



Two different ways of residual terrain effect computation: case study in Auvergne region

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Application of residual terrain effect to minimisation of the omission error of global gravity models is becoming a standard procedure during the last years. However, there are still several questions in this topic to be solved, e.g. determination of the optimal integration radius and its dependence on the terrain roughness, effective way of solving the singularity problem when computation point is located inside the masses or evaluation of efficiency of residual terrain effect application when dealing with potential or quantities directly derived from potential (e.g. the height anomalies). We chose the Auvergne test region in France to compute the residual terrain effect on potential and on gravity using two different approaches: tesseroid method with an analytical integration in radial direction and method based on general polyhedron. Both methods are compared, differences are analyzed and tested by independent set of GNSS/levelling points. The edge effect is estimated and optimal integration radius is suggested.