



AWG Discussions / Action Item Review

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Open points following ITRF reprocessing

DORIS scale jump in 2012

Increase of the scale factor for Jason-2 and Cryosat-2 is linked to the change of tropospheric model used by CNES in its POD processing (GDR standards): from CNET (GDR-C) to GPT/GMF (GRD-D).

➤ reduction of the amount of data marked as rejected in the doris2.2 file. Then, an increase of the data used in GRG analysis considered to be good in CNES pre-processing.

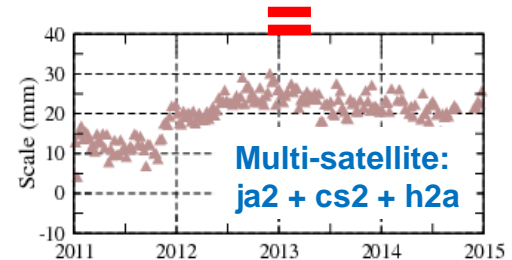
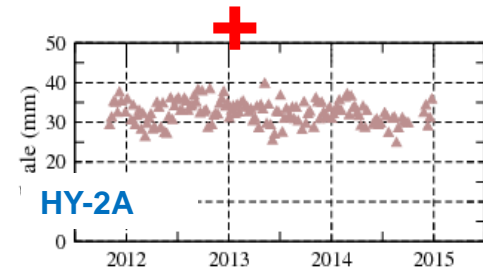
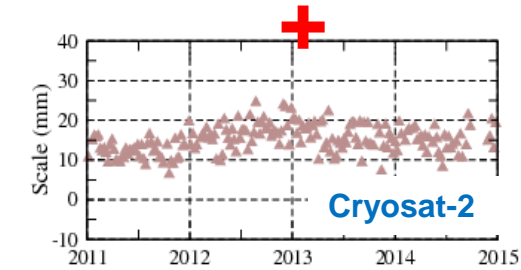
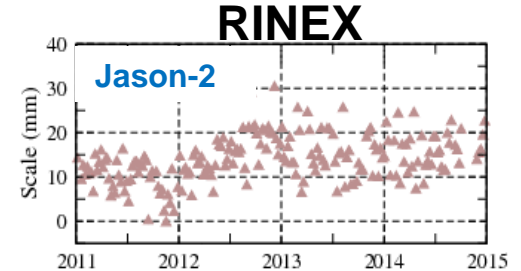
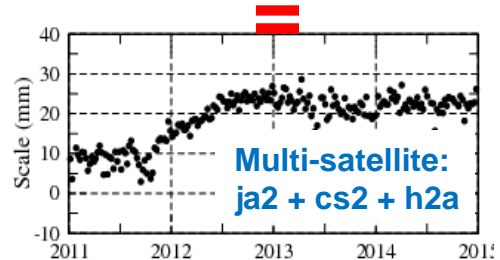
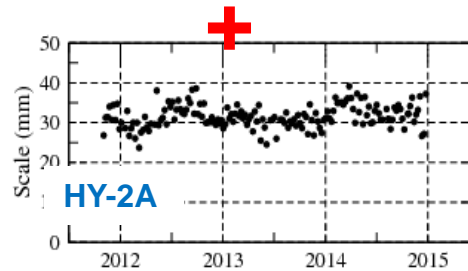
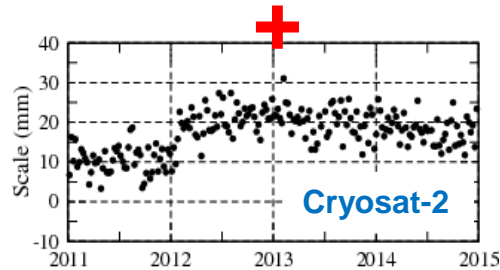
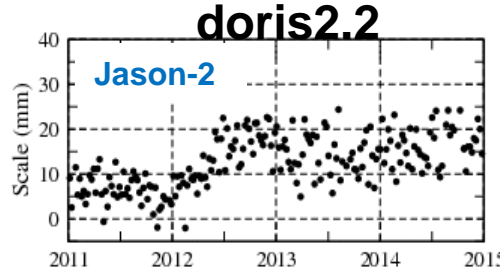
➤ The larger number of data, especially at low elevation, could thus be the cause of the change we observe in the scale factor. Date of change is mission dependent

