SIMSG ISSMGE

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International Society for Soil Mechanics and Geotechnical Engineering

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www.issmge.org

Message to ISSMGE Members

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

INSIDE THIS ISSUE

EDITORIAL BOARD

It is a pleasure, through this short article in the Bulletin to provide members of the ISSMGE some insight into the activities of the technical committee "Geotechnical Earthquake Engineering and Associated Problems" (TC 203).

The Technical Committee TC203 (ex TC-4) on Geotechnical Earthquake Engineering and Associated Problems started up in 1985, reflecting the increasing need and interest of earthquake engineering among the geotechnical engineering community. Professor Kenji Ishihara was the first chairman, followed by Professor Pedro Seco e Pinto, Professor Liam Finn, Professor Takaji Kokusho and Professor Atilla Ansal (co-chairman). For more than 25 years TC203 has provided the main forum for ISSMGE members in the area of earthquake geotechnical engineering and made significant contributions in responding to the needs and challenges posed by the major earthquakes.

Following the restructuring of ISSMGE and its committees for the current period 2009-2013, the organization scheme of the TC203 is the following: Chairperson: Professor Kyriazis Pitilakis (GR), Vice-chairperson: Professor Ross Boulanger (USA), Secretary: Assistant Professor Anastasios Anastasiadis (GR). The Technical Committee has today 63 members from 32 countries throughout the world, representing academia, consulting and construction industry. It covers a wide spectrum of earthquake-associated geotechnical problems, without neglecting more general topics associated with earthquake engineering, engineering seismology, risk assessment and management. Plenary meetings are organized during the International Conferences, normally every two years.

ISSMGE Webinar on geotechnical earthquake engineering will take place on November 20 at 12h00 (noon) UTC. For more info, please read President 1090 Days Report in page 14 of this issue.

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

INSIDE THIS ISSUE (CONTINUED)

Committee has today 63 members from 32 countries throughout the world, representing academia, consulting and construction industry. It covers a wide spectrum of earthquake-associated geotechnical problems, without neglecting more general topics associated with earthquake engineering, engineering seismology, risk assessment and management. Plenary meetings are organized during the International Conferences, normally every two years.

Unambiguously, it is well recognized that Earthquake Geotechnical Engineering ensures a critical link between all scientific disciplines involved in earthquake engineering. Its important role and contribution in the seismic design of any civil engineering structure and the resilience of the society is widely recognized and respected. Moreover, the outstanding progress that has been achieved during the last three decades in the Geotechnical Earthquake Engineering and Soil Dynamics has seriously contributed to the fundamental and applied Soil Mechanics and the Geotechnical Engineering in general. The exponential increase of high quality strong motion records and well-documented data and field studies after numerous important earthquakes that unfortunately hit many countries around the world provided valuable information and knowledge, improving considerably the know how in our field. Observation, field and laboratory techniques have been further improved while the modern hardware possibilities have seriously improved the computation and design capacities. Large scale experimental facilities like centrifuge and shaking table tests, sometimes of important dimensions like the E-Defense facility, provided valuable insights to better understand the phenomena and calibrate our numerical models and design tools. All this progress is reflected in a certain degree, not as much as it is wished, in modern seismic codes namely IBC2000, EC8. Publications in peer review journal have been exponentially increased covering a very wide range of interesting subject not strictly related to the traditional Soil Mechanics and Geotechnical Engineering like for example studies related to the vulnerability and risk assessment of different assets and systems (i.e. gas, oil, water systems etc). Finally Geotechnical Earthquake Engineering has been now introduced in most civil engineering under and post graduated curricula in all major universities in the world. In a few words Geotechnical Earthquake Engineering is now a well-established branch in engineering science and technology.

Recent strong earthquakes, like the mega Tohoku 2011 earthquake in Japan and the sequence of large devastating earthquakes in New Zealand (2011) have shown despite our progress how vulnerable is still our built environment and our societies. We learned more on the earthquake-induced liquefaction effects on lifeline systems, highway bridges, and residential structures to better validate and improve the existing methods, criteria and loading provisions. However, much effort is needed to make our built environment safer and our societies more resilient to face major and catastrophic natural hazards. We should invest more on the prevention and the development of better and more economic mitigation measures. Geotechnical Earthquake Engineering has an important role to play in this common and interdisciplinary effort. Our endeavor and challenge are also to prepare the future generation of researchers and civil engineers to face the new complex problems associated with the new modern and very complex and demanding societies constructing more and more complex infrastructure and utility systems, which are more and more vulnerable without proper seismic design qualifications.

Knowing the complexity of these goals on one hand and the professional and academic needs of our members on the other hand, it has been decided to establish a few working groups on specific subjects representing research-academia and profession and we are currently planning TC203-related activities for the upcoming conferences. A new TC203 website and portal (**www.earthquake-issmge.org**) has been created. It will exhibit the practice of geotechnical earthquake engineering aiming to run as a source of information relevant to TC actions that is available to all members and geotechnical engineers and at the same time an achievement of the TC history and actions.

For the period 2010-2013 the following actions have been agreed, which constitute the suggested challenges and terms of reference.

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Challenge A: Disseminate knowledge and practice in the field

- Encourage the participation of TC203 members in regional workshops and conferences and organize specialized workshops (i.e. after large earthquakes, code initiatives etc).
- Encourage the participation of TC203 members in international survey committees or coordination of survey committees after large earthquake.
- Creation of a web page and portal.
- Propose an award prize for outstanding young researcher(s) after adequate and severe selection process.
- Continue the already established and very successful activities such as the International Conferences of Earthquake Geotechnical Engineering, the Satellite Conferences in Geotechnical Earthquake Engineering in World Conferences, and the Performance Based Design Conference in Geotechnical Earthquake Engineering
- Actively support the Bulletin of Geotechnical Engineering and the Journal of Case Histories
- Encourage and support the production of high level monographs on specific subjects

Challenge B: Improve knowledge and establish technical recommendations and guidelines through the following actions:

- Dissemination (mainly through web) of high quality experimental data, observations surveys, reconnaissance reports and design-construction reports on significant structures
- Definition of topics for future TC generic activities like: (i) Performance Based Design in Earthquake Geotechnical Engineering, (ii) Liquefaction and associated phenomena, (iii) Site characterization, Site Effects and Design ground motion, (iv) Large Scale Facilities in Geotechnical Earthquake Engineering, (v) Numerical and physical procedures, (vi) Seismic codes, (vii) Soil Structure Interaction, etc.
- Establishment of permanent links with global activities (in particular with GEER and GEM) and between research-academia and profession.

Challenge C: Interact with other Technical Committees and organizations through the following actions:

- Improve the link and the participation of the construction industry in Technical Committee activities.
- Use the website as a source of information and interaction.
- Endeavour to get all national representatives to recommend published papers and reports that they consider represent best current practice in their region or particular field of expertise.
- Encourage national representatives to submit case history data showing recent examples of good practice.

Recent and upcoming conferences:

- Following the most successful 4th International Conference on Earthquake Geotechnical Engineering hosted in Thessaloniki Greece, on January 2011, we have had the 5th International Conference on Earthquake Geotechnical Engineering (www.5icege.cl) in 2011 in Santiago, Chile. The TC203, the Chilean Geotechnical Society and the Civil Engineering Department of the University of Chile organized the Conference jointly. More than 200 papers and more than 400 people from 35 countries attended the conference. The third Ishihara Lecture was successfully delivered by Professor Ricardo Dobry of the Rensselaer Polytechnic Institute (USA) with the following title “An Investigation into Why Liquefaction Charts Work: A Necessary Step Toward Intergrading the State of the Art and Practice”.
- Pushing forward the most successful Performance Based Design (PBD) Conference held in Tokyo in 2009 and the 5th International Conference on Geotechnical Earthquake Engineering held in Santiago (Chile) in 2011, the Taormina PBD 2012 Conference offered an ideal forum to present and discuss the most recent advances and progresses in Geotechnical Earthquake Engineering and in particular the Performance Based Design. This conference was organized by Prof. Michele Maugeri under the auspices of ISSMGE, TC203, and AGI (Italian Geotechnical Association).

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

The Conference organized around 5 State-of-the-Art, 21 Keynote Lectures, 4 Invited Lectures given by distinguished international experts and 100 presented papers on different topics over 141 selected ones; 3 Special Sessions were devoted to the mega Tohoku 2011 earthquake in Japan, and the two large devastating earthquakes in New Zealand (2011) and the Abruzzo 2009 earthquake in Italy (totally 14 speakers). Furthermore, one Workshop was organized on RRTT, Round Robin Tunnel Centrifuge Test and one Symposium in honour of Prof. S. Prakash. Finally, a replication of Rankine Lecture was delivered by Prof. Malcom Bolton (University of Cambridge, UK) on the Performance-Based Design on Geotechnical Earthquake Engineering.

