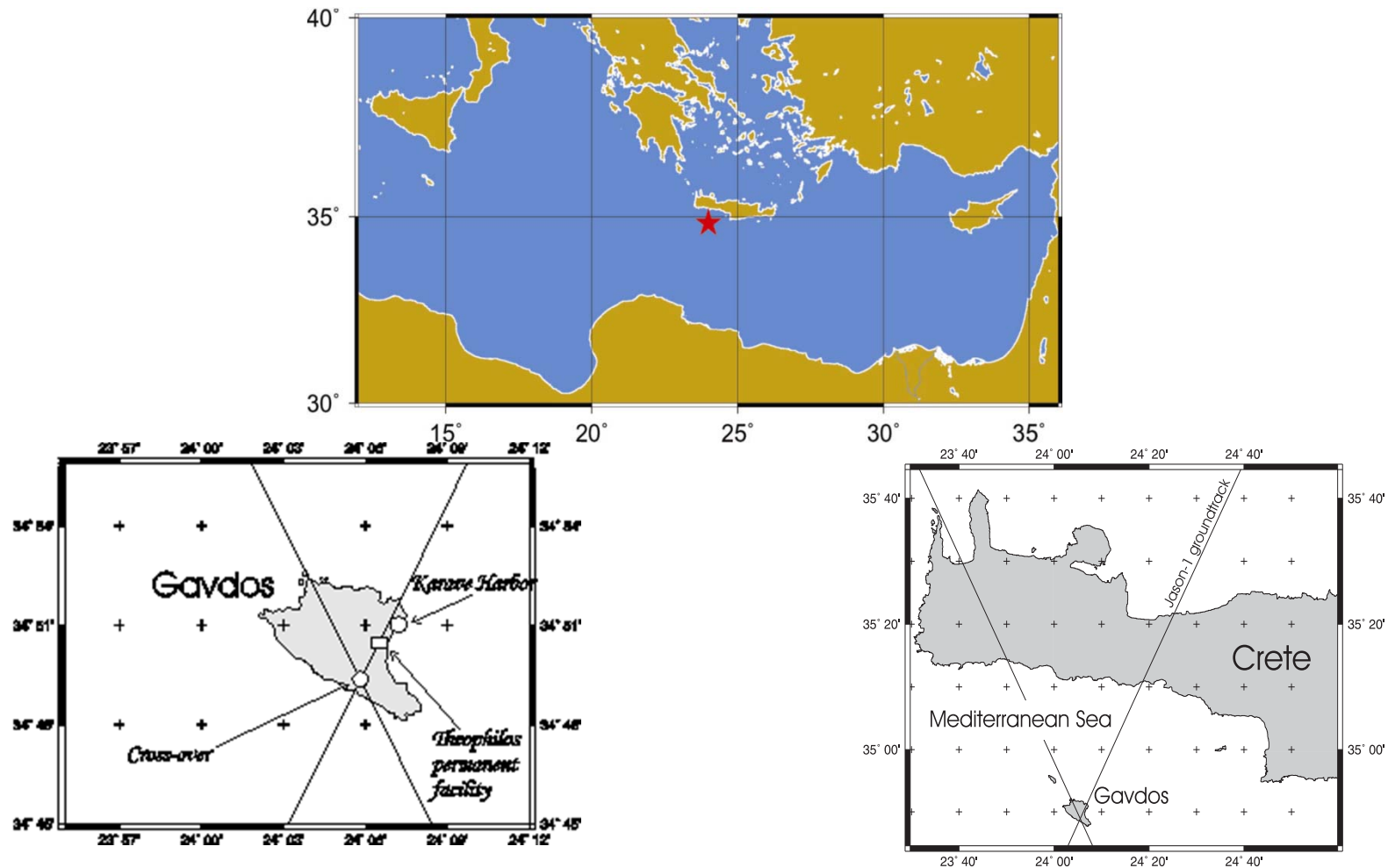


Latest results for the Jason-2 bias & preparations for the HY-2 Cal/Val using Gavdos

