



## **Calibration Experiences at the Western Mediterranean Sea using Altimetry and Tide Gauges**

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Three Begur Cape experiences on radar altimeter calibration and marine geoid mapping made on 1999, 2000 and 2002 are overviewed. One campaign has also been made in June 2003 at the Ibiza island area. The marine geoid has been used to relate the coastal tide gauge data from Ibiza and San Antonio harbours to off-shore altimetric data. A technical Spanish contribution to the calibration experience has been the design of GPS buoys and GPS catamaran taking in account the University of Colorado at Boulder and Senetosa/Capraia designs. The main objective of the marine campaign is to check the value of Ibiza Island (in fact the area Cape of Begur/Ibiza island) as a permanent calibration site in the western Mediterranean Sea, to complement to the Corsica site

L'Estartit tide gauge is a classical floating tide gauge set up in l'Estartit harbour. Data are taken in graphics registers, from which a data each two hours is recorded in electronic support. This two hour data are interpolated to one hour data to do a good harmonic analysis of the astronomical tide. It is expected to install a new Radar Tide Gauge later in 2006 with heights georeferenced to the same benchmark.

Puertos del Estado (Spanish Harbours) installed the tide gauge station at Ibiza harbour in January 2003. The station belongs to the REDMAR network. The tide gauge also belongs to the ESEAS (European Sea Level) network. In this case an Aanderaa water level/temperature sensor.

We present a synthesis of the sea level results results obtained from Topex/Poseidon and Jason-1 altimeter calibration campaigns using the direct measurements from GPS buoys and the derived marine geoid. The Ibiza results, related to Jason-1, agree relatively well with results obtained at Corsica, Harvest and Bass Strait calibration permanent sites.

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