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Award-winning paper in 2016.
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Announcement

Engineering and Computational Mechanics

ice publishing

Award-winning paper in 2016

Papers published in *Engineering and Computational Mechanics* 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 6 October 2017, ICE president Tim Broyd presented an award to the following paper published in *Engineering and Computational Mechanics* in 2016. The editorial panel nominated their best papers and an awards committee chaired by Nigel Wright allocated the awards.

Thomas Telford Premium Prize

The Thomas Telford Premium Prize, presented for the best paper published in *Engineering and Computational Mechanics*, was awarded to Pringgana *et al*. (2016).

Abstract

A series of three-dimensional smoothed particle hydrodynamics (SPH) and finite-element (FE) models, with a domain in the form of a water tank, were undertaken to simulate tsunami-induced bore impact on a discrete onshore structure on a dry bed. The fluid motion was simulated using the SPH-based software DualSPHysics. The tsunami-like waves were represented by solitary waves with different characteristics generated by the numerical paddle wavemaker. Numerical probes were uniformly distributed on the structure's vertical surface providing detailed measures of the pressure distribution across the structure. The peak impact locations on the structure's surface were specifically determined and the associated peak pressures then compared with the prediction of existing commonly used design equations. Using the pressure–time histories from the SPH model, FE analysis was conducted with Abaqus to model the dynamic response of a representative timber structure. The results show that the equations used to estimate the associated pressure for design purposes can be highly non-conservative. By gaining a detailed insight into the impact pressures and structure response, engineers have the potential means to optimise the design of structures under tsunami impact loads and improve survivability.

Benedict D. Rogers, Lee Cunningham and Gede Pringgana, winners of the Thomas Telford Premium Prize, with ICE president Tim Broyd (second right)

REFERENCE

Pringgana G, Cunningham LS and Rogers BD (2016) Modelling of tsunami-induced bore and structure interaction. *Proceedings of the Institution of Civil Engineers – Engineering and Computational Mechanics* **169(3)**: 109–125, https://doi.org/10.1680/jencm.15.00020.