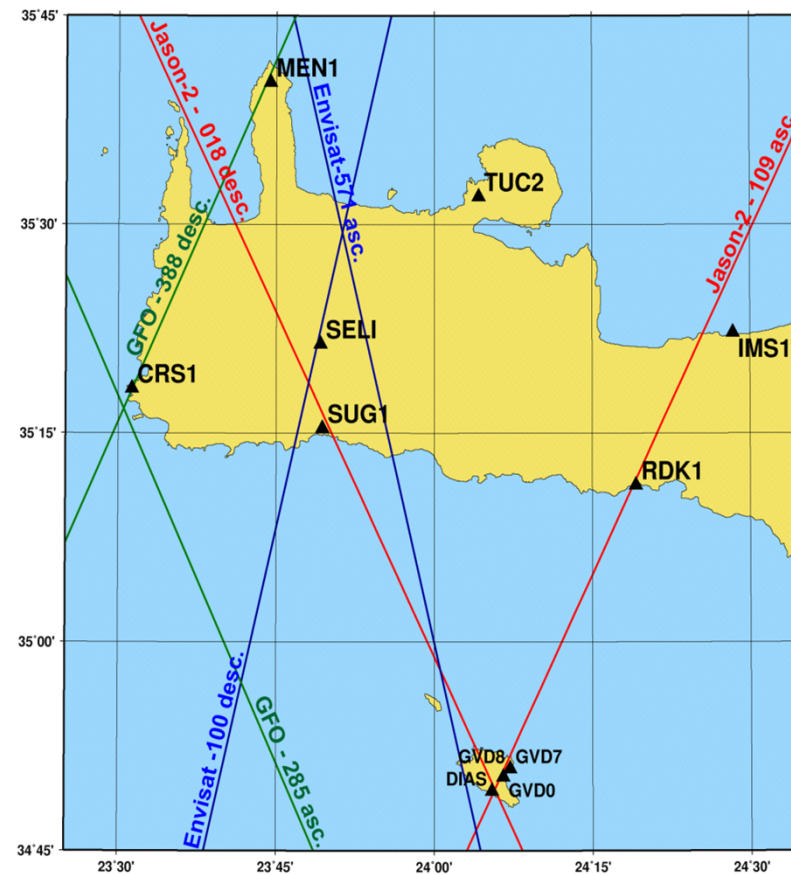
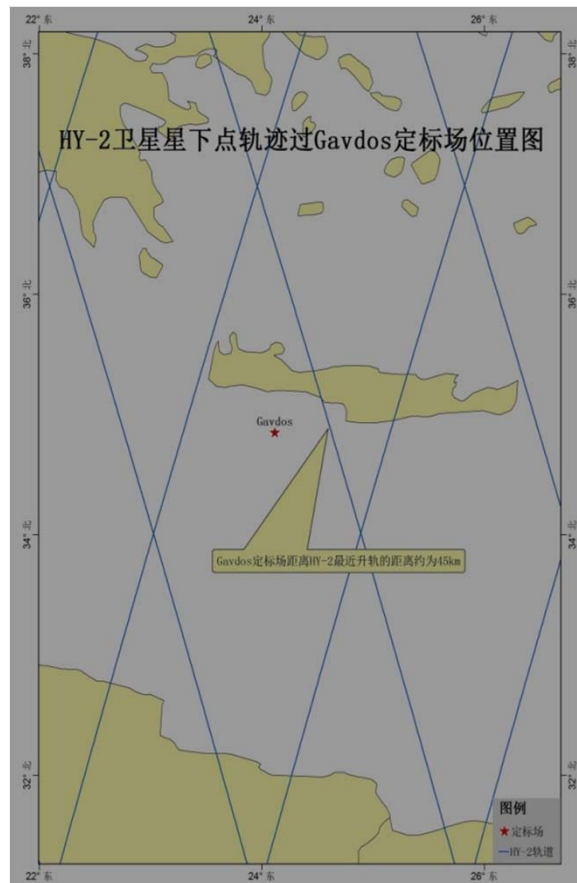
S. P. Mertikas(1), A. Daskalakis(1), X. Zhou (2), I.N. Tziavos (3),
G. Vergos(3), O. Andersen(4), V. Zervakis(5), Y.Q. Chen (6)

- (1) Technical University of Crete, Greece,
- (2) The First Institute of Oceanography, China,
- (3) Aristotle University of Thessaloniki, Greece,
- (4) Technical University of Denmark, Denmark,
- (5) University of the Aegean, Greece
- (6) GZSH Photonic & Sensor Systems, China.

