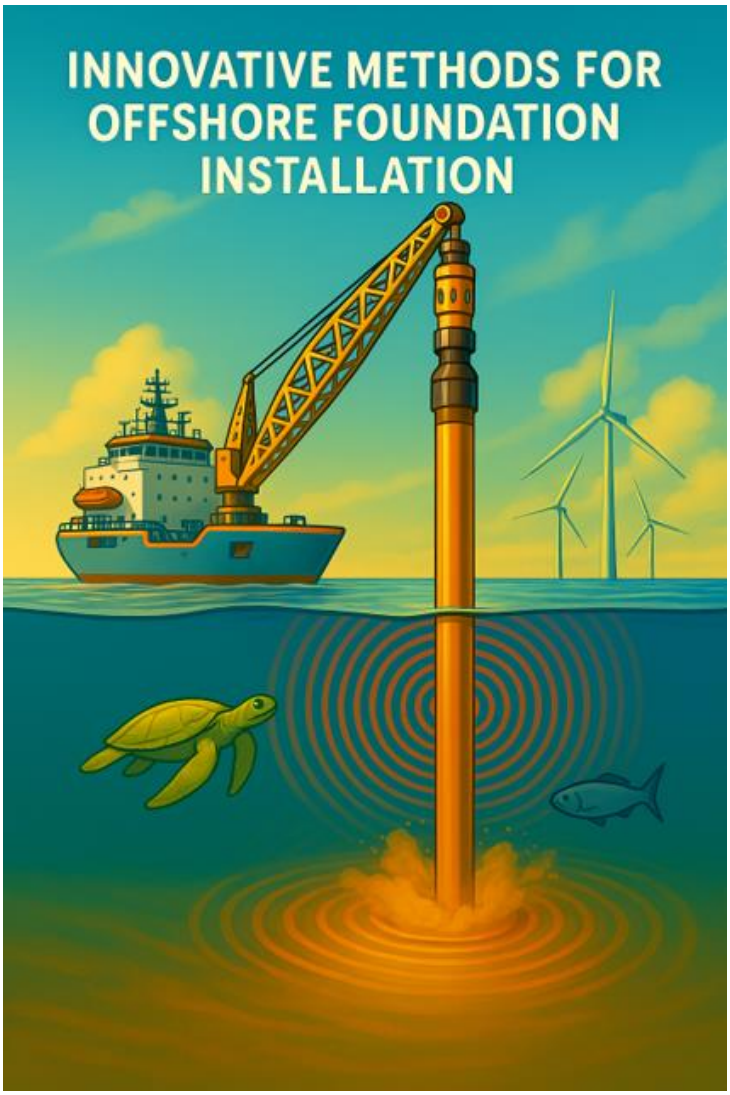
Special Session:

Innovative Methods for Offshore Foundation Installation



Organisers

Evangelos Kementzetzidis; Delft University of Technology (e.kementzetzidis@tudelft.nl)

Dr. Evangelos Kementzetzidis is an Assistant Professor at TU Delft. His research focuses on cyclic soil behaviour and dynamic soil–structure interaction, with applications ranging from monopile installation to the cyclic and seismic behaviour of offshore structures. He leads major international projects such as MIDASclay and DONISIS and contributes to industry–academia collaborations like GeoWin and the Gentle Driving of Piles (GDP) project family. He received the ICE Best Paper Award in Offshore Engineering (2022) and serves as an Associate Editor for *Geotechnique Letters*.

Prof. Britta Bienen; University of Western Australia (britta.bienen@uwa.edu.au)

Britta Bienen is a Professor of offshore geotechnical engineering at the University of Western Australia. With more than a decade of experience in offshore wind, her research focuses on foundation and anchoring solutions, underpinned by centrifuge and numerical modelling to develop practical prediction methods. The 2020 Australian Academy of Science John Booker medal recipient is actively involved in the development of international guidelines (ISO, InSafeJIP, J-REG JIP) and has brought the public engagement initiative OffshoreWind4Kids to Australia.

Huan Wang; NGI (huan.wang@ngi.no)

Dr. Huan Wang is an Engineer at NGI's Boston office with over a decade of experience in offshore geotechnics. His expertise spans physical and numerical modelling, soil mechanics, soil–structure interaction, and the design of foundations and anchors for offshore energy infrastructure. Dr. Wang has played key roles in several major international research–industry collaborations, including EU- and industry-funded JIP projects such as MIDAS, MIDASclay, GEOLAB, PIGS, and TAILWIND. He also serves as Associate Editor of the International Journal of Physical Modelling in Geotechnics. His work focuses on bridging cutting-edge geotechnical research and practical applications in offshore engineering.

Session Description

In recent years, challenges related to the installation of offshore foundations have become an increasingly relevant topic. The global expansion of offshore projects has introduced a wide range of difficulties—from increasing foundation sizes to complex ground conditions, including highly overconsolidated clays, glacial tills, dense sands, glauconitic sands, soft rocks, and other problematic soils. These conditions can severely hinder installation efforts, leading to issues such as low drivability, premature refusal, and pile run.

In parallel, the installation process has raised growing environmental concerns due to severe underwater noise and ground vibrations, which can be harmful to marine life.

In response, both research and industry are actively exploring novel approaches—from vibration-based systems and suction-assisted techniques to soil jetting and other emerging methods—aimed at addressing limitations of traditional installation methods.

This session invites contributions focused on the development, testing, and practical application of innovative foundation installation methods. We particularly encourage experimental studies addressing performance in challenging soil conditions, strategies for noise and ground vibration reduction, and lessons learned from field implementation.