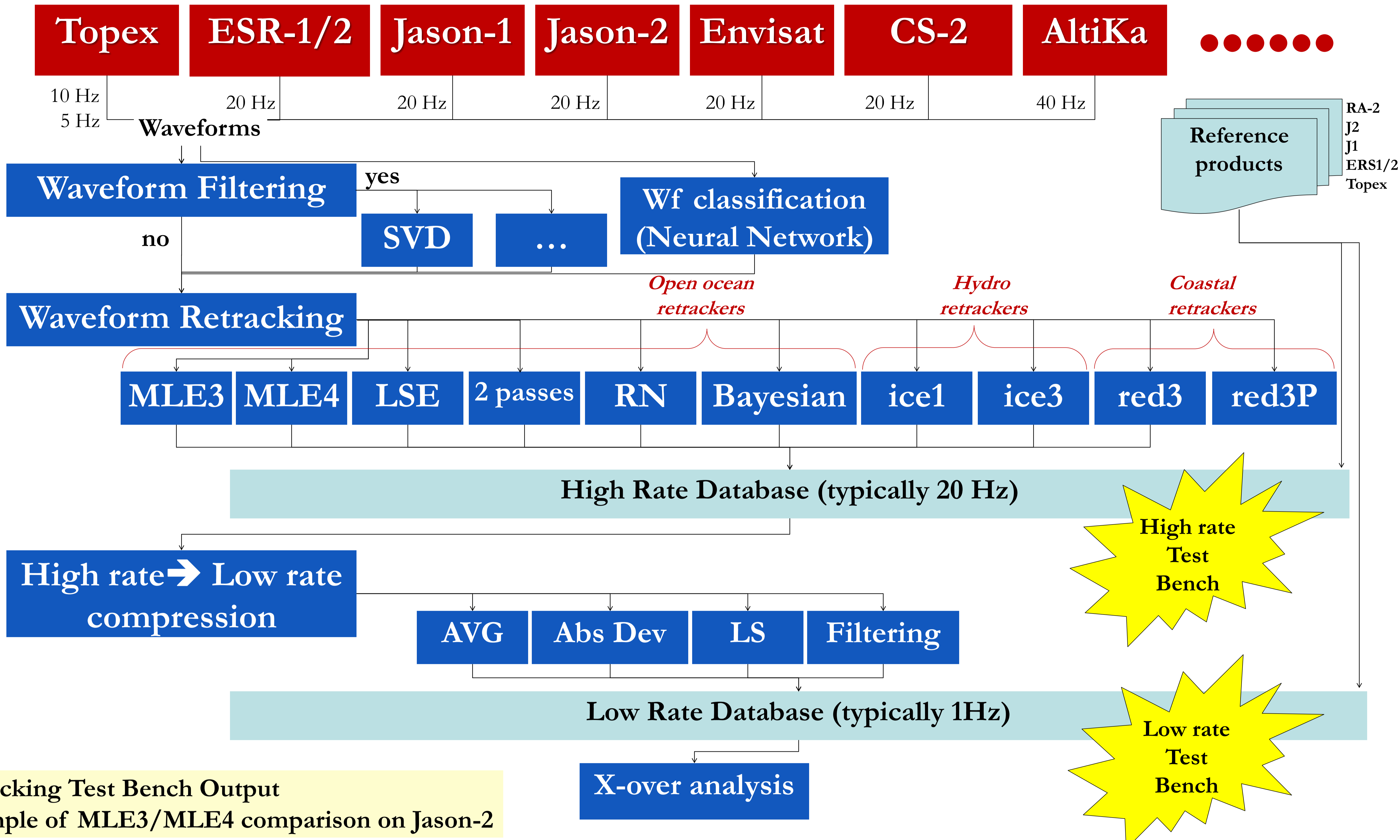
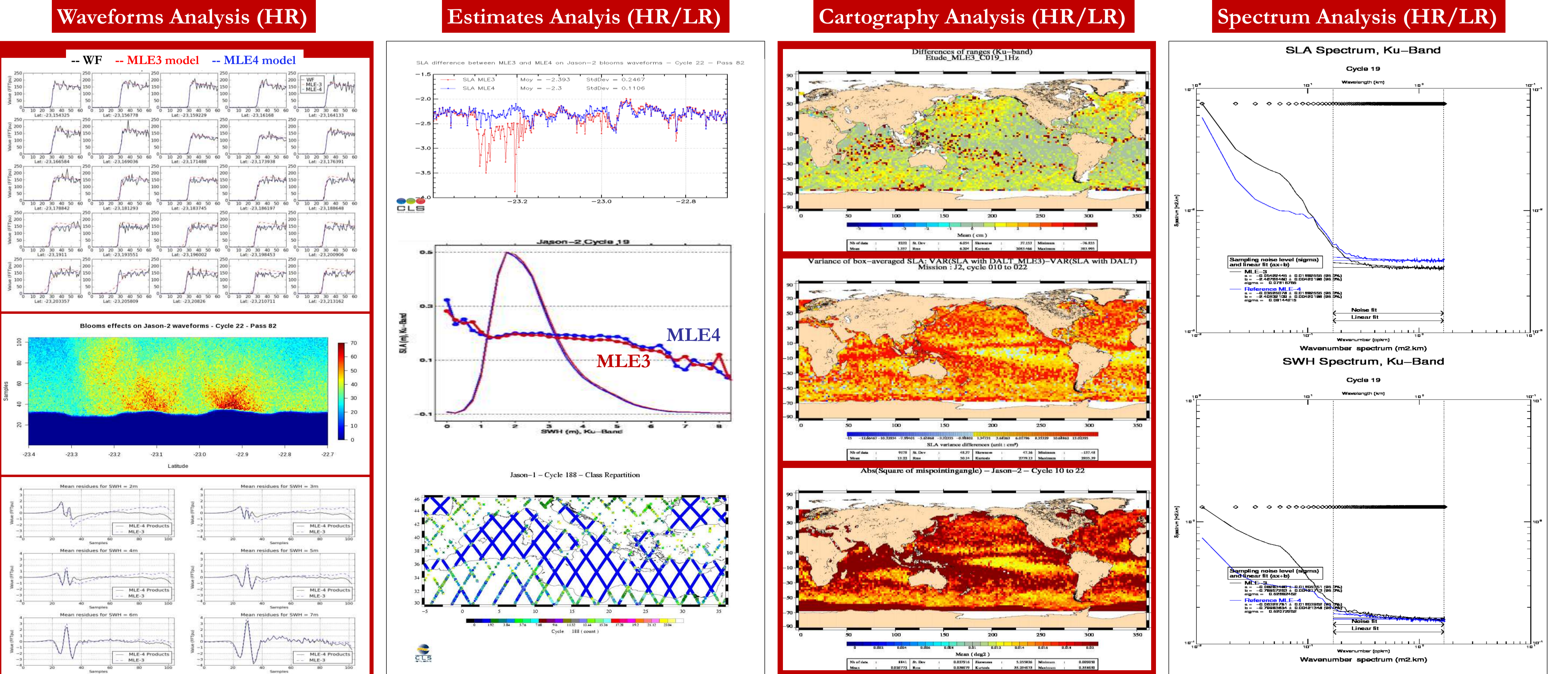