Gavdos/Crete Cal/Val site

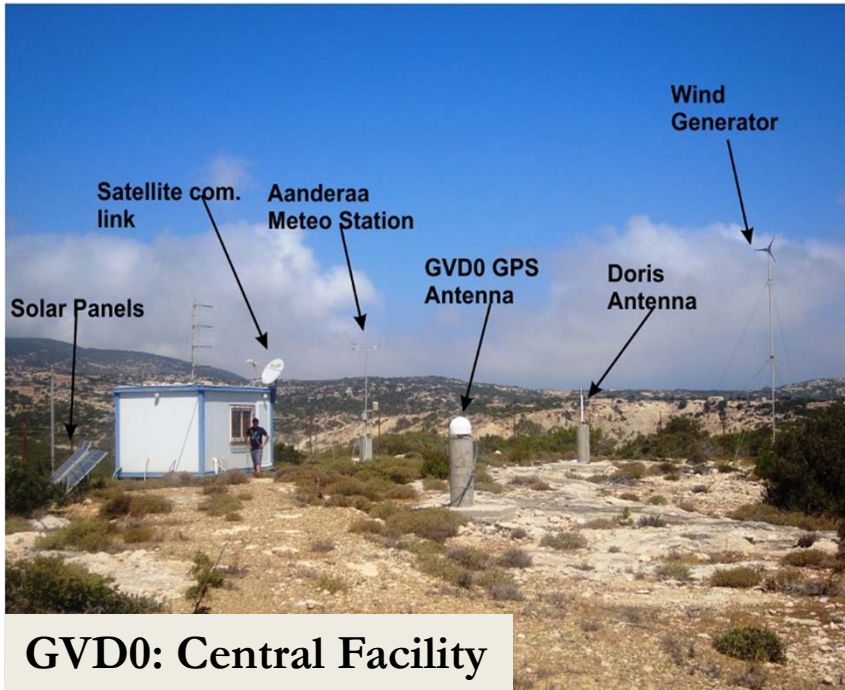


Jason, HY-2, AltiKa and GFO tracks



→ 20 YEARS OF PROGRESS IN RADAR ALTIMETRY SYMPOSIUM

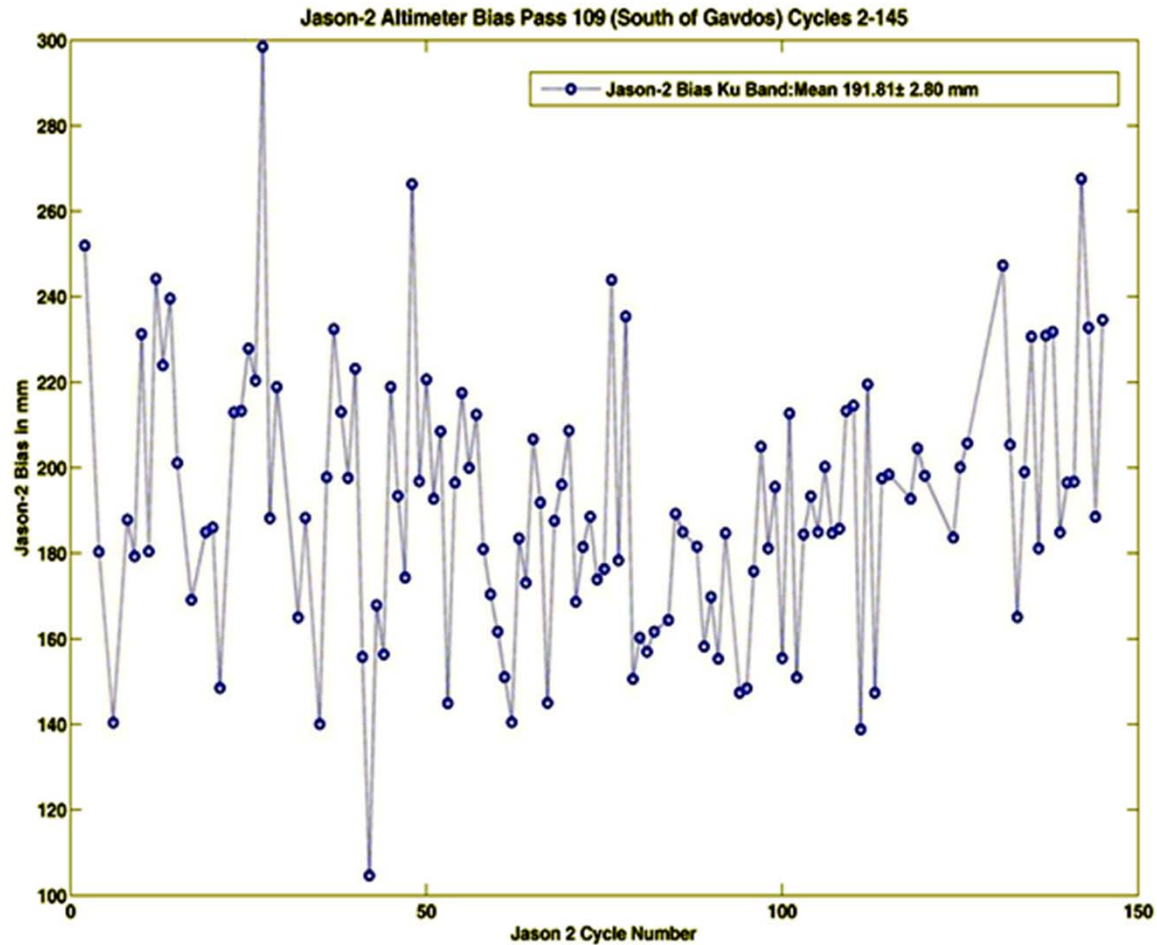
