

COMPARISON POSEIDON-1 / POSEIDON-2

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POSEIDON-1 : CYCLE 361

POSEIDON-2 : CYCLE 018

In order to be consistent, all the results are obtained on the same basis of available passes for both altimeters.

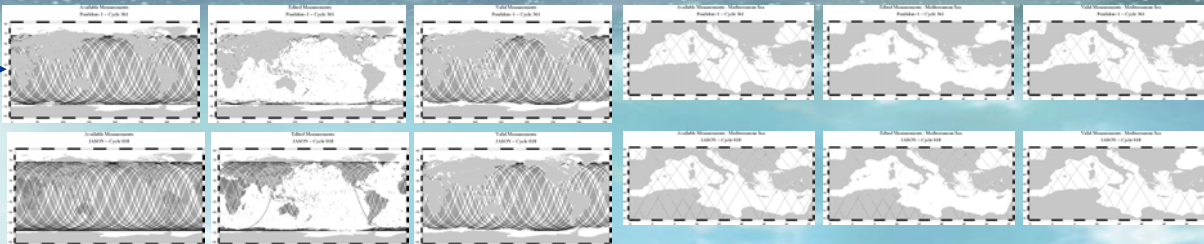
Due to 5 SEUs on Poseidon-1 and problems with the TMR, about 40% of data are not available

Poseidon-1

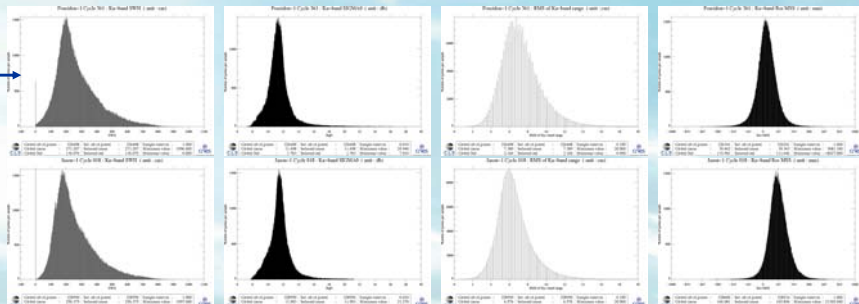
f = 13.65 GHz
 PRF = 1718 Hz
 Pulse duration = 0.105ms
 Bandwidth = 320 MHz
 Power (E) = 5 W
 Antenna beamwidth = 1.1°
 Antenna gain = 44 dB
 Waveform 64 samples
 (Sampl = 3.125 ns, 46.8 cm)
 86 pulses per 50 ms
 CGA = 1.875 m
 CFA = 2.925 cm
 Weight = 25 kg

Poseidon-2

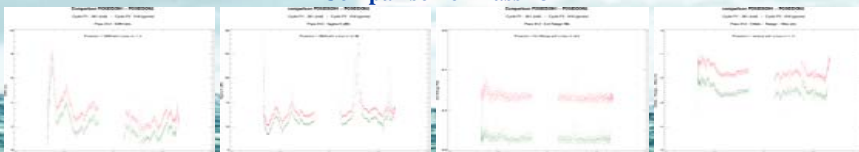
f = 13.575 GHz
 PRF = 2059 Hz
 Pulse duration = 0.1056 ms
 Bandwidth = 320 MHz
 Power (E) = 7 W
 Antenna beamwidth = 1.28°
 Antenna gain = 42 dB
 Waveform 128 samples
 (Sampl = 3.125 ns, 46.8 cm)
 90 pulses per 50 ms
 CGA = 1.875 m
 CFA = 0.7312 cm
 Weight = 51 kg (redundant bitreq)



Histograms of the main parameters



Comparison on Pass 13

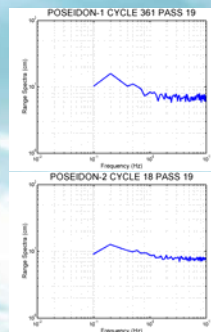


Noise level estimation for SWH = 2 m (Pass 19)

	Poseidon-1	Poseidon-2
Range (Tracker + Retracking)	6.93 cm	7.28 cm
SWH	48.62 cm	52.46 cm

43 segments of 10 seconds for Poseidon-1
 197 segments of 10 seconds for Poseidon-2

Estimations of the noise level are given at 20 Hz with the same retracking



Conclusion

As shown in this poster, both POSEIDON radar altimeters record the signal in an identical way and the instrumental noises on the range and SWH are the same (to the uncertainties of Poseidon Noise computation).