In the frame of the CNES SLOOP project aiming at improving the Jason open ocean products, many different retracking algorithms have been developed. In addition to the classical Maximum Likelihood Estimator solving for 3 or 4 parameters, SVD-MLE, Neural Network, Two-Passes, Least Square Error, Bayesian and dedicated rain retracking algorithms have been implemented. The need to precisely validate and cross-calibrate these algorithms then clearly appeared and we developed a retracking test bench able to help us to determine the main features, advantages, drawbacks and the main discrepancies between all these algorithms. We present here this validation test bench, able to be run on Jason data but also on any other altimeter data set, either on 10Hz, 20Hz, 40Hz data or on 1Hz data from Topex, ERS1/2, Envisat, Jason-1 and Jason-2, Cyrosat and Alti-Ka missions. The illustrations presented in this poster have been taken from various studies founded by CNES or ESA and performed in CLS during the course of 2010.



## Retracking Test Bench Output

### Exemple of MLE3/MLE4 comparison on Jason-2



**As a conclusion,** this tool is a very useful tool :

- to develop new algorithms (waveform filtering, classification, retracking, compression) and to analyse their performances
- to tests new parametrizations of these algorithms
- to detect potential problems in the waveform processing (on board and on ground)
- to compare the performances of two different algorithms (and to compare with official products) (at high and low resolutions)
- to compare the performances of two different altimeters
- to analyse the performances of a new mission at instrumental levels (level 1 and level 2)