- International Conference on Earthquake Geotechnical Engineering from Case History to Practice – In Honor of Professor Kenji Ishihara, Istanbul, 2013 (co-organized by Professor A. Ansal and M. Sakr).
- Sixth International Conference on Geotechnical Earthquake Engineering (6ICEGE), Christchurch, New Zealand, 2015.
- Third International Conference on the Performance Based Design in Geotechnical Earthquake Engineering. (Place and date to be defined, among candidates is USA and Canada).
- Special session during the 18th International Conference on Soil Mechanics and Geotechnical Engineering, Paris, France, September 2-5, 2013.
- Special Session in the 2nd European Conference on Earthquake Engineering and Seismology (2ECEES), Istanbul, Turkey, 2014.

Last but not least I should express from this step my gratitude and recognition to all present and past members of the Technical Committee and in particular the past core members and founders of our committee. The progress achieved so far and the promising excellent future, always under the auspices and permanent interest of ISSMGE, is due to their enthusiasm, devotion and certainly their precious works.

Finally, I would like to encourage even more all national associations and geotechnical engineers to participate in our Technical Committee works.

Please take a look at photographs below that introduce recent activities of TC203.

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Delegates of 5ICEGE - January 10-13, 2011, Santiago-Chile

Delegates of the 2nd PBD – May 28-30, 2012, Taormina-Italy

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Publications and Conference Proceedings of the TC203 (and the ex-TC4).
At the bottom left is the "Manual for Zonation on Seismic Geotechnical Hazards", prepared by the Technical Committee for Earthquake Geotechnical Engineering, TC4, and published by the Japanese Geotechnical Society (JGS), December 1993 and revised in March 1999.

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Overturned RC-building with shallow foundation. (Motoki Kazama, Tohoku University from Japanese Geotechnical Society (JGS) website : first results of its activities after the occurrence of the 11th March, 2011 Tohoku earthquake, http://www.jiban.or.jp/e/disaster-survey-information-of-2011-tohoku-earthquake-2/)

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Girder of bridge washed away (Motoyoshi) (Motoki Kazama, Tohoku University from Japanese Geotechnical Society (JGS) website : first results of its activities after the occurrence of the 11th March, 2011 Tohoku earthquake, http://www.jiban.or.jp/e/disaster-survey-information-of-2011-tohoku-earthquake-2/)

Message to ISSMGE Members (Continued)

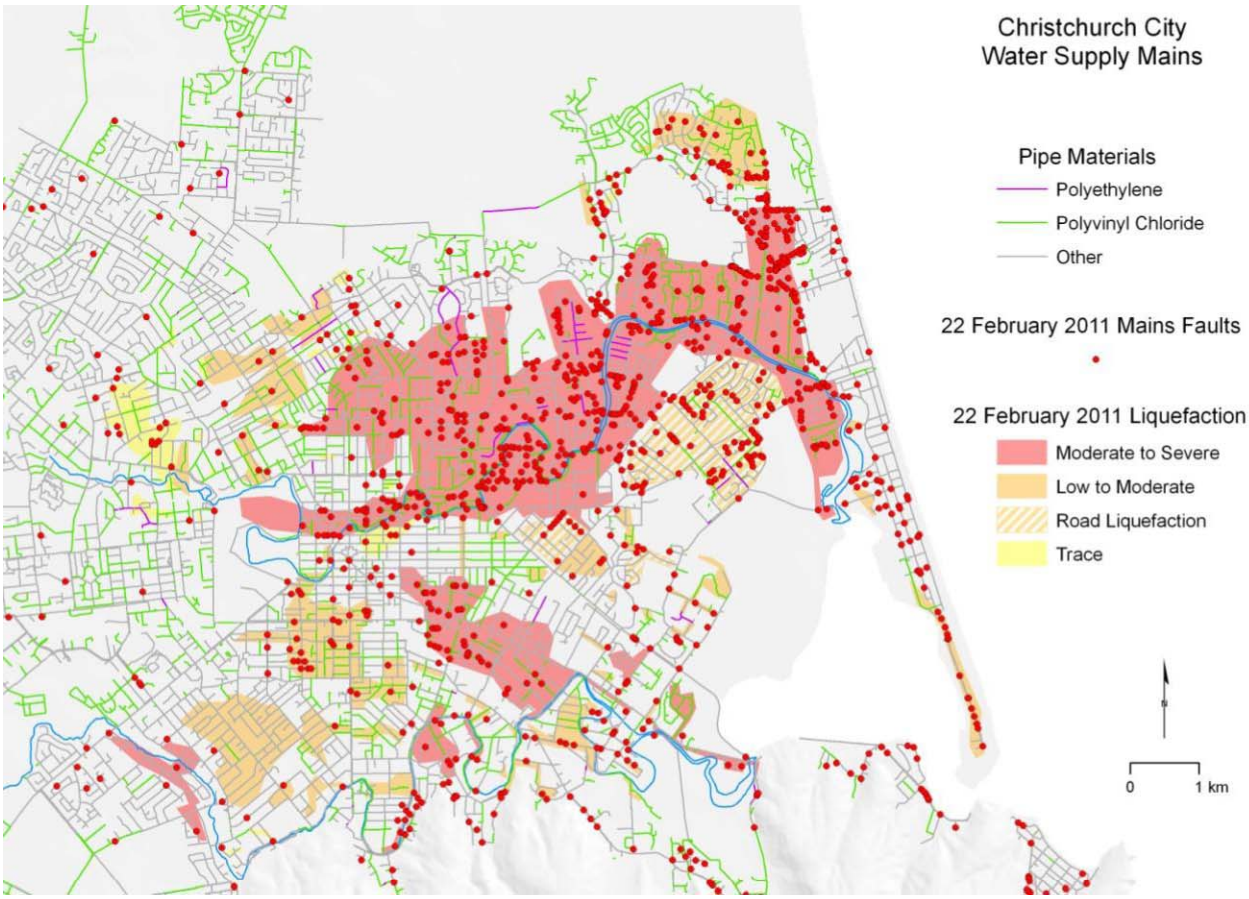
Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Evidence of liquefaction before the tsunami struck. (Motoki Kazama, Tohoku University from Japanese Geotechnical Society (JGS) website : first results of its activities after the occurrence of the 11th March, 2011 Tohoku earthquake, http://www.jiban.or.jp/e/disaster-survey-information-of-2011-tohoku-earthquake-2/)

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Christchurch



Water mains pipe network and location of breaks (faults) caused by the 22 February 2011 earthquake; colored lines indicate pipe materials; colored areas indicate liquefaction severity. (http://www.geerassociation.org/GEER_Post%20EQ%20Reports/Darfield%20New%20Zealand_2010/Cover_Darfield_2010.html).

Message to ISSMGE Members (Continued)

Prof. Kyriazis Pitilakis, TC203 (Earthquake) Chairman

Example of severe liquefaction near the intersection of Shortland St and Rowses Rd in the eastern suburb of Aranui. Note the high water marks on the car door window. (http://www.geerassociation.org/GEER_Post%20EQ%20Reports/Darfield%20New%20Zealand_2010/Cover_Darfield_2010.html).

Photo showing slight movement of upper part of gabion behind house at base of cliff in the suburb of Redcliffs. Gabion performed well in stopping rockfall and talus from impacting house (http://www.geerassociation.org/GEER_Post%20EQ%20Reports/Darfield%20New%20Zealand_2010/Cover_Darfield_2010.html).

ISSMGE President 1060 Days Progress Report

Professor J-L. Briaud

Distinguished Colleagues, Dear Friends,

This is my thirty fifth progress report after 1060 days as your President. Note that previous reports are on the ISSMGE web site (http://www.issmge.org/) under "From the President" if you need them. In this report, I would like to talk to you about ISSMGE Awards, Upcoming webinars, Board Level Committees, and Technical Committees.

Awards: The deadline for awards was 31 Aug 2012 but it has been extended to 30 Sept 2012. So please think of your worthy colleagues and take the time to nominate them for recognition by ISSMGE. The awards will be presented to the recipients at the Paris ICSMGE on Monday 2 Sept 2013 during the Awards luncheon. I consider the ISSMGE awards to be the highest and most global recognition that one can receive in our field; indeed it does not get any broader than that. Check the web site for more details at http://www.issmge.org/en/issmge-awards. Here is the list of new ISSMGE Awards

- Outstanding Innovator Award
- Outstanding Geotechnical Project
- Outstanding Technical Committee
- Outstanding Member Society
- Outstanding Paper in the Int. J. of Geoengineering Case Histories

Webinars: The topic of the next webinar will be Pile Driving and the presenter will be Frank Rausche. Dr. Rausche is a pioneer in the pile driving business and a prominent authority in that field. The webinar is scheduled for Tuesday 18 September 2012 at 3:00 pm, GMT Summer Time (London, GMT+01:00). Webinars will continue to be free of charge until Sept 2013. To register, go to https://issmge.webex.com/issmge/k2/j.php?ED=12427737&UID=0&HMAC=0ab5aa1d97574d2c1102f78b7299e1edd656df94&RT=MiM3

The webinar for November 2012 will be presented by Ikuo Towhata on the topic of Geotechnical Earthquake Engineering. Professor Towhata is a well recognized expert on this topic and has written a book entitled "Geotechnical Earthquake Engineering". The webinar in January 2013 will be presented by Robert Koerner on the topic of Geosynthetics. Professor Koerner is also a well recognized expert on this topic and has written a book entitled "Designing with Geosynthetics".

