

Thursday, 22 June 2017 - The University of Western Australia, Indian Ocean  
Marine Research Centre Auditorium

Onsite registration 5:30 PM Networking over coffee/finger foods 5:30 PM – 6:00 PM; Presentations 6.00 PM – 8:00 PM

The Offshore Site Investigation and Geotechnics (OSIG) Group is a special interest group of the Society for Underwater Technology (SUT). We promote technical advancement and knowledge sharing amongst academics and practitioners in the fields of geology, geophysics, geomatics and geotechnical engineering

Chaired by: Fiona Chow, Chief Geotechnical Engineer, Woodside Energy Ltd

**This event is free. Please register at <https://www.trybooking.com/QBZE>**

This event features an OSIGp selection of papers by Perth-based presenters from the 2017 Offshore Technology Conference (OTC) in Houston

### Pipe-Clamping Mattress (PCM) to Stop Flowline Walking

**S. Frankenmolen**, Shell Global Solutions International BV; **S. Ang**, Shell Global Solutions International; **R. Peek**, Shell Global Solutions International BV; **M. Carr**, Crondall Energy Subsea Limited; **I. MacRae**, Crondall Energy Consultants Ltd; **D. White**, University of Western Australia; **J. Rimmer**, Shell Philippines Exploration BVA

*Synopsis:* This presentation describes a new solution to arrest pipeline 'walking' that has been deployed on a Shell project. Pipe-clamping mattresses (PCMs) were invented, developed, and deployed within a period of 12 months. This paper shares the knowledge and experience from this novel but effective solution to mitigate pipeline walking, which is a cost-effective alternative to rockdump or conventional mattresses.

### Great Australian Bight: New Offshore Frontiers, Challenges and Potential Solutions

**C.A. Woodhams**, DNV GL Group; **E. Heshmati**, Curtin University

*Synopsis:* The Great Australian Bight has been subjected to exploration for the past five decades, and could be defined as a new frontier for oil and gas development. BP has recently committed to a drilling campaign in the region, establishing key infrastructure indicating potential for a significant hydrocarbon discovery. This paper presents a preliminary basis for concept selection for a field in this new and highly environmentally sensitive area where several potential offshore development options are evaluated against identified key challenges.

### The State of Knowledge of Pipe-Soil Interaction for On-bottom Pipeline Design

**D. White**, University of Western Australia; **E.C. Clukey**, Jukes Group; **M.F. Randolph**, University of Western Australia; **N.P. Boylan**, Norwegian Geotechnical Inst.; **F. Bransby**, Fugro; **A. Zakeri**, BP America Inc; **A.J. Hill**, BP; **C. Jaeck**, Cathie Associates

*Synopsis:* The paper reviews recent advances in the understanding of pipe-soil interaction, and provides an updated knowledge on best practices for on-bottom pipeline design for seabed pipelines in challenging environments and operating at high temperature and pressure. This involves mitigation of design issues associated with geohazards, hydrodynamic stability and thermal expansion management. This paper synthesises that work, and provides recommendations of methodologies suited to codification that will guide future projects.

### A Toolbox For Optimizing Geotechnical Design Of Subsea Foundations

**S. Gourvenec**, **X. Feng**, **M. Randolph**, **D.J. White**, University of Western Australia

*Synopsis:* This paper presents a tool box of solutions for optimising geotechnical design of subsea foundations derive from a blend of physical model testing in a geotechnical centrifuge, numerical analysis and theoretical modelling. Methods to optimise the capacity assessment methodology, configuration of the mudmat, geotechnical input and mode of operation are presented. These methods are given in the form of accessible tools for industry, including design equations and methods, and simple design charts.

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