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Analysis of noise levels of the superconducting gravimeter at the station Pecny (Czech Republic)

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The superconducting gravimeter OSG-050 has been installed at the station Pecny in February 2007. The gravimeter belongs to the worldwide network of superconducting gravimeters running under the coordination of the Global Geodynamics Project (GGP, IAG Inter-Commission Project). The stability of superconducting gravimeters allows to study geophysical phenomena over a very wide range of periods (from few seconds to few years). The presented analysis focuses on the OSG-050 characteristics in the frequency band of the free oscillations of the Earth (0.3-10 mHz, periods 1-60 min.). Noise level of the superconducting gravimeter has been analysed and compared with 1) long-period Guralp borehole seismometer at Pecný, 2) superconducting gravimeters at GGP (Rosat, 2003), 3) New Low Noise Model of Peterson (1993). Results of such comparisons make possible to evaluate the contribution of the OSG-050 for the geophysical research in corresponding frequency band.