

The ITRF combination and the increasing number of estimated parameters (*Invited*)

Z. Altamimi¹; X. Collilieux¹; L. Metivier¹; I. PANET¹; D. Coulot¹; O. Jamet¹

1. Institut Geographique National, Champs-sur-Marne, France.

Starting with the ITRF2005, the input data for the ITRF combination is in the form of time series of daily or weekly station positions and daily Earth Orientation Parameters (EOPs). The ITRF2008 incorporates such solutions from the four space geodesy techniques: VLBI, SLR, GPS and DORIS, spanning 29, 26, 12.5 and 16 years of observations, respectively. The total number of ITRF2008 estimated parameters is approaching 50000 and will increase in future ITRF solutions as more EOPs and stations will be available.

Consequently, the computing time is exponentially increasing.

We therefore envisage to explore and develop algorithms suited for the particular case of ITRF combination, such as parameter reductions allowing to invert several connected sub-systems, or and parallelization processes. After presenting the structure of the ITRF combination normal equation and its current inversion process, the paper outlines the future foreseen developments underlining both advantages and disadvantages, considering also the possibility of an increasing number of GNSS stations in future ITRF solutions.

Contact Information

Zuheir Altamimi, Champs-sur-Marne, France, 77455, [click here](#) to send an email