Board Level Committees: These committees did not exist before 2009 and my goal in creating such BLCs was to continue to improve the service to our members, to get more members involved in the decision process, and to increase the visibility of our profession. We now have 6 BLCs involving close to 100 members in the major decisions and activities of our Society. The leadership team of these BLCs is to be commended for their dedication and for their efforts in continuing to improve our profession. Please share your appreciation with them next time you see them at an event or drop them a note if you have some ideas that would help them.

They are (alphabetically):

- Marc Ballouz – Public Relations Committee - PRC
- Suzanne Lacasse – Technical Oversight Committee or TOC
- Michael Lisyuk – Corporate Associates Presidential Group or CAPG
- Jennifer Nicks - Students and Young Members Presidential Group or SYMPG
- Harry Poulos – Membership, Practitioners, and Academicians Committee – MPAC
- Francois Schlosser– Awards Committee - AWAC
- Dimitrios Zekkos - Innovation and Development Committee or IDC

ISSMGE President 1060 Days Progress Report (Continued)

Professor J-L. Briaud

These BLCs are now part of a mature structure for our Society to continue to prosper while involving more of our members in the decisions process and giving them a better sense of ownership.

Technical Committees: The Technical Committees (TCs) are the life blood of our Society. They provide worldwide expertise on many aspects of geotechnical engineering and allow all members of our society to participate. The activities are varied and a great deal of leadership independence is afforded to the chairs. The main TC activities are the organization of specialty conferences, development of guidance documents, service to the public and professional impact, contribution of articles in the Int. Jour. of Geoengineering Case Histories, organization of Honor Lectures, and communication of the TC work with the rest of the membership and with other TCs. Before 2009, only one person from each member society (country) could be part of a TC. We have changed that and now two members from each country can be on each TC. Furthermore we have created the "corresponding member" category and you can have as many corresponding members as you wish. Another important change which has been put into place is that the life of the TCs is no longer tied to the President. In Sept 2013 all TCs will continue to operate normally regardless of who is the next president. The chair of the TC is chosen for 4 years renewable once. At the same time, TCs are expected to be productive and TCs which are not productive can be terminated. The President retains the right to create a new TC in cooperation and with the advice of the TOC. All of you who work on TCs are to be commended for taking the time to contribute to the advancement of our field through volunteer work. The chairs of these 30 TCs are particularly deserving and while the list is too long for this progress report, I do wish to single then out for their contribution. I would like to see more exchange of information between the TCs and our members at large so everyone knows what the TCs are doing; therefore, I am asking the chairs of the TCs to please to send, at your convenience, a one page summary of your activities with photos to Ikuo Towhata, Chief Editor of The ISSMGE Bulletin, for publication in a future issue.

Until next time, take care and be safe.

Jean-Louis BRIAUD
President of ISSMGE
International Society for Soil Mechanics and Geotechnical Engineering

ISSMGE President 1090 Days Progress Report

Professor J-L. Briaud

Distinguished Colleagues, Dear Friends,

This is my thirty sixth progress report after 1090 days as your President. Note that previous reports are on the ISSMGE web site (http://www.issmge.org/) under "From the President" if you need them. This report corresponds to the 3 year anniversary of my election and as usual I will allow myself not to talk about geotechnical engineering in this progress report except for announcing the **next webinar** which will be presented by **Professor Towhata from the University of Tokyo on "Earthquake Geotechnical Engineering". Professor Towhata is a worldwide expert and author of a book on the topic. The date is 20 Nov 2012 at 12h00 (noon) UTC.** In this anniversary report, I have chosen to talk to you about laughing and smiling.

Laughing and smiling extends your life: I have read this a number of times and I wish to believe it. Rather than boring you with my thoughts about why it is important and how to best achieve it, I decided to simply tell you a few funny stories. What people consider to be funny varies extensively across cultures and it is bit challenging to find stories which will make all of us laugh. My hope is that you will find among these 10 short stories a few of them which bring a smile to your face; that is my goal. These funny stories reflect some of the things we experience in life.

1. We sometime make assumptions which are not verified: A man sees a woman walking a dog. He decides to approach her and says: "Does your dog bite?" The woman kindly answers "No". The man proceeds to pet the dog. The dog reacts, bites the man's hand. Astonished and frustrated, the man looks at the woman and says: " I thought you said your dog didn't bite". She answers:" yes, but this is not my dog!"

2. We don't always understand people's decision but they often have good reasons: A married couple is in the middle of a field chatting when a bull comes charging. Two solutions present themselves, to jump in a hole or to climb in a tree. The man jumps in the hole and the woman climbs in the tree. The bull stays around a while but suddenly the man comes out of the hole running towards the tree. The woman is puzzled, grabs him by the wrist to help him climb the tree, and saves his life but yells at him saying "why did you come out of the hole, you dummy you could have been killed, you just had to stay in the hole until the bull was gone". He replies: "Honey, I am very sorry but there was a big black bear in the hole!!!

3. Eating healthy food is important or is it: Two men die and go to Heaven. At dinner time in Heaven, they are enjoying a feast like never before: foie gras, plenty of wine, steak, gravy, French fries, cheese, chocolate and cognac. One of them says to the other. Isn't that absolutely wonderful, if it had not been for those darn vegetables, we would have been here two years ago!!

4. It pays to be polite or does it. A dish is filled with pieces of chicken and is circulating around a large table. People help themselves until the dish comes to the last two: Richard and John. At that point there are two pieces left in the dish, a very nice juicy piece and a very small half-burned piece. Richard takes the nice piece and passes the dish to John who says: "Richard, you are not very polite, you took the best piece and left me the bad one". Richard says: "what would you have done if you had been me". John says "well of course I would have taken the small piece" to which Richard responds: 'Well that's what you got, so don't complain!!".

ISSMGE President 1090 Days Progress Report (Continued)

Professor J-L. Briaud

5. Go after your dreams and persevere like little children: A little boy goes to bed upstairs. His father is watching TV downstairs. The little boy says: Daddy, can you bring me a glass of water. The father: No, you just had one, go to sleep. Two minutes pass and the little boy says. Daddy, can you bring me a glass of water. No, I said no already, you are just making excuses not to go to sleep. Again two minutes pass. The little boy: Daddy, can you bring me a glass of water. No, no, no, says the father, if you ask me one more time, I will come up and spank you. Ten minutes pass. The little boy says: Daddy, when you come up to spank me, can you bring me a glass of water!!!

6. Good news, bad news. A man goes to the doctor very worried about his health. The doctor orders some tests. After the test results are in, the doctor calls the man and says I have some bad news and some worse news. The bad news is that you have 24 hours to live. The man says that sounds pretty bad! what could be the worse news? The doctor says: I forgot to call you yesterday!!

7. Devious but cute. The phone rings in a house and a little girl answers speaking very softly. Hello says the caller, may I talk to your mother. The little girl answers very softly: she is busy. The caller: May I talk to your father then. The little girl still in a hush voice, he is busy too. The caller: Is there anyone else in the house I can talk to. The little girl: The police man. The caller: What do you mean the police man. Your mother is busy, your father is busy, the police is here. What are they doing? The little girl in a very quiet voice: "They're looking for me!!!"

8. Children are very logical. A police officer is teaching young kids to be careful about strangers and criminals. He takes them to the police station to show them the photos of the "most wanted" on the wall. He says here are the photos of people most wanted for their crimes. A little girl asks are these really mean people. The officer says Yes definitely. They are very mean and we are going to catch them all. The little girl asks: why did you not keep them when you took their picture?

9. We sometime think that the problem is with others when in fact …!Billy Bob is getting worried that Mary Jane is developing a serious hearing problem. Being an engineer, he decides to do a test to evaluate the extent of the problem. He sets himself 30m from Mary Jane one night and says "Mary Jane, what time is it?" … no answer. He says: that confirms it, there is a definite problem. He comes closer to 20m and says again "Mary Jane, what time is it?" … no answer. He says: it is really worse than I thought but he continues his test and comes to within 10m of Mary Jane and asks again. "Mary Jane, what time is it?" … Finally Mary Jane answers: "Billy Bob, for the third time, I said 10:30!!!"

10. Engineers are very practical. To the optimist, the glass is half full. To the pessimist, the glass is half empty. To the engineer, the glass is twice as big as it needs to be.

I hope that you now have a smile on your face. Keep it there, it does wonders.

Jean-Louis BRIAUD
President of ISSMGE
International Society for Soil Mechanics and Geotechnical Engineering

NEWS from Technical Committee TC104 on Physical Modeling in Geotechnics

Chair: Prof. Christophe Gaudin, University of Western Australia
Vice-Chair: Prof. Andy Take, Queen's University, Canada
Secretary: Prof. Dave White, University of Western Australia

Workshop and conferences

- Two special Physical Modelling sessions entitled "Roles and influences of physical modeling on state of the art and practice of geotechnical engineering" and "Roles and influences of physical modeling on state of the art and practice of geotechnical earthquake engineering" were held during GeoCongress 2012. The second session was co-sponsored with the ISSMGE TC203 on Earthquake Geotechnical Engineering.
- The 2nd quadrennial European Symposium on Centrifuge Modeling, Eurofuge 2012 was organized by Deltares in Delft (Netherlands) on 23-24 April 2012.
- The 1st quadrennial Asian Symposium on Centrifuge Modeling, Asiafuge 2012 Asiafuge will be organized by IT Bombay, India on 14-16 November 2012.
- The 8th quadrennial International Conference on Physical Modelling in Geotechnics, ICPMG2014, will be hosted by the Centre for Offshore Foundation Systems at the University of Western Australia, Perth, on 14-17 January 2014.

