Borowa Gora Geodetic – Geophysical Observatory

Przemyslaw Dykowski, Jan Krynski, and Marcin Sekowski
Institute of Geodesy and Cartography, Geodesy and Geodynamics, Warsaw, Poland (przemyslaw.dykowski@igik.edu.pl)

Borowa Gora Geodetic – Geophysical Observatory of the Institute of Geodesy and Cartography (IGiK), is situated north of Warsaw. In 2008 a A10 absolute gravimeter had been installed at the Observatory. Since then monthly quasi regular absolute gravity measurements are performed at three stations. In 2009 three LaCoste&Romberg model G (LCR) gravimeters owned by the Institute were equipped with a modern type of feedback system (LRFB-300) which gives a wide range of possibilities for gravimetric measurements.
Installation of the new equipment and modernization of the older one, allows to perform various gravimetric measurements at the Observatory. Along with the A10 gravimeter regular measurements precise microgravimetric surveys and precise spirit levelling were performed to validate absolute gravity determinations. As a complementary material vertical gravity gradient determinations were performed with the use of a special stand developed at IGiK. One of the upgraded LCR gravimeters is used for continuous tidal recording. From February 2012 good quality data is collected. The A10-020 gravimeter is also frequently used for scale factor determinations of LCR relative gravimeters. Gravimetric Laboratory at the Observatory is also suitable for local comparisons of absolute gravimeters.
Air pressure, ambient temperature and humidity are recorded with standard meteorological station as auxiliary data. Additionally, ground water table level is recorded in quasi regular time intervals at two points of the Observatory.
Data acquired at the Observatory is regularly processed and analysed. They are used to ensure metrological standard of the gravimetric equipment. The work presents recently obtained results of gravity determinations at the observatory and their discussion.