Editorial

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The publication of this second issue of 2017 of *Engineering and Computational Mechanics* (EACM) provides an opportunity not only to draw attention to the papers contained within the issue but also to review progress on the growth and development of the journal. At this time of the year the Institution of Civil Engineers (ICE) solicits nominations for the outstanding papers appearing in its journals in the previous calendar year. The EACM Editorial Advisory Panel has, therefore, been much occupied recently with selecting its best 2016 papers for this process, in the hope that recognition will again be afforded to the high standard of the research and practice contributions appearing in the journal. Recall that last year, the paper by Kara *et al.* (2015) was awarded the George Stephenson Medal as the second best paper published in all ICE journals in 2015 and the paper by Grafsrønningen and Jensen (2015) was deemed to be the best paper published in EACM in 2015. The Kara *et al.* (2015) paper is the most frequently downloaded EACM article in the past year and the journal has published papers that have twice won the ICE's annual Telford Gold Medal for the best paper of the year: for Vardy (2008) and Giannakopoulos *et al.* (2013). The range and novelty of the papers in EACM continue to increase, reinforcing the underlying philosophy of the journal to publish new work from across a full range of mechanics problems relevant to civil engineering research and practice.

The primary aim of the journal remains to attract outstanding, novel and timely articles from academic researchers and engineering practitioners, particularly where both communities are represented in the authorship. As well as providing a home for high-quality new work in the fields of engineering and computational mechanics, the journal continues to promote state-of-the-art overviews of key topics from established figures in the field (see, for example, the overview of hydraulic jumps and bores by Chanson and co-workers (Wang *et al.*, 2016) in the first issue of EACM in 2016). Several more of these scoping articles are already commissioned and will appear later in 2017.

The journal continues to support themed issues that bring together related articles within a novel, timely or developing area of research and/or practice, defined and curated by members of the Editorial Advisory Panel and senior experts in the field. Recent examples are the themed issue on engineering and computational mechanics in offshore wind in 2016 (Owen, 2016) and the September 2016 issue devoted to a selection of the best papers presented at the UK Association of Computational Mechanics (UKACM) conference held at Swansea University in April 2015 (Gil and Sevilla, 2016). It is noted that one of the papers (Cui and Bhattacharya, 2016) appearing in the engineering and computational mechanics in offshore wind themed issue is already one of the most highly cited EACM papers in the current year. A call for papers for a themed issue on infrastructure safety from fire and blast is currently being circulated and a themed issue on application of numerical methods within the Eurocode framework is already being compiled. Plans are in preparation to consider for publication a selection of the best papers presented at the 25th UKACM Conference on Computational Mechanics held at the University of Birmingham in April, 2017. Finally, an issue of the journal devoted to scoping articles from senior civil engineering practitioners outlining current research needs in engineering and computational mechanics is being prepared.

Readers are encouraged strongly to submit proposals for new themed issues to the Editorial Advisory Panel, for further consideration. The journal is also very anxious to receive briefing papers – short contributions that are offered a rapid publication route to provide topical updates on recent work and/or to stimulate debate within the ICE community.

The present issue illustrates the extreme range of topics falling within the remit of the journal, with contributions from the fields of solid and fluid mechanics. Both papers utilise advanced mathematical analysis to analyse problems of central importance in civil engineering.

The paper by Jalali and Borthwick (2017) provides an illustration of the application of the Green–Naghdi equations (non-linear and dispersive shallow-water equations to model the two-dimensional (2D) continuum of unsteady and inviscid three-dimensional flows) for the solution of a problem (sloshing) that has wide relevance to a range of excited, contained, free surface flows encountered in, for example, storage and ballast tanks, elevated water towers and reservoirs. Seismic excitation of such flows presents a strong motivation for studying the response of the fluid within such containers. In their paper, Jalali and Borthwick (2017) develop a numerical solver of 2D first-order Green–Naghdi equations and then apply it to two idealised cases – (i) sinusoidal free surface sloshing in a square tank and (ii) free surface sloshing of an initial Gaussian hump in a square, flat-bottomed basin – for both of which cases analytical solutions are available for comparison. The comparisons with analytical theory are shown to be good at small amplitude, but non-linear effects associated with higher-amplitude forcing and wave–wave interaction reveal significant limitations of the analytical solutions. Non-uniform bathymetry (i.e. non-flat-bottomed containers) is shown also to have a (local) effect on the sloshing motions.

The paper by Luk and Kuang (2017) deals with a structural analysis problem – the behaviour of wide beam–column joints subject to seismic excitation – that is particularly timely because of the lack of knowledge in this area to inform codes of practice and design practice. The authors describe the lack of uniformity in such codes as the context for this new finite-element modelling investigation. They apply such models to investigate cyclic (seismic-induced) behaviour and force-transfer mechanisms of reinforced concrete exterior wide beam–column joints, using different beam widths and reinforcement details. Their findings are used to address the width limitations of wide beams and the reinforcement detailing in the exterior portions of the wide beams in order to formulate design guidance for external wide beam–column connections.

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