Communication and dissemination

- The 1st Andrew Schofield Lecture has been awarded to Prof. Malcolm Bolton, Cambridge University, in recognition of his outstanding contribution to the field of physical modeling in geotechnics. The Lecture will be presented for the first time at the 18th ICSMGE in Paris in September 2013.
- The new version of our TC104 website is now available online (http://www.tc104.group.shef.ac.uk/). The website aims at being a portal for all physical modellers to exchange knowledge and information. In its current form, it presents our term of references and the activities to be developed for the current term, provides contact details for the global network of TC104 members, and a list of experimental facilities worldwide.
- A wikipage about Andrew Schofield, following the establishment of the Schofield Lecture, has been created (http://en.wikipedia.org/wiki/Andrew_N._Schofield). More wiki materials are programmed for the next couple of years.
- An update of the 2007 Scaling Law catalogue, describing similitude principle and scaling relationships in geotechnical physical modeling is in preparation and will be presented at the 8th ICPMG held in Perth in January 2014.
- An industry portfolio describing the industrial application of physical modelling in geotechnics is in preparation and will be presented at the 8th ICPMG held in Perth in January 2014. The portfolio aims at showcasing physical modelling to our industry partners and at helping increase their awareness about physical modelling capabilities and benefits.

NEWS from Technical Committee TC304 on Engineering Practice of Risk Assessment and Management

Chair: K. K. Phoon (Singapore) (kkphoon@nus.edu.sg)
Vice-Chair: Gordon Fenton (Canada) (Gordon.fenton@dal.ca)
Secretary: Jianye Ching (Chinese Taipei) (jyching@gmail.com)
Website: http://140.112.12.21/issmge/tc304.htm
GeoWorld: http://www.mygeoworld.info/pg/groups/948/engineering-practice-of-risk-assessment-and-management-tc304/

To disseminate knowledge and practice within the TC's subject area

Short courses

- "Reliability Analysis and Design in Geotechnical Engineering", 1 June 2011, Munich, Germany (KK Phoon)
- "Risk Assessment in Geotechnical Engineering", 24-25 March 2011, San Diego, USA (DV Griffiths & GA Fenton)
- "Risk Assessment in Geotechnical Engineering", 5-6 May 2011, Chicago, USA (DV Griffiths & GA Fenton)
- "Risk Assessment in Geotechnical Engineering", 26 June 2011, Atlanta, USA (DV Griffiths & GA Fenton)
- "Risk and Reliability of Levees and Dams", 26 June 2011, Atlanta, USA (GB Baecher, RB Gilbert & M McCann)
- "Reliability analysis and design in Geotechnical Engineering", 25 March 2012, Oakland, USA (KK Phoon & J Ching)
- ISSMGE webinar "Risk Assessment in Geotechnical Engineering", 24 Feb 2012 (Z Medina-Cetina & M Uzielli)

Publications

- Geotechnical Special Publications 224, "Geotechnical Risk Assessment and Management", ASCE, Reston, 2011 (CH Juang, KK Phoon, AJ Puppala, RA Green, & GA Fenton)
- Edited book on "Modern Geotechnical Design Codes of Practice - Development, Calibration & Experiences", IOSPress (P Arnold, GA Fenton, M Hicks, T Schweckendiek & B Simpson) (scheduled for publication Dec 2012)
- Geotechnical Special Publication in honour of Professor Fred Kulhawy (M Hussein, KK Phoon & J Withiam) ASCE, Reston (reviews in progress; scheduled for publication 2013)

To establish guidelines and technical recommendations within the TC's subject area

- TC304 Guidelines, Information, and Technical Resources – a compilation of over 300 references organized into 17 topics ranging from "Introductory Material" to "Inverse Analyses and Bayesian Methods"
  Lead contributors: DV Griffiths & GA Fenton
  Website: http://140.112.12.21/issmge/TC304_refs_v4.html
- Translation of glossary of terms on reliability analysis/design & risk management
  Traditional/simplified Chinese (completed)
  Lead contributors: J Ching, HW Huang, CH Juang, DQ Li, Y Wang, J Zhang, LM Zhang
  Website: http://140.112.12.21/issmge/2012Glossary_Chinese.pdf
  Translation to Spanish (in progress)
  Lead contributors: R Jimenez and Z Medina-Cetina
- Development of a web form for submission of information on useful software tools related to risk/reliability
  Lead contributor: L Olsson
  Website: https://sites.google.com/site/tc304rms/

TECHNICAL ARTICLE

Effects of Geotechnical Interest Caused by the Nicoya Peninsula Earthquake, Costa Rica September 5th, 2012

By William Vargas Monge, University of Costa Rica

On September 5th, 8:42 a.m. local time (14:42 GMT), an earthquake of magnitude Mw=7.6 occurred in the subduction zone of the Cocos Plate beneath the Caribbean Plate under the Nicoya Peninsula (shown by an yellow arrow in Fig. 1) of Costa Rica. The epicenter was located at about 160 kilometers west of San Jose, the capital, and at a depth of 18 kilometers, according to LIS, as shown in Fig. 1. Fig. 2 illustrates the distribution of seismic intensity scale. This article briefly reports the findings made during the author's recent site investigation.

An earthquake in the Nicoya Peninsula with a magnitude of 7.5 had been predicted by seismologists of the Observatorio Vulcanologico y Sismologico de Costa Rica (OVSICORI) since the early 1990's (Protti, 1998). The prediction was apparently fulfilled by this event, since it coincided in magnitude and location. However, after the earthquake Protti himself denied it was what he had predicted. Additionally, just days after the event, the seismologists of the OVSICORI issued a public statement announcing that there could be still sufficient stored energy to produce another earthquake of similar magnitude, spurring a scientific public polemic.

The earthquake produced the highest recorded seismic acceleration in the short history of this country, reaching a peak of 1.8 g in the maximum horizontal component at the town of Nosara, near the epicenter (Fig. 3). In spite of the high peak acceleration, important structural damage in the epicentral area all but existed (see Fig. 4 for response spectra), and the earthquake hit mostly non-engineered constructions, sending nearly 1500 people to shelters and leaving some 200 people homeless. Although there were reports of liquefaction in some beaches of the peninsula and along the Pacific coast (Figs. 5, 6, and 7), there was no associated damage since the alluvial deposits occupy a relatively small area and are generally thin.

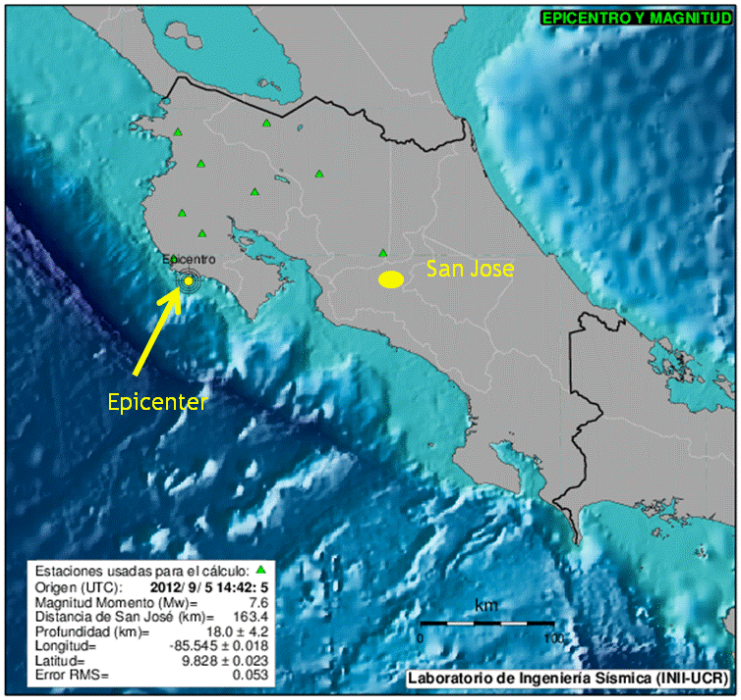


Fig. 1. Location of epicenter. Source: Laboratorio de Ingenieria Sismica, University of Costa Rica.

