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Research Highlights

Universitat Politècnica de Catalunya (UPC)
The Geotechnical Engineering and Geomechanics group

Introduction

The Geotechnical Engineering and Geomechanics group of UPC is in charge of teaching at undergraduate and graduate levels of the Civil and Geological Engineering degrees. No less than 35 Doctorate students and a similar number of Master students develop their activity under the guidance of thirteen full time staff members. The group is active in four aspects of research: the contribution to fundamental understanding and modelling of soil and rock behaviour, the development of advanced computational tools and testing techniques and the participation in applied engineering projects. Achieving a proper balance among these aspects has been a permanent objective of the group over the years. In the computational field the Program "Code_Bright", which is continuously being updated, is a reference for the analysis of coupled thermal, hydraulic, mechanical and chemical processes in porous media. The laboratory has specialized in multi-physical testing. It is well known for the in-house design and development of special prototypes, instrumentation and medium-scale cells which are in operation in Universities and research centres around the world. Cooperation with Industry and Public Institutions has been very active in underground nuclear waste storage, large civil engineering projects and geological risk.

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Eduardo E. Alonso

Eduardo Alonso initiated the activities of the Department of Geotechnical Engineering and Geosciences of UPC soon after the foundation of the Civil Engineering School of Barcelona in 1974. He currently directs the Doctorate Program. His research has benefited from his involvement in large engineering projects (dams, railway lines), forensic investigations (landslides, foundation failures) and large-scale European research initiatives (nuclear waste storage, landslides). Topics and highlights of his research activities are:

- **Unsaturated Soil Mechanics**. A continuous effort was directed during the past 35 years to develop consistent frameworks for the behaviour of unsaturated soils. Attention was given to a wide range of soils and rocks:
  - Collapsible materials, which were successfully described in 1987–1990 by the so-called BBM (Barcelona Basic Model) in publications by E. Alonso, A. Gens and former Ph.D. student A. Josa.
  - Expansive soils and rocks, which received a formal constitutive formulation as an extension of BBM.
  - Coarse grained aggregates and rockfill. Sensitivity to relative humidity changes was physically explained, modelled and tested in large testing cells (relevant contributions by former Ph.D. students L. Oldecop, C. Chávez and E. Ortega). Recent activity is directed towards further testing (C. Alvarado and Prof. E. Romero) and comprehensive rockfill description by DEM techniques (M. Tapias).
  - Compacted soils and the incorporation of microstructure as described in recent publications in collaboration with N.M. Pinyol and A. Gens.
  - Degradation of clay rocks under environmental conditions and rock joints described in recent papers with past doctorate students N.M. Pinyol, R. Cardoso, M.T. Zandarín and J. Pineda.
- **Development of computational models for dynamic conditions and large displacements** (Material Point Method). A pioneering contribution was the coupled flow-deformation analysis of Aznalcóllar dam (together with F. Zabala). Further work, performed by A. Yerro and M. Alvarado, includes the development of a computational tool for unsaturated soils (an interesting application is rain-induced failures) and the relevance of rate effects.
- **Forensic Engineering.** Understanding and explaining failures is a formidable experience to learn and to teach. This idea is the guiding objective of the recent books on Geomechanics of Failures (Springer) authored by E. Alonso, A. Puzrin and N.M. Pinyol. Current research is directed towards advanced landslide research including rate and thermal effects in cooperation with Dr N.M. Pinyol.
- **Crystal growth in Geomechanics**. This subject, which could be included in the vast area of chemical interactions in Geomechanics, started by a detailed monitoring and analysis of the unexpected and impressive damage suffered by tunnels and deep foundations in anhydritic clayey rocks. Basic mechanisms are now better understood. Recent contributions are co-authored by former doctorate students, I. Berdugo and A. Ramon.

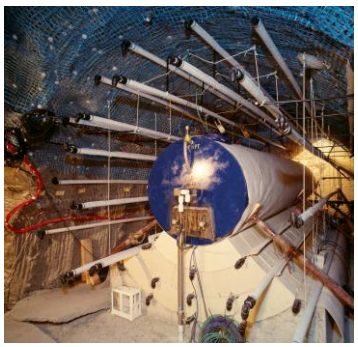


Figure 1. Engineered Barrier test in Monterri underground Rock Mechanics Laboratory, Switzerland. The model canister rests on dense expansive bentonite blocks during test

Figure 2. Relative Humidity controlled triaxial cell for rockfill aggregates

Figure 3. Gypsum crystals cover a discontinuity in anhydritic Lilla claystone

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Marcos Arroyo

Marcos Arroyo is a Civil Engineer specialized in geotechnics. He obtained his PhD at Bristol University (UK), with a thesis on the interpretation of laboratory seismic tests. He has worked for 8 years in geotechnical design offices. In 2005 he joined the Department of Geotechnical Engineering and Geosciences at UPC, where he is now Associate Professor. He has initiated a variety of research projects there that have attracted some 2.8 M€ of public and private funding. His research is problem-driven and relies on different numerical (DEM, FEM, PFEM) and experimental (laboratory & in situ testing) techniques to address questions of geotechnical interest. He is currently working on the modelling and interpretation of in situ tests, tool-wear on mixed soil-rock TBM drives, the application of robotics and active control techniques to geotechnical offshore drilling, hollow shaft construction and inspection, the micromechanics of sand production and the stability of reinforced shafts in deep mines. Previous projects have dealt with monopile lateral design, the geotechnical properties of TDA (tire derived aggregates), the design and simulation of excavations and tunnels in soft soils, coupled THM constitutive models for soil-cement design, sampling and testing of silty soils, atmospheric effects on rail track design. He is active in several CEN normative committees and has led to a number of dissemination efforts, amongst them the "Aula PaymaCotas", a symposium series in Tunnel Engineering.

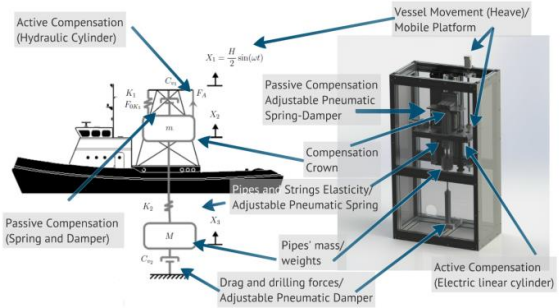


Figure 4. Active Heave Compensator prototype (from A. Arriaga MSc)

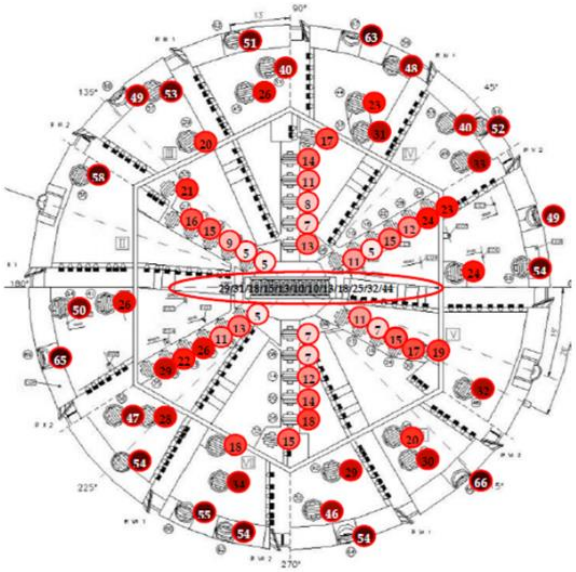


Figure 5. Mapping tool wear on a TBM (from C. González PhD)

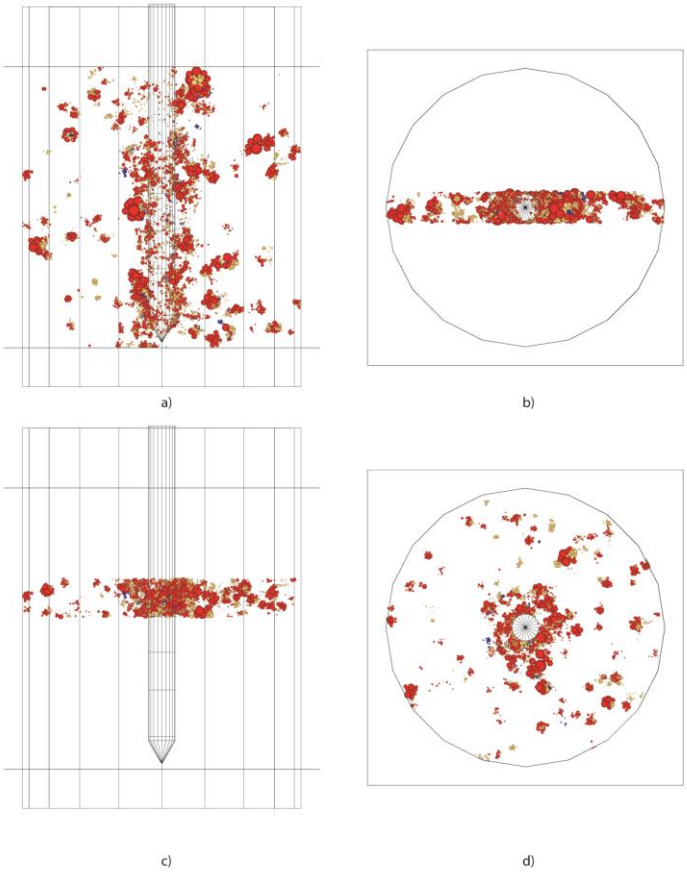


Figure 6. A DEM simulation of CPT induced soil crushing (with M. Ciantia and J. Butlanska)

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Ignacio Carol

Ignacio Carol is Professor of Rock Mechanics at the Department of Geotechnical Engineering and Geosciences, UPC.

He leads the research group of Mechanics of Materials, with active research lines in experimental and numerical aspects of mechanical and environmental behaviour of rock and concrete. Focus is placed on numerical models and lab testing for cracking and fracture-dominated phenomena, with special emphasis on mechanical behaviour and environmental degradation of materials and structures, including coupling effects due to flow and diffusion through existing discontinuities and developing cracks. Infrastructure generated by the group include lab equipment ranging from heavy 200T testing machine and large-capacity triaxial cell, to smaller sophisticated lab testing equipment for chemo-mechanical attack of cement and concrete, as well as computer codes for general-purpose FE analysis with large-scale parallel capabilities of materials, structures and geomechanical domains undergoing non-linear and time-dependent behaviour. Particular attention is paid to cracking, fracturing, flow or diffusion through those cracks, and subsequent chemical or pressure-induced cracking and coupling phenomena, etc. Modelling of discontinuities and cracks at all scales of observation makes use of zero-thickness joint/interface elements or XFEM equipped with fracture-based constitutive models, and other specialized tools. Applications range from micro (micrometer-scale simulations of nano-indentation of cement paste) to meso (mm- and cm-scale studies of heterogeneous concrete, rock or bone tissue specimens) and macro-scale (such as geomechanical analysis of fractured rock masses). Research funding comes from public competitive government grants supporting fundamental developments or lab equipment, as well as industrial projects supporting more applied activities in Civil, Mining and Oil & Gas Engineering.

