BASS STRAIT IN-SITU CALIBRATION SITE:
TRIALS OF THE FRENCH TRANSPORTABLE LASER RANGING SYSTEM (FTLRS)

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Introduction

The Bass Strait in-situ calibration site has been used in the calibration and validation of satellite altimeter data since the launch of TOPEX/Poseidon in 1992 [1][3][4]. This site was selected as part of a collaborative French/Australian project to trial the French Transportable Laser Ranging System (FTLRS). The FTLRS was operated in Tasmania over a five month period between 1 December 2007 to 17 April 2008 jointly by French and Australian staff. The FTLRS and temporary GPS installation were located within the city of Burnie close to the Jason-1 descending pass over 88, several kilometers from the Burnie tide gauge/CGPS and infield CGPS sites.

Conclusions

Our initial results using the GINSPEC and DYNAMO suite shows an extra SLR station in Bass Strait calibration site reduces significantly the RMS of the SLR solutions when estimating the orbit of Jason-1. The averaged reduction rate is over 10%.

We observed that in two arcs in January, with the measurements from FTLRS the RMS are 1.61 cm and 1.79 cm respectively; without the inclusion of the Burnie FTLRS, the RMS jump sharply to 10.68 cm and 9.06 cm on using the same settings in GINSPEC. This may be due to the instability of the orbit determination or due to the absence of observations from the Mt Stromlo site. We are currently experimenting with solutions by excluding Mt Stromlo’s observations in order to clarify these results.

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Reference: