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ABSTRACTS

Determination of a new gravimetric quasigeoid for Romania

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Keywords: Gravimetric Measurements, Gravimetric Network, Modeling, Quasigeoid

Abstract

The project of modeling a gravimetric quasigeoid for Romania is carried out in stages, based on the gravimetric measurements in the area of each county, in the gravimetric points of the 0, 1st and 2nd order gravimetric network, in the checkpoints points (with GNSS/levelling data) and also in the new designed points.

The remove-compute-restore technique was used to remove the long-wavelength component from Global Geopotential Model (GGM) and effect of the short-wavelength signal by applying terrain corrections, to compute residual geoid heights, and to restore the effect of the GGM and topography.

As a preliminary analysis for the development and evaluation of a precise quasigeoid for Romania, different gravimetric geoid solutions were computed using two gravity reduction techniques (Helmert's second condensation method and the Residual Terrain Model method), and two methodologies to compute residual geoid heights (Stokes' integral and Least Squares Collocation - LSC).

In this article are presented the main activities that took place in the period 2016-2018 for creating the projects in the counties of Romania and the results obtained till now as well as the perspective for the next years.