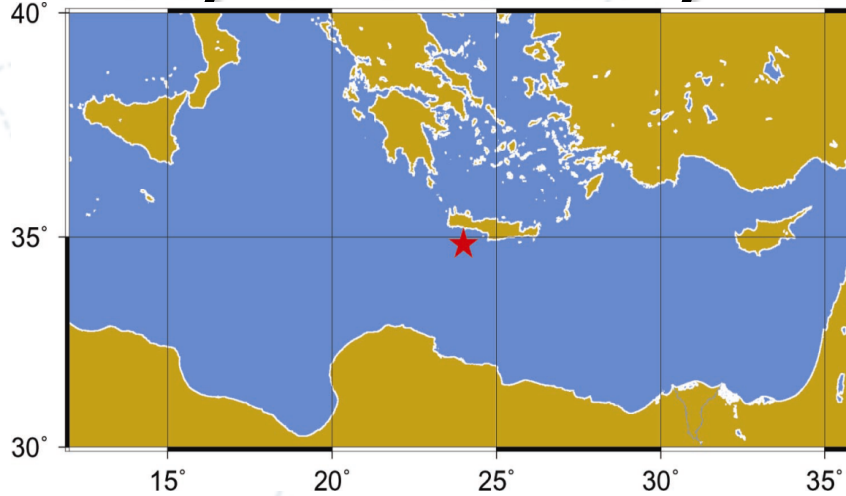


Altimetry & Bathymetry relations around the coastal zone of Gavdos Cal/Val Facility

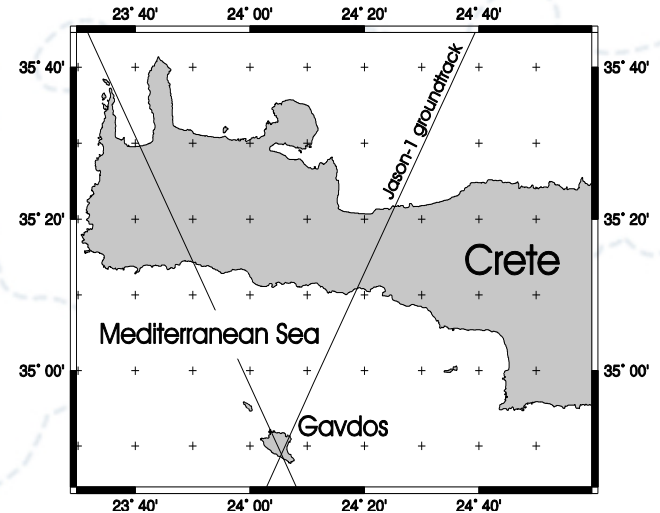
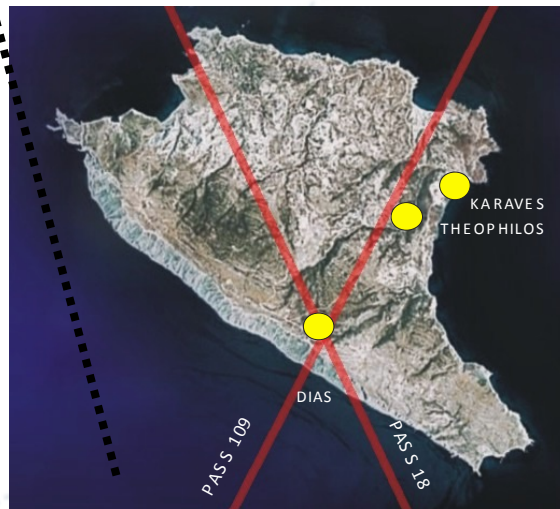
S. P. Mertikas(1), A. Daskalakis(1), I.N. Tziavos(2), G. Vergos(2), O. Andersen(3), V.
Zervakis(4)

- (1) Technical University of Crete, Greece,
- (2) Aristotle University of Thessaloniki, Greece
- (3) Technical University of Denmark, Denmark
- (4) University of the Aegean, Greece.

