



Combination of simulated VLBI and SLR observations to determine a global TRF

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The Global Geodetic Observing System requires a global terrestrial reference frame (TRF) that should have an accuracy better than 1 mm and a stability better than 0.1 mm/yr as several phenomena in geophysics and climatology such as the prediction of the global sea level rise require a most accurate and stable reference. These goals have not been met so far. Simulation studies allow to better understand the error-limiting factors in the TRF determination and hence, they can contribute to the improvement of the next ITRF. Within project GGOS-SIM we combine normal equation systems (NEQs) of simulated VLBI and SLR observations to determine a global TRF. The time span of 2008-2014 is considered and the software EPOS is employed for the combination. The NEQs include station coordinates, velocities as well as pole coordinates and dUT1. We test different combination strategies including local ties as well as global ties in terms of pole coordinates and proper datum constraints. Our results are compared to ITRF2008 and IERS C04 focusing on origin and scale, i.e. the main contributions of the considered space geodetic techniques to the ITRF.