Analysis of the Performance of Two Gravimetric Reduction Schemes

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Key words: Positioning; Reference systems; Terrain correction, gravimetric reduction scheme, geoid modeling, Normal gravity

SUMMARY

Terrain correction (TC) in gravimetric reduction schemes is an essential component in gravimetric geoid modeling especially in areas with uneven topography. Two gravimetric reduction schemes (the second helmert's comdensation method and the Rudzki's inversion method) are presented in this paper. A comparative analysis of the performance of the resulting anomalies from both schemes in relation to the study area's topography has also been evaluated. It was discovered that the Rudzki inversion produced a better statistical fit amongst the two reduction schemes although both methods produce similar terrain pattern when plotted in 2D across the study area. The study recommends that further investigations should be performed on the Rudzki inversion scheme due to its theoretically significant advantage of not changing the equipotential surface.

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FIG Congress 2018
Embracing our smart world where the continents connect: enhancing the geospatial maturity of societies
Istanbul, Turkey, May 6–11, 2018