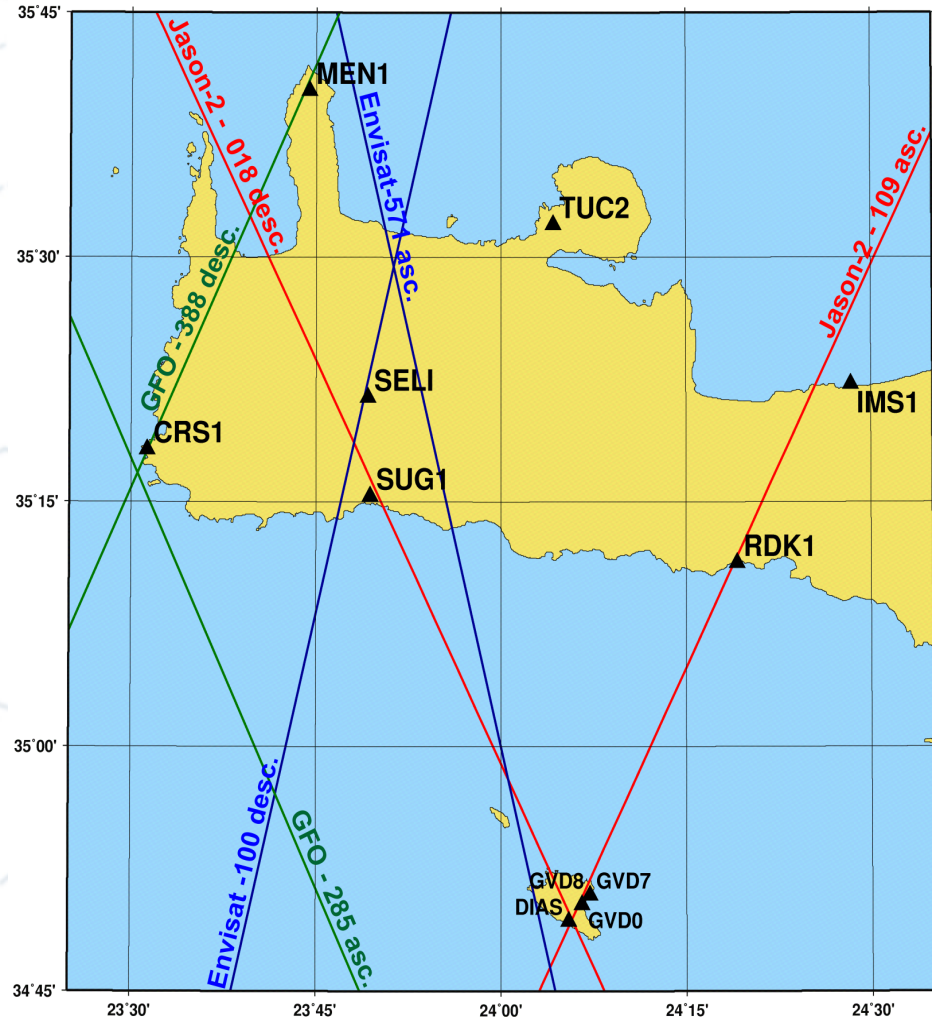
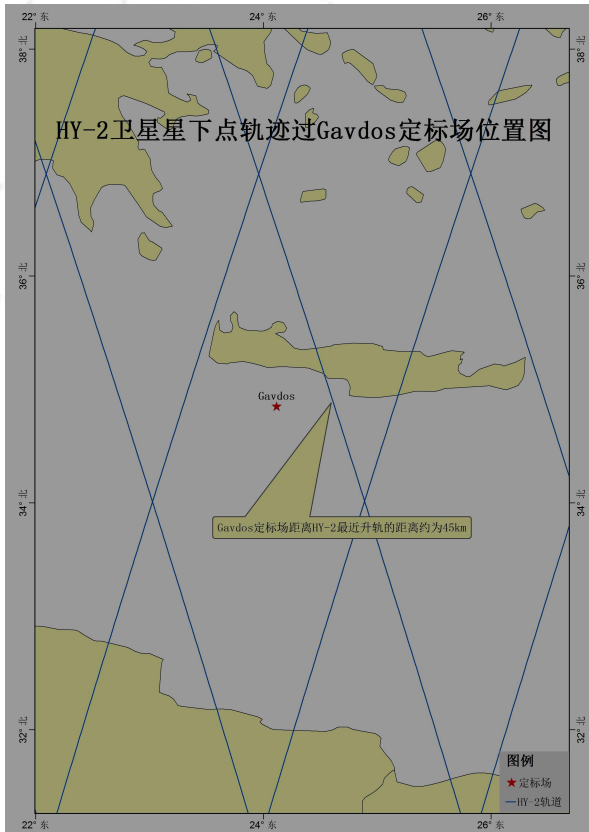
Gavdos/Crete Cal/Val site



