

ISSMGE Foundation Reports

The theme of the conference was “Geotechnical Risk from theory to practice” (GEO-RISK 2017, Denver, Colorado, USA, 4th to 7th June 2017) and it mainly focused on demonstrating the emerging engineering-practice innovations by adopting the probabilistic and risk methodologies in geotechnical engineering.

The Risk Assessment and Management committee of Geo-Institute (GI) ASCE, organised the conference. On 4th June, short courses were conducted on very interesting topics like Bayesian analysis and reliability updating, risk assessment, reliability based design in geotechnical engineering. Later, the conference started with a welcome keynote, the prestigious “Suzanne Lacasse Lecture” was delivered by Prof. Gregory B Baecher on “Bayesian thinking in Geotechnics”. The next day, “Wilson Tang lecture” was delivered by Prof. Gordon A Fenton on “Future Directions in Reliability-Based Geotechnical Design”. These two lectures were one of the highlights of the conference. The events on 5th June and 6th June were mainly the keynote lectures and concurrent technical sessions. They also invited practicing geotechnical engineers from some of the pioneering firms in the world to understand the challenges that they face in the field and also the significance of using probabilistic methods to overcome these problems. The keynote lectures by Dennis E. Becker from Golder Associates Ltd, Brain Simpson from Arup Geotechnics, John W. France from AECOM addressed the importance of risk assessment and reliability based design with project examples. They gave an understanding on the recent advances in the Bayesian methods and Reliability based design methods. Around 160 papers were selected for presentation under different themes. The two-day technical sessions had high quality presentations covering wide variety of probabilistic methods implemented in geotechnical engineering. I attended some interesting sessions on Reliability-and risk-based code developments, Practice of risk assessment and management in all fields of geo-engineering, advances in geotechnical reliability based design, uncertainty relating to geotechnical properties. I also had an opportunity to present my paper under one of these themes. The sessions were on-time and all the above events were well organised. There was also an opportunity to interact with some of the eminent professors and practicing engineers during the conference. It was a great experience to not only attend but also present in this conference and I sincerely thank ISSMGE foundation for giving me this opportunity.



Photo of me attending the conference

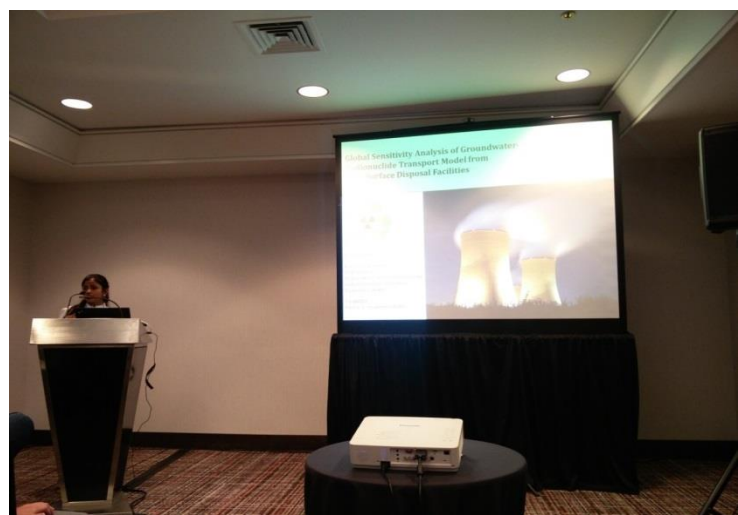


Photo of me during my presentation

K.Geetha Manjari
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ISSMGE Foundation Reports (Con't)

The 6th International Symposium on Geotechnical Safety and Risk, GEO-RISK 2017 - Geotechnical Risk from Theory to Practice, occurred in Denver, Colorado, between June 4th to 7th, with the presence of 320 participants. The subjects of the symposium were: Spatial Variability and Site Characterization; Uncertainty Relating to Geotechnical Properties, Models and Testing Methods; Probabilistic Characterization of Soil Properties; Bayesian Probabilistic Asset Management Protocol; Reliability Analysis; Geotechnical Risk Assessment and Management; Risk Assessment for Landslides; Risk and Reliability Assessment of Slopes; Slope Failure and Landslides; Geotechnical Seismic Risk Assessment; Liquefaction Assessment and Mitigation; Methods for Eurocodes; Load and Resistance Factor Design; Assessment for Tunnelling; Risk Assessment and Management of Dams, Levees and Dikes.

The first day started with four short courses. At 5:00 pm the Symposium officially started with the Welcome keynote Suzanne Lacasse Lecture - "Bayesian Thinking in Geotechnics" (Figure 1). This presentation was given by G.B. Baecher, and was followed by the Exhibit Hall opening and the Reception with the Exhibitors. Between 8:00 and 10:00 pm occurred the 19th ICSMGE Organizing Committee and the ISSMGE Technical Committee meetings (TC 304/TC 205; Figure 2).

The second day started with the Opening Keynote Wilson Tang Lecture - "Future Directions in Reliability-Based Geotechnical Design" given by G. A. Fenton. This Keynote Lecture was followed by the Concurrent Technical Sessions. After lunch, two Keynote Lectures were presented. The first one was given by D.E. Becker, on the theme - "Geotechnical Risk Management and Reliability Based Design: Lessons Learned". The second one was given by B. Simpson, on the theme - "Robustness and Eurocode 7". The Keynote Lectures were followed by the Concurrent Technical Sessions. At night, the Awards Dinner was held.

