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Determination of nutation offsets by combining VLBI/GPS-produced normal equations

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Longstanding routing operation of individual geodetic space- and ground-based techniques (like, for instance, VLBI, GNSS, LLR, etc.) revealed their strong and weak aspects. More effective use of these strengths as well as reduction of their weaknesses is possible by incorporating of the information collected by each individual technique into combined products. Such a consistent combination can be performed either by combination at the observational level or at the level of normal equations.

We concentrate on the combination of normal equations gathered during VLBI/GPS-data processing. The main goal of this combination is to construct a time series of nutation offsets in the most consistent way. The objective of this presentation is to describe the developed strategy of combination and to present the current status of tits implementation. For the purpose of step-by-step validation of our procedure we use two-month-long time series of normal equations produced from VLBI and GPS observations by means of CALC/SOLVE and BERNESE v.5.0 software, respectively. Earth orientation parameter determination will, in our procedure, benefit from angle and rate observation for a unique estimation.