



Processing strategies for comparisons of absolute meters

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Starting in 1981, absolute gravimeters (AG) have been compared on a regular basis at international level. As a consequence of the Mutual Recognition Arrangement of the International Committee for Weights and Measures (CIPM MRA), the international comparisons of AGs are today split into key comparison (KC) and pilot study (PS), considering different subsets of meters and different contributions to the comparison reference values. Furthermore, the mean reference level was estimated independently for each epoch at the same station without assessing the plausibility of changes. Also the adjustment procedure changed over time, starting from different strategies for the homogenization of the instrument heights and reaching up to uncertainty estimates, weighting schemes and consideration of systematic errors. With the establishment of a new absolute gravity reference system, the international comparisons will gain importance as a backbone of its realization.

We present a reprocessing of the recent comparisons, considering different processing approaches and showing differences between KC vs. KC+PS solutions, equal vs. weighted constraints, least squares vs. L1 norm solutions and to raise the question of how to obtain reasonable uncertainty estimates directly from the adjustment.