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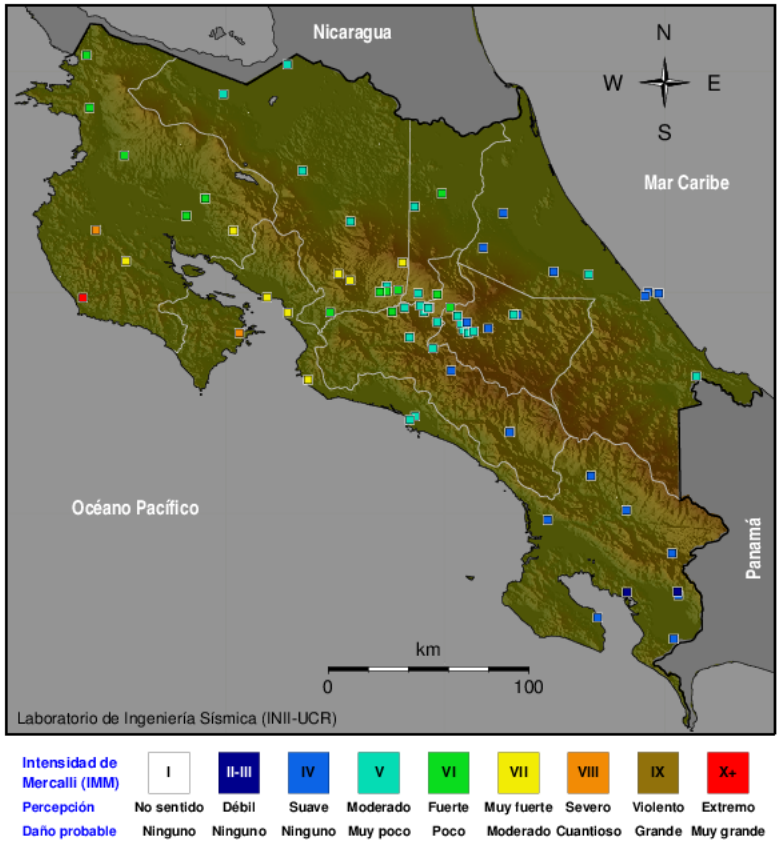

Fig. 2. Distribution of seismic intensity scale; see the highest scale of VIII in the Nicoya Peninsula (Source: Laboratorio de Ingenieria Sismica (LIS), University of Costa Rica)

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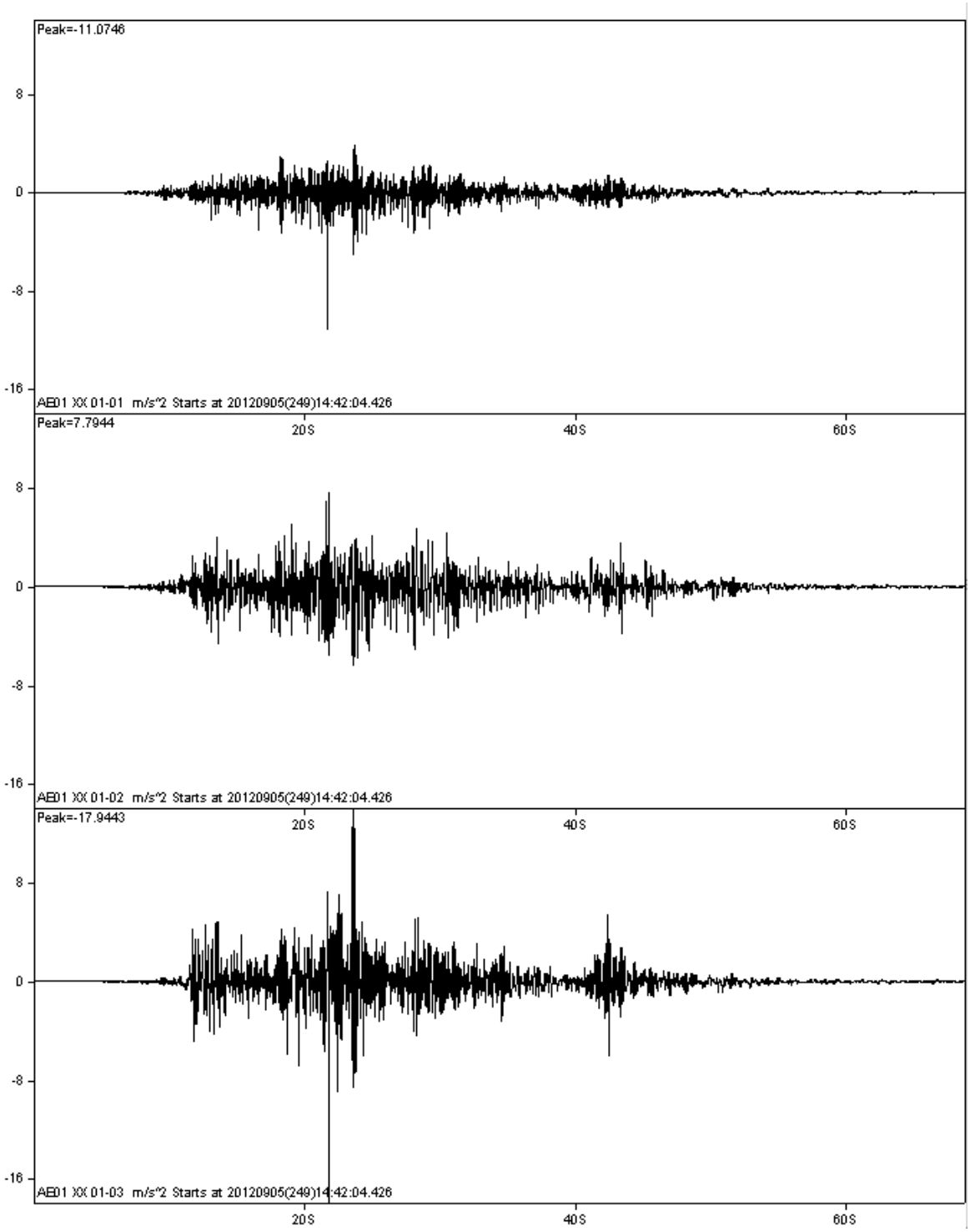

Fig. 3 Acceleration records obtained at Nosara by the Laboratorio de Ingenieria Sismica, Universidad de Costa Rica.

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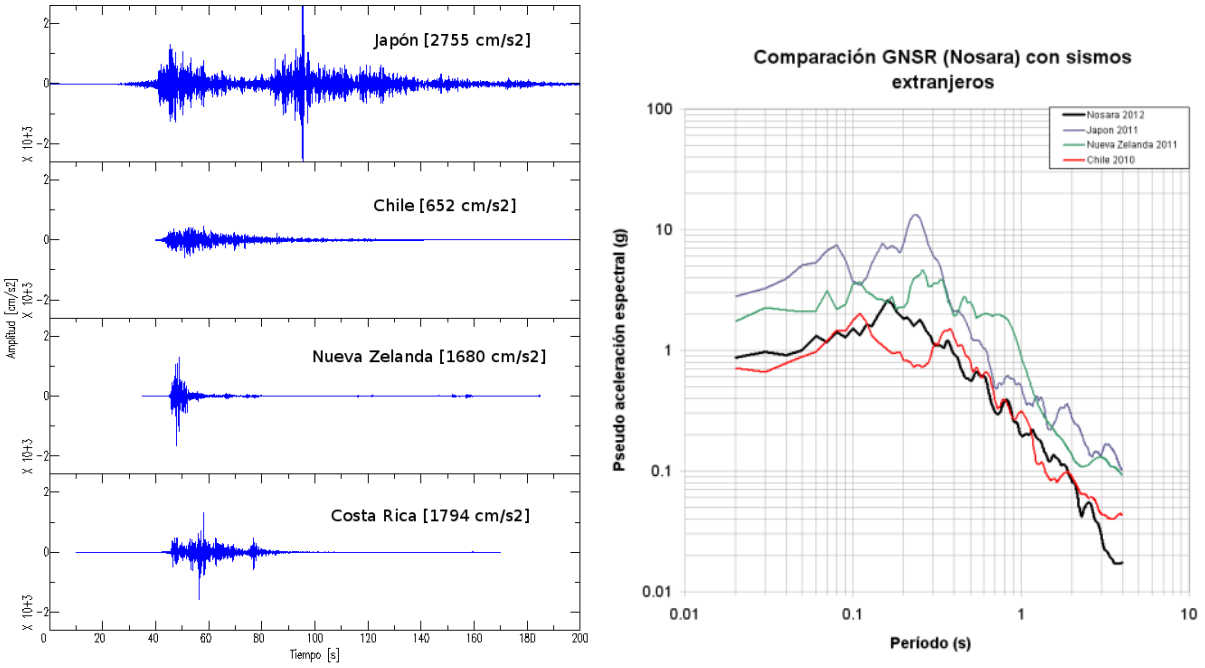

Fig. 4 Comparison of the Costa Rica earthquake and other recent records with high accelerations; Left: time history, Right: response spectra for 5% damping (present earthquake shown by thick black curve).

Fig. 5 Sand boiling in the Caldera beach
Source: Periódico El Imparcial (online version).

Fig.6 Lateral spreading in the Tivives beach
Source: La Nacion (online version).

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Within the geographic boundaries of the peninsula, the most important infrastructure assets affected by the earthquake were levee for flood control, a cable-stayed bridge and a multi-story RC hospital building. Although the structures were damaged, a technical diagnosis has not been published yet.

