November 2009

CMST News

The Newsletter of the Centre for Marine Science & Technology

#13

Defence Award for Beaked Whales Project

The Department of Defence recently presented an Environment and Heritage Defence Award for exceptional contribution to the preservation of Australia's environmental and cultural heritage to HMAS LABUAN, Navy Headquarters and DSTO. The award was presented for providing valuable information about beaked whale distributions during the Talisman Saber Exercise in July. CMST was a major partner in this work, building and deploying the specialist high frequency underwater sound recorders required to pick up beaked whale calls. CMST Researcher Iain Parnum supervised the use of the recorders and processed the data whilst on board the LABUAN, during the three-week naval exercise in the Coral Sea off the coast of Queensland.

PHOTO: DAVID DONNELLY

Researcher Iain Parnum performing checks on the CMST high frequency sound recorders.

Grant for Olympic Sailing Research

CMST Senior Research Fellow Tim Gourlay and Curtin Mechanical Engineering lecturer Andrew King have recently been awarded a Curtin Linkage Grant to undertake racing dinghy research over the 2009-2010 summer. This grant continues research carried out over the 2008-2009 season, in which accelerometers and GPS units were used to analyse the performance of Laser racing dinghies. CMST's SailTool software was also used to analyse sail shapes.

This season's project will concentrate on the '470' racing dinghies, and will work with two of the world's top crews in this class. The research will be carried out with the continued support of Fremantle Sailing Club and the WA Institute of Sport. Trials will be undertaken off Fremantle, which offers an ideal testing ground for two-boat trialling, with consistent summer sea breezes. Dedicated software will be written to analyse each boat's performance with different tuning changes, and correlate the results with sail shape analysis. This research will help the crews in their preparation for the London 2012 Olympics.

PHOTO: GARETH BUCKETT

Image of sail analysed using CMST SailTool software, taken during dinghy trialling off Fremantle Sailing Club.

GRAPHIC: GARETH BUCKETT

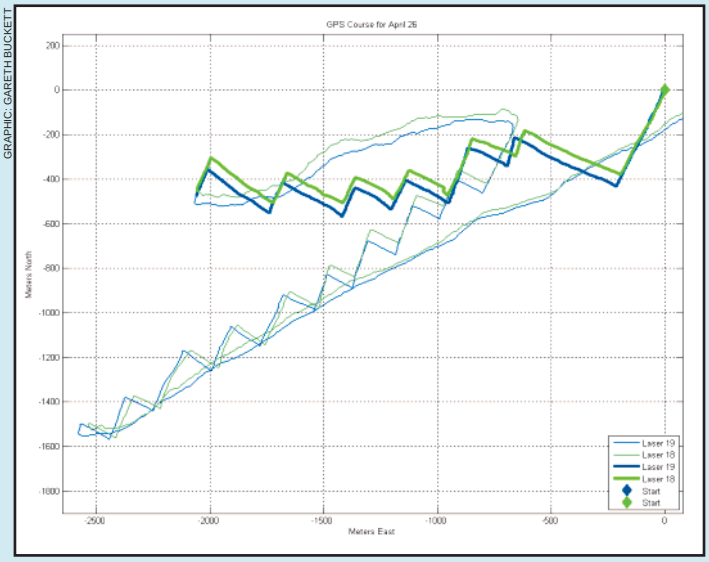


Diagram showing GPS tracking of Laser racing dinghies.

International Activities

➤ **Links with China**

CMST welcomed a further two researchers from the Institute of Acoustics, Chinese Academy of Sciences, in Beijing in September. Dr Wei Liu spent two months working with CMST on the interpretation of multibeam sonar signals and Professor Haining Huang, Head of the Oceanic Information Laboratory at the Institute, discussed plans for further collaboration. CMST Senior Research Fellow Alec Duncan visited our Chinese collaborators during a ten day visit to China as a guest of the Institute of Acoustics at the Chinese Academy of Sciences. During the visit he presented papers at the Shallow Water Acoustics conference in Shanghai, the Western Pacific Acoustics conference in Beijing, and the Pacific Rim Underwater Acoustics Conference in Xi'an. All of these activities were supported as part of a scientific exchange program between the Chinese and Australian Academies of Science.

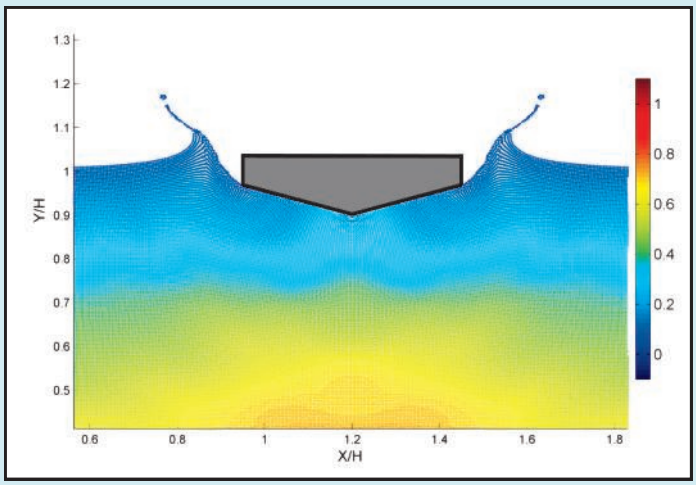
➤ **Acoustic Modems in the Arctic**

PhD student Grant Pusey has recently spent three weeks in Arctic waters as part of his studies into the performance of underwater acoustic modems. Grant was offered a place on the vessel KV Svalbard, which left from Norway in September for a two week field experiment in the Fram Strait. Grant was responsible for acoustic modems deployed in ice-affected waters near previously deployed sound sources. The experiments were part of a five-nation program run by the Nansen Environmental and Remote Sensing Center, Norway. Grant's place on the cruise was supported by Aquatec UK, manufacturers of the modems.

PhD student Grant Pusey preparing to deploy acoustic modems in Arctic waters.

➤ **Fast Ships in Greece**

PhD student Daniel Veen presented a paper at the prestigious FAST 09 conference in Athens, Greece in early October. The conference promotes world-wide cooperation among scientists and engineers concerned with the high speed maritime industry. The paper is on the prediction of slamming loads on bottom plating and catamaran cross-decks, using Smoothed Particle Hydrodynamics (SPH).



GRAPHIC: DANIEL VEEN

Numerical model output of a two-dimensional hull section falling into the water, using SPH techniques.

New Stereovision Spinoff Company DeepVision3D

A new spinoff company, DeepVision3D, has been established by CMST and the Commercialisation Team from Curtin's Office of Research and Development. The objective of the company is to commercialise the stereoscopic video research undertaken by CMST and led by CMST Research Fellow Andrew Woods. The company has already been successful in winning a $70,000 Federal Government COMET grant to develop the business.

The Centre for Marine Science & Technology (CMST) conducts world-class consulting, research, development and education for the marine industry and for government agencies.

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CMST Lunchbox Seminars

CMST holds weekly seminars, with speakers from interstate and overseas, as well as CMST staff.

The schedule of seminars is listed on our website:
www.cmst.curtin.edu.au/seminars

If you would like to receive email updates regarding CMST seminars, simply send an email to the following address:
seminars@cmst.curtin.edu.au