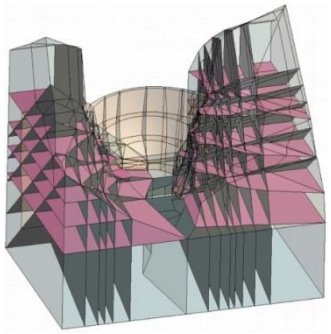


Figure 7. 3D rock mass model for the analysis of Canelles dam

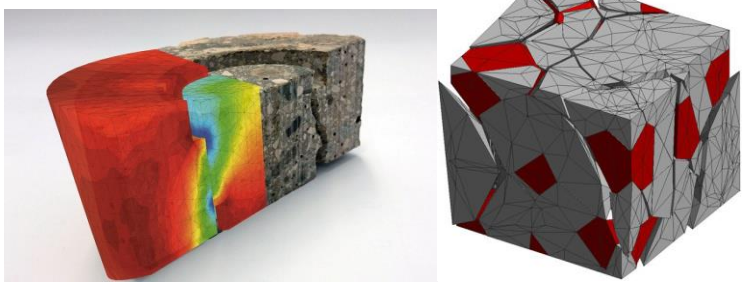


Figure 8. Testing and micromechanics fracture analysis

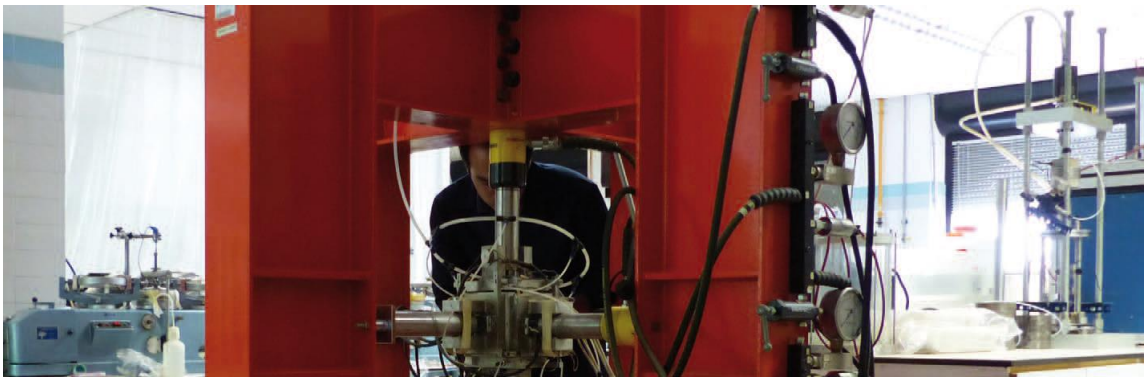


Figure 9. Triaxial testing of rock specimen under thermochemical attack

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Jordi Corominas

Jordi Corominas is full professor of Engineering Geology at the Civil Engineering School of Barcelona. His research has focused on natural hazards, and particularly on slope stability analysis, landslide hazard and risk assessment. Recent projects include the monitoring of large landslides, the quantitative analysis of rock fall risk, and the characterization of weak rocks and their degradation potential.

He has been organizer and co-chairman of the eight Spanish symposia on landslides. Currently, he is associate editor of the Landslides Journal; core member of the Joint Technical Committee (JTC-1) for Natural Slopes and Landslides; and President of the European Centre for Geomorphological Hazards of the Council of Europe.

The research group "EnGeoModels" (Monitoring and modelling in Engineering Geology), formed by Prof. Corominas, Dr Moya, Dr Hürlimann & Dr Mavrouli, deals with different topics on engineering geology, but its main focus is centred to landslides. For more than 30 years, the characterisation, the causes and the mechanics of different types of landslides have been investigated in order to understand better the processes and to improve hazard as well as risk assessment/mitigation. Recent activity includes sophisticated landslide monitoring of several landslide types (large slides in soil-like bedrock, shallow landslides and debris flows). At the moment three master sites are operational in the Eastern-Central Pyrenees: 1) the Vallcebre large landslide; 2) the Rebaixader debris-flow catchment; and 3) the Cercs shallow landslide.

The landslide monitoring with the longest time-series is the Vallcebre translational landslide, a very slow moving slide in clay shales with a volume of > 107 m^3, which started in 1987. The comprehensive monitoring system has significantly improved the understanding of the mechanics, the kinematic behaviour and the interaction between rainfall, pore water pressure and displacement rates of large landslides.

In 2009, the monitoring of debris flows (very rapid mass movements of saturated sediment) started in the Rebaixader catchment. Two types of mechanisms were registered. The initiation mechanisms are monitored by meteorological stations and infiltration stations. Dynamic behaviour of the flows is sensed by geophones, ultrasonic devices and a video cameras.

In 2013, a shallow landslide near Cercs was instrumented by new class of sensor network devices with wireless communication capabilities, exhibiting ultra-low power consumption and long-range communication.

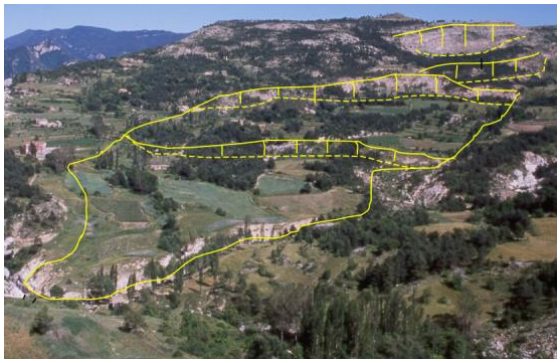


Figure 10. Overview of Vallcebre landslide

Figure 11. Overview of Rebaixader monitoring site for debris flows

Figure 12. Installation and calibration of the sensors in the field

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Antonio Gens

Antonio Gens is Professor of Geotechnical Engineering, he was Head of the Department of Geotechnical Engineering and Geosciences and member of the Governing Council of the University. He delivered the 47th Rankine Lecture, he is a Fellow of the UK's Royal Academy of Engineering and he has received a Doctorate Honoris Causa from the University of Grenoble. He has been elected Vice-President for Europe of the ISSMGE for the period 2003-2007.

His research interests notably involves unsaturated soils where he has played a prominent role in the description of the behaviour of unsaturated soils by suitable unified frameworks. This has been recently recognized by the invitation of the TC on Unsaturated Soils to deliver the first G.E. Blight lecture. Recent developments in this field include the inclusion of degree of saturation in the modelling of unsaturated soils (with D. Gallipoli and J. Vaunat), the consideration of microstructure in the modelling of compacted soils (with E.E. Alonso and N. Pinyol), formulation of double structure models for expansive clays (with E.E. Alonso, M. Sánchez and J. Vaunat), incorporation of chemical effects (with L. Guimaraes) and the extension of unsaturated models and concepts to freezing soils (with F. Casini, S. Nishimura, R. Jardine and S. Olivella).

He has also been intensely involved in the field of coupled multi-physics analysis in which mechanical, thermal, hydraulic and chemical phenomena and their mutual interactions are considered in a rigorous and integrated manner. The main sphere of application has been in the area of high-level nuclear waste disposal where coupled numerical analysis have been undertaken in relation to many large-scale field tests performed in several underground laboratories in Europe and the US. The generality and flexibility of the formulation developed has been demonstrated by applications in areas as diverse as the effect of climate change on permafrost, the stability of wellbores in petroleum engineering or the effects of rainfall on the stability of natural slopes.

Other recent computational activities concern the development and application of alternative or new numerical techniques such as DEM and PFEM to penetration problems, sand production in oil wells and other large displacements situations (with M. Arroyo, J. Butlanska, N. Climent and L. Monforte).

He has always been actively involved in a number of large civil engineering projects that have provided the opportunity for a range of research initiatives. They have involved, among others, deep excavations, tunnels, harbour quays and breakwaters, dams, nuclear and conventional power stations and large-scale scientific facilities. Recent research results (with M. Arroyo, A. Di Mariano, C. Gonzalez, D. Tarragó and M.T. Yubero,) concern the development of ground movements due to tunnelling in deltaic deposits, the optimization of ground improvement techniques, the stability of caisson quay walls and the study of tool wear in tunnels excavated by TBM in mixed soil-rock conditions.

Figure 13. The Canister Retrieval Test in the ASPÓ underground laboratory in Sweden test installation

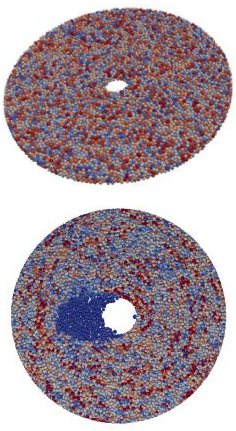


Figure 14. Sand production using coupled hydro-mechanical DEM

Figure 15. Construction of Barcelona Metro Line 9

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Alejandro Josa

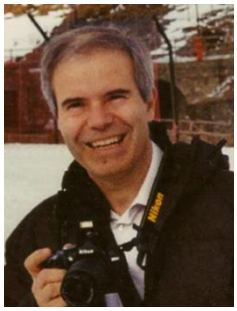
Alejandro Josa finished his Master Degree in Civil Engineering in 1981. He obtained his PhD from UPC with honours with a thesis in the field of Geotechnics (elastoplastic modelling of partially saturated soils) in 1988. This work got the "Extraordinary Award" for 1988 UPC thesis.

In the 80s and early 90s his research was mainly focused on the experimental analysis and modelling of unsaturated soils, the behaviour of foundations and the application of different types of concretes in low-volume road pavements. In the late 80s and 90s he joined different European groups working in the field of the environmental impact and Life Cycle Assessment (LCA) of cement-based products. Since then his research was mainly focused first on the environmental impact of cement and its applications through the LCA methodology and later on the assessment of sustainability through the application of multi-attribute utility theory and value analysis. His research in recent years has focused on the LCA of different construction applications (different types of urban pavements, rainwater harvesting infrastructures, water cycle system, and electrical mobility), the quantitative assessment of sustainability (theoretical models and application to different infrastructures) and the behaviour of geotechnical structures. He is author or co-author of national and international books, book chapters, journal papers, congress communications, research reports and PhD thesis in all these fields. He has also participated in research projects funded by open calls and contracts with public bodies and companies.

He is responsible for a master's course on LCA and sustainability assessment of infrastructures and two graduate courses on Soil Mechanics and Geotechnical Engineering; director of the UPC University Master program on Environmental Engineering; member of the executive and of the academic board of the UPC Research Institute for Sustainability Science and Technology (ISUPC); and deputy director of the UPC Department of Geotechnical Engineering and Geosciences.

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Alberto Ledesma



Alberto Ledesma is Professor of Soil Mechanics and Geotechnical Engineering. His main research interests include inverse problems in Geomechanics, numerical methods applied to geotechnical problems and unsaturated soils, having supervised several PhD thesis on these topics.

He is currently advising the companies involved in the design and construction of high speed railway lines in Spain. The contract includes not only geotechnical advice, but also research in: i) use of field instrumentation in tunnelling works and excavations to identify model parameters in a systematic manner by means of genetic algorithms and gradient based methods, ii) analysis of excavations and tunnels far from failure, developing new nonlinear elastic models for very small strain conditions. Both topics have found to be important in tunnelling in urban areas, where settlements are usually small and calibration of soil models becomes difficult.

He is also currently involved in a research project in collaboration with Dr Pere Prat, devoted to the analysis of desiccation cracks in soils and mine tailings. The project, funded by the Spanish Research Agency, includes laboratory and field desiccation tests.

He also collaborates with some Radioactive Waste Disposal Agencies in Europe (in particular with the Spanish Agency – ENRESA-, the French Agency –ANDRA- and the Swedish Agency –SKB-) in the analysis of large scale "in situ" experiments using expansive clays (bentonite) as sealing material for nuclear waste repositories. A recent example is his THM modelling of the "Temperature Buffer Test", funded by ANDRA and carried out at Äspö Hard Rock Laboratory in Sweden, where temperatures well above 100ºC where reached on the bentonite while artificially hydrated.

Finally, he has been working in the last 20 years in the numerical analysis of landslides simulating a wide range of different scenarios, including landslides on volcanic soils and toppling in jointed rock massifs. The large Vallcebre landslide constitutes a natural laboratory to compare continuous measurements with simulations. The role of viscosity in the displacements pattern is being analysed with the objective of developing predictive tools and warning systems.