Cal/Val Facilities: Gavdos, Crete



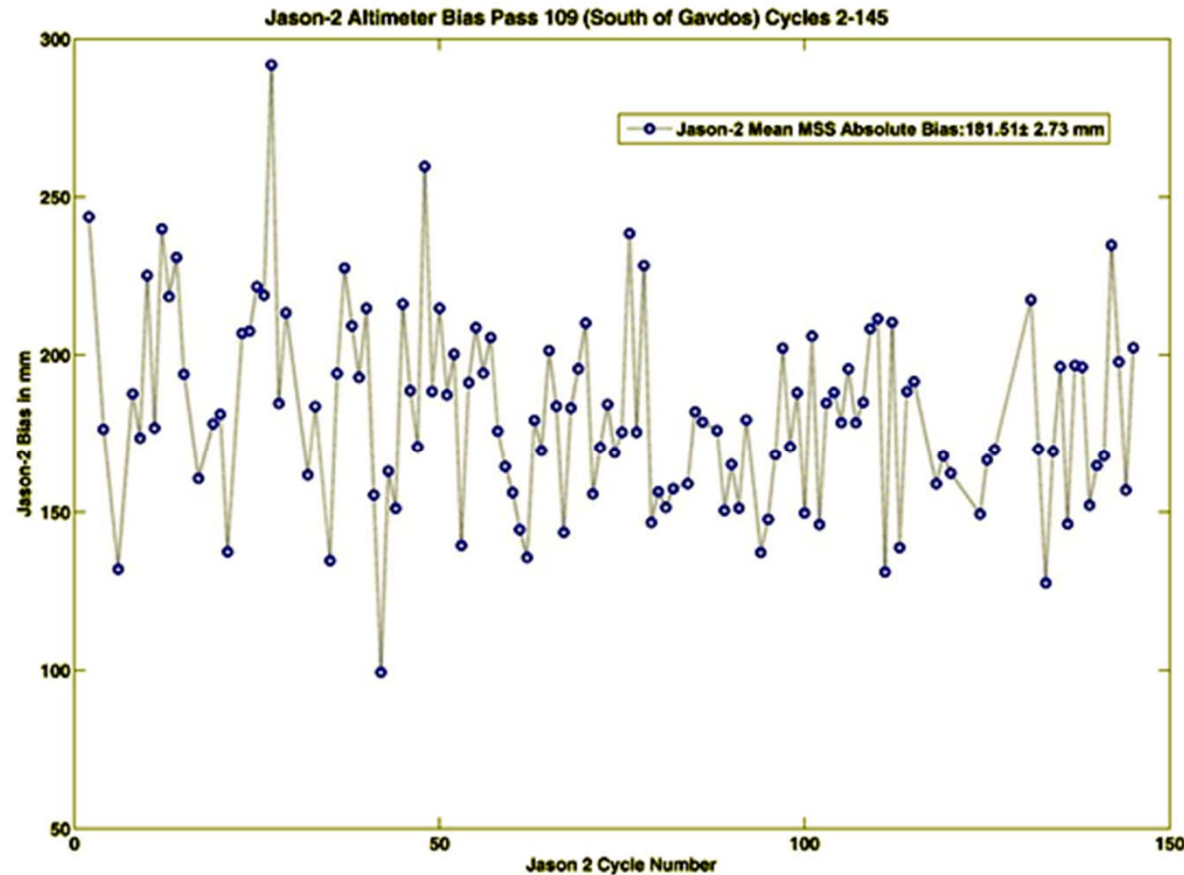
Jason-2 calibration regions



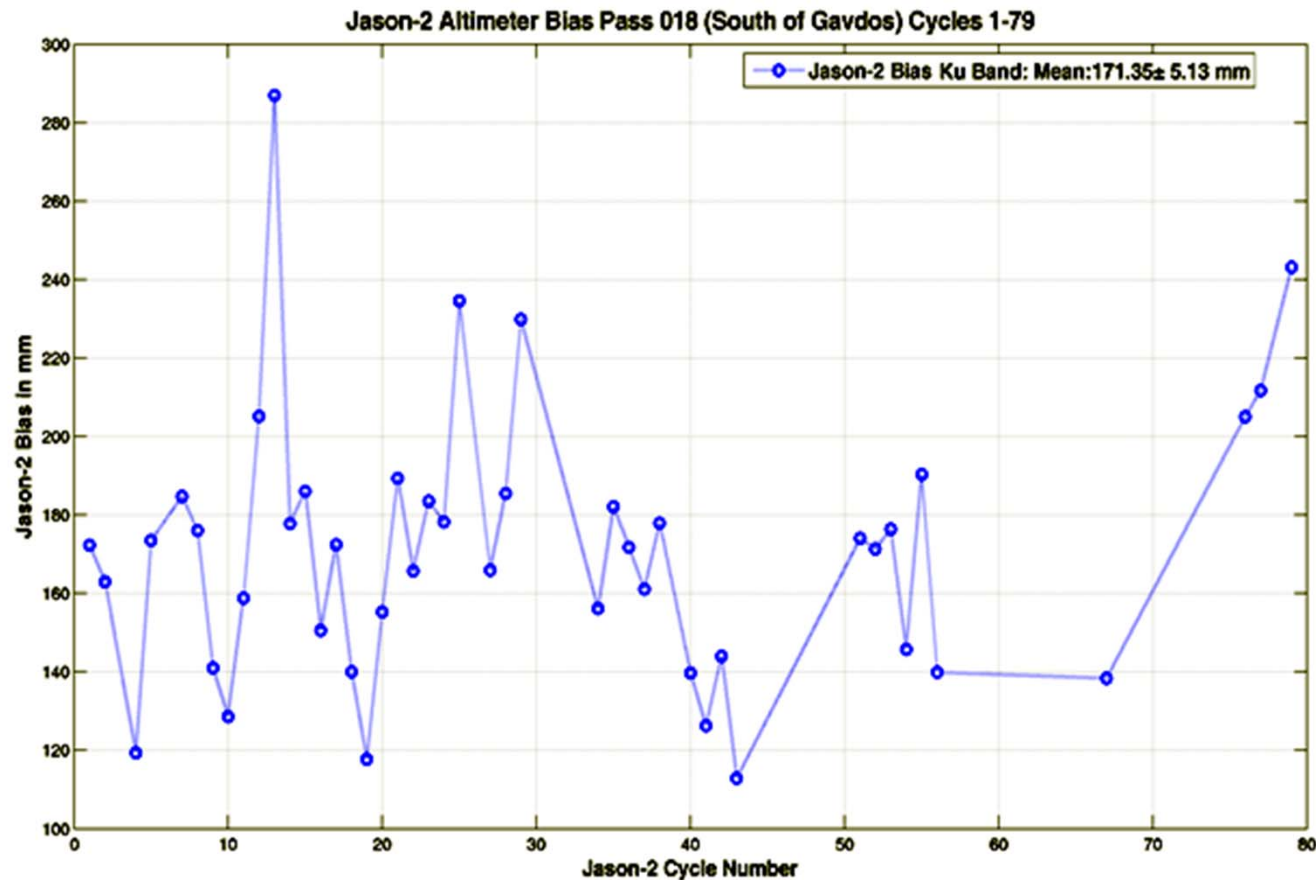
Jason-2 bias over pass No. 109



