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Gravitation effect of distant topographic masses: comparison of two different procedures

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Many problems in geodesy and geophysics require the estimation of topographic effects in a global manner, i.e. assuming the topographic masses over the entire Earth. Due to practical reasons, the computation of topographic effects is usually divided into near and distant zones while the boundary between them is often, but not always, the outer spherical radius of Hayford zone O_2 which is 1° 29’ 58". The aim of our contribution is to describe and compare two different procedures for computation of the distant topographic effect. Both procedures are based on the numerical integration of elementary contributions, however, the organisation of elements and mathematical formulae used for evaluation of elementary contributions are different. One procedure was developed in geophysical community while another was compiled in geodetic community. The both procedures are compared and tested in selected regions. Advantages and limitations of the procedures as well as some general ideas about the distant topographic effects are discussed.