



Consistency evaluation of space geodetic techniques via ITRF combination

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The International Terrestrial Reference Frame (ITRF) combination is heavily dependent on the configuration, precision and co-locations of integrated global geodetic solutions (VLBI, SLR, GPS, DORIS). Each one of these techniques contributes to one or more, but not to all ITRF defining parameters (origin, scale, orientation). Consistency of these solutions, connected via local ties at co-location sites, in station positions and linear velocities is a prerequisite for an optimal ITRF combination. The ITRF2008 had shed some light on significant inconsistencies observed at co-location sites where at 50% of these sites we observed discrepancies larger than 6 mm between local ties and space geodesy estimates. We recall the combination strategy adopted to mitigate the impact of these inconsistencies on the frame defining parameters. We evaluate the currently achievable accuracy of the ITRF physical parameters, namely the origin and scale, as a function of local ties and the level of technique agreement on station velocity estimates.