WORKSHOP

CSEE'18
WORKSHOP ON NUMERICAL MODELLING IN GEOTECHNICAL ENGINEERING

APRIL 2018 | BUDAPEST, HUNGARY

WORKSHOP OBJECTIVES

This intensive Workshop will provide you with the needed theory and practical background required to confidently utilize modern analysis software to achieve practical solutions to challenging geotechnical problems. The workshop includes two modelling modules: Finite Elements and Artificial Intelligence.

COURSE CONTENT

FINITE ELEMENT MODELLING

- *Introduction to Geotechnical Modelling:* Types of Models, and FEA
- *Nonlinear constitutive models:* physical parameters; commonly used yield functions for soils, and Determination of model parameters.
- *Treatment of soil-structure interface:* contact elements; uplift, sliding.
- *Solution strategy:* buildup of FE models, mesh sizes, initialization, boundary conditions.
- *Hands-on Session:* Shallow Tunnel/Culvert Problem

ARTIFICIAL INTELLIGENCE MODELLING

- *Introduction and overview of Artificial Intelligence.*
- *Development of Artificial Intelligence models:* Determination of model inputs; data division; data preparation; model validation; model robustness; model transparency and knowledge extraction; model extrapolation; and model uncertainty.
- *Use of artificial neural networks in geotechnical engineering.*
- *Hands-on Session:* Shallow and Deep Foundations.

CONGRESS CHAIR

A/Prof. Hany El Naggar
Dalhousie University,
Canada

Associate Professor of Geotechnical Engineering at Dalhousie University, Canada, with more than 20 years of experience in civil construction, geotechnical and structural engineering and research in Canada and overseas.

CONGRESS CO-CHAIR

A/Prof. Mohamed Shahin
Curtin University,
Australia

Associate Professor of Geotechnical Engineering, at Curtin University, Australia, with over 25 years of academic and industrial experience.

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