



Pre-analysis in view of the next ITRF solution

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The ITRF2005 experience has shed light on some deficiencies in the four space geodesy technique solutions that were used, as well as in the available local ties. Before initiating a new ITRF solution analysis, there are some conditions to be satisfied, mainly the need of reprocessed and consistent solutions from each technique: a new reprocessed IGS solution involving the absolute PCV models, an improved reanalysis solution from IVS accounting for the mean pole tide correction and better troposphere modeling, an improved ILRS solution taking into account all range bias and other station-dependent corrections, and new DORIS solutions where improvements are expected in the frame Z translation and the scale. It is anticipated to have some of these solutions available so that some initial pre-analysis can be performed and their quality assessed. A particular emphasis will be given to the time behavior of the frame physical parameters (origin and scale). The new reprocessed solutions are expected to change in particular the height component estimate of station positions which will have a direct consequence on the ITRF scale determination. Considering these expected changes, a re-evaluation of the consistency between the available local ties and space geodesy estimates becomes necessary, and in particular their impact on the ITRF datum specification. A specific study will be devoted to quantify the overall frame effects as a consequence of time series discontinuities (especially GPS), including the present adequacy of the available ties.