The third day started with the Graduate Student Research Competition, with the distinction award of the best scientific work. This competition was followed by two Keynote Lectures given by S.G. Vick and J.W. France, respectively with the topics "Dam Safety Risk: From Deviance to Diligence" and "Risk Analysis is Fundamentally Changing the Landscape of Dam Safety in the United States", which were followed by the Concurrent Technical Sessions. In the afternoon, another two Keynote Lectures were presented. The first one was given by C.H. Juang, on the topic "Assessing Soil Liquefaction and Effect Using Probabilistic Methods". The second one was given by A.W. Stuedlein, on the theme - "Performance of Structures Founded in Spatially-Variable Soil: A Probabilistic SSI". The Keynote Lectures were followed by the Concurrent Technical Sessions.

On the last day, June 7th, technical tours were held.



Opening session by D. Vaughan Griffiths



Meeting of TC304 with TC205 of ISSMGE

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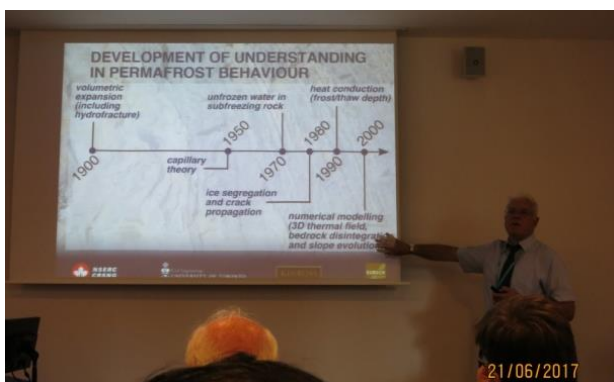
EUROCK2017 took place from June 20-22, 2017, in the unique industrial and mining city of Ostrava in the Czech Republic. Symposium was organized by Czech national group of the ISRM and the institute of Geonics of the Czech Academy of Sciences. The event attracted more than 250 scientists and practitioners from Africa, Asia, Europe, Australia and America. More than 150 peer-reviewed papers focusing on rock mass properties, laboratory and in-situ rock testing, mine design and ground control, underground storage and waste disposal, dynamic phenomena in rock mass, design methodology in mining and underground constructions, geothermal energy, rock disintegration as well as new materials and technologies in geomechanics and geotechnics are published in *Procedia Engineering Journal*, Vol. 191 (Elsevier BV).

The opening ceremony speech given by Prof. Petr Konicek was followed by Prof. Walter Wittke's Keynote lecture "Design based on the anisotropic jointed rock model (AJRM)". In total six keynote lectures were delivered during the symposium covering various topics in the field of rock mechanics and rock engineering. Keynote lectures were delivered by Prof. Heinz Konietzky, Prof. Frederic Pellet, Dr. Jiri Ptacek, Prof. Walter Wittke, Prof. Arno Zang and Dr. Marwan Al Heib.

Oral presentations were delivered throughout four parallel sessions. A large number of papers addressed sub-topics such as underground and slope stability modelling by means of DEM, in-situ stress measurements, simulation of hydraulic fracturing, rockbursts, strength and deformability of rock masses and weathering of clay-bearing rocks.

Overall the conference has given me an opportunity to meet scientists, engineers and researchers around the world to share our research work and get their suggestions. As I am interested in doing post-doctoral research in the area of influence of weathering on strength and deformation properties of clay-bearing rocks, the conference was helpful to develop contacts to continue my research in the future.

I would like to thank each and everyone from the ISSMGE Foundation for the wholehearted support and financial help which enabled me to attend the symposium.



Professor Harrison's vivid lecture on the history of permafrost



During my presentation

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The PBD-III conference started with a welcome speech by Ross W. Boulanger and Dharma Wijewickreme, Conference Chair who explained the main objectives of the conference. After the welcome speech, the plenary keynote lecture titled “Evaluation of Flow Liquefaction: Influence of High Stress” was delivered by Prof. Peter Robertson from Gregg Drilling & Testing Inc. in which he explained about the flow liquefaction along with the different case histories. On the next day, plenary keynote lecture titled “Applicability of Sliding Block Analyses to Lateral Spreading Problems” was delivered by Prof. Steven L. Kramer from University of Washington. Everyday three keynote lectures were presented corresponding to the different themes of the conference. The parallel sessions started on the second day focused on liquefaction, ground motions and site response, numerical analysis, soil structure interaction, dynamic analysis, challenging soil and seismic hazard assessment. I attended the ground motion and site effect session. The discussion started with the keynote lecture by Prof. Gang Wang on Large-scale simulation of ground motion amplification considering 3D topography and subsurface soils and in the second session the keynote lecture by Prof. Domniki Asimaki on the complexity of seismic waves trapped in non-flat geologic features. Many case histories were discussed which helped me understand the difficulties associated with application on site response study in deep and shallow basin and their solutions which is going to help me in my work regarding Indo Gangetic Basin. On the following day, keynote lectures were delivered by Prof. Hashash from the University of Illinois on “Seismic Performance Evaluation of Underground Structures - Past Practice and Future Trends” and Prof Bradley from University of Canterbury on “On-going challenges in physics-based ground motion prediction and insights from the 2010-2011 Canterbury and 2016 Kaikoura, New Zealand earthquakes”. The lectures were highly enlightening. Parallel sessions on this day focused on performance-based design on ground motion and site response as well as on soil-structure interaction. Discussion on the paper I presented at the conference with the experts was also useful for me. Overall the conference was really enlightening, informative and very well organized. Once again thanks to the ISSMGE Foundation for providing me financial assistance for attending the conference.



Photo with Prof. George Gazetas



Photo of me during my presentation

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