

## Editorial

Faramarzi, Asaad; Dirar, Samir

DOI:

[10.1680/jencm.2018.171.4.145](https://doi.org/10.1680/jencm.2018.171.4.145)

License:

None: All rights reserved

Document Version

Peer reviewed version

Citation for published version (Harvard):

Faramarzi, A & Dirar, S 2019, 'Editorial', *Proceedings of the Institution of Civil Engineers: Engineering and Computational Mechanics*, vol. 171, no. 4, pp. 145-146. <https://doi.org/10.1680/jencm.2018.171.4.145>

[Link to publication on Research at Birmingham portal](#)

### Publisher Rights Statement:

Checked for eligibility: 01/03//2019

This is the author accepted manuscript version of an editorial published in *Proceedings of the Institution of Civil Engineers: Engineering and Computational Mechanics*, which can be found at:

<https://www.icevirtuallibrary.com/doi/10.1680/jencm.2018.171.4.145>

### General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

### Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.



Asaad Faramarzi  
BSc, MSc, PhD



Samir Dirar  
BSc (Hons), MPhil (Cantab), PhD (Cantab)

It gives us great pleasure to present to you the second part of the UKACM 2017 themed issue. The 25<sup>th</sup> UKACM (UKACM 2017) was hosted by the University of Birmingham on 12-13 April 2017 and was attended by over 100 researchers from both the UK and overseas. With over 70 papers across various disciplines including solid and structural mechanics; failure, fracture and damage; geo-mechanics; fluid mechanics and biomechanics, the conference provided an opportunity to foster new ideas and collaborative research links, building strong research links within the UK and at international level. Selected authors were invited, based on the originality and rigour of their submissions, to extend their conference papers and submit them for publication in a two-part themed issue of the *Proceedings of the Institution of Civil Engineers - Engineering and Computational Mechanics*.

This second part of the Themed Issue includes three papers. The first paper, by Ciantia et al. (2019), presents a new procedure to initialise large-scale discrete element models. The authors use random cells to generate representative elementary volumes (REV) that matches the desired properties. Once the cell is in equilibrium it will be used in a repetitive manner to build the problem domain. The presented approach in this paper results in computational efficiency of large-scale DEM problems.

In the second paper, Mahdavian and Javadi (2019), present a three-phase hydro-mechanical model to simulate hydraulic fracturing. The authors couple two simulators to model multiphase fluid flow in fractured rock that experience a wide range of deformations from linear elastic to large, non-linear inelastic. The coupled flow-geomechanic model is used to simulate the interaction between fluid flow inside the fractures with rock deformations. The authors use an iterative process to link pore pressure and strains to calculate changes in reservoir parameters. In addition, they carry out a parametric study to show the impact of geomechanical and fluid parameters on hydraulic fracture propagation.

The third and final paper in this Themed Issue uses limit-equilibrium and finite-element methods to model and analyse geometrically non-homogeneous stratified slopes with the aim of understanding the effects of non-homogeneity of geometry and materials on stability under various inclination angles of slope face. Sauffisseau and Ahangar-Asr (2019) investigate the complex problem and based on the results the authors generate a number of key practical conclusions that can be used by urban designers and geotechnical engineers to achieve more efficient designs of slopes and sustainable construction works.

We hope that you find this Themed Issue, helpful and motivating. We would like to thank the authors who prepared their papers, and the reviewers who carefully considered every paper ensuring the quality of this Themed Issue. We would also like to express our gratitude to the Editorial Panel for *Proceedings of the Institution of Civil Engineers - Engineering and Computational Mechanics* for availing us the opportunity to guest-edit this Themed Issue. Finally, we would like to thank Ms Cherise Lopes-Baker and Mr Paul Allanson for their continuous support throughout the process of preparing this Themed Issue.

Asaad Faramarzi  
Samir Dirar