



Improved Data Quality Control and Calibration of the Superconducting Gravimeter OSG-050 at the Station Pecný

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The superconducting gravimeter OSG-050 has been operated at the gravimetric tidal station Pecný (Czech Republic) since February 2007. Presented are two results related to the better utilization of gravity data in consequent studies: 1) data quality control based on the PQLX software typically used for seismometers in IRIS, 2) accurate calibration of the superconducting gravimeter (SG) at the level of few tenth of per-mil using repeated absolute gravity measurements.

The approach expressed by statistics of the Power Spectral Densities and Probability Density Functions using basic principles of the open source PQLX software has been implemented for control of the noise level of the OSG-050. Advantage of such an approach is a wide range of information related to the actual noise level of the meter described within one graph and the complex and meaningful comparison of noise levels of different instruments (SGs, seismometers, etc.).

Altogether 50 absolute gravity campaigns with the FG5#215 has been performed at the station Pecný in the period 2007-2010. Among others, the data has been used for the calibration of the OSG-050. The large number of absolute measurements, which means 70 days of simultaneous observation, allowed to determine the SG scale factor with an unprecedented accuracy of 0.03%. The analysis of calibration results showed important contribution also from short-term absolute gravity campaigns (duration less than one day) of which utilization for calibration purposes are often considered as useless.