



Absolute Gravity Measurements with the FG5#215 in Czech Republic, Slovakia and Hungary

V. Pálinkás (1), J. Kostelecký (1), and M. Lederer (2)

(1) VÚGTK, v. v. i., Geodetic Observatory Pecný, Ondřejov, Czech Republic (vojtech.palinkas@pecny.cz, +420 323649236),

(2) Land Survey Office, Prague, Czech Republic

Since 2001, the absolute gravimeter FG5#215 has been used for modernization of national gravity networks in Czech Republic, Slovakia and Hungary. Altogether 37 absolute sites were measured at least once. In case of 29 sites, the absolute gravity has been determined prior to the FG5#215 by other accurate absolute meters (FG5 or JILA-g). Differences between gravity results, which reach up to 25 microgal, are caused by random and systematic errors of measurements, variations of environmental effects (mainly hydrological effects) and by geodynamics.

The set of achieved differences is analyzed for potential hydrological effects based on global hydrology models and systematic errors of instrumental origin. Systematic instrumental errors are evaluated in context with accomplished international comparison measurements of absolute gravimeters in Sèvres and Walferdange organized by the Bureau International des Poids et Mesures and European Center for Geodynamics and Seismology, respectively.