The flood-control levee showed longitudinal cracks (Fig. 8) but no significant settlement or instability failures. The preliminary conclusion from the observation is that the damage was not related with liquefaction of the foundation but with tensional stresses induced by the seismic waves at the crest of the levee. It is however possible that the longitudinal cracks were induced by lateral expansion as a consequence of subsoil or levee liquefaction. The Amistad Bridge over the river Tempisque, built in 2002, is the largest of the country and it is a structure composed of a cable-stayed span and a simply-supported span. The two spans seemingly collided and deformed leaving a horizontal permanent shift of 6 centimeters (Fig. 9). The Monsenor Sanabria Hospital (Fig. 10) is the most important facility of this type in the Pacific coast of Costa Rica. It is a reinforced concrete 10-story building with a combination of flexural frames and shear walls. The earthquake caused damage to non-structural partition walls and façade. There was shear cracks in several floor beams of the stairs (Fig. 11) and the building was therefore evacuated.

Fig. 7 Sand boiling through a cracked pavement in Puntarenas.

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Fig. 8 Tension cracking and slope failure of the Tempisque levee at Filadelfia (Source: La Nacion, online version).

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Fig. 9 Collision and permanent relative displacement between the two spans of the Amistad bridge (Source: La Nacion, online version).

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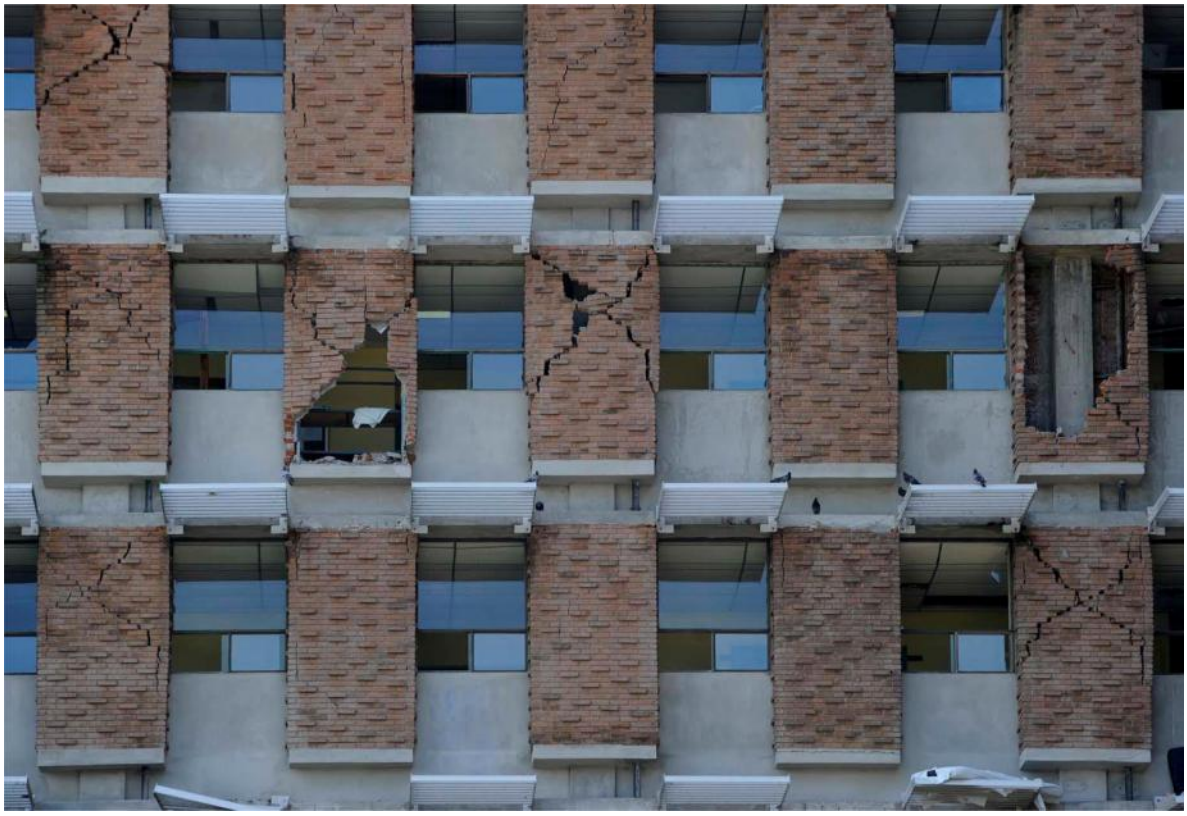

Fig. 10 Shear failure of non structural facade walls of the Monsenor Sanabria Hospital (Source: La Nacion, online version).

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Fig. 11 Shear cracks in the floor beams of the main stairs of the Hospital Monsenor Sanabria. Source: Laboratorio de Ingenieria Sismica, Universidad de Costa Rica.

According to Laboratorio de Ingenieria Sismica of the Universidad de Costa Rica, the accelerations throughout the country (Figs. 12 and 13) were moderate, considering the magnitude of the earthquake, with the notable exception of the central volcanic mountain range and the Caribbean alluvial plain, where the accelerations were amplified in comparison with those recorded in the central valley, at similar epicentral distances. The acceleration records show that, as the seismic waves traveled away from the epicenter, their frequency content shifted towards the lower range, which contributed to excite the natural frequencies of the foothills constituted by volcanic ashes in the mountain range and the thick alluvium deposits in the Caribbean plain.

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Amplification was the cause of additional damage at as far as 150 kilometers away from the epicenter. In the central volcanic mountain range, amplification was observed along the ridgelines of the foothills located at intermediate elevations between the valley and the mountain ridge (Figs. 14 and 15). The foothills of the volcanic range have an inverted U shape, created by erosion and the natural drainage and the foothill ridgelines are approximately perpendicular to the main mountain ridgeline, becoming radial around the volcanic peaks at higher elevations. Amplification was seemingly more intense in the ridgelines oriented in a perpendicular direction to the wave propagation trajectory. The combination of the two directions produced large displacements and tensional stresses along the ridgeline, which may be associated with the cracking of the ground and the failure of poorly compacted fills. The combination of these two effects caused damage to several houses observed in the towns of Grecia and Sarchi, at over 125 kilometers from the epicenter (Fig. 16).

In the Caribbean alluvial plain, the most significant damage was the collapse of a railway bridge in the location of Sarapiqui (Fig. 17). The structure is a steel truss bridge which fell off its support by the excessive displacement, which can be associated with the low frequency content of the seismic waves.

Perhaps the most costly damage caused by the earthquake to public infrastructure was the failure of a rock slope in the national route 141, shown in Figure 18, at 120 kilometers from the epicenter. The route is the main transportation way for agricultural products between the Caribbean plain and the center of the country, where San Jose is located. The Ministry of Public Works and Transportation worked for two weeks on removing the massive failure and repairing the damage while the traffic had to take other routes, causing an increment of at least 50 kilometers in the travel distance.

Why so little overall damage?

Although there was damage, it was mostly non structural, not severe and it was located mostly out of the epicentral area. This was somehow a “puzzle” demanding for a scientific explanation. The GPS data of Fig. 19 show that the peninsula moved upwards and towards the West, which means that the Caribbean plate moved over the Cocos plate. Typically, the displacement in subduction zones is such that the oceanic plate moves under the continental plate, projecting the seismic energy toward the continent, but here it was apparently the opposite. The displacement of the upper plate may be associated with most of the released energy being innocuously projected towards the ocean and not towards the continent. Besides that, the (yet to be published) simulations of the rupture mechanism based on the acceleration records in the epicentral area obtained by LIS show that it started in the easternmost boundary and moved towards the West (Moya, 2012, personal communication). This would reinforce the projection of seismic energy in the direction opposite to the country and help in producing little significant damage.

Another important reason for the absence of important structural damage is perhaps that the country has a seismic code which is mandatory by law since 1975. The code has been updated and edited twice and its most recent version is from 2010. Since the beginning of the code in the academic realm, it helped in creating a seismic-resistant construction culture which has permeated to the workers, who became proficient in building with reinforced concrete and masonry. In this aspect, Costa Rican is closer to other Latin American countries with high anti-seismic design and construction standards, such as Chile.

Conclusions:

The Nicoya Peninsula earthquake of September 5, 2012 was an event which did not live up to the expectancy of a large magnitude earthquake. Although there was damage associated it was not what can be typically seen for earthquakes of similar magnitudes in populated areas. In spite of large accelerations, in the epicentral area the damage was non-structural and the geotechnical effects such as soil liquefaction did not produce associated damage to important infrastructure.

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The most interesting effect from the geotechnical viewpoint was the amplification that was observed in the foothills of the central volcanic mountain range and in the Caribbean plains, over a hundred kilometers from the epicenter. The amplification can be associated with long periods which occur in soft soils (volcanic ash and alluvial deposits) as well as in some topographic features. This local effects manifest with great intensity for the first time and will have to be considered in the next edition of the Costa Rica Seismic Code.

