

On the evaluation of global geopotential models

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Current and future satellite missions dedicated to global mapping of the Earth's gravitational field provide accurate spherical harmonic coefficients of geopotential. The Stokes coefficients are usually accompanied with estimated errors in terms of variance-covariance matrices (formal or calibrated). While these error estimates provide users with some information on correlations of estimated values and their relative accuracy, there is only a limited evidence on the actual performance of the new models in terms of their fit to some independent reference. This contribution discusses existing and proposed methods (GPS/levelling, satellite cross-over altimetry, ground gravity observations) for evaluation of the external accuracy of the new geopotential models.