Jason-2 bias, No. 109, Altimetric MSS

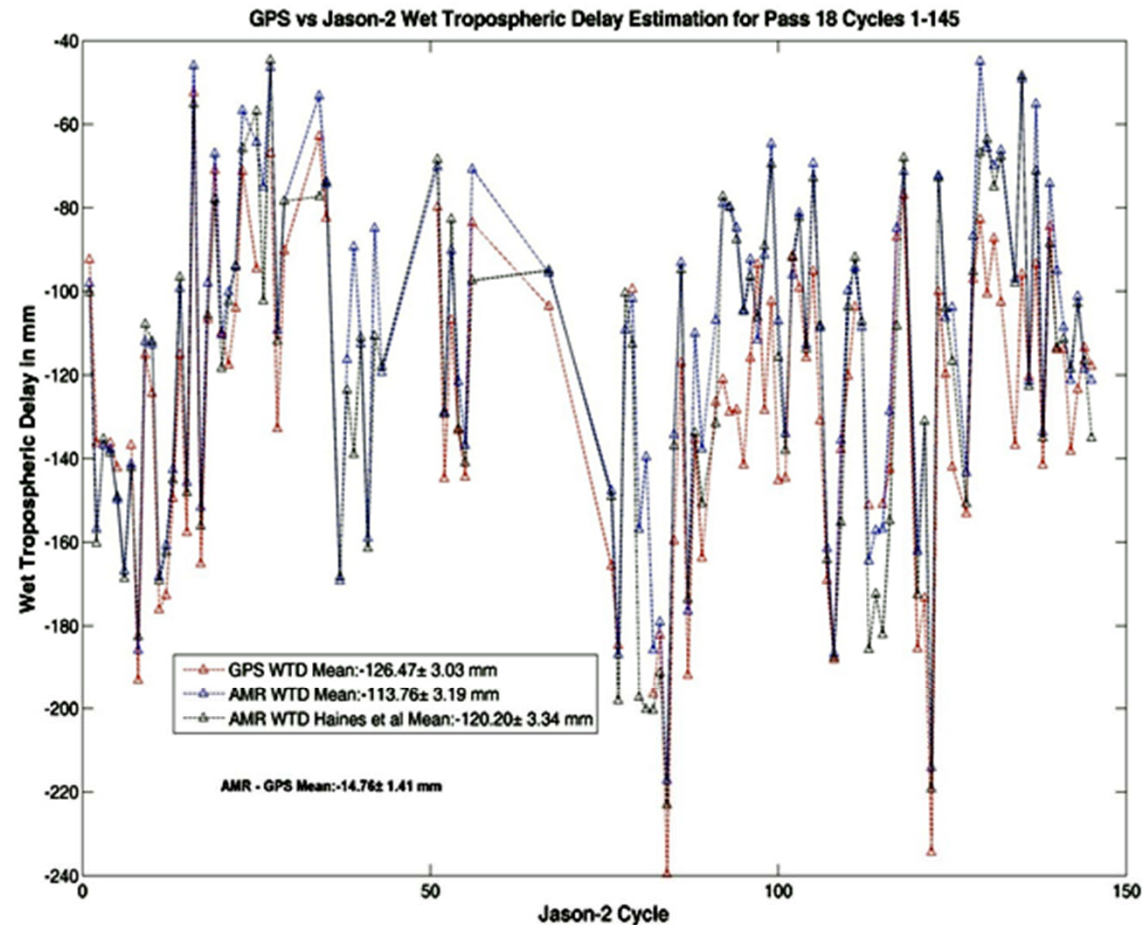


Jason-2 bias over pass No. 18



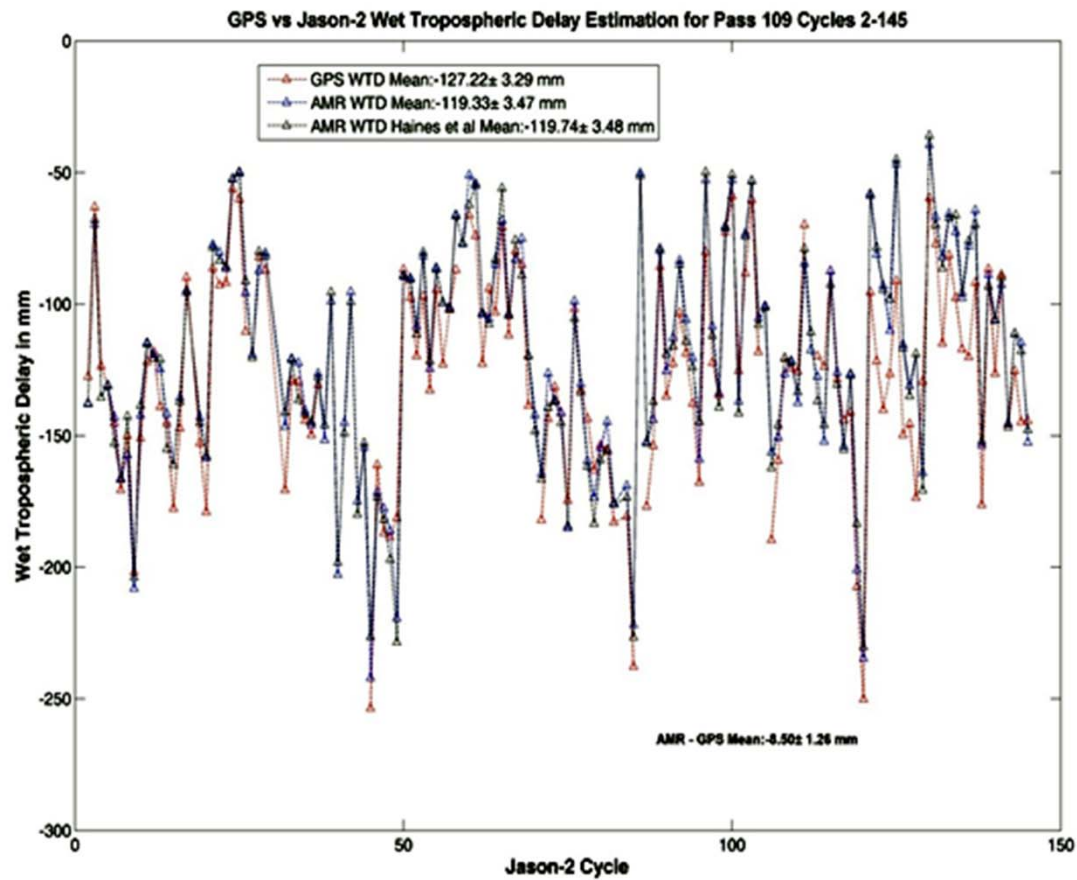
Wet Tropo wrt GPS for Pass No. 018

