



A highly accurate absolute gravimetric network for Albania, Kosovo and Montenegro

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The objective of this project is to establish a basic gravity network in Albania, Kosovo and Montenegro to enable further investigations in geodetic and geophysical issues. Therefore the first time in history absolute gravity measurements were performed in these countries.

The Norwegian mapping authority Kartverket is assisting the national mapping authorities in Kosovo (KCA) (Kosovo Cadastral Agency - Agjencia Kadastrale e Kosovës), Albania (ASIG) (Autoriteti Shtetëror i Informacionit Gjeohapësinor) and in Montenegro (REA) (Real Estate Administration of Montenegro - Uprava za nekretnine Crne Gore) in improving the geodetic frameworks. The gravity measurements are funded by Kartverket.

The absolute gravimetric measurements were performed from BEV (Federal Office of Metrology and Surveying) with the absolute gravimeter FG5-242. As a national metrology institute (NMI) the Metrology Service of the BEV maintains the national standards for the realisation of the legal units of measurement and ensures their international equivalence and recognition. Laser and clock of the absolute gravimeter were calibrated before and after the measurements.

The absolute gravimetric survey was carried out from September to October 2015. Finally all 8 scheduled stations were successfully measured: there are three stations located in Montenegro, two stations in Kosovo and three stations in Albania. The stations are distributed over the countries to establish a gravity network for each country. The vertical gradients were measured at all 8 stations with the relative gravimeter Scintrex CG5. The high class quality of some absolute gravity stations can be used for gravity monitoring activities in future. The measurement uncertainties of the absolute gravity measurements range around 2.5 micro Gal at all stations (1 microgal = 10⁻⁸ m/s²).

In Montenegro the large gravity difference of 200 MilliGal between station Zabljak and Podgorica can be even used for calibration of relative gravimeters. The complete basic gravimetric network of these countries will be tied to these absolute stations.

In this presentation all the stations and results will be presented in detail and some special results analysed.