The main evolutions in the reprocessed data (GDR 'B' for J1 and RGDR for TOPEX) are the implementation of a new retracking algorithm (MLE4 for Jason-1 and MLE5 for TOPEX), a new precise orbit based on a GRACE gravity model and new geophysical corrections (tidal models, MOG2D, Sea State Bias). In order to get a significant data set, the following statistics are computed over the 21 cycles, excluding cycles TOPEX 361 (J1 IB), which was not reprocessed and TOPEX 362, which was not available due to a problem in the reprocessing.

**A) SLA consistency: Impact of orbit using GRACE data**

SLA differences between J1 and TOPEX are plotted (figure A2) using former orbits and ranges from GDR 'A' for J1 and MGDR for TOPEX. Geophysical corrections for SSB correction were applied for both satellites. Large structures of negative and positive differences are visible, as well as orbit passes.

Using the new orbits (GRACE family) provided by the GDR 'B' for J1 and RGDR for TOPEX, removes trackiness and decreases the particular pattern in North Atlantic (figure A2). Thanks to the new orbits, large structures are detected in Indian ocean and close to the shores. Some part of these discrepancies correspond to SSB differences between the two missions.

Besides, a thick equatorial band is evidenced on figure A2 with negative differences. This is due to the ascending and descending SLA differences between J1 and TOPEX showing a large hemispheric signal (see figure B4).

**B) SLA consistency: Impact of new range**

When using the new range (from LSE for TOPEX), the patch in Indian ocean is strongly reduced (figure B3). Jason-1 and TOPEX SSB are probably more homogeneous from now on (see dedicated S. Labroue's talk).

Using the new MLE4 range for Jason (figure B2) has weak impact on the mean differences, even if the consistency is slightly better in the Indian Ocean. Nevertheless a great hemispheric bias (between -2 cm and +2 cm) is highlighted when separating the ascending and descending passes (figure B4).

- This bias is partly due to TOPEX data. It was present on TOPEX M-GDR dots alone (figure B3, left) but it is greater using new range (MLE4 from RGDR) as shown at the TOPEX crossovers (figure B3, right). This needs more investigation.

- To a lesser extent, such a signal is also visible at Jason-1 crossovers in the GDR 'B' (see Gaillard report) probably due to time lag bias. But it is much weaker than for TOPEX.

**C) SLA consistency: Impact of new SSB**

New SSB corrections have been computed for J1 using GDR B and for TOPEX using RGDR, with the collinear method. For more details, we are indebted to N. Labroue.

These new TOPEX and J1 SSB models are much closer than before. When applying them in the SLA calculation in addition to the new orbits and the new ranges (figure C2), the discrepancies between J1 and TOPEX are reduced. However, on East/West (E/W) measurement, but it is not correlated with SWH.

The origin of this signal is explained by CNES and GSC, orbit, needed specifically for J1 and T/P. Indeed, using GSC orbit for Jason-1 similar to those used in RGDR T/P data, allows us to remove this East/West signal (see figure C2).