

Some Aspects on Basic Gravimetric Network Adjustment

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SUMMARY

In this paper are summarized and analyzed some types for estimation of precise relative gravimetric networks measured simultaneously with two or more gravimeters. The studies are based on functional model with preliminary calculation and elimination of the drift. Different types of stochastic models of measurements are examined. Some robust methods for estimation of measurements are presented. The presented theoretical approaches are applied to the estimation of the Basic Gravimetric Network of Republic of Macedonia. The comparison between the results from the least squares adjustment of stochastic models is based on models of equal weights, weights proportional to the standard deviations of the measurements, weights reciprocal to the time differences, and on a model accounting the relation between the measurements in each gravimetric loop. Robust estimation methods are examined and the Danish method is chosen as the most appropriate for relative gravimetric networks. Calculations and estimation methods are applied for each gravimeter separately and combined models are made.