Figure 16. High speed railway tunnel crossing Barcelona next to world heritage buildings

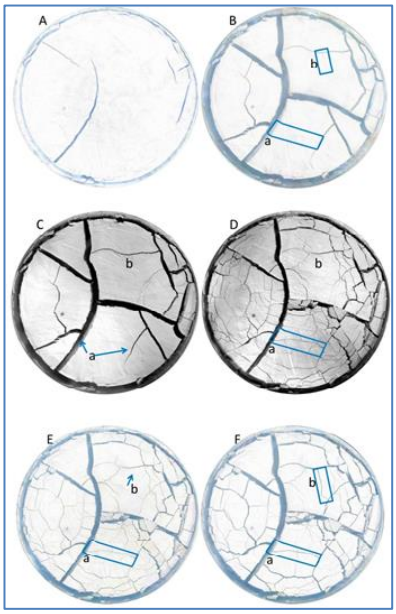


Figure 17. Cracking evolution on a clayey soil during drying-wetting cycles in an environmental chamber

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Antonio Lloret

Antonio Lloret obtained a Civil Engineering degree from the UPC in 1979, and then went on to do a PhD degree in Unsaturated Soil Mechanics, graduating in 1982. An innovative nonlinear coupled hydro-mechanical finite element model for unsaturated soil was developed. He worked as Research fellow from 1980 before joining the Department of Geotechnical Engineering and Geosciences (UPC) as Lecturer in 1982. He was appointed an Associated Professor in 1986, a position that he held until 2002, when he became Professor.

Since 1983 and during a period of 16 years he was Head of Laboratory of Geotechnical Engineering of the Department of Geotechnical Engineering and Geosciences at UPC. During this period a large number of innovative techniques and test equipment were developed, mostly related to Unsaturated Soil Mechanics.

He has published books, technical and scientific papers and he has supervised 10 PhD Thesis on Unsaturated Soil Mechanics, Soil Mechanics Laboratory, Geotechnical and Geoenvironmental Engineering, Expansive soils, Radioactive waste disposal, Slope stability, Hydromechanical behaviour of porous media and Mine tailings. His main research interests are unsaturated soil mechanics and laboratory testing and their application to Civil and Geoenvironmental Engineering.

He has been involved in a large number of major projects in Spain and Europe including foundation of nuclear power stations, slope stabilization, mine waste, clay barriers in nuclear waste disposal, excavations in urban areas, harbour design, instrumentation to "in situ" monitoring THM processes monitoring.

He has received the 1994 Telford Medal and the 2010 Geotechnical Research Medal from the Institution of Civil Engineers (UK).

Figure 18. Bentonite barrier in large-scale Febex nuclear waste disposal test (water content and dry density) after five years of heating and hydration

Figure 19. Instrumentation of mine waste deposits

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Professor Sebastià Olivella

Sebastià Olivella is Professor at the Faculty of Civil Engineering of the UPC. He graduated in 1987. His doctoral thesis on "Nonisothermal multiphase flow of brine and gas through saline media" was the starting work leading to the well-known Code_Bright Finite Element Program for THM analysis in porous media.

He has been vice-dean of Escola de Camins (Civil Engineering School) since 2000 and he became Dean in 2012. He has participated in a number of research projects in the field of isolation barriers for underground disposal of nuclear waste. He has co-authored more than 50 papers in international journals and has received the following awards: 2005 Crampton Price (ICE); 2006 Rock Mechanics Case History Award (ARMA, USA); 2009 Geotechnical Research Medal (ICE). He leads a project for the development of Code_Bright, which has been extended to model different kinds of geotechnical problems, such as earth and rockfill dams, engineered barriers and freezing problems.

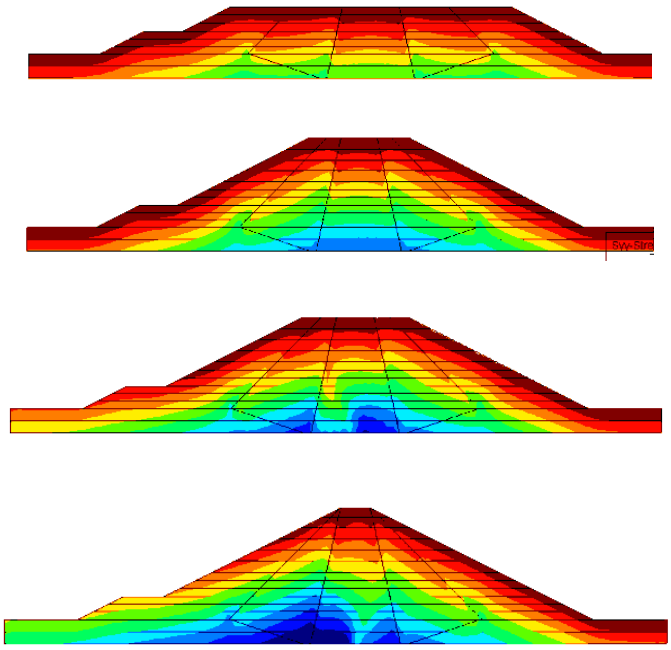


Figure 20. Stress distribution during construction and inundation of Beliche dam

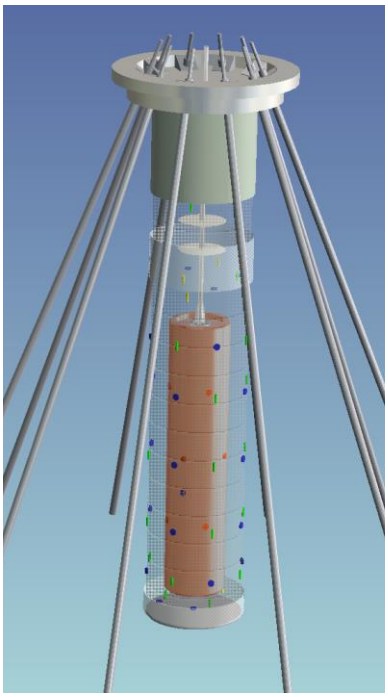


Figure 21. Simulation of water and gas injection in a nuclear waste disposal engineered barrier built with expansive clay blocks and pellets

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Núria M. Pinyol

Núria Pinyol is Lecturer in the Department of Geotechnical Engineering and a postdoc researcher in the International Centre for Numerical Methods in Engineering (CIMNE). She obtained her PhD at UPC in 2010. Her thesis describes the thermo-hydro-mechanical analysis of rapid landslides. It was awarded by UPC as the best thesis in the field of Civil Engineering presented in the period 2009-2010. One of her research interests still focused in the field of landslides. She is currently working modelling landslides using a coupled MPM (Material Point Method) code under development.

Other research topics, in collaboration with colleagues in her Department, include: (a) modelling of the geotechnical behaviour of earth and rockfill dams; (b) advanced constitutive modelling of unsaturated soils including microstructure; (c) constitutive modelling of soft rocks and hard soils including expansive behaviour and degradation.

She is a co-author of two original books published in Springer ("Geomechanics of Failures" and "Geomechanics of Failures. Advanced Topics") in which some real cases (Vaiont landslide, the sinking of Barcelona Harbour caissons and two tunnel instabilities, among other failures) are described and analyzed in detail. She teaches a course in the UPC Master in Civil Engineering based on these books. She is the author of 12 journal publications and 30 papers in international conferences and workshops. A paper published in Géotechnique ("A review of Beliche dam") was awarded the Crampton Prize (granted by ICE, UK) in 2006. In 2012 the International Consortium on Landslides selected a paper published in Landslides ("Canelles Landslide: modelling rapid drawdown and fast potential sliding") as the best paper of 2012. Recently, the Géotechnique paper on "Compacted soil behaviour: initial state, structure and constitutive modelling" received the Geotechnical Research Medal in 2013.

Núria Pinyol also acts as a consultant for private geotechnical companies in projects of underground excavations, earth dams and reinforced walls.

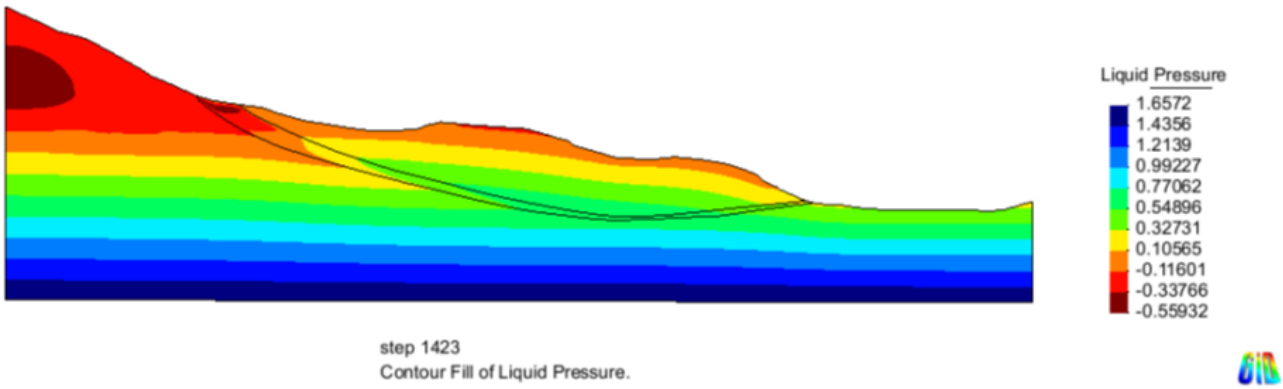


Figure 22. Canelles Landslide. Modelling rapid drawdown and fast potential sliding. *Landslides*

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Pere Prat

Pere Prat is an Associate Professor of Civil Engineering and member of the Geotechnics and Mechanics of Materials Research Group at UPC-BarcelonaTECH. Dr Prat's research focuses on the problem of cracking of soils. He has been the principal investigator, in collaboration with Dr Alberto Ledesma, of several research projects in the past ten years that have produced advances in: crack formation in soils due to changes in environmental conditions (such as drought), a recurrent phenomenon in Mediterranean-type climates with wide implications (e.g., change of soil's permeability or bearing capacity).

A fully instrumented environmental chamber capable of accommodating circular specimens of up to 80 cm in diameter and 20 cm thick was developed. Tests may be run under a variety of environmental conditions, simulation of drying-wetting cycles, changes of air temperature and/or humidity, etc. This chamber, in combination with a ground penetrating radar system, is being used to investigate key aspects such as the impact of crack opening in the volume of evaporated water, the cause of the different crack patterns seen on the top and bottom boundaries, or the three-dimensional crack pattern.

Currently, research focuses on the soil-air interface and on the scale-effect, related to boundary effects. Models capable of predicting the initiation and propagation of cracks in soils are being developed. The main research test, currently under way, is a large-scale experimental setup, under natural conditions, fully instrumented to measure solar radiation, rainfall intensity, wind speed/direction, air and soil temperature and moisture and soil suction.

Figure 23. Environmental chamber

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Enrique Romero

Enrique Romero is the Director of Research and Head of the Geotechnical Laboratory. He has strong research interest in fundamental behaviour of geomaterials (soil, rockfill material and rock) and their applications to geotechnical engineering problems in the areas of embankments, engineered barriers, radioactive waste repositories, dam construction and slope stability. His expertise and research team efforts focus on the constitutive modelling of unsaturated geomaterials and on advanced laboratory testing related to multi-scale and coupled phenomena involving mechanical, hydraulic, thermal, geochemical, biological and electrical process.

Recent research areas of his current PhD students and researchers on experimental geomechanics include: (i) gas transport process in low-permeability argillaceous formations; (ii) thermo-hydro-mechanical behaviour of deep argillaceous formations and tracking their degradation along hydro-mechanical paths; (iii) chemo-hydro-mechanical behaviour and evolution of the microstructure of clay-based engineered barriers (sand/bentonite and pellet-based mixtures); (iv) hydro-mechanical behaviour of compacted soils with particular emphasis on microstructure, inclusion of large fragments and anisotropy effects; (v) hydro-mechanical behaviour of coarse aggregates (rockfill material) with special emphasis on scale effects, long term compressibility and chemical effects; (vi) thermo-hydro-mechanical coupling in fast planar sliding process using a new shearing prototype; (vii) freezing-thawing behaviour of natural soils; and (viii) microbial induced calcite precipitation for application in compacted soils. Enrique Romero's team at the Geotechnical Laboratory has been also involved (in collaboration with different centres of research and Universities) in the development of new prototypes and medium-scale cells for multi-physical testing of unsaturated geomaterials, including an EIT hydro-mechanical oedometer (developed jointly with Politecnico di Torino, Italy) to monitor spatial and time variability in soils with electrical measurements.