➤ In the case of doris2.2 data the scale increase of the multi-satellite solutions is due to the jump not at the same time of the Jason-2 and Cryosat-2 solutions but also of the HY-2A high scale

➤ In the case of the RINEX data the jump observed is only due to the contribution of HY-2A

So, IDS ACs need to do their own pre-processing

GRG Scale factor for Jason-2, Cryosat-2, HY-2A and the multi-satellite solutions from doris2.2 data and RINEX data



Open points following ITRF reprocessing

DORIS scale jump in 2012

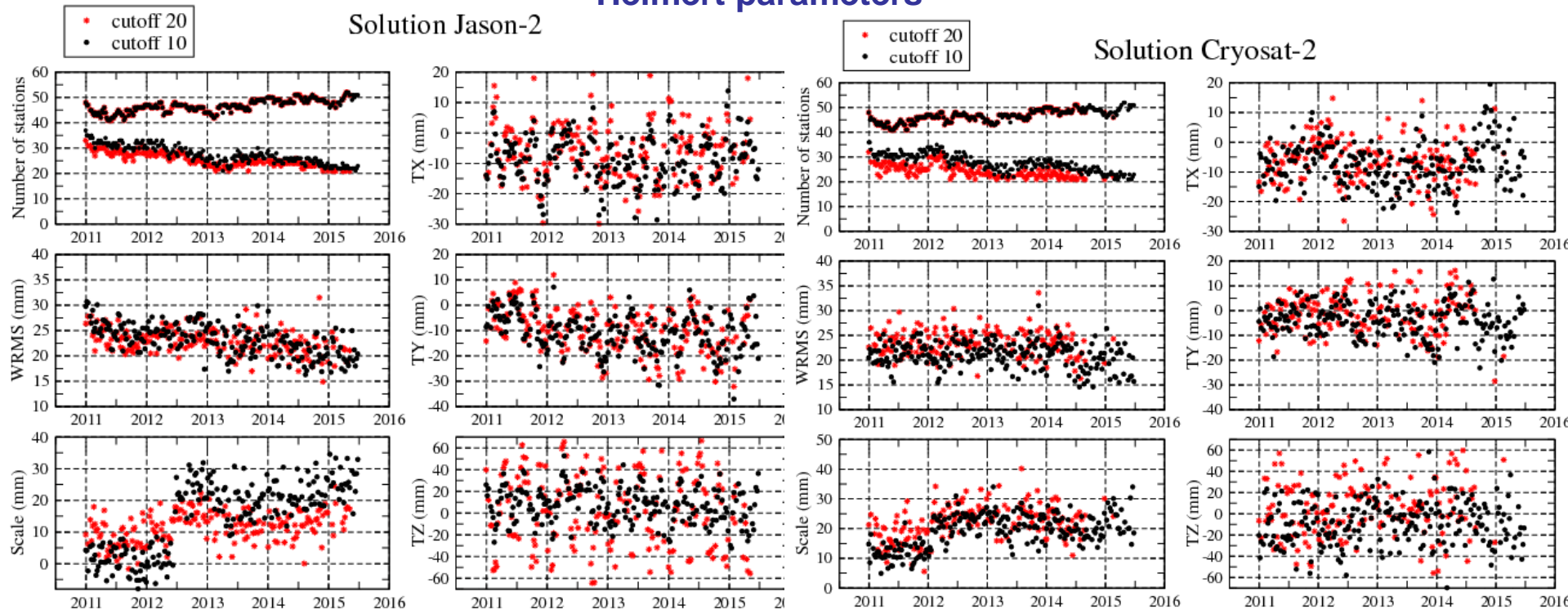
Jason-2 and Cryosat-2 Single satellite Solution compared to DPOD2008 computed by CATREF

(from Jan. 2011 to Jun. 2015)

with GMF/GPT Tropospheric model

with cutoff angle of 10° and 20° (without downweighting)

Helmert parameters



Impact of the cutoff angle on the scale factor

The larger number of data, especially at low elevation, is the cause of the change we observe in the scale factor for Jason-2 and Cryosat-2 single-satellite solutions with the doris2.2 dataset.

With an elevation cutoff angle of 20° the scale change in 2012 is significantly reduced

Open points following ITRF reprocessing

HY-2A Zoffset and HY-2A Tz

Do we apply a correction of Center of Mass (CoM) value?

-take into account the discussion about the paper of Gao et al. (2015, Adv. Space Res.) which proposes new values of CoM, of 2Ghz DORIS Phase center and of LRA spherical center (different from ILRS recommended values).