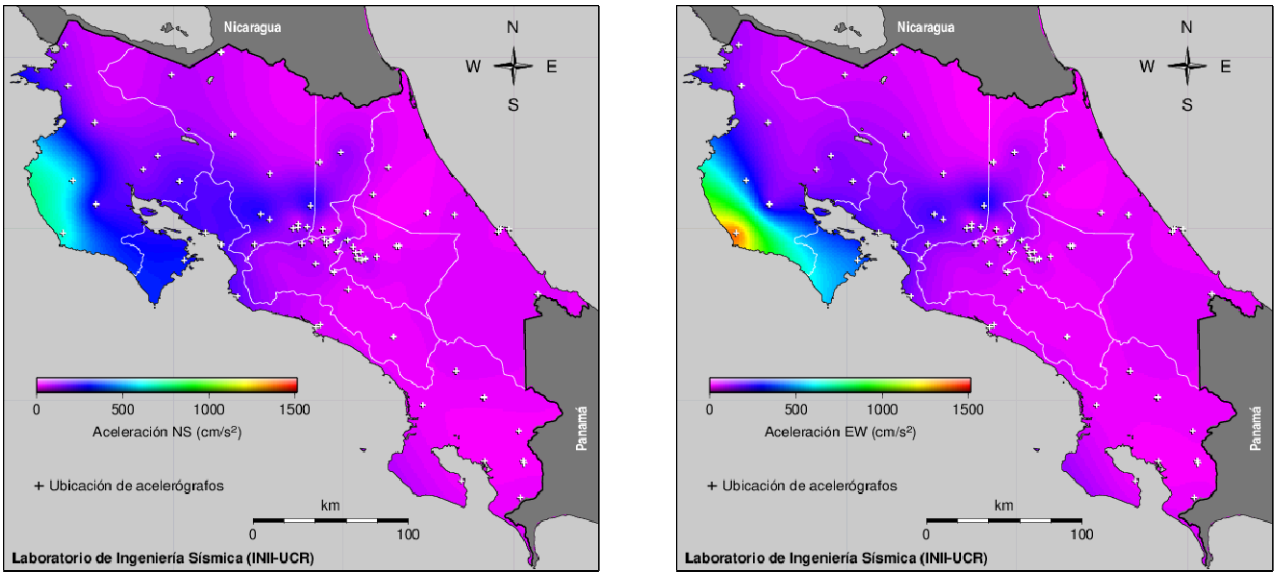

Fig. 12 Maps of interpolated horizontal accelerations by Laboratorio de Ingenieria Sismica, UCR. Left: North-South components. Right: East-West components.

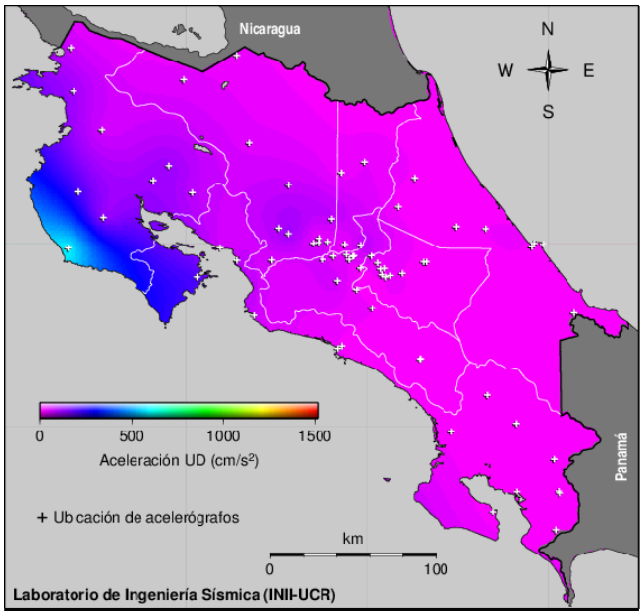

Fig. 13 Map of interpolated vertical accelerations by Laboratorio de Ingenieria Sismica, University of Costa Rica; Left: North-South components, and Right: East-West components.

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Fig. 14 Foothills of the mountain range in Sarchi (Photograph by W. Vargas).

Fig. 15 Failure of unstable fill in Sarch (Photograph by W. Vargas).

Fig. 16 Tension cracks and failure of a fill in La Fortuna (Source: La Nacion, online version).

Fig. 17 Collapse of a railway bridge over river Sarapiqui at Puerto Viejo (Source: La Nacion, online version).

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Fig. 18 Failure of a rock slope on route 141 (Source: La Nacion, online version).

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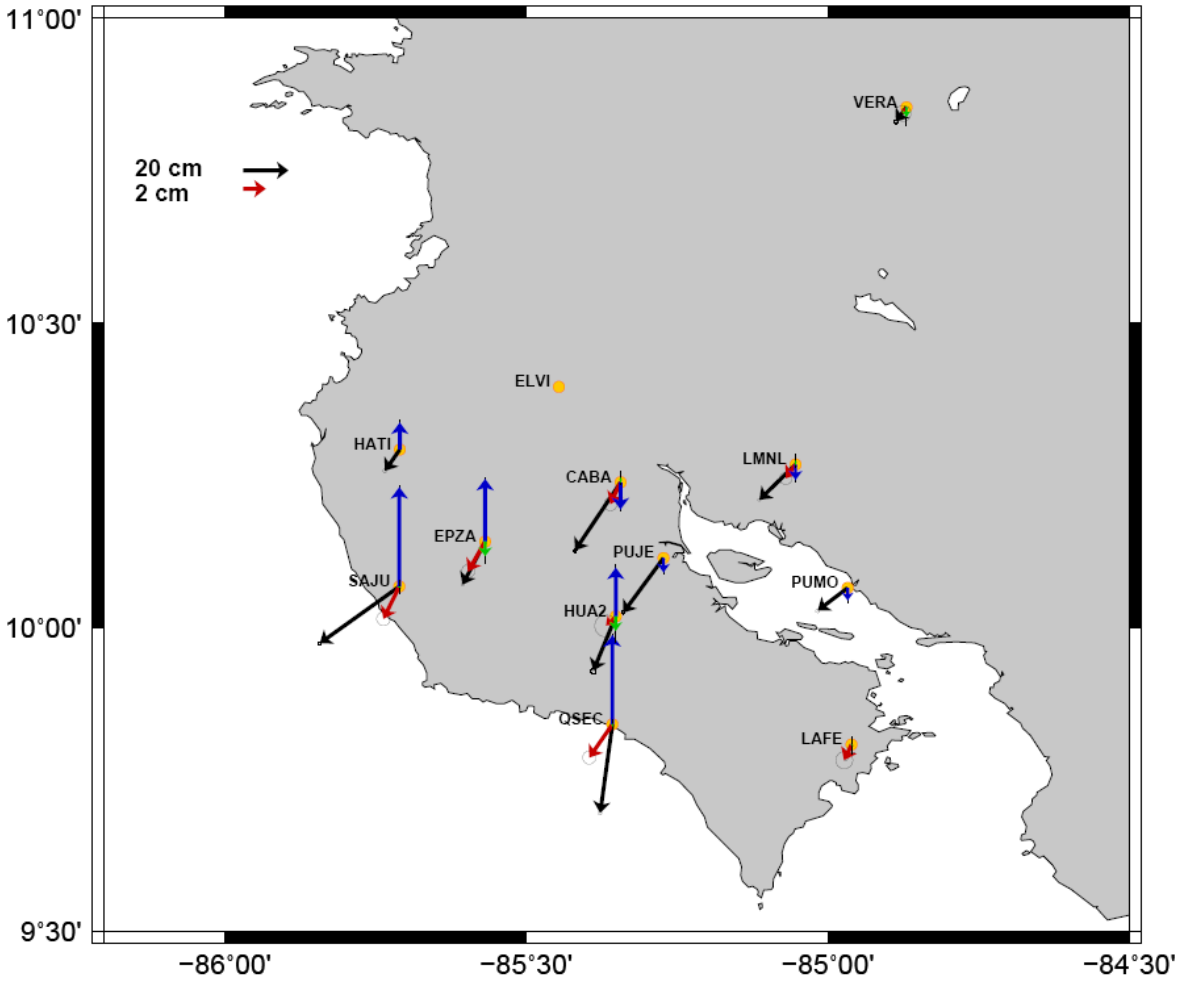

Fig. 19 Coseismic and postseismic displacements of the Nicoya peninsula associated with the September 5 event. Black vectors show coseismic horizontal displacements and blue vectors represent coseismic vertical displacements. Red (horizontal) and green (vertical) represent postseismic offsets up to Sept 10, 2012 (Source: Dixon, 2012).

Printed references:

Protti, M. (1998) "Alerta temprana a San José por un terremoto debajo de la Peninsula de Nicoya" Volumen de Ponencias de la Reunion hemisferica de la Decada Internacional para la Reduccion de Desastres Naturales, San Jose, Costa Rica. Comision Nacional de Emergencias.

Online references

http://www.lis.ucr.ac.cr/: Site of the Laboratorio de Ingenieria Sismica. All acceleration data (time histories, spectra, maps) can be downloaded without cost.

http://www.nacion.com/: Main webpage of the Costa Rican newspaper "La Nacion".

http://wp.me/p10fH0-ys/: Site of the Costa Rican online bulletin "El Imparcial".