Enrique Romero also leads research activities in connection with geological repositories for deep radioactive waste disposal. He has been researcher in charge of more than 25 industrial research grants for more than 12 years with National Management Agencies for Radioactive Waste Disposal (ONDRAF/NIRAS and EIG EURIDICE in Belgium, NAGRA in Switzerland, Obayashi Corporation in Japan). Principal investigator in several international research staff exchange grants with national (Spain) projects and the European Commission. He has been active in the organisation of scientific events at international level, member of the editorial board of several international journals, and member of the new TC308 on Energy Geotechnics of ISSMGE and the EuraSEM Technical Committee on Rock and Soil Mechanics. Enrique Romero has been author and co-author of over 220 research publications in peer-reviewed journals, refereed conferences and book chapters, including the co-editor of three books on advanced experimental geomechanics: 'Advanced Experimental Unsaturated Soil Mechanics' (2005, Taylor & Francis Group), 'Laboratory and Field Testing of Unsaturated Soils' (2009, Springer) and 'Advanced Experimental Techniques in Geomechanics' (2012, ALERT Geomaterials INPG-3SR).

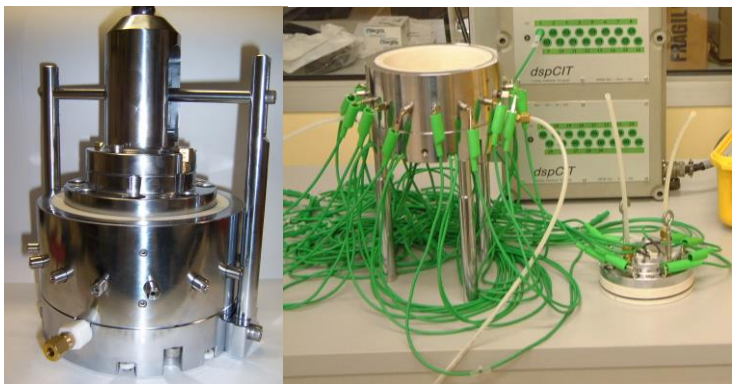


Figure 24. EIT oedometer cell developed jointly with Politecnico di Torino (Dr G. Musso and Dr S. Foti)

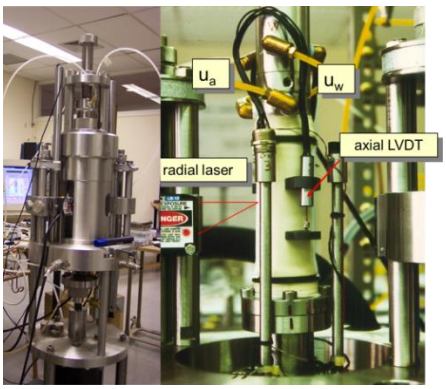


Figure 25. UPC controlled-suction triaxial cell with electro-optical laser based system for soil volume change measurement

Research Highlights (Con't)

Universitat Politècnica de Catalunya – Jean Vaunat

Jean Vaunat is Associate Professor in Geotechnical Engineering at the Technical University of Catalonia. The major focus of his work is on the modelling of coupled problems in applied geotechnical problems. One of the main applications lies within the issues associated with the storage of nuclear waste repository: excavations in hard clays and clayey rocks, response of hard clays and clay rocks under thermal loads, hydration of bentonite-based seals, thermo-hydro-mechanical behaviour of interfaces, long-term response of repositories and fully coupled THM models at the scale of the repository (kilometric). Other applications focus on the modelling of civil works in unsaturated soils and of soil-atmosphere-vegetation couplings, including mechanical coupling, with particular emphasis on issues related the response of man-made and natural slopes under climate change.

His research interests involve modelling of coupled problems: design of experimental tests to capture processes and parameters, development of advanced constitutive modelling, efficient numerical implementation of the models, numerical techniques to regularize instabilities and handle very large problems as well as prediction and interpretation of real problems. Recent fundamental research activities focus on the modelling of the effect of microstructural changes on the macroscopic THM-C behaviour of soils and rocks, the modelling of structured materials and the development of microscopic models to be implemented in the analysis of boundary-value problems. He participates actively in the development of the Finite Element programme Code_Bright.

Jean is Director of the Master of Geotechnical Engineering and Earthquake Engineering (www.etcg.upc.edu) of the Technical University of Catalonia. This Master proposes an integrated offer of advanced courses in the main disciplines related to ground response: Geotechnical Engineering, Groundwater Engineering and Earthquake Engineering, from fundamentals to applications. Teaching is organized along several specialities (Geotechnical Engineering, Hydrogeology and Earthquake Engineering) and also in transversal curricula across specialties, which allows the students to acquire knowledge in multidisciplinary emerging topics (geo-energy, modelling of coupled process, ground hazard and risk assessment, etc.).

Reports from Member Societies

Korean Geotechnical Society (KGS) and Japanese Geotechnical Society (JGS)

The 2nd Korea-Japan Round Table Meeting

The 2nd Korea-Japan Round Table Meeting was held in Seoul, Korea, on April 25, 2014 as one of the events planned for celebration of the KGS's 30th Anniversary.

It was organized jointly by Korean Geotechnical Society (KGS) and Japanese Geotechnical Society (JGS) to discuss current issues, problems, and solutions for geotechnical engineering of the two societies.

The 1st Korea-Japan Round Table Meeting was held in Jeju Island, Korea on December 2, 2011, with the main theme of "The Future of Geotechnical Engineering".

The 2nd Korea-Japan Round Table Meeting was held with the main theme of "The Present and Future of Fusion Technology between Geotechnical Engineering and IT" (the main technologies : BIM(Building Information Modeling), Automatic Measurement System, Disaster Management System, 3D Geomodeling System, Robot Technology) and also with the sub theme of Population Decrease, Durability and Maintenance of Structures, Repository of Used Nuclear Fuels, Proposal of New Life Style, and so forth.

In the opening ceremony of the meeting, there were opening speech from President Seung-Ho LEE of KGS, introductory speech from Advisor Soo-Sam KIM of KGS, and finally congratulatory message from the Vice President Ikuo Towhata of ISSMGE.

The following five presentations were delivered by the Korean and Japanese experts;

- Application of Civil BIM, Integrated DB for National Geotechnical Information, and Fusion with IT in Geotechnical Engineering
- Robotics for Lunar Exploration
- Trend and Issues in Applications of ICT to Geotechnical Engineering
- The Present and Future of Civil BIM for Domestic and Oversea Projects - Focused on Geotechnical Engineering
- Scope for the Future of Construction Engineering

Figure 1. Discussion after presentation

Figure 2. Participants of the 2nd Korea-Japan Round Table Meeting

Hyun CHO
Yoichi WATABE

Reports from Member Societies
Malaysian Geotechnical Society (MGS)

Prof. Roger Frank, President of ISSMGE and Prof. Brian Simpson, visit to Kuala Lumpur (KL) on 14th to 21st November 2014

Welcome Dinner for Prof. Simpson: 14th Nov 2014 (Friday)

Prof. Brian Simpson arrived in Kuala Lumpur on Nov 14, 2014. A dinner was arranged to welcome him. The dinner was hosted by the Prof. Chin Fung Kee Memorial Lecture Advisory Board and Organizing Committee led by Dr Ting W.H. The Managing Director of Arup (Malaysia), Ir. Wan Anuar Endut was also present.

Prof. Simpson is an Arup Fellow and Chairman of the British Standards Institution on Geotechnical Codes.

Figure 1. Committee Members at the dinner with Prof. Simpson in Petaling Jaya

24th Professor Chin Fung Kee Memorial Lecture: 15th Nov 2014 (Saturday)

Prof. Simpson delivered the 24th Annual Professor Chin Fung Kee Memorial Lecture on the subject "Seeking the Code of the Ground" at Professor Chin Fung Kee Auditorium, Wisma IEM. The lecture was jointly organized by The Institution of Engineers, Malaysia and The Engineering Alumni Association of the University of Malaya, and was also supported by the Institution of Civil Engineers (Malaysian chapter). The lecture was attended by 130 engineers and students. The main sponsor of this year's lecture was Arup Jururunding (M) Sdn Bhd.

Prof. Simpson explained that there are three issues dealing with the ground: deformation, water and safety. He explained the concepts of stress and strain, reminding the audience that strain is more important with regard to interaction with structure. He added that geotechnical engineers must be aware and beware of the forces of water. Prof. Simpson reminded that engineers must ensure that safety is paramount and should be achieved with economy. He made many references to his work in the Eurocode 7 and illustrated these guiding principles using many case histories from all over the world. The lecture paper was published in Jan 2015.

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)


Figure 2. Prof. Simpson and audience during 24th Annual Professor Chin Fung Kee Memorial Lecture

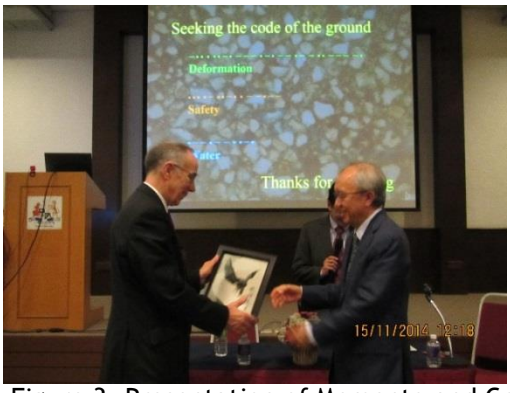


Figure 3. Presentation of Memento and Certificate of Appreciation to Prof. Simpson

Welcome Lunch for Prof Roger Frank: 15th Nov 2014 (Saturday)

Prof. Roger Frank, the current President of ISSMGE, arrived in Kuala Lumpur on Nov 15, 2014. A lunch was arranged by the Malaysian Geotechnical Society (MGS) to welcome Prof. Frank. Committee Members of MGS present at the lunch exchange thoughts and views of MGS and possible support from ISSMGE. Prof Frank explained the role that ISSMGE plays among international societies and encouraged MGS to make reference to their website.

Following lunch, the 6th MGS Committee General Meeting was held. Prof. Frank remained as the observer at the meeting.

Figure 4. Prof. Frank with MGS committee during the welcoming lunch

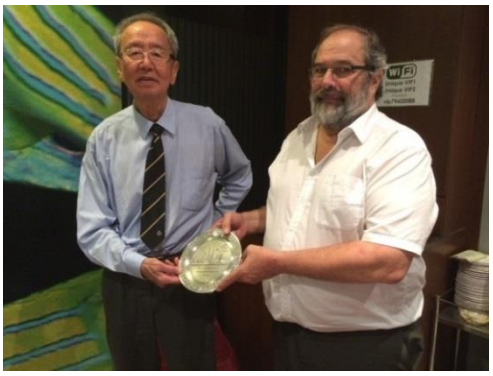


Figure 5. Chairman of MGS Dr Ting presents a memento to Prof. Frank in appreciation of his visit to Malaysia

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)

KL Site Visits: 16th Nov 2014 (Sunday)

Prof. Frank and Prof. Simpson visited a few station boxes for the KVMRT (KL Metro) project in Kuala Lumpur. They were shown shafts as deep as 45m in KL Limestone. They were encouraged to see the scale of geotechnical challenges faced by local designers and contractors. Due to the highly variable rock head and the presence of cavities, different ground engineering solutions were employed. These included the use of secant piles, heavy struts, ground anchors, cement-soil mixed walls, rock-bolting, rock-grouting, guniting and cavity filling techniques.

