Society for Underwater Technology

EVENING TECHNICAL MEETING

WA Research Night

Wednesday, 9 October 2013
Parmelia Hilton Hotel (Swan Room)
Mill Street, Perth

Registration 5.30 pm: Presentations 6.00 pm – 7.30 pm Networking over drinks and finger food 7.30 pm – 9.00 pm

Chaired by: **Brian Lamb, Open Water Engineer, Shell Development Australia Pty Ltd**

Towards a Geostatistical Approach for Improving the Resolution Publicly Available Bathymetry Grid for the Kimberley Region, North-West Australia
Elizabeth Mair, Student, Bachelor Science Honours (GIS), Curtin University
Though the use of acoustic observation for the estimation of bathymetry is established, challenges exist in obtaining such data over broad-scale regions. Potential exists to compile multiple formats and sources of bathymetry to produce a continuous grid at an improved spatial resolution to the regular 250m grid for the offshore Kimberley region. The ability to interpolate single-beam echo sounder data to contribute to the surface prediction will be explored. This presentation is related to the thesis undertaken with the department of Spatial Sciences in collaboration with CMST, Curtin University.

Vortex Induced Vibration in Subsea Pipelines
Vanessa Bullock, Mechanical Engineering Student, Curtin University
The area of vortex induced vibrations (VIV) of subsea pipelines is one that has been heavily researched due to the serious consequences which can result due to this phenomenon. The effect of the proximity of the free-span undergoing VIV to the seabed is an area which research has not been covered as conclusively. Using the DNV Recommended Practice for Free Spanning Pipelines, Finite Element Analysis and experimental testing the effect of a rigid plane boundary to a pipeline free span experiencing VIV has been investigated. A coupled numerical CFX and Transient Structural model has been developed in ANSYS Workbench. Laboratory trails are being conducted in air using pipes of different stiffness over a range of gap ratios. The results from both analyses will then be compared to those of the DNV Recommended Practise for Free Spanning Pipelines.

The Effects of Wind Forces on Surface Currents on the Continental Shelf Surrounding Rottnest Island
Jennifer Penton, Student: PhD in Engineering Science, Costal Engineering, University of Western Australia
The presentation will cover the definition and importance of surface currents; the regional currents: the Leeuwin Current and the seasonal nearshore counter current, the Capes Current. It will then be explained briefly how HF radars function and how they were used in this case, followed by the analysis of the collected data, leading to a conclusion!

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