

Award-winning paper in 2013

Papers published in the *International Journal of Physical Modelling in Geotechnics* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 17 October 2014, ICE president Geoff French presented an award to the following paper published in the *International Journal of Physical Modelling in Geotechnics* in 2013. The editorial panel nominated their best papers and an awards committee chaired by Quentin Leiper allocated the awards.

Telford Premium Prize

The Telford Premium Prize, awarded for the best paper on physical modelling in geotechnics, was awarded to Klinkvort *et al.* (2013).

Abstract

This paper deals with three different and important issues for centrifuge testing on monopiles for offshore wind turbines. A series of centrifuge model tests has been conducted on cylindrical stiff model monopiles that were installed at $1g$ and in-flight before being loaded laterally as well as on conical model piles installed in-flight. All model tests were performed in normally consolidated dense dry sand, simulating drained conditions. The tests confirmed three important issues for centrifuge modelling of monopiles for offshore wind turbines. First, to avoid any noticeable grain-size effect, the geometric ratio between average grain-size in poorly graded soils and pile diameter has to be larger than 88. Second, the non-linear stress distribution with depth, which is often neglected, has to be taken into account in the analysis of the lateral response. Finally, the pile lateral load–displacement tests confirm that both stiffness and strength increase following in-flight installation and that in-flight installation is needed to avoid any scale



ICE President Geoff French with Telford Premium Prize winners Rasmus Tofte Klinkvort, Ole Hededal and Sarah Springman

effects. This paper illustrates how these three issues are important factors in achieving reliable centrifuge modelling, which is capable of scaling model observations to prototype.

REFERENCE

Klinkvort RT, Hededal O and Springman SM (2013) Scaling issues in centrifuge modelling of monopiles. *International Journal of Physical Modelling in Geotechnics* **13(2)**: 38–49, <http://dx.doi.org/10.1680/ijpmg.12.00010>.