



Impact of DORIS beacons shifts on the DORIS contribution to ITRF2008

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Analysis of DORIS stations positions time series from IDS combined solution over time period 2000-2012 has revealed discontinuities linked not with geophysical phenomenon, but correlated with beacons frequency shifts. This result was the consequence of assuming the nominal frequency in the measurement model, and not accounting for beacon frequency shifts during an arc or over time. This affected the DORIS data analysis for the software at the ESA, GSC, LCA, and GAU analysis centers. The GIPSY-OASIS analysis centers (IGN, INA) were unaffected since they model DORIS as a difference in two phase measurements and they estimate ground frequency drift for the station clock. This mismodelling affected the DORIS contribution to ITRF2008. Since late 2011, the software at the affected ACs has been modified and these frequency shifts are now taken into account. We computed mean stations positions and velocities over the time period 1993-2008 with the original (uncorrected) and new SINEX files to estimate impact of this missmodeling on the IDS contribution to ITRF2008. Finally, as we know the exact number of stations affected, the amplitude of the effect and when, we can predict the effect on the TRF scale. After presentation of these results, we will also give the status of the main guidelines of the DORIS contribution to ITRF2013.