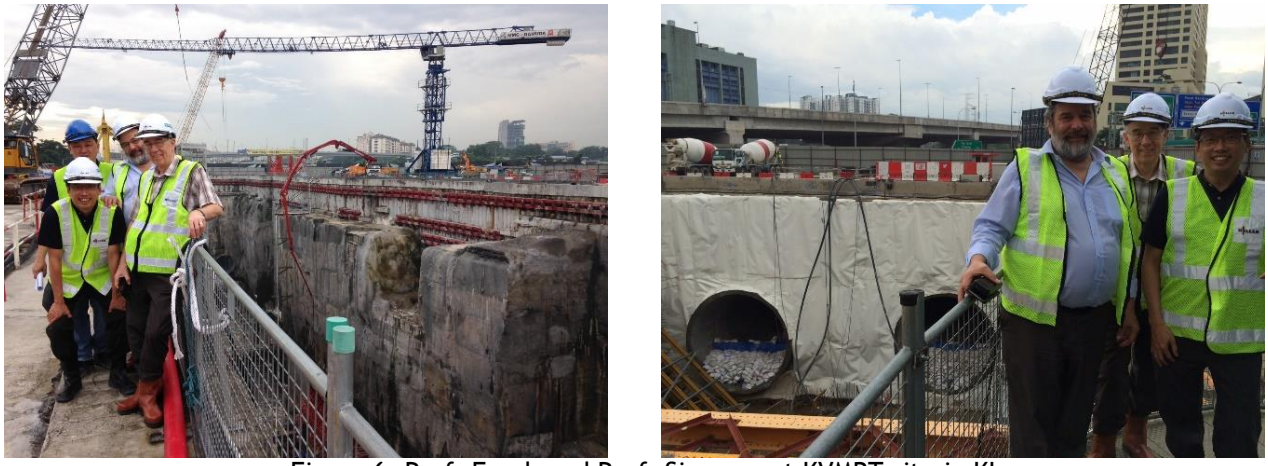


Figure 6. Prof. Frank and Prof. Simpson at KVMRT site in KL

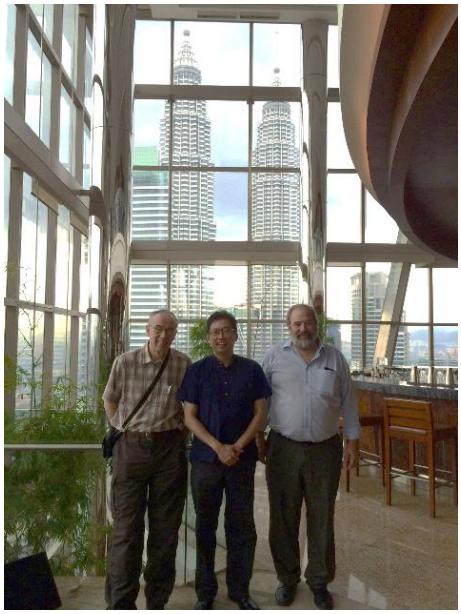


Figure 7. Lunch near the KL Petronas Twin Tower

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)

Seminar on Foundation and Retaining Wall Design: 17th Nov 2014 (Monday)

Prof. Frank and Prof. Simpson conducted a 1-day seminar on Foundation and Retaining Wall Design at the Professor Chin Fung Kee Auditorium, Wisma IEM. The seminar was attended by about 60 engineers. Prof. Frank began the first part of his presentation on the topic, "Pressuremeter Testing and Foundation Design". The speaker introduced how the design of shallow and deep foundations is done using data from the Menard Pressure Meter (MPM). Some experimental long duration monitoring of shallow foundations and instrumented pile tests results under different ground conditions in France were shown. Questions from the audience regarding applicability of MPM to embankments and group action of piles were raised before the session was adjourned for tea break.

The second session of the workshop on Retaining Walls under the theme of "What can go Wrong?!" was given by Prof. Simpson. Different modes of failure of retaining walls were explained and illustrated with the help of actual case studies and with reference to EC-7. The speaker pointed out that usually problems arise not because of erroneous calculation, but because something was forgotten during the design process. He reminded engineers that they should not forget fundamentals of engineering design: visiting the site; making to-scale drawings of the problem; and reviewing available data. He explained in detail the investigation of the Nicolle Highway collapse (Singapore), and emphasized the importance of communication (especially documented).

After lunch, Prof. Frank spoke on "The New French Standard for the Application of EC-7 to Deep Foundations". He expounded on the design guides set out in the new French Standard for deep foundations (NF P94 – 262, 2012), where design parameters are set out using accrued data from actual pile tests. He demonstrated how PMT and CPT test results can be used in accordance to EC-7 to arrive at optimal design.

The last session of the workshop on "Retaining Structures – Getting it Right" was given by Prof. Simpson. Continuing from his morning session, Prof. Simpson suggested ways to avoid pitfalls in retaining wall design. He explained systematically how EC7 can guide the designer. He touched on the new revisions in EC7 with respect to ground anchors and reminded that the anchor goes through a "life" of constant stress changes from installation to long term performance. The audience asked many questions, especially regarding the use of numerical analysis in accordance with EC-7 in the design of retaining walls. Prof Simpson made reference to his paper presented at the 18SEAGC.

The workshop concluded with certificates of appreciation being presented to the speakers by MGS.

Figure 8. Photos taken during Foundation & Retaining Wall Design seminar at Professor Chin Fung Kee Auditorium

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)

Welcome Dinner for Prof. Roger Frank and Prof. Simpson by ICE: 17th Nov 2014 (Monday)

Ir. Dr Ooi Teik Aun, the Malaysian representative from the Institution of Civil Engineering Malaysia (ICE) arranged a dinner to welcome Prof. Frank and Prof. Simpson in Petaling Jaya. The dinner was attended by Guest of Honour, the Institution of Engineers, Malaysia (IEM) President Dato' Ir. Lim CH and many other geotechnical practitioners.

Figure 9. ICE dinner in PJ attended by IEM President and 40 guests

Workshop on EC7: 19th Nov 2014 (Wednesday)

Prof. Simpson conducted a 1-day design workshop on "Eurocode 7" at the Professor Chin Fung Kee Auditorium, Wisma IEM. Prof. Simpson began by explaining the evolution of the Eurocodes over a period of more than five decades. He then proceeded to introduce the Euro Norms, with particular emphasis being on EN1990 and EN1997. He illustrated limit state design principles, partial safety factors, design values of actions and their effects which are given in EN1990, with specific applications on geotechnical design. On EC-7, the different design approaches, load combinations and characteristic values were explained with the help of worked examples.

After tea break, Prof. Simpson resumed the workshop by explaining how the Eurocodes aim to execute the design with the help of complementary documents such as the British Standards (BS), Published Documents (PD) and Non-Conflicting Complementary Information (NCCI). He then moved on to expound on EC-7, Section 6 in particular the approach to the design of Shallow Foundations with the help of illustrations and worked examples before breaking for lunch.

In the third session, Prof. Simpson introduced a number of commentaries written on EC-7 and also the features contained in the online facility (Eurocodes Plus). Section 7 of EC-7 on Piled Foundations was explored to an appreciable depth with concise examples.

During the last session, Prof. Simpson touched on Sections 3, 4, 5, 10 and 11 of EC-7 Part 1 and on EC-7 Part 2. He answered questions from the audience in regard to which design direction are to be followed for specific cases, model factors and effect of different load tests on design of Piled Foundations. The workshop ended with presentation of certificate of appreciation to Prof. Simpson.

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)

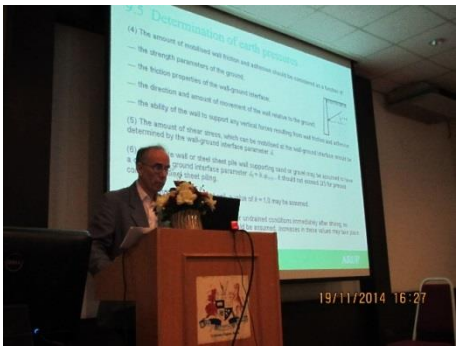


Figure 10. The design workshop on "Eurocode 7" at Professor Chin Fung Kee Auditorium attended by 40 engineers

Dialogue with Public Works Department (JKR) Directors: 20th Nov 2014 (Thursday)

MGS and IEM organized a dialogue with Directors from JKR (Geotechnical) with regards to implementation of the EC-7. Dr Mohd Nor (Chairman of meeting) informed that Dato' Dr Aziz (Structure Section Head absent with apologies) has announced that JKR will encourage submission of design documents for JKR projects using MS EN from Jan 1, 2015. Two years later (from Jan 1, 2017), the use of BS EN for JKR projects will be mandatory. Prof. Simpson shared from his experience in the United Kingdom with regards to implementation of EC7 and gladly answered questions. The meeting ended after one and half hours of discussion and exchange of views, after the Chairman thanked Prof Simpson.

Figure 11. Photos taken during dialogue session with JKR.

Reports from Member Societies

Malaysian Geotechnical Society (MGS) (Con't)

Workshop on EC7: 21st Nov 2014 (Friday)

Prof. Simpson gave a 1-day design workshop on "Eurocode 7" at Auditorium Perpustakaan, Kuala Lumpur organized by the Road and Geotechnical Engineering Branch, Public Work Department (JKR) and supported by MGS. The objectives of the workshop were to provide greater understanding of the EC-7 general principals and concepts to engineers in JKR and to create awareness on the implementation of EC-7.

Dr Mohd Nor, the head of Geotechnical Engineering Branch, chaired the seminar and reminded participants that submission of design using EC-7 will commence in Jan 1, 2015 and become compulsory from Jan 1, 2017, for JKR projects. He encouraged JKR engineers, Consultants and Contractors to familiarize themselves with EC-7 and start using the code in their everyday work.

Prof. Simpson explained the development of the Eurocodes in the UK and in Europe, over the last 30 years. He highlighted the differences between the current British Standard and the EC-7, in particular, the limit state design principles. He used latest back-analysed data from UK to show that design using EC-7 largely yielded equivalent results to the former design using of safety factors, but in a more consistent approach with structural designers. This helped enhance design synergy with structural design (soil-structure interaction application).

Prof. Simpson encouraged users to make reference to the many commentaries now available in the market and also, the on-line Eurocode Plus. He also mentioned that there are guidelines given the suite "Execution of Special Geotechnical Works" that can be used for practical application in the field. He encouraged users to give feedback on the use of the Code as the drafters are constantly updating the Code for practical application.

The Workshop ended at 5pm and the Chairman thanked Prof. Simpson for coming to Malaysia to help with implementation of EC-7.

Figure 12. Photos taken during design workshop on EC-7 at Auditorium Perpustakaan Kuala Lumpur

Ir. Yee Yew Weng
Secretary General, MGS

Young Members' Arena

3 Young Faculty receive NSF CAREER Award

Introduction

Three assistant professors in geotechnical engineering, Shideh Dashti, Tong Qiu and Cassandra Rutherford, have received the U.S. National Science Foundation (NSF) CAREER Awards. CAREER awards, administered under the Faculty Early Career Development Program, are the NSF's most prestigious form of support and recognition for junior faculty who "exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations."

The research being pursued by these young professionals is broad and focuses on solving geotechnical issues in which further understanding is needed. From studying liquefaction mitigation measures, landslide mobility, and tidal current foundations, the results will hopefully make an impact not only within the geotechnical engineering discipline, but also on our communities. Outreach efforts to disseminate the knowledge are also part of the grant, fostering the importance of geotechnical engineering for younger generations.

Shideh Dashti, PhD
Assistant Professor, University of Colorado at Boulder
shideh.dashti@colorado.edu

CAREER: Toward a New Paradigm in Evaluating and Mitigating Urban Liquefaction

This Faculty Early Career Development (CAREER) grant will create a new approach for evaluating the behavior of clusters of buildings on liquefiable ground during earthquakes, and pave the way toward designing mitigation measures that improve building performance at a system level. Earthquake-induced soil liquefaction can cause substantial damage to urban areas where multiple buildings and infrastructure systems are clustered. Previous studies have shown that buildings located in close proximity to one another can interact during earthquakes affecting ground motions, settlement patterns, and building damage potential. The parameters that control the seismic performance of building clusters are poorly understood. As a result, mitigation measures that are currently designed perform poorly, particularly when the performance of a building is evaluated in the context of its surroundings. This award supports a systematic study of the impact of adjacent buildings on the effectiveness of liquefaction remediation techniques. In doing so, this award contributes to the resilience of cities globally. In its outreach plan, this effort will improve production and dissemination of knowledge on infrastructure performance during urban disasters through a pilot, community reconnaissance platform. In its educational plan, the grant aims to improve retention among engineering students through pedagogical innovations and an international post-disaster reconnaissance program for undergraduate students.

