

Advances in Geotechnical Limit Analysis and its Practical Application in Limit State Design



The Department of Civil and Natural Resources Engineering at the University of Canterbury is offering a ½ day seminar detailing recent advances in geotechnical limit analysis and their practical application to limit state design.

The seminar will cover the different methods currently available for geotechnical limit analysis, including DLO – a powerful new analysis technique co-developed by the seminar presenter, Dr Colin Smith. The DLO-based LimitState:GEO software will be used during the seminar to illustrate the points being made.



4th June : Christchurch

University of Canterbury, 2nd Floor, Commerce Building, The Coppertop (Room 220)

8th June : Auckland

University of Auckland, Faculty of Engineering, 20 Symonds Street, (Room 403.401)

Presenter

Dr Colin Smith

Senior Lecturer, University of Sheffield UK
Visiting Erskine Fellow, University of Canterbury
Director, LimitState Ltd UK

Programme

13:00 – 13:15	Registration
13:15 – 14:30	Lecture 1 - Computational Limit Analysis in Geotechnics: <ul style="list-style-type: none">• Introduction• Background to Limit Analysis• Computational Limit Analysis: available methods FELA, MOC, DLO• Limit analysis – parameter sensitivity and analytical validity• Practical examples (I): bearing capacity, slope stability, retaining structures
14:30 – 15:00	Coffee / Tea break
15:00 – 16:15	Lecture 2 - Application to Limit State Design: <ul style="list-style-type: none">• Ultimate Limit State design to Eurocode 7• Factors of safety and overdesign factors• Partial factors, application to actions, resistances and materials• Advantages and disadvantages of the different Eurocode design approaches• Practical examples (II); reinforced soils, rock stability, seismic loading
16:15 – 16:45	Summary and discussion
16:45 – 17:00	Closure

Registration

The seminar fee is \$56 GST (incl). The registration fee will cover notes and refreshments. To book a place, please fill out the accompanying registration form and return it to:

F: 03-3642-758
E: Catherine.OShaughnessy@canterbury.ac.nz

About the presenter

Dr Colin Smith graduated from the University of Cambridge with a first class honours degree in Engineering in 1987. He joined the Cambridge Soil Mechanics research group in the same year and completed a PhD in 1991. Following 2 years as a research associate at Cambridge he then joined the University of Sheffield in 1992 where he is now a Senior Lecturer. He currently holds a Visiting Erskine Fellowship with the Geotechnical Research Group at the University of Canterbury, Department of Civil and Natural Resources Engineering.

He has lectured on the principles and application of Eurocode 7 for the past 10 years, focusing both on the functioning of the code and the changes in philosophy from preceding design codes. His research and consultancy work encompasses theoretical and numerical limit analysis techniques in geotechnics, combined with physical modelling work on soil structure interaction. He is the co-developer of the novel Discontinuity Layout Optimization (DLO) numerical limit analysis technique and is the author or co-author of over 65 research papers, reports and book chapters. He was a recipient of the 2007 Institution of Civil Engineers' Baker Medal and sits on the Editorial Advisory Panel of Geotechnique.

He is also a Director of LimitState Ltd, a company he co-founded in 2006. The company specialises in the development of novel ultimate limit state analysis and design software applications which make use of research methods developed in the University. This notably includes LimitState:GEO which will be used during this seminar.