Editorial

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As the new editor of the *International Journal of Physical Modelling in Geotechnics*, it is my great pleasure to welcome you to the first issue of 2014. In addition to introducing this issue, there are a number of exciting wider developments underway and planned which I would like to bring to your attention. However, before I delve into these more deeply, I would first like to sincerely thank the outgoing chairman, David Muir Wood, for all of his hard work (more on this below), and also the outgoing members of the panel, some of whom have been involved with the journal since its inception.

The first and most exciting development which I would like to highlight is that the journal has recently been accepted for inclusion in the ISI Web of Science. This is hugely significant as the lack of indexing has been a significant impediment to attracting a greater number of high-quality papers and allowing the journal to grow. On behalf of the panel and the whole physical modelling community I would like to profoundly thank David and the staff at ICE Publishing for all of their hard work and perseverance in securing the journal's inclusion. This also would not have been achieved without the strong support from within the geotechnical community, who I would also like to thank, for being prepared over the previous years to look beyond this limitation and submit their work to the journal. Existing journal content will be retrospectively indexed from volume 11, issue 1 (i.e., 2011 onwards), and we expect an impact factor to follow in September of this year.

Now that indexing has been secured, the next phase for the journal's development, and the one I will be championing throughout my tenure as chairman, will involve sustainably growing the number of high-quality papers submitted to the journal and published in each volume. To encourage this, the panel and I will strive to ensure that the journal continues to provide the fast peer review and rapid time to publication that has been established by David since the journal was acquired by ICE Publishing. I would also encourage all readers of the journal to be active in submitting discussion contributions, so that the journal can also become a forum for discussing new techniques, instrumentation and issues in physical modelling.

Looking ahead to the end of this year and the beginning of next, the content of the issues will be themed around the recent 8th International Conference on Physical Modelling in Geotechnics held in January at the University of Western

Australia. These issues will focus primarily on material that was not published in the conference proceedings, including: session reports (for both the main and technician programmes), Professor Malcolm Bolton's 1st Schofield Lecture, a paper on the early history of centrifuge modelling and extended versions of the prize-winning papers. This themed material will allow us to highlight the highly exciting work presented at the conference and the session reports will also provide concise state-of-the-art reviews of physical modelling in geotechnics. We would hope to do similar themed issues to support future Eurofuge conferences.

In this issue, there are two papers focussing on instrumentation and the making of challenging measurements in physical models, specifically the accurate measurement of soil pressure in granular materials (Talesnick *et al.*, 2014) and the measurement of very small undrained shear strengths in ultra-soft cohesive materials (Sahdi *et al.*, 2014a).

The first paper, by Talesnick *et al.* (2014), describes the development, validation and calibration of a 'null soil pressure sensor' – an 'active' instrument which measures soil pressure by creating an equivalent air pressure in a reservoir behind the membrane resulting in zero net movement of the diaphragm. This concept is shown to avoid the sensor compliance and size effects of more conventional deflecting-membrane-type cells that most readers will be familiar with. Cells of different size are developed from 80 mm to 6 mm in diameter, making them suitable throughout the range of physical modelling scales, from full-scale models (e.g., Talesnick *et al.* 2011) with particle sizes up to many millimetres in diameter to centrifuge-scale models using finer materials. The paper reports an extensive calibration of all of the cells in multiple materials within a soil-filled calibration chamber and also verifies that accurate measurements can be made in the presence of superimposed shear loading at the measurement point (e.g., when measuring pressures at soil–structure interfaces).

The second paper, by Sahdi *et al.* (2014a), describes a methodology for using T-bar penetrometers to accurately measure extremely small (0.1–2 kPa) undrained shear strengths in ultra-soft (consolidating) clays. The methodology is extensively validated using a large database of centrifuge test data, and will be of particular interest to researchers studying challenging processes in consolidating clays such as submarine slides and pipeline–soil interaction at the seabed (e.g., Sahdi *et al.*, 2014b).

I hope you enjoy the content of this issue and that both this content and indexing in Web of Science encourage you all to submit your work to the journal over the coming months.

REFERENCES

- Sahdi F, Gaudin C, White DJ and Boylan N (2014a) Interpreting T-bar tests in ultra-soft clay. *International Journal of Physical Modelling in Geotechnics* **14**(1): 13–19, <http://dx.doi.org/10.1680/ijpmg.13.00012>.
- Sahdi F, Gaudin C, White DJ, Boylan N and Randolph MF (2014b) Centrifuge modelling of active slide-pipeline loading in soft clay. *Géotechnique* **64**(1): 16–24.
- Talesnick ML, Xia HW and Moore ID (2011) Earth pressure measurements on buried HDPE pipe. *Géotechnique* **61**(9): 721–732.
- Talesnick ML, Ringel M and Avraham R (2014) Measuring soil pressure in models of soil–structure interaction. *International Journal of Physical Modelling in Geotechnics* **14**(1): 3–12, <http://dx.doi.org/10.1680/ijpmg.13.00008>.