



## Voyage ss2011\_v03

### Integrated Marine Observing System (IMOS) Facility 3. Southern Ocean Time Series (SOTS) moorings for climate and carbon cycle studies southwest of Tasmania (47°S, 140°E)

Dr Tom Trull, ACE CRC, UTAS, CMAR, CAWCR (Chief Scientist) and Eric Schulz, BOM, CAWCR

#### Contribution to Australia's national benefit

This project lies within the national priority of An Environmentally Sustainable Australia: Responding to climate change and variability. The Southern Ocean is important to global and regional climate and carbon cycling, because of its highly energetic interactions with the atmosphere, its deep mixing, and its role in connecting all the basins in the global ocean. The development and deployment of instrumentation to observe air-sea exchanges in these waters is essential to enable informed assessment of possible changes in climate and climate variability, and in uptake of atmospheric CO<sub>2</sub> by the Southern Ocean. The physical and meteorological observations will allow testing of the parameterization of air-sea interactions in climate models. This informs development of climate projections and assessment of their fidelity, and thus their utility in efficient adaptation to changing climate. The carbon, oxygen, and biogeochemical observations will contribute to determining the factors that control, and thus the propensity for change in the ecosystem service the Southern Ocean provides of absorbing significant amounts of anthropogenic CO<sub>2</sub>. This informs debate about the urgency of efforts to mitigate emissions.

This voyage achieved a significant milestone in the overall development of the sustained observing system, it marks the start of the first 12 month operational deployment of the Pulse mooring. Data from these systems are provided via the Integrated Marine Observing System internet interface to Australian and international researchers.

#### Itinerary

Departed Hobart  
1600 hrs Monday 1 August 2011  
Arrived Hobart  
1300 hrs Sunday 7 August 2011

#### > Voyage track ss2011\_v03

