



Division of Civil Engineering University of Liverpool

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PREDICTING THE ONSET & POST-FAILURE OF GEOMATERIALS

Ha Bui, Monash University, Australia

ABSTRACT

Geotechnical designs often rely on traditional analytical and computational approaches which are limited to small deformation problems. While these methods of analysis provide important guidance, and have been used for the safe design of many geotechnical structures, they are unable to provide information on the failure of such structures under extreme weather or operational conditions or the risk associated with these failure modes. In this talk, Bui will discuss recent developments in the field of computational geomechanics to predict the onset and post-failure of geomaterials with reference to geomechanics problems relating to slope stability and failure, debris flows, strain localisation/localised failure, soil-structure interaction, amongst other examples. The work his research team has done with particular focuses on the scaling issues and the application of an emerging Smooth Particle Hydrodynamics (SPH) method to geomechanics is discussed.

SPEAKER BIO

Bui is currently an Associate Professor and Head of Geomechanics Disciplines in the Department of Civil Engineering, Monash University. He received his MSc and PhD from Ritsumeikan University, Japan in 2004 and 2007 respectively. His key research interests are in the areas of computational mechanics and material modelling with a particular focus on large deformation and failure of geomaterials. Bui is on the Editorial Board for Computers & Geotechnics (Elsevier, IF3.345) and Materials & Designs (Elsevier, IF5.77), the two leading journals in the areas.



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