



Impact of inconsistent use of IERS Conventions on PPP results

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The IERS Conventions define the standard reference systems realized by the International Earth Rotation and Reference Systems Service (IERS) and the models and procedures used for this purpose. State-of-the-art processing of space geodetic data requires, in principle, to adopt the latest version of the IERS Conventions, e.g., IERS 2010. This means, however, to frequently update analysis software packages accordingly, which cannot always be realized immediately due to several reasons, e.g., operational constraints. Small inconsistencies are an unavoidable consequence.

The impact of the use of inconsistent IERS Conventions is assessed by processing GNSS data from a global station network. Orbits and clocks from GPS and GLONASS satellites resulting from a reprocessing based on the IERS 2010 Conventions are used for a Precise Point Positioning (PPP) of the stations. On the one hand, the PPP is done with consistent IERS 2010 Convention models and on the other hand, the older IERS Conventions 2003 are used for the PPP. Results of kinematic and static analyses are compared and investigated to quantify and qualify the impact of an inconsistent use of the IERS Conventions.