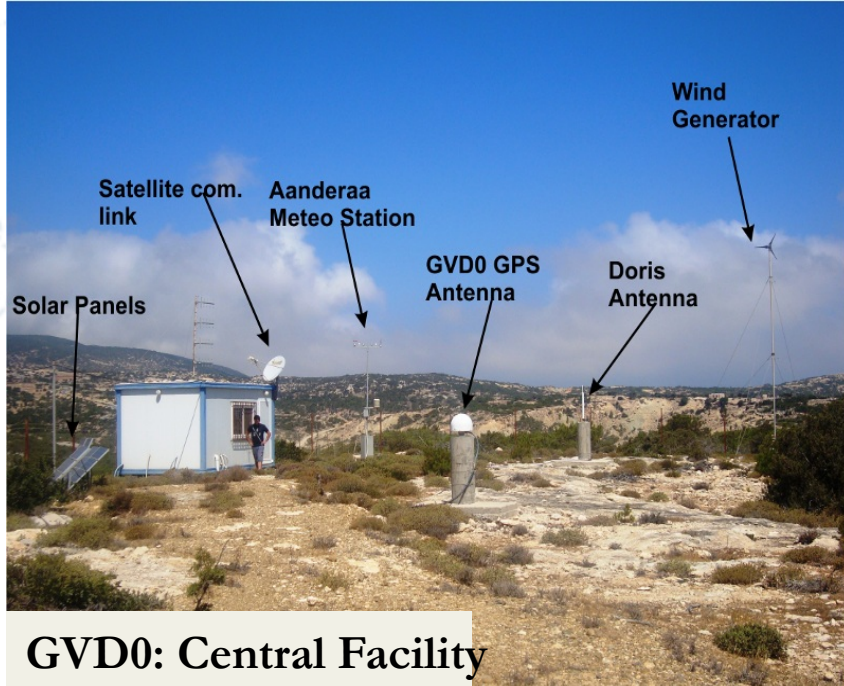
AltiKa, EnviSat No. 571



Jason, AltiKa, GFO & HY-2 tracks



Cal/Val Facilities: Gavdos, Crete



GVD0: Central Facility



GVD7&8

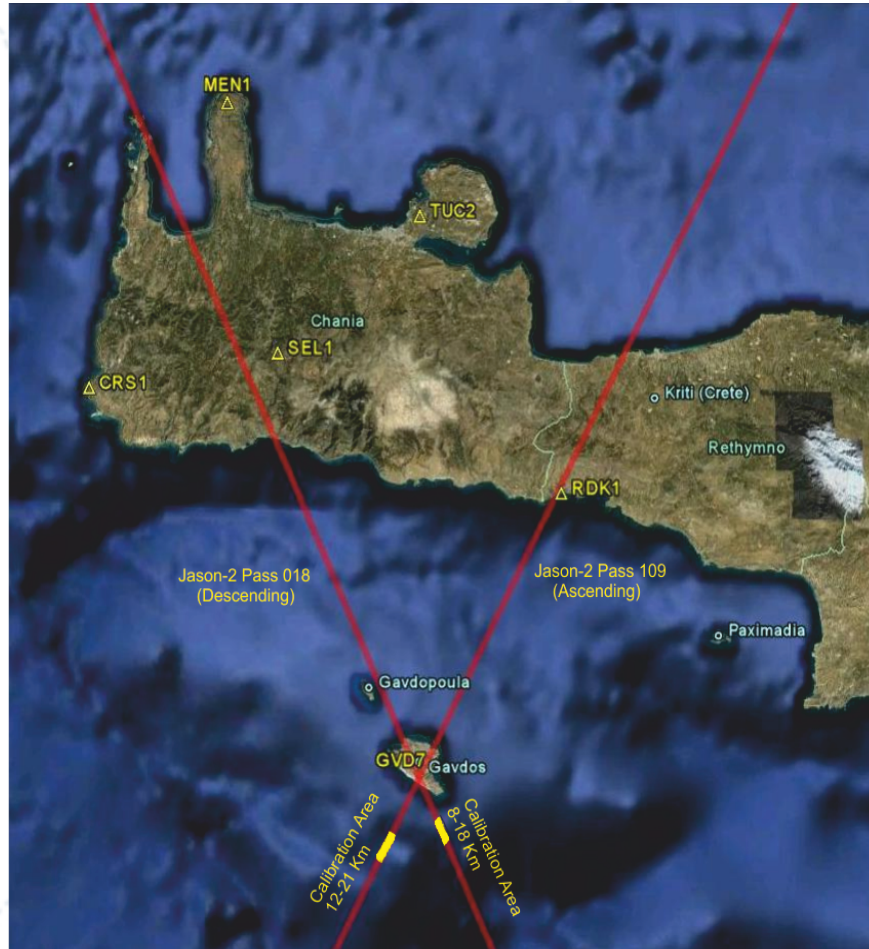


RDK1