This CAREER grant will advance the science and practice of disaster mitigation in urban areas by enhancing the fundamental understanding of how building clusters respond during earthquakes. The primary objectives of this research are to: 1) study the impact of multiple structure-soil-structure-interaction (SSSI) on the seismic performance of buildings on liquefiable soils and on the effectiveness of mitigation techniques; and 2) identify the fundamental predictors of building performance individually and as a cluster. This will be done through a combination of centrifuge experiments and numerical simulations. This study sets the groundwork for the future development of a probabilistic liquefaction mitigation methodology that relies on mechanistically validated models. The development of validated numerical models and knowledge of the key predictors of the performance of building clusters will enable an effective mitigation of the liquefaction hazard at a scale beyond one isolated building. This effort will enable designing future mitigation measures that dissipate seismic energy and deformation simultaneously to improve performance at a system level.

Young Members' Arena (Con't)

3 Young Faculty receive NSF CAREER Award

Tong Qiu, PhD, P.E.
Assistant Professor, Pennsylvania State University
tqiu@engr.psu.edu

CAREER: Experimental, Numerical, and Case Studies of Landslide Mobility

This Faculty Early Career Development (CAREER) Program grant will advance the understanding of landslide mobility. Rapid flow-like landslides such as mud flows, debris flows, and rock avalanches are capable of mobilizing large volumes of soil and rock and impacting large areas, often far from their source because of their high mobility. Globally, rapid flow-like landslides cause billions of dollars in damage and thousands of deaths and injuries each year. As evidenced by the recent Oso Landslide (March 22, 2014) in Snohomish County, Washington, landslide mobility remains poorly understood. This award supports fundamental research to provide the knowledge needed for advancing the understanding of landslide mobility, and reliably predicting landslide runout. Results from this research will improve current landslide hazard assessment and ultimately help reduce future losses to society from these devastating geohazards. The international component of this project will foster international collaborations that contribute to the training of globally-engaged engineering students.

The objective of this research is to advance the understanding of the effects of solid-like behaviors of landslide mass and fluid-solid interaction on landslide mobility, which play important roles but have been overlooked in the past. To achieve this objective, integrated experimental, numerical and case studies that span laboratory and field scales will be conducted. Laboratory-scale flume tests will be conducted to investigate the impact forces generated by a sliding mass on a rigid obstruction. The slide mass will have varied porosity, mass, and release height and pattern. In the numerical investigation, a three dimensional smoothed particle hydrodynamics model will be developed, which will incorporate the latest advancements in contact algorithms, formulations of landslide mobility, two-phase debris flow models, and parallel computing. The developed numerical model will be calibrated and validated against the laboratory-scale flume tests conducted in this research, well-documented field-scale flume tests conducted by others, and case histories of long-runout landslides. The fully validated numerical model will then be utilized to gain insights into the effects of internal stress field, fluid-solid interaction, and evolution of porosity, stiffness, and bulk density of the sliding mass on landslide mobility.

Cassandra Rutherford, PhD
Assistant Professor, University of Illinois at Urbana-Champaign
Member of the ISSMGE's Young Member Presidential Group
cjr@illinois.edu

CAREER: Experimental Modeling of Tidal Current Turbine Foundations: An Integrated Research and Education Plan

This Faculty Early Career Development (CAREER) Program grant will advance the understanding of the unique behavior of tidal current foundations and improve science and engineering education at the elementary and high school levels, while promoting increased diversity in the field of geotechnical engineering. The research will investigate efficient and reliable foundation systems for undersea tidal current turbines. The foundations must be designed to resist high lateral loads as well as vertical and horizontal cyclic loading from the oscillating turbine blades, allowing the turbines to effectively absorb and harness the tidal energy while attached to the seafloor. Decreasing the cost of the foundation system can be an important part of making tidal power a viable and economical source of electricity. The research tasks will be used to produce educational products such as learning modules, demonstrations, animations and videos that will be implemented in the courses taught by the researcher and in K-12 outreach programs. A renewable energy lesson will be created for the 4th grade students at Booker T. Washington STEM Academy and the Girls Adventures in Mathematics, Engineering, and Science (G.A.M.E.S) camp for high school girls.

Young Members' Arena (Con't)

3 Young Faculty receive NSF CAREER Award

The research objective of this project is to evaluate suction caisson foundation systems for tidal current turbines by examining the foundation performance using both 1g bench-scale (in transparent soil and Kaolin) and centrifuge testing under combined cyclic loading. This research focuses on the cyclic nature of the vertical, horizontal and moment loading due to waves, the rotation of the tidal current turbine blades and the change in direction of the horizontal loading due to ebb and flow tides. Although there have been many studies on the use of suction caissons as anchors with diameters less than 10m (Length/Diameter = 3-5), few researchers have investigated using suction caissons as foundation elements in soft clays with intermediate aspect ratios of L/D = 1-3. In addition, the unique vertical cycling and semidiurnal or diurnal (12 or 24 hr) tidal cycling of the horizontal load has not been accounted for in previous designs of suction caisson foundations. The focus of the experimental testing is to investigate the foundation performance, failure modes, load-displacement response, yielding behavior, and cumulative displacements under cyclic loading. The research effort will result in: (i) high quality laboratory data; (ii) load-displacement curves, and (iii) failure envelopes/interactions diagrams that will allow for the continued study of the utilization of tidal current turbines as a renewable energy source.

Cassandra Rutherford

Report from an ISSMGE Foundations Recipient

The 7th International Congress on Environmental Geotechnics (10th – 14th Nov 2014)

The environmental geotechnics is a newly emerging field, involving study of the contribution of natural process in geotechnical systems. My research interests are recycling-reuse-biocementation which is entirely new to me. 7ICEG was the right place to get exposure of what has been done and what are the future prospects. The congress gathered more than 300 researchers and professionals of related backgrounds from around the world. The congress covered most of the demanding topics in the form of keynote lectures and oral and poster presentations. The keynote lectures were very comprehensive and informative. I learnt about various biocementation processes and their limitations, which will help me to decide the most suitable one for application to the geomaterial in Oman. Furthermore a lot of interesting data was presented about the laboratory and field scale studies. The main themes of congress were "Containment & Management of Waste", "Energy Geoenvironmental Technology", "Containment & Management of Waste", "Developments in Geosynthetics for Environmental Protection", "Biogeotechnical Engineering" and "Soil, Ground Vapor and Groundwater Remediation and Redevelopment of Derelict Land" Venue of the congress was at the Melbourne convention and exhibition center on the bank of Yaara river, which provided beautiful scenic views. We did not have to visit the Melbourne Zoo to see Australian Koala, because the congress organizers brought one to exhibit during a tea break which became point of interest for the participants. The conference also provided socializing opportunities during the gala dinner at the National Gallery of Victoria. Best paper awards were also given for each theme of the congress. I am very grateful to the ISSMGE Foundation for making it possible to attend the 7ICEG which has improved my understanding of present research. Last but not the least; I am indebted to the Pakistan Geotechnical Engineering Society for continuous linkage of local geotechnical engineers with the international forum of ISSMGE

Figure 1. Presenting at the Conference

Figure 2. A view of 12 apostles on the Australian coastline

Figure 3. A view of conference gathering with Koala

Mohsin Usman Qureshi
Pakistan Geotechnical Engineering Society

Hot News

ISSMGE's International Journal of Geoengineering Case Histories

ISSMGE's International Journal of Geoengineering Case Histories is pleased to announce its new Editorial Board Members and that it is now indexed in Georef

The International Journal of Geoengineering Case Histories proudly announces that its request to be indexed in Georef has been approved!

All its articles are now part of the Georef database. Georef is the leading geosciences database in North America, established by the American Geosciences Institute (AGI) in 1966. The database was created with the mission to provide access to the most comprehensive geosciences literature worldwide, containing nowadays millions of references to geosciences maps, serial and non-serial literature. Coverage for North American resources starts in 1669, whereas worldwide coverage starts in 1933. From now on, the International Journal of Geoengineering Case Histories and all its past and future papers are going to be part of this database.

In addition, we are pleased to announce the composition for the period 2014 - 2017 of the new Editorial Board of the International Journal of Geoengineering Case Histories, as presented below

Editorial Board Membership 2014 - 2017

George Athanasopoulos
Professor, University of Patras, Greece

Heinz Brandl
Professor, Tech. Univ. of Vienna, Austria

John Christian
Consultant, USA

Richard Bathurst
Professor, Royal Military College of Canada

Jonathan D. Bray
Professor, Univ. of California at Berkeley, USA

Luiz Guilherme DeMello
Assistant Professor, Univ. of São Paulo, Principal of Vecttor Projetos, Brazil

Antonio Bobet
Professor, Purdue University, USA

John Burland
Professor Emeritus, Imperial College, U.K.

Michael Duncan
Professor, Virginia Tech, USA

Rudolph Bonaparte
President & CEO GeoSyntec Consultants, USA

Turan Durgunoglu
Professor, Boğazici University, Istanbul, Turkey

Russell Green
Professor, Virginia Tech, USA

Hot News

ISSMGE's International Journal of Geoengineering Case Histories (Con't)

Mike Jamiolkowski
Professor Emeritus, Tech. Univ. of Torino, Italy

Paul G. Marinos
Professor Emeritus, National Technical University of Athens
Greece

Mark Randolph
Professor, The University of Western Australia, Australia

Rolf Katzenbach
Professor, Technical University of Darmstadt Germany

Paul W. Mayne
Professor, Georgia Institute of Technology, USA

François Schlosser
President-Director of Terrasol & Professor à l' École Nationale des Ponts et Chaussées, France

Demetrious Koutsoftas, Arup
San Francisco, USA

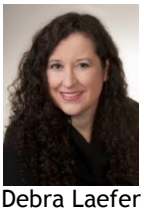
Za-chieh Moh
Chairman MAA Group Consulting Engineers, Taiwan

Raymond B. Seed
Professor, University of California at Berkeley, USA

Suzanne Lacasse
Norwegian Geotechnical Institute, Norway

Sissy Nikolaou
PhD, PE, Mueser Rutledge Consulting Engineers

William Van Impe
Professor, Ghent State University, Belgium
Past-President of ISSMGE



Debra Laefer
Associate Professor University College Dublin, Ireland

Charles W.W. Ng, Chair Professor,
Hong-Kong University of Science & Technology, China

Robert Mair
Professor, Cambridge University, U.K.

Kok Kwang Phoon
Professor
National University of Singapore, Singapore

Hot News

ISSMGE's International Journal of Geoengineering Case Histories (Con't)

CALL FOR PAPERS for the ISSMGE Case History Journal

The International Journal of Geoengineering Case Histories invites researchers and practitioners worldwide to submit papers on well-documented case histories from the broader area of practice in Geoengineering.

Here are the 5 top reasons to submit a case history paper for publication in the Journal of Case Histories:

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The Case Histories Journal is funded by our sponsor GEI Consultants, Inc.

To learn more about ISSMGE's Case Histories Journal and submission guidelines,
visit: http://casehistories.geoengineer.org

Hot News

Early Registration Deadline for XVI ECSMGE 2015

Early Registration Deadline for XVI ECSMGE 2015 – 29th May 2015

www.xvi-ecsmge-2015.org.uk

A record number of delegates are expected to attend the XVI European Conference on Soil Mechanics and Geotechnical Engineering to be held in Edinburgh from 13-17 September 2015.

The theme of the conference *is* ***Geotechnical Engineering for Infrastructure and Development*****,** and is the latest in a long and distinguished line of such conferences to be held in Europe's great cities. It is the first to be held in Scotland and being located in the heart of Edinburgh, the capital, the venue is the equal of any of those of the past.