Action: estimation of the CoM position by some ACs and associated

Action: CNES has to contact Chinese agency to have information in particular for the Center of Phase DORIS position. The goal is to obtain information by showing results of HY-2A of scale factor for example.

Some groups have also a high Tz value (~70 mm for GRG). To see which AC is impacted, Analysis Coordinators propose to ACs to provide a HY-2A single satellite solution to IDS CC at least one year (5 years [2011-2015] in the best case). This action will be done later.

SARAL Center of mass

The initial CoM position in Z for Saral was estimated using DORIS data by CNES POD team: -0.6105 m (initial value was -0.6583). This new value is the one implemented in CNES POE processing since Nov. 6, 2014 and in geometrical correction in the doris2.2 files.

The document describing the satellite models implemented in POE processing <ftp://ftp.ids-doris.org/pub/ids/satellites/DORISSatelliteModels.pdf> has been updated. The Z value of the initial center of gravity in the header of the “mass and center of mass” history file of Saral has also been updated.

The re-delivery of the doris2.2 data taking into account the new value of CoM from the beginning of mission to Nov. 6, 2014 by CNES POD team is not urgent, that could be done at the end of Saral mission for example.

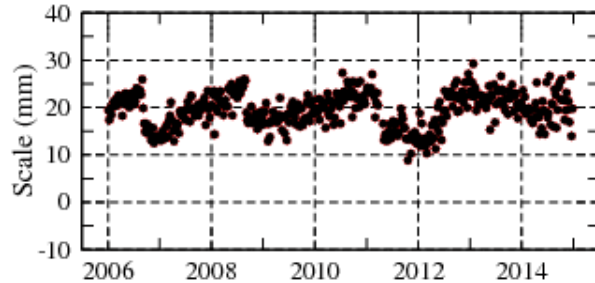
Action: CNES has to contact Indian Agency to have information

Open points following ITRF reprocessing

Scale issues on SPOT-5 (sawtooth pattern) / Spot attitude

The SPOT-5-only scale clearly showed a sawtooth pattern with breaks. The discontinuities are of the order of -20 mm, so they are significant.

Action for ACs: plot histogram of residuals for SPOT-4/5, JASON-2 and CRYOSAT-2 to see if the center moves according to the elevation.



Understand the outstanding points following the ITRF reprocessing

Action for ACs: Analysis Coordinators ask to IDS ACs (volunteer) to provide a single satellite solution for all satellites to IDS CC over 5 years [2011-2015].

Increase of DORIS RMS of fit of the orbit determination

Since 2012 some ACs observe an increase of the DORIS residuals

Action for Acs and ACs associated: provide to the Analysis Coordinators the temporal evolution of the DORIS RMS residuals for all satellites available since 2011.0

What's Next

Switch to ITRF2014 for operational products

If ACs need help to implement in their POD software the post-seismic models they can contact those that have already done

CC (G. Moreaux) proposes to give to ACs the temporal series of stations impacted by post-seismic model

When and how switch to ITRF2014?

when next DPOD will be available (specific issue)

Analysis coordinators propose to make orbit comparison between all ACs

A chain of comparison is in progress but we need to have orbits in sp3 format (terrestrial frame, TAI)

Action of ACs and ACs associated: provide their sp3 orbit to the CDDIS/IGN data centers in the appropriate directory

<ftp://cddis.gsfc.nasa.gov/pub/doris/products/orbits/>

(Done regularly by GRG and POD CNES team)

Others ?

Open points following ITRF reprocessing

DORIS scale jump in 2012

ACs	Cutoff	Downweighting	Use of Data-supplied offset corrections	Edit flags used in data file	Edition criteria in POD processing
ESA	7°	After 2002 sin (elev) with gradient	No	Yes but only 3 and 4 are rejected corresponding to zero doppler and restart mode RS=1	3.5 sigma editing
GOP	10°	No	Yes	All edited data are rejected (1, 2, 3,4)	observations with post-fit residual over 5 mm/s (after first iteration)
GRG	12°	For elev <20° elev**2/400 (elev in °) and with gradient after 2002	No	All edited data are rejected (1, 2, 3,4)	3 sigma editing
GSC	10°	No	No	Yes, all data used	3.5 * RMS
IGN	7°	1/sin (elev)			
INA	12°	1/sin (elev)			