

Editorial

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Welcome to Volume 5 of *Geotechnical Research*, a gold open access journal published by the Institution of Civil Engineers (ICE), UK. Issue 1 of 2018 includes five research papers covering a wide range of topics. I hope readers will find this issue interesting and useful for their research and engineering careers in academia and/or geotechnical industry.

The first paper, by Rocchi *et al.* (2018), shows that in situ measurements of soil suction and water content in deep soil layers still represent an experimental challenge. In this paper, a novel installation technique is presented, discussed and assessed, which allows extension of the use of commercially available low-cost and low-maintenance instruments to characterise deep soil layers. Multi-depth installations have been successfully carried out using two different sensor types to measure the soil suction and water content up to 7 m from the soil surface. The results of this study offer a convenient starting point to accommodate important geotechnical works such as river and road embankments in the traditional monitoring of unsaturated soil variables.

In the next paper, Zelleg *et al.* (2018) studied the feasibility of Tunisian sediment reuse as a new road material. Three mixtures (raw sediments, stabilised sediments with 3% lime and stabilised sediments with 3% cement) were assessed with regard to their mechanical performances. Experimental results showed that humic compounds complicated sediment treatment with cement. Therefore, a mixture with 3% lime can be used as a new road material. Based on environmental tests, the sediments were assessed as uncontaminated and could be reused directly without a decontamination treatment process.

Liu *et al.* (2018a) developed a non-linear elastic model, considering temperature effects that engineers can readily use to predict the mechanical behaviours of soils in geotechnical applications. In this model, all of the eight parameters have clear physical meanings and could be readily obtained by performing temperature-controlled triaxial tests. The accuracy and general applicability of the proposed method was checked by comparing its predictions with experimental results on saturated clay under various stress-path and temperature conditions as well as existing solutions proposed elsewhere.

Liu *et al.* (2018b) described shakedown analyses to predict the long-term response of slab track substructures under repeated moving train loads. The train loads were converted into a distributed moving load on the substructure surface by using a simplified track analysis. Based on Melan's static shakedown theorem, a well-established shakedown analysis method is extended to determine shakedown limits of the slab track substructures. It was found that the increase in stiffness modulus or stiffness variation ratio can either increase or decrease the shakedown limit, depending on the competitive effects of the two mechanisms. It was also shown that the material stiffness modulus, the ratios of layer stiffness and the layer thickness have great impacts on the long-term stability of the slab track substructure.

Finally, numerical and analytical solutions for a number of consolidation problems of soils (or poroelasticity) were presented by Verruijt (2018). The numerical solutions were primarily based on the method of finite elements in space and a single finite difference in time, so that the solution is obtained in the form of a stepwise process. Because of the mathematical complications in deriving analytical solutions, it is expected that engineers will use mainly numerical methods of solution, especially given that, for the problems considered in this paper, the numerical results are very close to the analytical solutions.

While volume 5 of *Geotechnical Research* is underway, I would like to take this opportunity and look back at 2017, which was a very successful year for the journal. Similarly to previous years, the editorial panel together with ICE Publishing has made a huge effort in promoting the journal to an international audience. The journal was actively promoted in a few international conferences around the world including the 19th International Conference on Soil Mechanics and Geotechnical Engineering that was held in Seoul (South Korea) in September 2017. Extended versions of selected contributions from the technical session on interactive design (organised by TC-206) will be published in one of the future issues of volume 5.

Last year, 15 articles were published in volume 4, covering 221 pages in total, which is a significant increase compared to volume 3 published in 2016. More importantly, the high quality of the articles

published in the journal is proven by Scopus indexing. Apart from Scopus, *Geotechnical Research* is indexed by Compendex on Engineering Village, the Directory of Open Access Journals (DOAJ) and Emerging Sources Citation Index (ESCI). Based on ICE's data, the articles published in 2017 were accessed more than 7700 times. Furthermore, according to Scopus, some of the articles published in 2017 have already been cited in top geotechnical journals.

The *Geotechnical Research* editorial panel and ICE Publishing would like to extend their invitation to geotechnical engineers and researchers from all over the world to consider *Geotechnical Research* as a platform for a quick dissemination of their research, design and construction projects. Full publication fee waivers are available for outstanding contributions to 2018 issues and beyond. We are also actively looking for potential collaborations with organisers of international conferences, symposia and workshops who would like to promote outstanding contributions from their events to a wider audience through a gold open access journal. I would also like to encourage our readers to submit discussions on articles published in *Geotechnical Research* last year. Constructive discussions are extremely valuable for all technical publications and are always welcome for open access articles such as those published in *Geotechnical Research*.

On behalf of the editorial advisory panel, I would like to emphasise that despite slightly different publication criteria compared to other ICE journals, *Geotechnical Research* maintains ICE's reputation of publishing high-quality work. All articles submitted to the journal undergo rigorous peer review, based on initial editor screening and

blind peer review by the panel members and independent reviewers. The review process is closely monitored by an international editorial panel, minimising the time from submission to acceptance. For example, in 2017, the average time between submission and first decision was just under 30 days.

As chair of the editorial advisory panel, I would like to take this opportunity to thank all the members of the panel for their hard work in promoting the journal as well as their timely reviews and assessments of submitted papers. Last but not least, I would like to thank Ben Ramster and Sam Hall from ICE Publishing for their excellent support to the journal. Without them, the significant progress *Geotechnical Research* has made in 2017 would not have been possible.

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