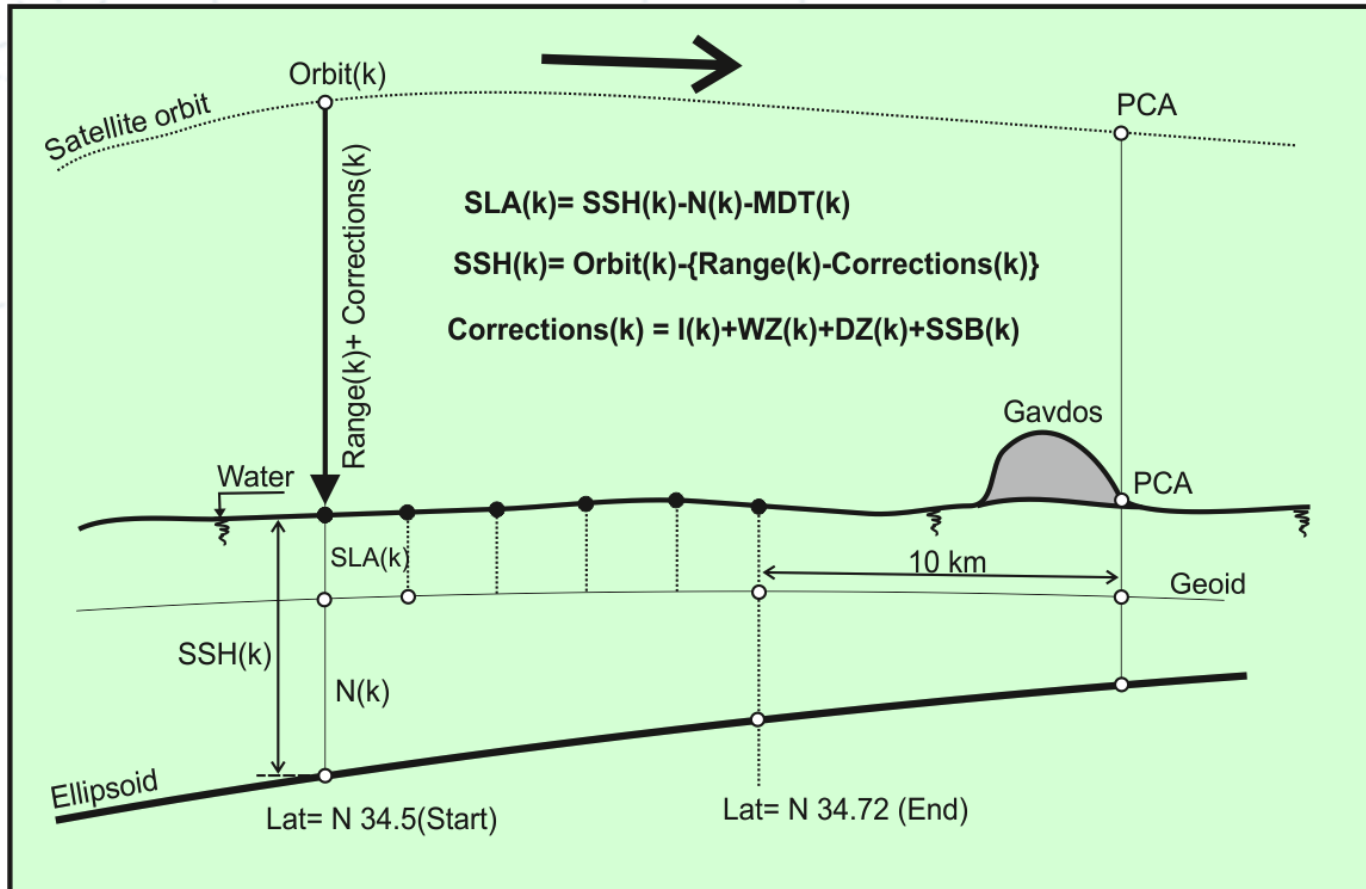


CRS1

Jason-2 calibrating regions

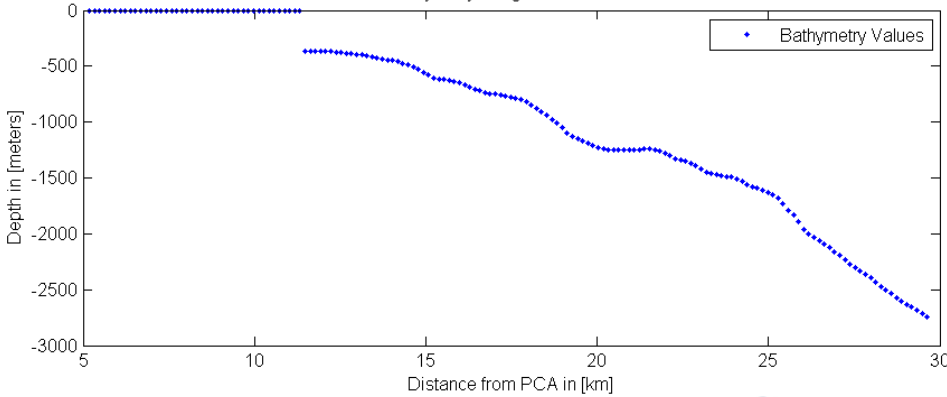


Calibration procedure

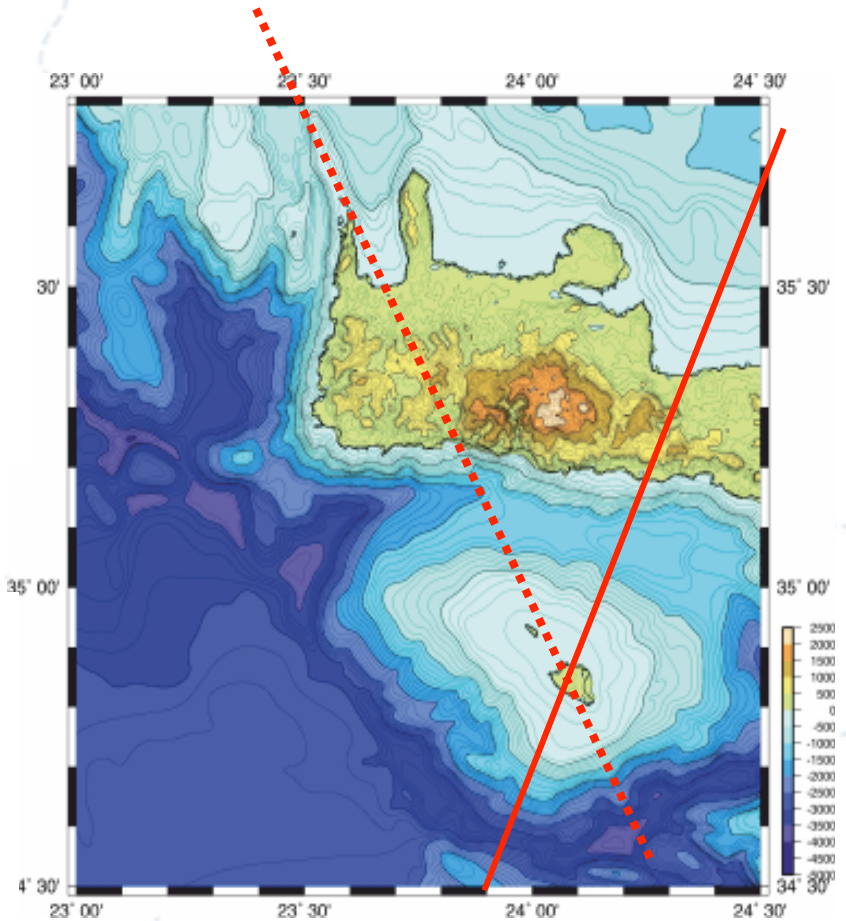
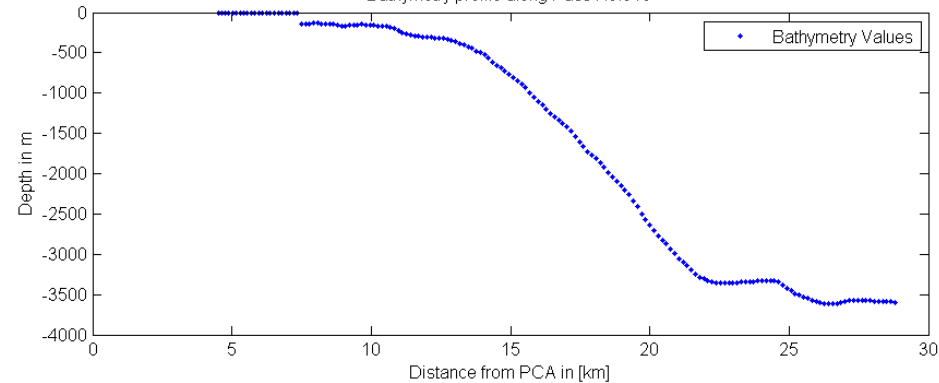