Over 700 papers were submitted and registrations are already flooding in. The response from the industry has also been beyond expectations and the exhibition halls are already almost full with only limited sponsorship items still available.

As well as a high level technical programme, there will be ample opportunity to network at the various social events, including a Whisky Tour and a sumptuous gala dinner in the historic surroundings of the Royal Museum of Scotland.

Post-conference tours will include a boat trip on the Maid of the Forth to view the construction works for the Queensferry Crossing cable-stayed bridge and the existing cantilever rail and suspension road bridges. There will also be a visit to the Education and Contact Centre for the Queensferry Crossing where the investigation and construction of Scotland's landmark project will be explained.

Register before 29th May to take advantage of the reduced registration fee and to ensure your first choice of accommodation. Visit the conference website **www.xvi-ecsmge-2015.org.uk** for further information.
We look forward to welcoming you to Edinburgh!

Professor Mike Winter
Chair, Conference Organising Committee

Obituaries

Professor Michele Maugeri (1944 – 2014)

In honour of Professor Michele Maugeri

On 1st of November 2014, after a strong battle against illness, Professor Michele Maugeri passed away. Prof. Maugeri was a long-time Italian member of the ISSMGE Technical Committee on 'Earthquake Geotechnical Engineering and Associated Problems' (TC203).

Born in Acireale (Sicily) in 1944, he got the degree in Civil Engineering from the Politecnico di Torino, winning the award for the best thesis ("Technical aspects of a bridge across the Messina Strait") and the second prize in an international competition for the fixed link road and railway between Sicily and the mainland, banned by the Ministry of Public Works.

The brilliant academic career developed at the University of Catania, where he was teaching since 1972, becoming Associate Professor in 1979 and then Full Professor of Geotechnical Engineering in 1990. His career was full of countless tasks of primary importance: he was a member of the Board of Public Works, member of the National Commission UNI "Construction Structural Engineering", member of the Task Group no. 6 on "Geotechnical Earthquake Engineering and Microzonation" of the European Association for Earthquake Engineering, chairman of the "ERTC 12 - Evaluation of Geotechnical Aspects of EC8", member of scientific and organizing committees of numerous national and international conferences, including the "2008 Seismic Engineering International Conference commemorating the 1908 Messina and Reggio Calabria Earthquake (MERCEA08).

He also actively contributed to the life of his native Sicily, as a director of Banca Popolare Santa Venera at Acireale, and of Credit Valtellina today.

He was a guest editor of several special issues of national and international journals (including the recent issue no.3 of the Bulletin of Earthquake Engineering in 2014) and authored more than 300 scientific publications.

Since 1990, Prof. Maugeri delivered keynote and special lectures at international conferences and workshops of different disciplines, helping extend the TC203 mission beyond the core industry. Recently, Prof. Maugeri was the Chairman of the very successful 2nd International Conference on "Performance-Based Design in Earthquake Geotechnical Engineering" of TC203, held in Taormina, 2012.

He was a scientific "ambassador" of geotechnical earthquake engineering at events organized by other learned societies. He often focused on engineering issues relevant to Italy in the fields of seismic geotechnics, mitigation of natural hazards and geosynthetics. Through his contributions, the Italian geotechnical community has maintained a strong and beneficial dialogue with the world.

He died at his home in Sicily, just one day after he retired from University of Catania. Burial services were held on November 3 at the cathedral in his home town of Acireale. We extend our thoughts and sympathies to his family and friends. Those wishing to send a personal message to Prof. Maugeri's family may contact his son Alessandro, alemaugeri@alice.it. He will be remembered warmly and missed by many of us.

Ciao, Michele.
ISSMGE Technical Committee TC203 Earthquake Geotechnical Engineering and Associated Problems

Obituaries (Con't)

Professor József Mecsi (1945 – 2015)

In honour of Professor **József Mecsi**

Many people will be saddened to learn of the untimely passing of Dr József Mecsi. Dr Mecsi was a prominent figure within the Hungarian Geotechnical Society and was an active member of two Technical Committees: TC204 – Underground Construction in Soft Ground and TC302 – Forensic Geotechnical Engineering. His liveliness and enthusiastic commitment to the geotechnical engineering profession will be sorely missed.

József Mecsi was born in Nagykanizsa, Hungary in 1945. He completed his secondary education at the Jáky József Technical School in Székesfehérvár and obtained the Diploma in Civil Engineering from the Budapest University of Technology (BUT) in 1969.

From 1970 to 1985 he worked as a Research fellow at the Geotechnical Department of BUT, with outstanding results in the determination of bearing capacity of anchors and prediction of surface subsidence due to tunnel construction. Between 1985 and 1992 he worked as a technical adviser at the Hydraulic Construction Co. engaged in conceptual planning of major projects and introduction of vibratory deep compaction, a novel method at that time.

In 1991 he founded his own design office where he was active up to the end of his life in preparation of specialist reports on topics including building damage, surface subsidence, dam failures and collapse of tunnels and also conceptual designs for ground improvement technologies and deep excavations. Particularly noteworthy projects on which he worked in the last decade were the investigation of the collapse of a tunnel on Motorway M6, the dam breach at a red mud reservoir and feasibility studies for ground improvement at the harbours of Tel Aviv and Baku.

From 1992 he had various academic assignments first as a guest lecturer then from 2001 as private professor at the University of Miskolc. In 2004 he moved to the University of Pécs where he was appointed as a full professor of Geotechnics in 2005. In the same year he was elected Dean of the Pollák Mihály Faculty for Technology and Informatics. In this capacity he was instrumental in developing the teaching infrastructure, establishing special education in Civil Engineering at the University of Pécs, fostering international cooperation and promoting PhD courses. From 2014 he continued his academic career by organising research activities at the Pannon University, Veszprém.

Apart from his academic activity he played key roles in various scientific, technical and social fields of his home country including membership of the National Accreditation Board, member and chairman of the Technical Scientific Board at the Academy of Sciences, leader of the Educational Commission at the Hungarian Chamber of Engineers and member of the Planning Board of the Capital City of Budapest (2004 to 2008). On the international field, he was member of the presidency of International Conferences on Engineering Education and member of the International Network for Engineering Education and Research.

His scientific work primarily focused on creating a theoretical model for describing the conditions developing around an expanding cavity in soil. In his PhD thesis (1981), a general theory was developed for determining stresses, strains, displacements and volume changes around an expanding cavity using a non-linear material model. That model was then first used in practice in 1991 for the determination of the bearing capacity of grouted anchors. The theory was later used in various practical applications such as plastic state in rocks, interaction between rock and structures, interpretation of the pressuremeter test

Obituaries (Con't)

Professor József Mecsi (1945 – 2015)

and pile load tests. The results were published in several books and almost 100 publications, and presented at numerous conferences.

From the 90's onwards, Dr Mecsi emerged as an emblematic person in Hungarian geotechnics. From 1996 to 2010 he was president of the Geotechnical Section of the Hungarian Chamber of Engineers and made tremendous efforts to encourage geotechnical engineers to form an active, nationally and internationally recognised professional body. Apart from organising workshops and conferences, promoting international relations, initiating ways for continuing professional development, he was particularly keen to cultivate the legacy of the founding fathers of Hungarian geotechnics. He was one of the key individuals who deserved special recognition in establishing the Széchy Memorial Session, which has now grown into a series of annual professional gatherings and which attracts many participants and prominent personalities from home and abroad.

Dr Mecsi received many highly respected awards, among them the Jáky prize, Széchenyi professorial grant, Széchy Károly Memorial Medal, Hollán Ernő Memorial prize and the Pro Facultate Rerum Metallicarum Award of Appreciation for Superior Leadership in Engineering Education.

But what gave him utmost satisfaction beyond any official distinction was the appreciation he received from his profession, fellow engineers and students. His devotion to the profession, legendary working ability, capacity to identify and solve problems, readiness to share knowledge and unparalleled skill in the presentation of his scientific work earned him, indeed, overall respect and admiration from his friends and colleagues alike.

International guests with hosts at the XXth Károly Széchy Memorial Session and XIIIth Geotechnical Evening Forum Budapest, February, 2014

1) János Józsa - academic of the HAS - Hungary; 2) Péter Görög - vice president of the Hungarian Geotechnical Society and ISSMGE HNC; 3) Ferenc Friedler - Rector of the University of Pannonia; 4) Dietmar Adam - professor TU Vienna; 5) Ivan Vrkljan - Zagreb - president of the Croatian Geotechnical Society (CGS) - vice president of International Society of Rock Mechanics ISR; 6) Antonio Gens - ISSMGE vice president for Europe; 7) László Nagy - Head of Geotechnical Department of TU Budapest - lecturer; 8) Heinz Brandl - em. professor TU Vienna - Head of Austrian Society of Civil Engineers and Architectures; 9) József Mecsi - president of the Hungarian Geotechnical Society and ISSMGE HNC; 10) Zoltan Melitz - Rector of the ETJ Colleges Baja city; 11) Roger Frank - president of the ISSMGE; 12) Carlo Viggiani - em. professor Naples - lecturer; 13) Peter Turček - professor TU Bratislava; 14) László Szilvágyi - president of the Geotechnical Session of Hungarian Chamber of Engineers; 15) Jana Frankovska - president of the Czech and Slovak ISSMGE National Committee; 16) Ákos Török - president of the Hungarian National Group of International Society for Rock Mechanics

Edited by Neil Taylor

Event Diary

ISSMGE EVENTS

Please refer to the specific conference website for full details and latest information.

2015

12th Australia and New Zealand Conference on Geomechanics - The Changing Face of the Earth: Geo-Processes & Human Accelerations
Date: Sunday 22 February 2015 – Wednesday 25 February 2015
Location: Wellington, New Zealand
Contact person: Amanda Blakey
E-mail: secretary@nzgs.org

XVI African Regional Conference on Soil Mechanics and Geotechnical Engineering - Innovative Geotechnics for Africa
Date: Monday 27 April 2015 - Thursday 30 April 2015
Location: Hammamet, Tunisia
Language: English and French
Organizer: ATMS
Contact person: Mehrez Khemakhem
Phone: +216 25 956 012
E-mail: organisation@cramsg2015.org
Website: www.cramsg2015.org

ISP7 - PRESSIO 2015
Date: Friday 01 May 2015 - Saturday 02 May 2015
Location: Hammamet, Tunisia
Organizer: Tunisian Association of Soil Mechanics (ATMS)
Contact person: Dr Wissem Frikha
Address: Enit BP37, 1000 Le Belvedere, Tunis, Tunisia
Phone: +21698594970
E-mail: Isp7_organisation@cramsg2015.org
Website: http://www.cramsg2015.org/isp7-pressio2015/?lang=en

International Conference CIGOS-PARIS 2015
Date: Monday 11 May 2015 - Tuesday 12 May 2015
Location: ENS Cachan, Cachan, Ile de France, France
Language: English and French
Organizer: ENS Cachan, ESTP, ECP, GCMM, AVSE
E-mail: secretariat@cigos.org
Website: http://www.cigos.org/

ISFOG 2015
Date: Wednesday 10 June 2015 - Friday 12 June 2015
Location: Holmenkollen Park Hotel Rica, Oslo, Norway
Language: English
Organizer: NGI
Contact person: Vaughan Meyer - NGI
Address: PO Box 3930 Ullevaal Stadion, N-0806, Oslo, Norway
Phone: +47 22 02 30 00
Fax: +47 22 23 04 48
E-mail: isfog2015@ngi.no
Website: www.isfog2015.no

Event Diary (Con't)

3rd International Conference on the Flat Dilatometer DMT'15
Date: Monday 14 June 2015 - Wednesday 16 June 2015
Location: Parco dei Principi Grand Hotel & SPA, Rome, Italy
Language: English
Contact person: Simona Rebottini - Studio Prof. Marchetti
Address: Bracciano 38, 00189 Rome, Italy
Phone: +39 06 30311240
Fax: +39 06 30311240
E-mail: simona@marchetti-dmt.it
Website: www.dmt15.com

