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With the satellite altimetry missions, the global mean sea level (GMSL) has been calculated on a continual basis since January 1993. 'Verification' phases, during which the satellites follow each other in close succession (TOPEX/Poseidon--Jason-1, then Jason-1--Jason-2), help to link up these different missions by precisely determining any bias between them. Envisat, ERS-1 and ERS-2 are also used, after being adjusted on these reference missions, in order to compute Mean Sea Level at high latitudes (higher than 66°N and S), and also to improve spatial resolution by combining all these missions together.
The global mean sea level (MSL) deduced from TOPEX/Poseidon, Jason-1 and Jason-2 provides a global rate of 3.2 mm from 1993 to 2013 applying the post glacial rebound (MSL AVSIO website http://www.jason.oceanobs.com/msl). Besides, the regional sea level trends bring out an inhomogeneous repartition of the ocean elevation with local MSL slopes ranging from +/- 8 mm/yr. But for users, it’s also crucial to know as much as possible the errors impacting the MSL calculation in order to analyze the MSL variations and in fine to interpret correctly the geophysical mechanisms at the origin of these variations.
In last OSTST (Ablain et al., Venice 2012), the characterization of these errors was performed over all the altimetry period separating several time scales as the long-term evolution (mean sea level trend), but also the inter-annual and periodic signals. However, it has been also underlined that these errors are not homogenous on time. Indeed they are most of the time more important on the first altimetry decade [1993-2002] than in the second one [2003-2013]. In this paper, we propose to describe in details the multiple causes explaining the MSL error budget differences between both decades. We also provide the MSL error budget for both decades separately.
OSTS session
Quantifying Errors and Uncertainties in Altimetry Data
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