Bathymetry in calibration regions

Bathymetry along Pass No. 109



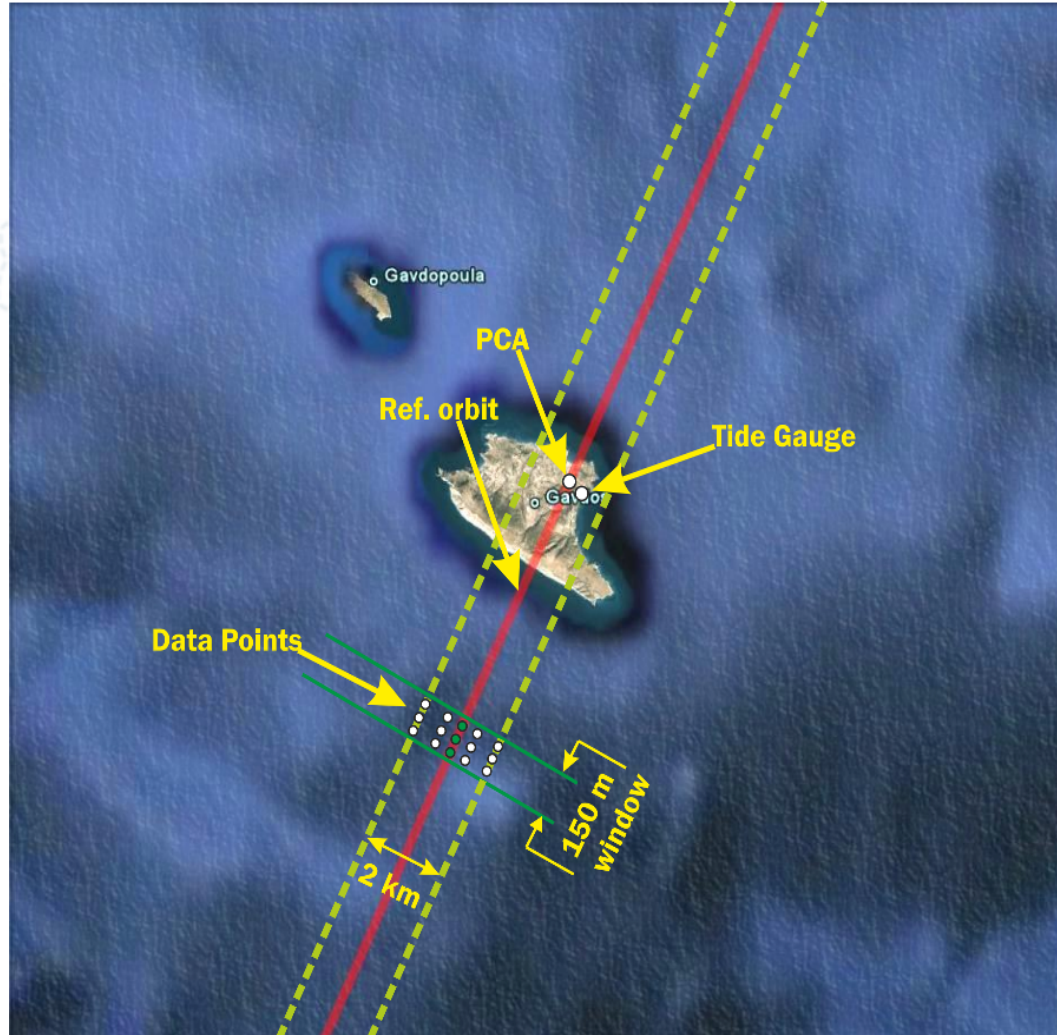
Bathymetry profile along Pass No.018



Altimetry & Bathymetry

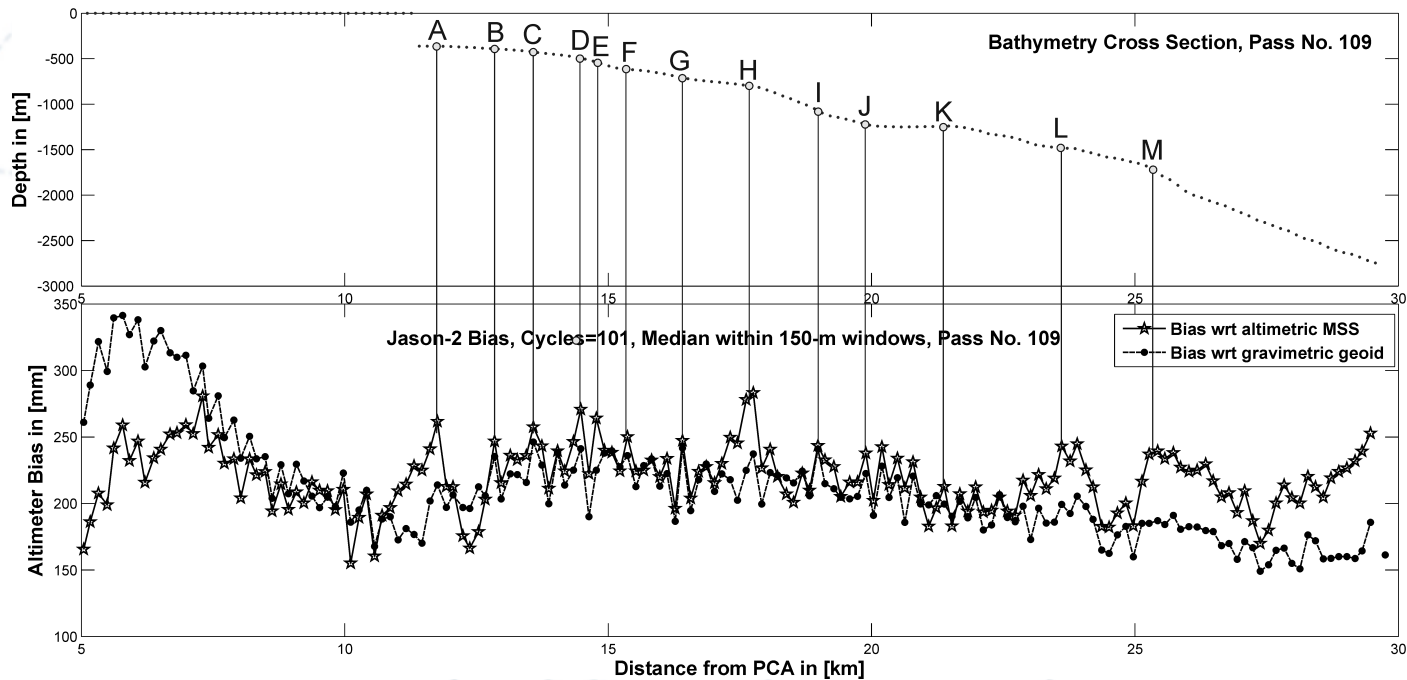
- Over 4 years of Jason-2 calibration:
 - Bias systematically higher (1-3 cm) at certain locations;
 - Slight slope, but systematic, at other places.
 - Is resolution of geoid adequate in all regions?
 - Any correlation of bias with:
 - Steep bathymetry,
 - Marine geoid model,
 - Applied altimetric corrections/reductions,
 - Mean Dynamic Topography?