International Symposium on Geohazards and Geomechanics
Date: Thursday 10 September 2015 - Friday 11 September 2015
Location: University of Warwick campus, Coventry, United Kingdom
Language: English
Address: University of Warwick, Library Road, Coventry, CV4 7AL, Coventry, United Kingdom
E-mail: C.Voulgari@warwick.ac.uk
Website: http://www2.warwick.ac.uk/fac/sci/eng/research/civil/geo/conference/

XVI European Conference on Soil Mechanics and Geotechnical Engineering
Date: Sunday 13 September 2015 - Thursday 17 September 2015
Location: Edinburgh International Conference Centre, Edinburgh, Scotland, United Kingdom
Language: English
Organizer: British Geotechnical Association
Contact person: Derek Smith
Address: Coffey Geotechnics Limited, The Malthouse, 1 Northfield Road, RG1 8AH, Reading, UK
Phone: +44 1189566066
Fax: +44 1189576066
E-mail: derek_smith@coffey.com
Website: http://www.xvi-ecsmge-2015.org.uk/

Workshop on Volcanic Rocks & Soils
Date: Thursday 24 September 2015 - Friday 25 September 2015
Location: Isle of Ischia, Italy
Language: English
Organizer: Associazione Geotecnica Italiana (AGI)
Contact person: Ms. Susanna Antonielli
Address: Viale dell'Università 11, 00185, Roma, Italy
Phone: +39 06 4465569 - +39 06 44704349
Fax: +39 06 44361035
E-mail: agi@associazionegeotecnica.it
Website: http://www.wvrs-ischia2015.it/

6th International Conference on Earthquake Geotechnical Engineering
Date: Monday 02 November 2015 - Wednesday 04 November 2015
Location: Christchurch, New Zealand
Contact person: The Conference Company
Address: PO Box 3727, Christchurch, New Zealand
Phone: +64 3 365 2217
Fax: +64 3 365 2247
E-mail: 6icege@tcc.co.nz
Website: http://www.6icege.com

Event Diary (Con't)

The 15th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering -New Innovations and Sustainability-
Date: Monday 09 November 2015 - Friday 13 November 2015
Location: Fukuoka International Congress Center, Fukuoka, Kyushu, Japan
Language: English
Organizer: The Japanese Geotechnical Society
Contact person: Toshifumi Mukunoki
Address: 2-39-1 Kurokami, Chuou-ku, Kumamoto, JAPAN, 860-8555, Kumamoto, Japan
Phone: +81-96-342-3535
Fax: +81-96-342-3535
E-mail: 15tharc@kumamoto-u.ac.jp
Website: http://www.jgskyushu.net/uploads/15ARC/

XV Pan American Conference on Soil Mechanics and Geotechnical Engineering
Date: Sunday 15 November 2015 - Wednesday 18 November 2015
Location: Hilton Hotel, Buenos Aires, Buenos Aires, Argentina
Language: Spanish - Portuguese - English (simultaneous translation)
Organizer: Argentinean Society for Soil Mechanics and Geotechnical Engineering
Contact person: Dr Alejo Oscar Sfriso
Address: Rivadavia 926 Suite 901, C1002AAU, Buenos Aires, Buenos Aires, Argentina
Phone: +541143425447
Fax: +541143423160
E-mail: presidente@saig.org.ar
Website: www.panam2015.com.ar

Geo-Environment and Construction European Conference
Date: Thursday 26 November 2015 - Saturday 28 November 2015
Location: Polis University, Tirana, Albania
Language: Albanian, English
Organizer: Polis University, Albanian Geotechnical Society and Co-PLAN
Contact person: Msc. Eng. Erion Bukaçi
Address: Polytechnic University of Tirana, Faculty of Civil Engineering, 1001, Tirana, Albania
E-mail: erion.bukaci@gmail.com, Correspondence and information, MSc. Eng. Erdi Myftaraga (erdi.myftaraga@hotmail.com), Prof. Luljeta Bozo (lulibozo@gmail.com)

International Conference on Soft Ground Engineering ICSGE2015
Date: Thursday 03 December 2015 - Friday 04 December 2015
Location: Singapore, Singapore
Language: English
Organizer: Geotechnical Society of Singapore
Contact person: Dr Kam Weng Leong
Address: OPE3, Faculty of Engineering, NUS, 117578, Singapore
E-mail: ICSGE2015@nus.edu.sg
Website: http://www.geoss.sg/icsge2015

Event Diary (Con't)

GIFT - Geotechnics for Infrastructure and Foundation Techniques
Date: Thursday 17 December 2015 - Saturday 19 December 2015
Location: Govt. College of Engineering (Established 1853 AD), Pune, Maharashtra, India
Language: English
Organizer: Indian Geotechnical Society, Pune Chapter
Contact person: Prof. Yashwant Apparao Kolekar
Address: Associate Professor, Geotechnical Engineering Division, Dept. of Civil Engineering, Govt. College of Engineering, Wellsley Road, Shivajinagar, 411005, PUNE, MAHARASHTRA, INDIA
Phone: +91-20-25507070 / +91-9420963672
Fax: +91-20-25507299
E-mail: igc2015pune@gmail.com
Website: http://www.igc2015pune.in/GUI/index.aspx

The 1st International Conference on Geo-Energy and Geo-Environment (GeGe2015)
Date: 4th and 5th December 2015
Location: The Hong Kong University of Science and Technology (HKUST), Hong Kong
Language: English
Organizers: HKUST, Chongqing University, Hohai University and Zhejiang University in mainland China, and EPFL in Switzerland
Contact person: Ms Shirley Tse
Address: The Geotechnical Centrifuge Facility, HKUST, Clear Water Bay, Kowloon, Hong Kong
Phone: +852-2358-0216
Fax: +852-2243-0040
E-mail: gege2015@ust.hk
Website: http://gege2015.ust.hk

2016

NGM 2016, The Nordic Geotechnical Meeting
Date: Wednesday 25 May 2016 - Saturday 28 May 2016
Location: Harpan Conference Centre, Reykjavik, Iceland
Language: English
Organizer: The Icelandic Geotechnical Society
Contact person: Haraldur Sigursteinsson
Address: Vegagerdin, Borgartún 7, IS-109, Reykjavik, Iceland
Phone: +354 522 1236
Fax: +354 522 1259
E-mail: has@vegagerdin.is
Website: http://www.ngm2016.com

SEAGC2016
Date: Tuesday 31 May 2016 - Friday 03 June 2016
Location: Dorsett Grand Subang, Subang Jaya, Selangor, Malaysia
Language: English
Organizer: Malaysian Geotechnical Society and Institution of Engineers, Malaysia
Contact person: SEAGC2016 Secretariat
Address: c/o IEM Training Centre Sdn Bhd, No.33-1A (1st Floor), Jalan 52/18, PO Box 224 (Jalan Sultan), 46720, Petaling Jaya, Selangor, Malaysia
Phone: +(603) 7958 6851
Fax: +(603) 7958 2851
E-mail: seagc2016@gmail.com / choy.iemtc@gmail.com
Website: www.mygeosociety.org/SEAGC2016

Event Diary (Con't)

GeoChina 2016
Date: Monday 25 July 2016 - Wednesday 27 July 2016
Location: Shandong, China
Language: English
Organizer: Shandong University in Cooperation with Shandong Department of Transportation and University of Oklahoma
Contact person: Antony Warden
Address: Shanghai, China
Phone: +86-021-54721773
E-mail: geochina.sec@gmail.com
Website: http://geochina2016.geoconf.org/

3rd ICTG International Conference on Transportation Geotechnics
Date: Sunday 04 September 2016 - Wednesday 07 September 2016
Location: Vila Flor Cultural Centre and University of Minho, Guimaraes, Portugal
Language: English
Organizers: Portuguese Geotechnical Society and University of Minho
Contact person: Prof. A. Gomes Correia (Chair)
Address: University of Minho, School of Engineering, 4800-058, Guimarães, Portugal
Phone: +351253510200
Fax: +351253510217
E-mail: agc@civil.uminho.pt
Website: http://www.webforum.com/tc3

13 Baltic States Geotechnical Conference
Date: Thursday 15 September 2016 - Saturday 17 September 2016
Location: Vilnius University, Vilnius, Lithuania
Language: English
Organizer: Baltic Sea states Geotechnical Societies / Main organizer Lithuanian Geotechnical Society
Contact person: Danutė Sližytė
Address: Saulėtekio ave. 15-510, LT-10224, Vilnius, Lithuania
Phone: +37068690044
Fax: +37052500604
E-mail: danute.slizyte@vgtu.lt
Website: http://www.13bsgc.lt

NON-ISSMGE SPONSORED EVENTS

2015

Geosynthetics 2015
Date: Sunday 15 February 2015 - Wednesday 18 February 2015
Location: Oregon Convention Center, Portland, Oregon, USA
Language: English
Organizer: Industrial Fabrics Association International / Geosynthetics Materials Association
Contact person: Barbara Connett
Address: 1801 County Road B West, 55113 Roseville, Minnesota, USA
Phone: 651 225 6914
Fax: 651 631 9334
E-mail: bjconnett@ifai.com
Website: http://www.geosyntheticsconference.com

Event Diary (Con't)

Second International Course on Geotechnical and Structural Monitoring
Date: Thursday 04 June 2015 - Saturday 06 June 2015
Location: Castle of Conti Guidi, Poppi (Arezzo),,Italy
Language: English
Organizer: NHAZCA S.r.l.
Contact person:Samuele Pietrini
Address: Via Cori snc (Metro C Area), 00177, Roma (RM), Italy
Phone: +39 06 9521 6501
E-mail: info@geotechnicalmonitoring.com
Website: http://www.geotechnicalmonitoring.com/

SEC 2015 Symposium
Date: Thursday 18 June 2015 - Friday 19 June 2015
Location: IFSTTAR, Marne La Vallée, France
Language: English & French
Organizer: IFSTTAR, CEREMA, PFC
Contact person: Ms Séverine Beaunier - Ponts Formation Conseil
Address: 15 rue de la Fontaine au Roi, 75011, Paris, FRANCE
Phone: +33 1 44 58 28 07
E-mail: severine.beaunier@enpc.fr
Website: http://sec2015.info/

International Conference in Geotechnical Engineering - ICGE-Colombo 2015
Date: Monday 10 August 2015 - Tuesday 11 August 2015
Location: Colombo, Colombo, Sri Lanka
Language: English
Organizer: Sri Lankan Geotechnical Society
Contact person: Eng. K. L. S. Sahabandu
Address: Central Engineering Consultancy Bureau, 415, Bauddhaloka Mawatha, Colombo 7, Sri Lanka
Phone: +94 11 2668803
Fax: +94 11 2687369
E-mail: gm@cecbsl.com ; sahabandukls@gmail.com
Website: www.slgs.lk

The 2nd International Symposium on Transportation Soil Engineering in Cold Regions (TranSoilCold2015)
Date: Thursday 24 September 2015 - Saturday 26 September 2015
Location: Siberian State University of Railway Engineering, Novosibirsk, Russia
Description: The 2nd International Symposium on Transportation Soil Engineering in Cold Regions
Language: English, Russian
Organizers: Universities of Russia, China, USA
Contact person: Yury Moryachkov
Address: Novosibirsk, Russia
E-mail: transoilcold@inbox.ru
Website: http://transoilcold2015.stu.ru/

Event Diary (Con't)

5th International Symposium on Geotechnical Safety and Risk (ISGSR 2015)
Date: Tuesday 13 October 2015 - Friday 16 October 2015
Location: WTC, Rotterdam, The Netherlands
Language: English
Organizers: KIVI, GEOSnet, Geo Impuls
Contact person: Maarten Profittlich
Address: Zekeringstraat 41A, 1014BV, Amsterdam, The Netherlands
Phone: +31206510800
E-mail: nssmge@kivi.nl
Website: www.isgsr2015.org

FOR FURTHER DETAILS, PLEASE REFER TO THE WEBSITE OF THE SPECIFIC CONFERENCE

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