

Preface

The theme of the 2014 December issue is Offshore and Coastal Geotechnics. The guest editors for this special issue are Dr. Shinji Sassa at Port and Airport Research Institute, Japan, Prof. Poul V. Lade at The Catholic University of America, USA, Prof. Li-zhong Wang at Zhejiang University, China, Prof. Yean K. Chow at National University of Singapore, Prof. Dong Sheng Jeng at Griffith University, Australia, Prof. Christophe Gaudin at University of Western Australia and Prof. Fuping Gao at Chinese Academy of Sciences. Dr. Dariusz Wanatowski at The University of Nottingham Ningbo, China contributed to the editorial management. Prof. Bala as the Editor-in-Chief and Dr. Teik A. Ooi as the President of SEAGS strongly supported the launch of this special issue on Offshore and Coastal Geotechnics.

The topics and scope covered in this special issue are comprehensive and interdisciplinary, ranging from Offshore Foundations, Seabed Liquefaction, Scour and Erosion, Marine Slope Stability and Geotechnical Aspects of Dredging and Reclamation Works to Tsunami-Seabed-Structure Interaction. The issue is comprised of twelve papers with a selection of the authors from eight countries involving Asia, Australia, Europe and USA.

Sumer summarizes recent research advances in seabed liquefaction through the use of standard wave-flume tests and centrifuge wave-soil modelling and mathematical approaches together with their implications for the stability of marine structures. Sun et al. develops and validates a new hybrid Eulerian-Lagrangian modelling framework of coastal current-induced sediment transport and sand dune migration. Liu and Zhao presents a numerical study of the penetration mechanism and kinematic behaviour of the drag anchor in soils by performing a large deformation finite element analysis. Wang et al. describes and discusses the results of a series of specially designed water flume tests on the response of silty soils under the action of combined waves and currents. Luo et al. proposes a new pipeline stability analysis method that takes into account the three-dimensional scour and pipe sinkage that were observed in an innovative large experimental facility, named the O-tube. Kohan et al. describes an improved analytical method for accurately predicting the offshore spudcan extraction resistance in soft clay and validates the method against a large database of centrifuge model tests. Jostad et al. develops and validates a new finite element procedure that accounts for 3D cyclic undrained degradation of soils with its application to a foundation design of offshore structures. Monkul et al. proposes volumetric compressibility (m_v) as an indicator of liquefaction potential for sands and silty sands that are ubiquitous in offshore and coastal deposits on the basis of a series of isotropic compression and undrained triaxial tests. Lee et al. investigates the seismic responses of a gently sloped

liquefiable sand deposit confined within parallel walls of different geometry using centrifuge modelling and assesses the wall effects in relieving the excess pore pressures and the lateral spreading. Chen et al. numerically investigates the pullout behaviour of circular plate in normally consolidated clay and presents a direct design method for obtaining the uplift capacity of a circular plate anchor embedded in soils with a linearly increasing shear strength. Kumagai et al. presents and validates a new restoration method of artificial tidal flats by use of pressure injection of slurry dredge clay through the combined use of laboratory and field experiments and the finite element analyses. Sassa reports some recent research advances on tsunami-seabed-structure interaction and discusses the stability assessment for the design of tsunami-resistant structures from geotechnical and hydrodynamic perspectives.

We consider that this special issue presents and illustrates the outcome of some of the state-of-the-art research on Offshore and Coastal Geotechnics, and hope that it will make an important contribution to this growing field in the years to come.

Shinji Sassa

Poul V. Lade

Lizhong Wang

Yean K. Chow

Dong S. Jeng

Christophe Gaudin

Fuping Gao