



Jason-2 altimeter transponder calibration experiment

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Absolute and relative calibrations of altimetry missions is a key concern to insure the required long term stability of the sea surface height estimates. For example, on CNES/AVISO data center side, the global MSL for the entire altimetric period is calculated by combining the time series from all three Topex/Poseidon, Jason-1 and Jason-2 missions before filtering out the periodic signals. The three missions are linked together during the formation flying phases of the Jason-1 and Jason-2 missions in order to calculate very precisely the bias in global MSL between these missions. But after the formation flying phases, we do not have direct comparison possibles. We have to rely on long term comparison exercices based on statistical analysis and/or dedicated insitu sites.

Among the insitu technics, the transponder is certainly a very powerful mean to calibrate and monitor the onboard instrument range. To demonstrate this, range calibrations of POSEIDON3 (JASON2) are currently performed every cycle using a transponder based on Gavdos Island. The altimeter emits radar impulsions which are received, amplified and re-transmitted by the transponder back to the altimeter. The altimeter is programmed in calibration mode with specific parameters to perform the measurement.

Data are then processed on ground with a dedicated algorithm using auxiliaries data.

This paper will present the calibration methodology and first results.