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Recent improvements in DORIS orbit determination and station coordinates estimation at CNES/CLS Analysis Center

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At the end of 2011, the CNES/CLS Analysis Center has entirely re-processed the whole DORIS data set for orbit determination and tracking station coordinate estimation. In addition to SPOT-2, -3, -4, -5, Topex/Poseidon and Envisat, the DORIS/DGXX measurements of Jason-2 and Cryosat-2 are included in the products delivered to the IDS (combined multi-satellite weekly SINEX, orbits in sp3 format). The new processing was motivated by upgrades brought to the GINS/DYNAMO software and the availability of new models. Changes with respect to the previous processing set up for the IDS-3 realization (IDS solution contributing to ITRF2008 computation) are:
- a priori reference system defined by DPOD2008 (also used for discontinuities and data rejection) and IERS EOP series aligned on ITRF2008;
- trospospheric delays derived from GMF/GPT model;
- EIGEN-6S gravity model.
Attitude laws implemented in GINS have been revised. A new macro-model tuned by GRGS is now used for Jason-2.

The objective of this presentation is to show the impact of this reprocessing on the orbit determination and the terrestrial reference frame. Post-fit residuals, orbit comparison, estimated dynamical parameters are discussed, as well as station positioning performances. Residual signals at draconitic and beta-prime periods are also examined, especially in the geocenter time series.