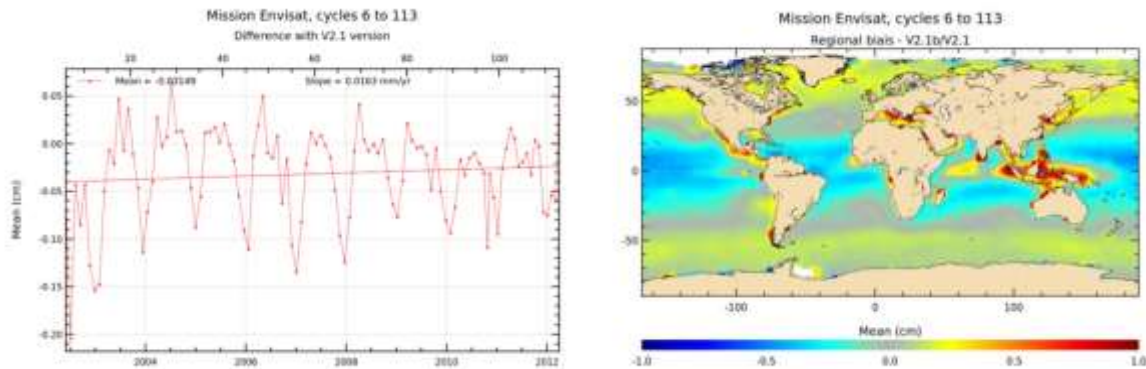


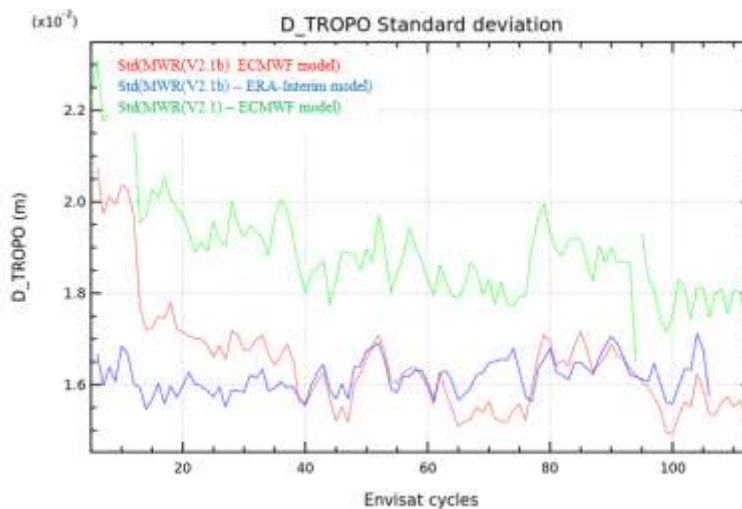
Envisat RA2: Updated MWR Wet Tropospheric correction for Envisat Altimetry V2.1 data set – Validation report

The main impact is on the consistency at scales below 10 days of data for mesoscale applications, notably for wet troposphere zones.



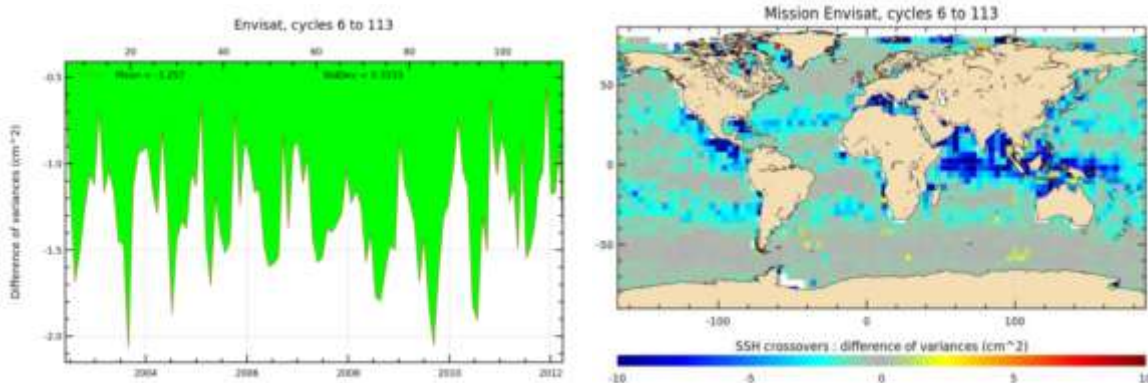
Radiometer wet tropospheric correction bias between v2.1 b and v2.1 version (left: temporal evolution, right: regional biases)

The plot of the wet tropospheric standard deviation w.r.t. ECMWF models demonstrates a better agreement with the new version v2.1b, notably with ERA Interim reprocessed series which has a reduced number of processing inhomogeneities.



Standard deviation of $D_{Tropo} = \text{MWR} - \text{Model wet tropo}$

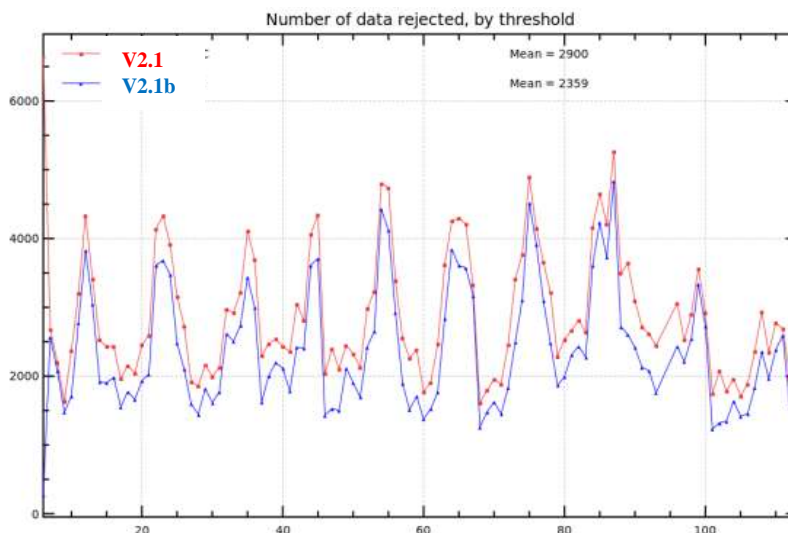
The improvement of the reliability of the v2.1b wet tropospheric correction in terms of consistency between Sea Surface Height estimation between ascending and descending tracks is presented in the figures below, where the variance gain of the SSH (Sea Surface Height) at the crossover .



Reduction of mesoscale error lower than 10 days (Variance gain of Sea Surface Height at crossovers) using V2.1b instead of V2.1 version for the radiometer wet tropospheric correction

**Left: temporal monitoring (green: improvement, blue: degradation)
Right: Geographical distribution of the improvement (blue: improvement, red: degradation)**

The number of data considered as valid after the usual selection applied on data also increases with this new version (v2.1b) compared to the v2.1 one (mainly at high latitudes for low tropospheric content).



Number of rejected data by cycle, due to out of threshold MWR values: less data are considered as spurious with V2.1b MWR version of Wet tropospheric correction than with V2.1 version. Those data are situated at high latitudes near the ice shelves.