Altimeter bias trend along track



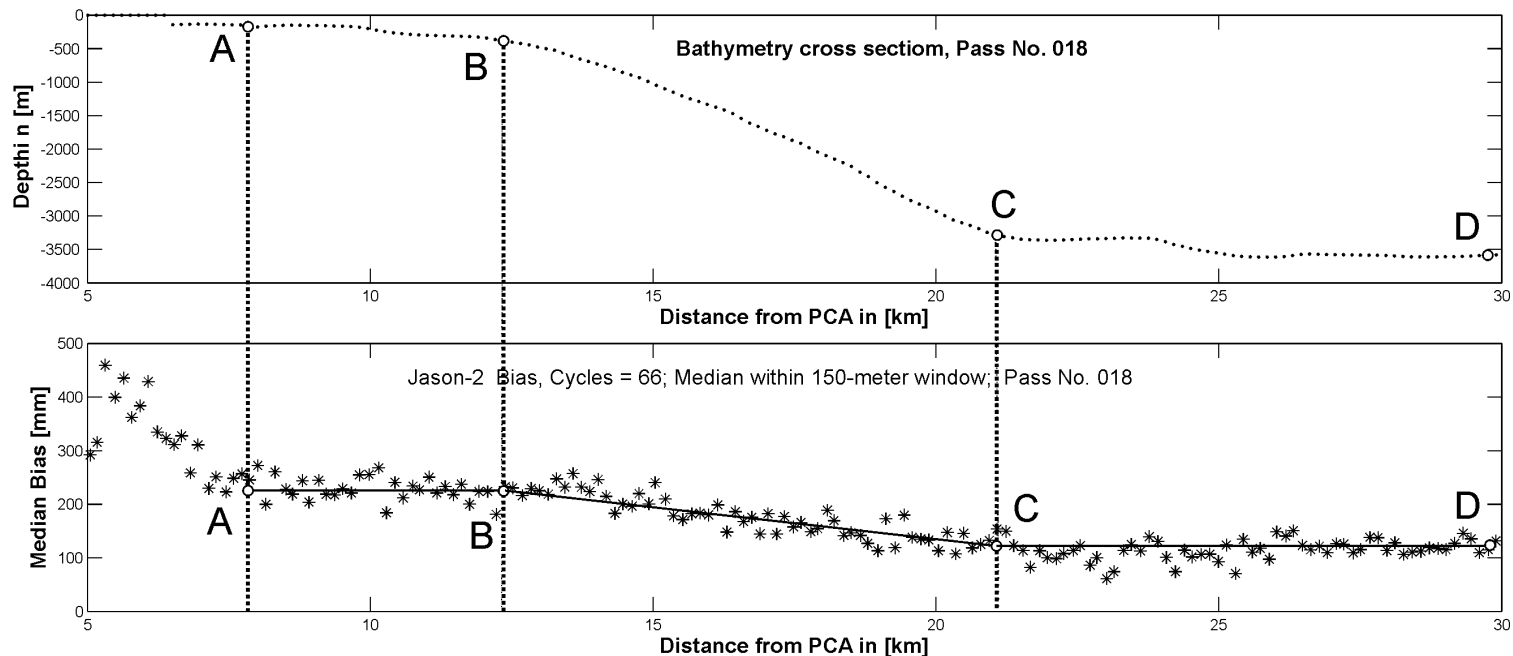
Bias along Pass No. 109 wrt distance

Gravimetric geoid and altimetric MSS

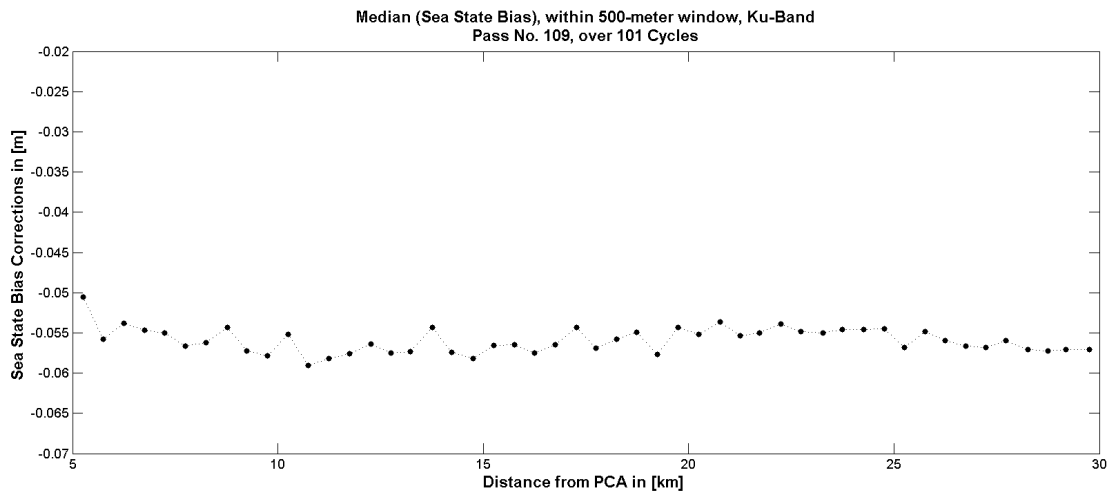
