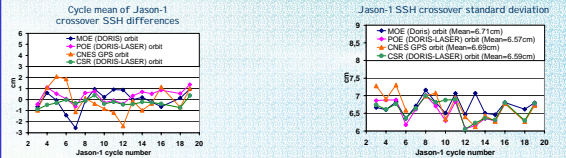


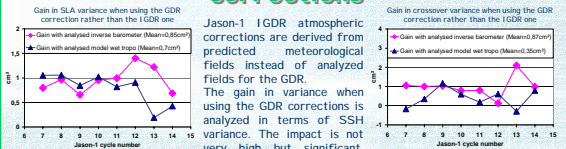
Impact of orbit calculation



To better understand the 60-day variations observed on Jason-1 SSH (see poster 1), different orbits have been tested. The effect is less perceptible with GPS orbits and DORI-S-laser POE orbits, even if the 60-day cycle is still present. Thus the POE calculation seems promising to better estimate MSL variations and to enhance Jason-1 data precision.

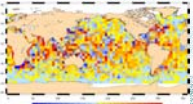
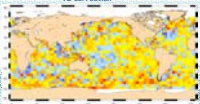


Analyzed/predicted atmospheric corrections



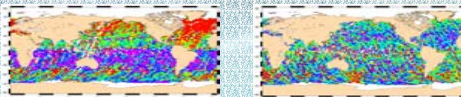
Jason-1 IGDR atmospheric corrections are derived from predicted meteorological fields instead of analyzed fields for the GDR. The gain in variance when using the GDR corrections is analyzed in terms of SSH variance. The impact is not very high but significant. Analyzed fields could thus lead to better Jason-1 data performances.

Geographical pattern of the gain in SLA variance (δ / δ , cm^2) when using the GDR 1B correction



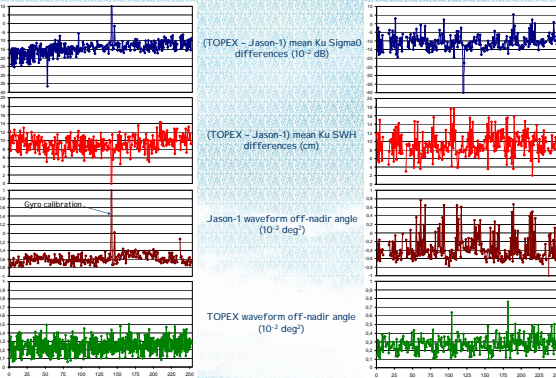
Jason-1 / TOPEX Sigma0 and SWH comparisons

Difference between TOPEX and Jason-1 Ku Sigma0 estimations on ascending passes (left map) and descending passes (right map). The scale ranges from -0.1 DB to +0.1 DB.



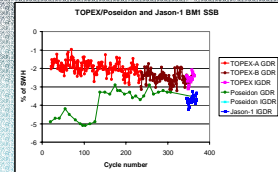
Jason-1 cycle 004 TOPEX cycle 347

Jason-1 cycle 019 TOPEX cycle 362



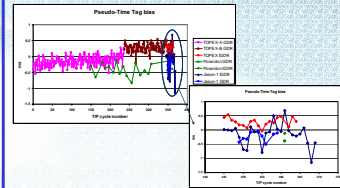
Ku Sigma0 differences between TOPEX and Jason-1 are analyzed along-track. Differences on the order of +/- 0.1 db are observed, depending on tracks (ascending and descending). Significant patterns appear at local scale and hemisphere scale. Ku Sigma0 and SWH (TOPEX - Jason-1) differences are averaged over each pass for Jason-1 cycles 004 and 019. The figures show some correlation with the estimated waveform off-nadir angle of both altimeters: ascending/descending signal on TOPEX cycle 347 and particular features on Jason-1 cycle 019.

SWH dependency



A 1-parameter SSB model is adjusted at crossovers and applied to TOPEX, Posidon-1 and Posidon-2 altimeters from the beginning of the /TP mission. Note that the M-GDR tracker bias is accounted for in Posidon-1 estimates. The change at cycle 138 is due to on-board/ground retracking change. TOPEX-A SWH dependency had increased with time. TOPEX-B BM1 coefficient is about -2.6% SWH, while Jason-1 IGDR estimates are around -3.7%. MOE/POE orbit influence is also analyzed, but it seems to have low impact.

Pseudo Time Tag bias



The same method is used to estimate the pseudo-Time Tag Bias coefficient (linear function of radial velocity). A change between TOPEX-A and TOPEX-B estimations is noticed. Jason-1 values are about the same as TOPEX-A. The POE (GDR) orbit provides better stability for Jason-1 estimates.