

2013 *Géotechnique* Lecture

Wednesday 13th November 2013 at 6.30 pm

Institution of Civil Engineers
One Great George Street, Westminster, London SW1P 3AA

Geotechnical numerical analysis: a road map

Professor Lidija Zdravković
Imperial College London

Summary: The development of numerical analysis over the past twenty years and its successful application to increasingly complex geotechnical problems, has created an extremely powerful analysis tool for geotechnical professionals. However, establishing confidence in the simulation capabilities of more complex soil constitutive models is often marred by limited site investigation data. Equally, the lack of full scale monitoring of geotechnical structures makes it difficult to comprehensively validate the whole numerical model for a given problem. Finally, assessing the geotechnical risk by quantifying some form of safety for a given problem is not naturally compatible with numerical analysis, but is nonetheless required by the latest design codes.

Drawing on author's work published in *Géotechnique*, this lecture will discuss the main ingredients of the numerical analysis approach in geotechnical engineering, from the derivation of constitutive model parameters to the calculation of factors of safety to failure. Routes to overcome some of the above issues will be examined utilising case studies of different geotechnical problems.

Biography: Lidija Zdravkovic is a Professor of Computational Geomechanics at Imperial College London. She obtained a PhD from Imperial in 1996, for her research involving experimental investigation of soil strength and stiffness anisotropy using a hollow cylinder apparatus. Since then, while maintaining her interest in experimental research, Lidija has worked mainly on the development and application of numerical methods to general geotechnical engineering problems, both in research and in providing advice to industry. She has published over 120 journal and conference papers and was awarded the Telford Medal and the BGA Medal on three occasions. She has co-authored two books on geotechnical finite element analysis and is currently a UK representative and a core member of the ISSMGE Technical Committee 103 for Numerical Analysis. She was a member of the *Géotechnique* Advisory Panel from 2003 to 2006 and has been an Editorial Board member for *Computers and Geotechnics* since 2010. She has just completed her three-year service on the BGA Executive Committee as an elected member.



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This event will be broadcast online, details for which will be issued to BGA members by email prior to the meeting.

Advance Registration required at ice.org.uk/geotechnique