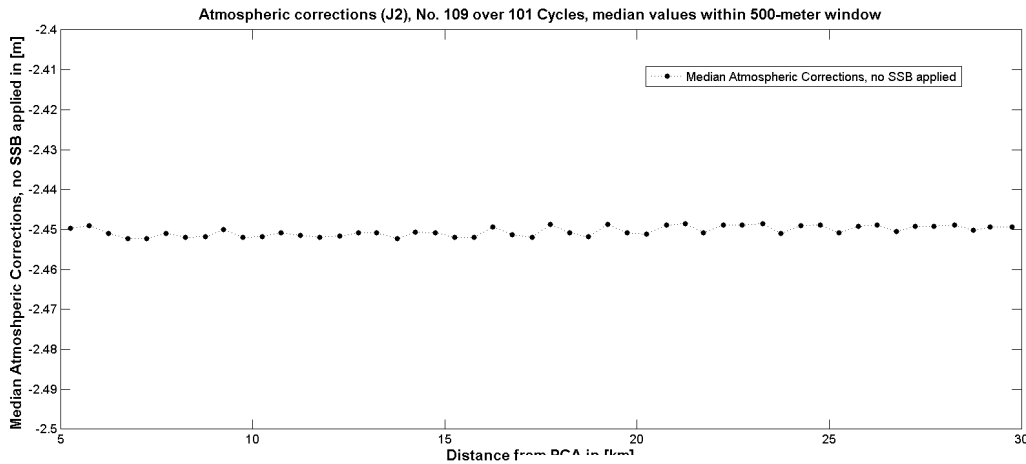


Bias & bathymetry, PassNo.018

Old gravimetric geoid

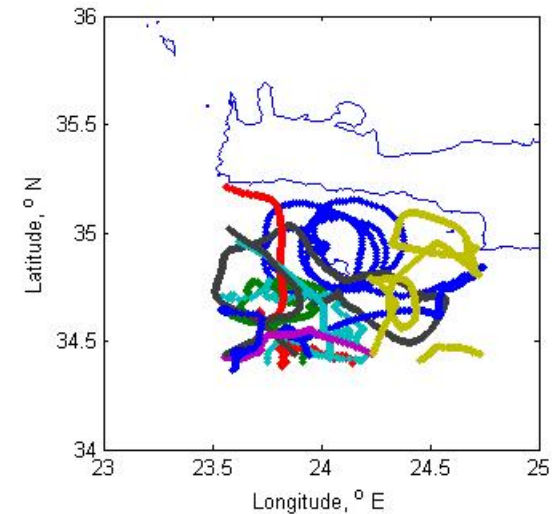
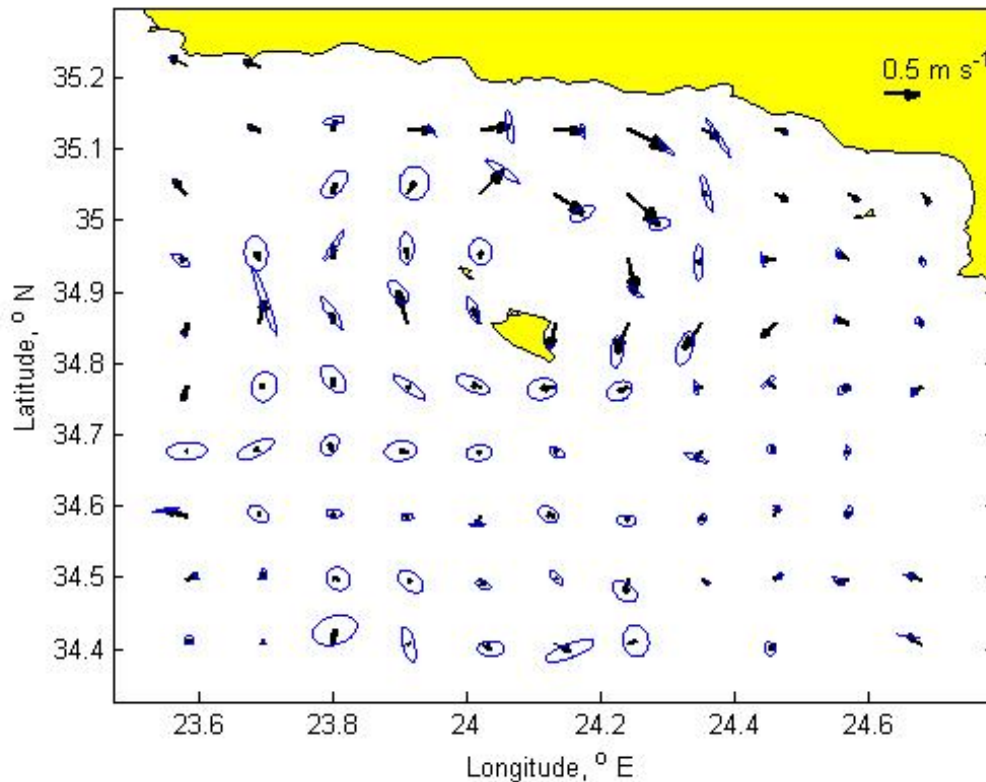


