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Space-wise global grids of GOCE gravity gradients at satellite altitude

Andrea Gatti, Federica Migliaccio, Mirko Reguzzoni, and Fernando Sansò
DICA, Politecnico di Milano, Milan, Italy (federica.migliaccio@polimi.it)

The new release of the ESA-GOCE data set, with improved calibration and processing, has been attacked by the space-wise approach according to a new strategy for the data gridding at satellite level. Two approaches are possible: the first exploiting the creation of about 30 global grids of 1,620,000 values, each corresponding to about 2 months of data to be combined afterwards; the second exploiting a data under-sampling un-correlating the observation noise and making it possible to compute the final grid in a single step. In both cases global grids of potential and of the full gravity gradient tensor are estimated by collocation at mean satellite altitude, together with their corresponding error estimates coming from Monte Carlo samples. The new gridding strategy is based on local estimation of non-isotropic covariances, modeled by independent individual coefficient variances. First results are presented and also evaluated with respect to other solutions.