Pass No. 18 : -7.48 ± 4.5 mm



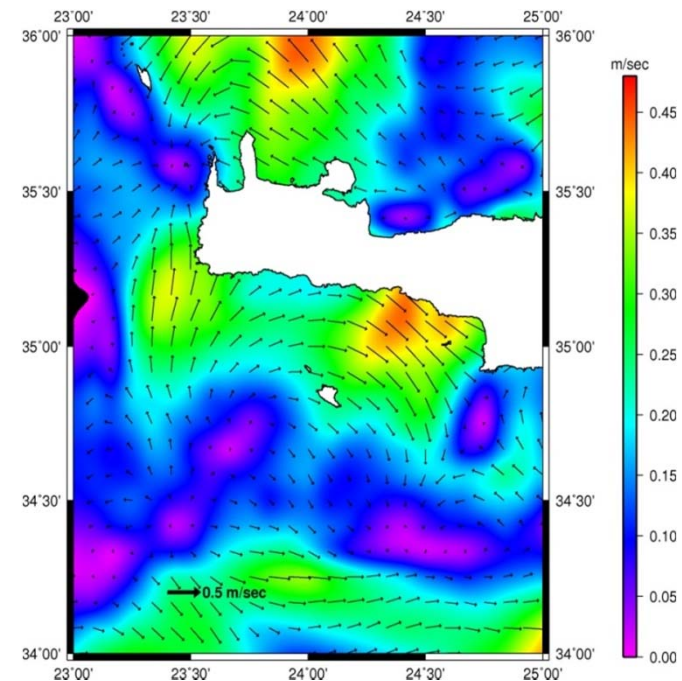
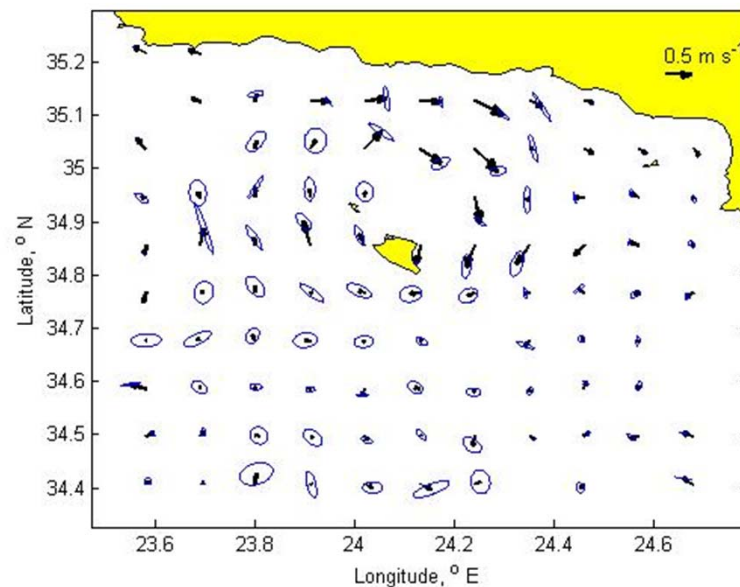
Wet Tropo wrt GPS for Pass No. 109

Pass No. 109 : -6.27 ± 4.7 mm.



