



Evaluation of ITRF2014 Solutions

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For the most recent International Terrestrial Reference Frame (ITRF) realization three candidates have been provided, namely an ITRF2014 solution by IGN, DTRF2014 by DGFI-TUM, and JTRF2014 by JPL. There are significant differences in the way how these solutions have been generated, which parametrization has been applied, and how the solutions from the different space-geodetic techniques are combined.

The most recent GNSS reprocessing solution generated in the frame of the EGSIEM project (European Gravity Service for Improved Emergency Management; funded by EC in the frame of Horizon 2020) was used to generate time series of GNSS-based solutions from 2000 to the end of 2014 using these reference frame realizations. The solution contains station coordinates, GNSS satellite orbits, Earth rotation parameters, and troposphere parameters.

In order to evaluate the consistency of the contributions from the IGS (GNSS) and ILRS (SLR) in the reference frame solutions, the SLR measurements to the GNSS satellites can be used. Since the microwave-based GNSS satellite orbits obtained in the different reference frames are consistent regarding the orbit modeling differences in the SLR residuals may be interpreted to assess the consistency of the station coordinates between the SLR and GNSS sites in the reference frame solutions.

With this contribution we hope to provide an independent contribution to the discussion about the advantages and disadvantages of the different methods to generate the IERS-TRF.