

Simultaneous estimation of a TRF, CRF and the EOP using VLBI

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VLBI observations allow to set up a solution with simultaneously estimated station positions, Earth orientation parameters (EOP) and quasar positions. By choosing an appropriate datum definition, a completely unbiased solution can be derived, e.g., by including no net rotation (NNR) and no net translation (NNT) conditions for station positions and velocities w.r.t. ITRF2000, and NNR conditions for source positions w.r.t. ICRF. The solution is computed with observations of more than 2650 VLBI sessions between 1984 and 2005, using the modified least-squares approach of the VLBI software OCCAM (version 6.0) and DOGS-CS. The paper presents the discrepancies between the solution and the a priori values from ITRF2000, ICRF and EOP C04. Furthermore, the consistency of the actual IERS products are analysed by comparing the differences between results of such an unbiased approach to solutions with ITRF2000 or ICRF fixed.