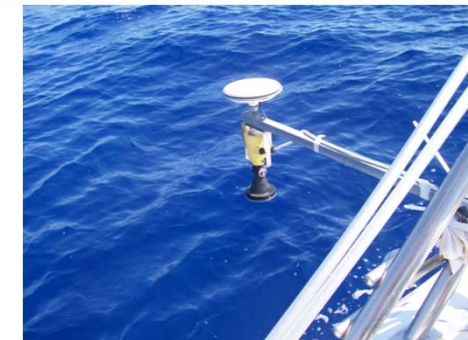
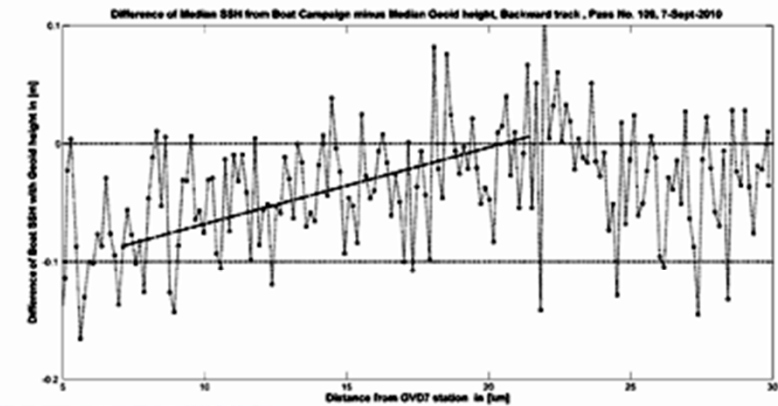
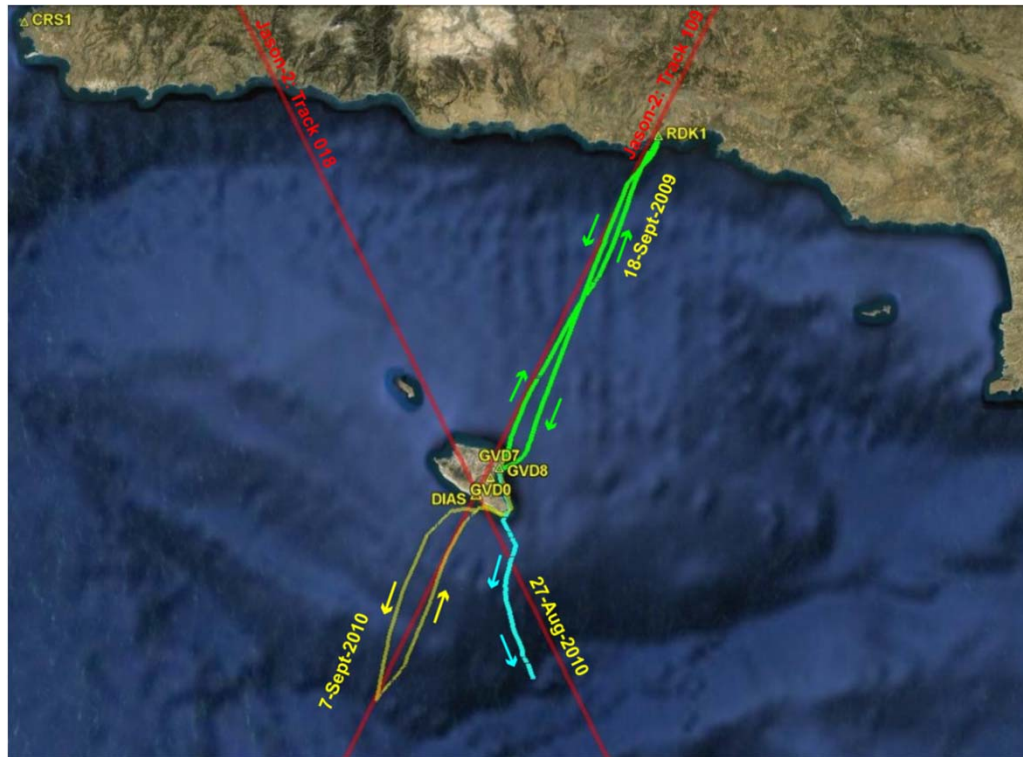
Ocean circulation as monitored

- Strong circulation between Crete and Gavdos (0.5m/sec, eastwards);
- Drifters cover a monitoring period of 1990-2008.
- Right: DOT based on GOCO02S model (Gravity Combination Project).

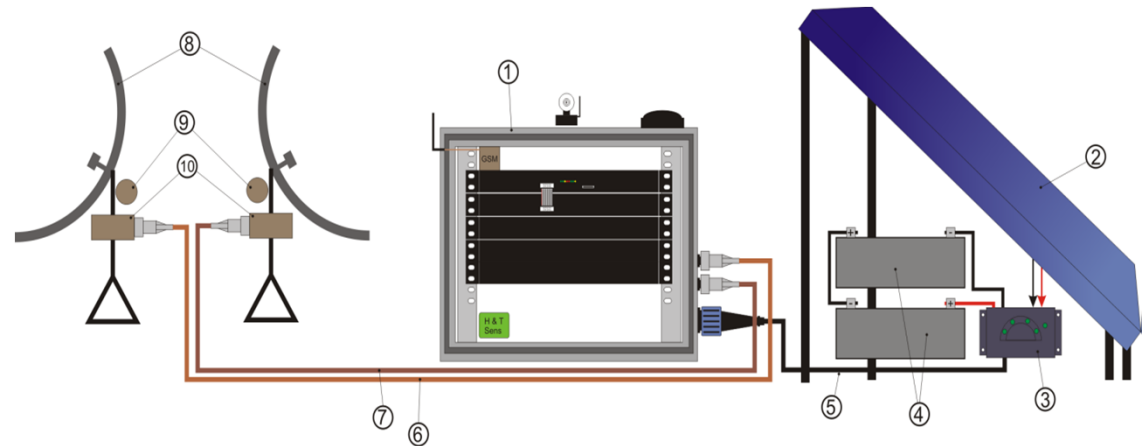
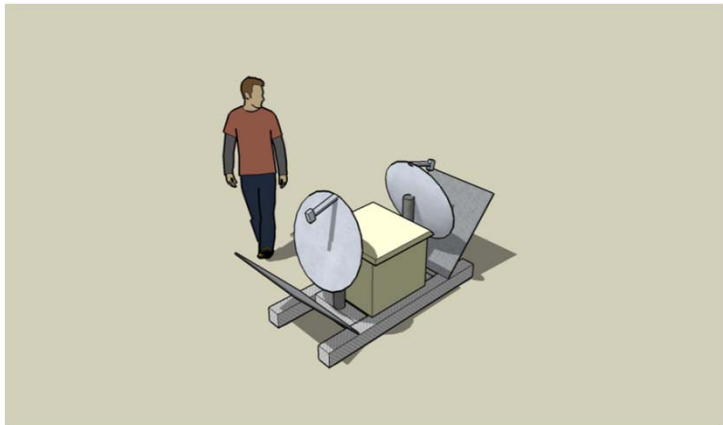


