# OSIGp Selections of ISFOG

**Wed 21 September 2022**
**Perth City Library Auditorium, 573 Hay Street**
**Registration 5.30 pm; Presentations: 6.00 pm – 7.30 pm; Networking over drinks and finger food: 7.30 pm – 8.30 pm**

## Sediment Transport and Scour in the Ocean Environment – Knowledge and Future Directions

*Scott Draper, Associate Professor in Ocean Engineering, University of Western Australia*

Many recent advances in sediment transport and scour prediction in the ocean environment have resulted in large part from an increased availability of high-quality field observations, which have served to both motivate and validate engineering models. Inspired by this emerging trend, this talk describes the basic processes concerning sedimentation and scour before explaining the types of field observations that are now routinely available in practice and the recent advances in experimental capabilities that have enabled improved interpretation of these observations as well as the ability to undertake new, more relevant applied research. A number of case studies are presented for three classes of structure - pipelines, subsea structures and monopiles – which are relevant to a range of Ocean Industries.

## Strength Properties of Subsea Rockfills at Low Stress Level

*Hongjie Zhou, Principal Engineer, Norwegian Geotechnical Institute*

This talk presents a desktop study on the rockfill strength properties related to the subsea rockfill, which is generally installed at a loose state and under low stress level compared with its onshore counterparts. The rockfill properties are derived based on extensive review of literature available in the public domain, together with our experience in geotechnical testing, design and installation of rockfills. The focus of the present study is on the effective peak internal friction angle, $\phi'_p$, of the rockfill, placed by the Fall Pipe installation method, by considering its dependency on the stress level. A case study is presented at the end to demonstrate how the derived relationships can be applied for real designs.

## Cyclic Loading of Offshore Wind Turbine Suction Bucket Foundations in Sand: The Importance of Loading Frequency

*Han Eng Low, Senior Principal Engineer, Fugro*

Suction buckets are expected to be increasingly used as foundations for offshore wind turbine (OWT) projects as they move to deeper water and monopiles become impractically large. Since OWTs are relatively light and operational loads include high overturning moments, potential exists for individual foundations to experience periods of net tension with accompanying (significant) cyclic tension. Foundation design must ensure that these loading conditions do not lead to permanent tilting of an OWT, due to differential foundation movement. This talk presents selected results from a series of centrifuge tests designed to investigate how the suction bucket foundation performance is affected by the signature of the loading, the frequency of the cyclic vertical loading and the average vertical load.

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**For further enquiries, please contact OSIGp directly by emailing: Cathal Colreavy (cathal.colreavy@ngi.no)**