



Analysis of local ties from ITRF2008 computations

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In its function as an ITRS Combination Centre DGFI has computed a solution of the International Terrestrial Reference Frame 2008 (ITRF2008). It is based on the combination of time series (weekly or session data sets) of station positions and Earth Orientation Parameters from the geodetic space techniques VLBI, SLR, GPS and DORIS. A key element for the combination of the different space techniques are the terrestrial difference vectors (local ties) at co-location sites. In this presentation we focus on the analysis of local ties from the ITRF2008 computations. This analysis and validation was done by comparing the local ties with the station coordinates obtained from the technique-specific solutions. An interpretation of the observed discrepancies is difficult, since various factors have to be considered. So, uncertainties of the space geodetic solutions and systematic differences between them, local site effects, such as different motions of the co-located instruments, instrumentation-related issues, small remaining datum inconsistencies between techniques and errors in local tie measurements could be the reason for the discrepancies. To get further insight, we also analysed the position time series at co-location sites in order to quantify the accuracy of the space geodetic solutions and to identify possible time-dependent effects that might be relevant for the observed discrepancies. We performed the validation of local ties for all co-location sites contributing to the ITRF2008 solution at DGFI and we will provide some general results on this. Furthermore we will give some detailed information for selected co-location sites.