Credit: Italian Institute Nazionale di Oceanografia e Geofisica Sperimentale

GPS & Profiler Boat campaigns

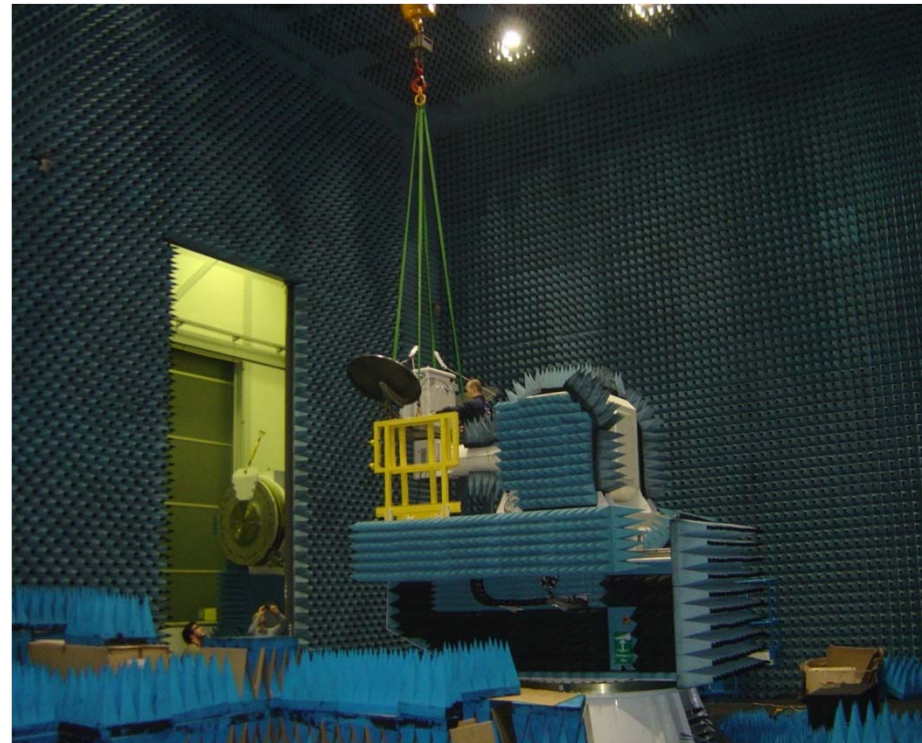


New transponder



- Central frequency 13.575 GHz, bandwidth = 350 MHz;
- Polarization: Circular;
- Mobile (for new locations) and modular (for other frequencies).
- Capable for record incoming & outgoing signal at the transponder;
- Controlled remotely through communication links.
- Capable for monitoring internal delays ($\pm 1\text{mm}$);

Full calibration completed



- Constructed under the ESA specs and supervision;
- Fully calibrated and characterized from March-July 2012 in ESA;
- Add modules for new satellites (AltiKa: 35.75 GHz, 500 MHz)

HY-2 tracks over Crete

- State Oceanic Administration;
- Repeat Orbit: 14 days;
- $f = 13.58$ GHz, 5.25 GHz;
- Sea height precision = 5-8 cm;
- I-GDR files for:
 - Cycle No. 19-22;
 - 19 June-14 Aug, 2012 ;
 - Descending Pass 280.



Absolute gravity for the Gavdos Cal/Val

- A-10 Absolute Gravimeter



Summary

- Bias for the Jason-2 altimeter (GDR-T):
 - B= **+191** ± 3 mm (Ascending Pass No.109, Cycle 2-145, Geoid Model);
 - B= **+181** ± 3 mm (Altimetric MSS reference);
 - Cycles over No.18 are missing because of transponder calibration.
- Wet Troposphere calibration against GPS:
 - Pass No. 18 : **-7.48** ± 4.5 mm;
 - Pass No. 109 : **-6.27** ± 4.7 mm.
- Geoid models validated with GPS field campaigns.
- Improved geoid models extended the calibrating regions.
- Calibration of HY-2 in Crete has been started.
- Plans for installing a HF radar to verify this ocean circulation.
- Plans for measuring absolute gravity at Gavdos.
- Transponder ready for Cryosat-2, Jason-2, Sentinel-3 and HY-2.