Altimetric corrections/ reductions



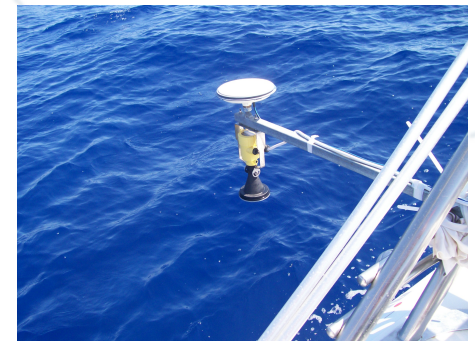
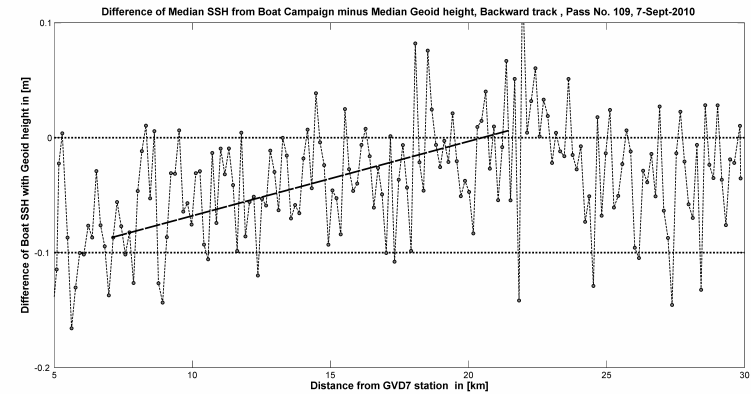
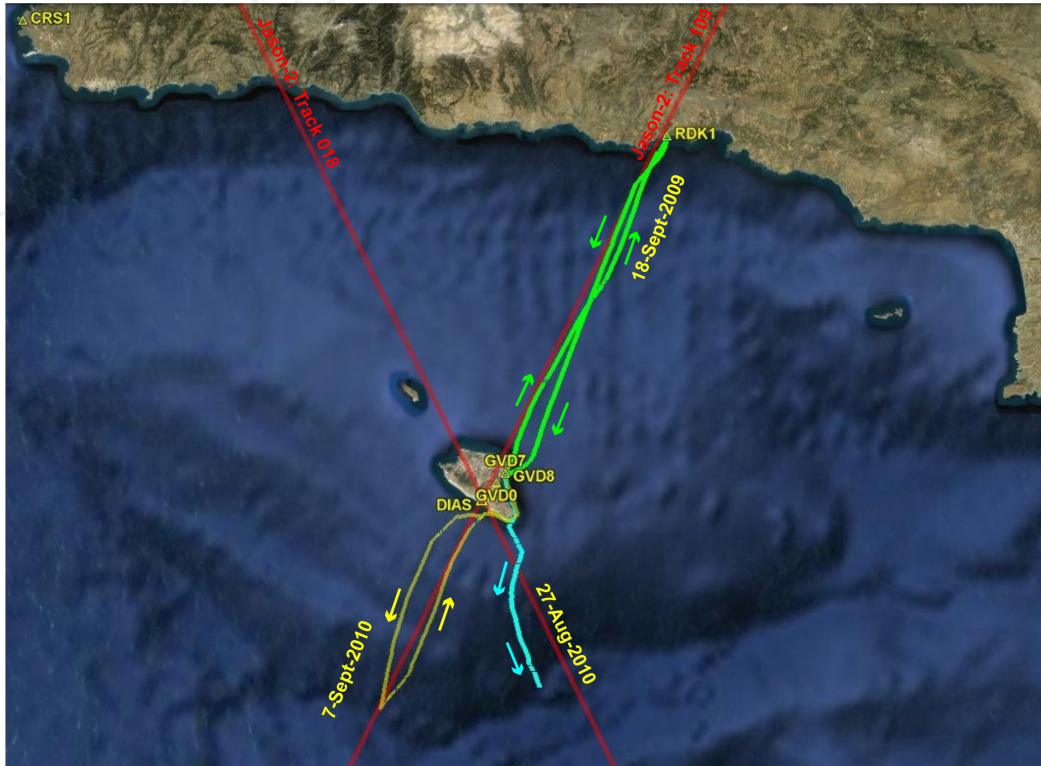
Ocean circulation as monitored

- Strong circulation between Crete and Gavdos (0.5m/sec, eastwards);
- Drifters cover a monitoring period of 1990-2008.



Credit: Italian Institute Nazionale di Oceanografia e Geofisica Sperimentale

GPS&Profiler Boat campaigns



Summary

- Median of bias as a function of distance from PCA, along ground track for Jason-2 calibrations, over N=123:
 - Portrays short-wavelength features (1-2 km with $a = 1-4$ cm) clearly displaying changes in the topography of sea floor at depths;
 - Reveals a sea level feature of about 3-4 cm, about 12-15 km away from PCA.
 - This seems to reflect the MDT & compatible with circulation in the region.
- Plans for installing a HF radar to verify this circulation.
- Geoid gravimetric model required minor adjustments in certain regions within the calibrating region;
- Improved altimetric/gravimetric geoid models have emerged for extending the calibrating regions.