Dixon, Tim. September 5, 2012 M 7.6 Costa Rica Earthquake: Geodetic Data Available for Research. ftp://sideshow.jpl.nasa.gov/pub/JPL_GPS_Timeseries/20120905_CostaRica/

TECHNICAL ARTICLE

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

By
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ABSTRACT

The distributed fiber-optic (FO) strain sensing technology offers the possibility to measure strain in consecutive sections along a fiber of up to 60 km length. These individual fiber sections, defined as the spatial resolution, can be as small as a few mm for short fiber lengths whereas a spatial resolution of 1 m is common for longer fibers in the range of kilometers. Thus, by embedding a single FO cable into soil or by integrating the cable into a geotechnical structure, an unprecedented amount of accurate, spatially resolved data can be obtained. This article intends to provide the reader with the basics of the distributed FO strain sensing technology. In addition, various successful applications, both scientific and commercial, of the technology in geotechnical monitoring are shown. In this way, it is possible to obtain an overview of the possibilities of the technology, as well as what can be expected in terms of monitoring data and information.

DISTRIBUTED FIBER-OPTIC SENSING

Measurement Technology

Distributed strain along optical fibers can be measured by several techniques based on the Brillouin scattering effect. This effect occurs when a light pulse guided through a fiber (Fig. 1a) is backscattered (Fig. 1b) by a nonlinear interaction with thermally excited acoustic waves. The scattered light undergoes a frequency shift, which is directly related to the strain and temperature in the fiber medium (Horiguchi & Tateda, 1989). Consequently in addition to the strained FO cable, a loose fiber must be placed for temperature compensation. The backscatter is recorded in the time domain to obtain information of the scattering location along the fiber and the frequency shift of the signal is analyzed to be converted into strain and temperature data.

Brillouin Optical Time Domain Analysis (BOTDA) is the most developed and commercially used FO distributed technology for strain sensing. It allows measuring several kilometers of fiber with a spatial resolution of 1 m. Other distributed technologies with spatial resolution in the mm range are currently being introduced into field projects (e.g. coherent optical frequency domain reflectometry to measure Rayleigh backscatter with high resolution resulting in gauge lengths of a few mm over 70 m sensor length). In this article, only BOTDA monitoring applications are presented.

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

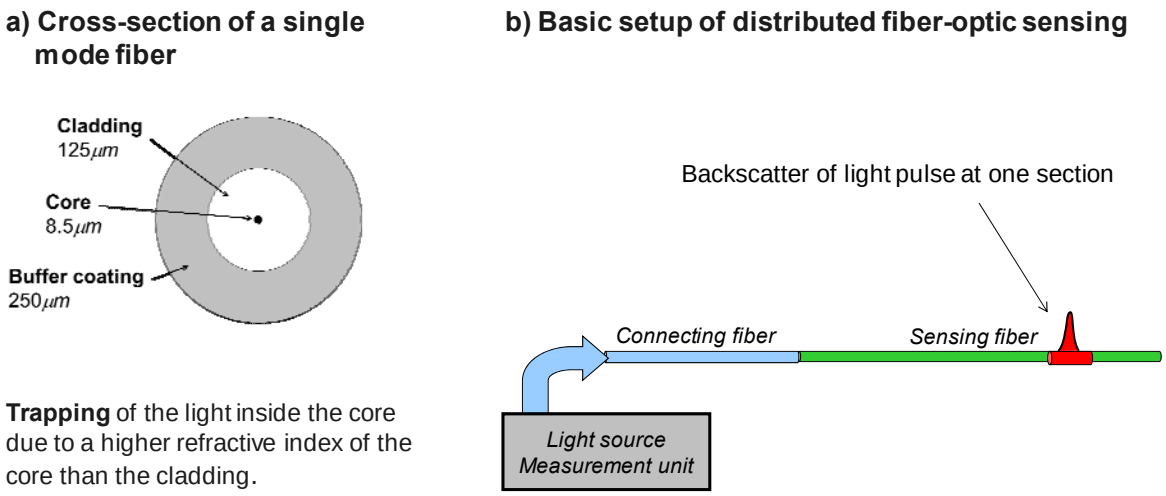

Figure 1: a) The fiber-optic and b) the basic setup of distributed fiber-optic sensing.

Sensors

The distributed FO sensing technologies function with standard commercial fibers, such as used for telecom applications. However, commercial cables are designed to protect the optical fibers against mechanical stresses, which may degrade data transmission performance and considerably reduce optical fiber's lifetime.

In a strain sensing cable, strain must be efficiently transferred from the outer layer, where the sensor is fixed to the object of interest, down to the fiber core. Of course, best results are obtained using a bare fiber. Any protection layer above the bare fiber presents a risk of slippage between the protection layers. Nevertheless, protection of the strain sensing fibers against the harsh geotechnical environment during installation and operational lifetime is crucial.

Over the past years, well-protected strain sensing cables which allow for strain transfer from the outer jacket to the core, have been developed and tested (e.g. Iten et al., 2011). Fig. 2 shows the FO strain readings in two sensor cables: one with good strain transfer properties and one with limited strain transfer properties. It can clearly be seen that the cable with limited strain transfer properties is only able to measure applied strain up to a certain level. For applied strain on the cable jacket above this level, the sensor does not provide for accurate monitoring data. Thus, the choice of an appropriate strain sensing cable strongly influences the overall measurement accuracy of the sensing system and the success of a FO monitoring project.

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

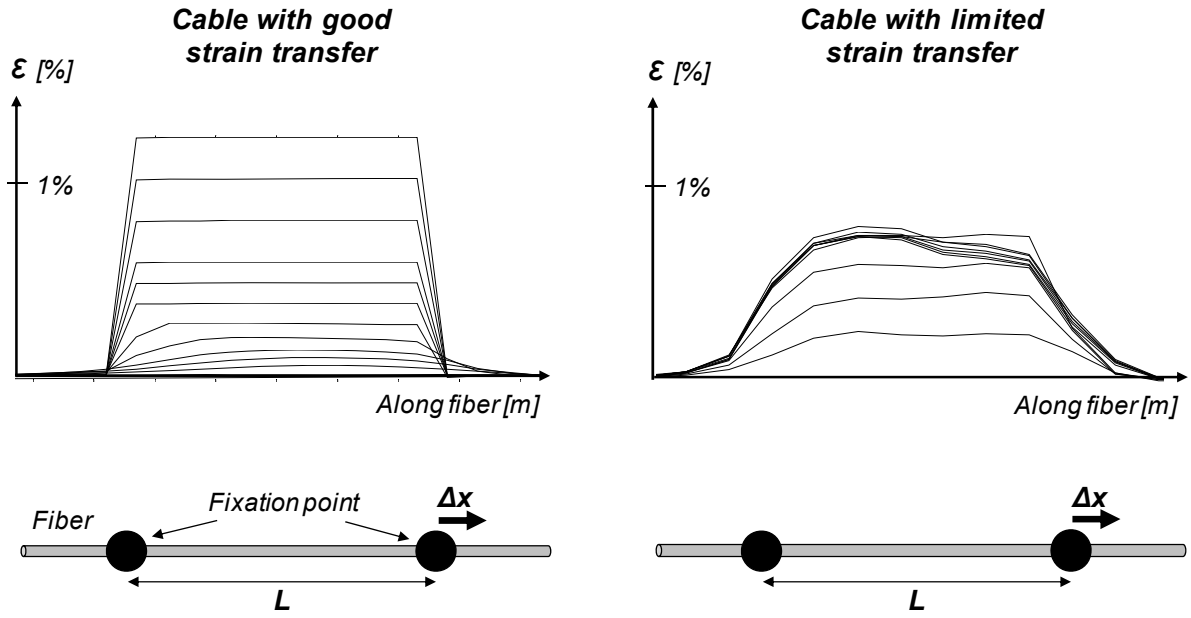

Figure 2: Distributed strain readings (BOTDA) along two different strain sensing cables for increasing applied strain on section L = 2 m.

PILE- AND ANCHOR-EMBEDDED SENSORS FOR BEARING BEHAVIOR MONITORING

Motivation and Principle

By measuring the strain distribution within a ground anchor or pile, it is possible to understand the bearing behavior of such a structure. Normally, the strain is obtained at distinctive points, either using conventional strain gauges, extensometers or sliding micrometers. With all these methods, the strain readings are limited to only a few sections within the structure. Embedding FO cables allows for distributed strain assessment along the entire ground anchor or pile and thus, provides a powerful tool for calculating the load distribution, where other reliable methods are rare.

Design and Installation

Since the strain is monitored within the structure, the sensor cable has to be fixed to the structure. This is done by fixing the sensor to the ground anchor tendon or to the reinforcement of the pile (Fig. 3).

In the case of a ground anchor, the tendon is then inserted into a borehole and connected to the surrounding soil by a grout body. Fig. 4a shows an 8 m long monitoring ground anchor, which was installed into a sheet pile wall supporting an excavation pit of a high rise building construction in Zurich, Switzerland.

In the case of a pile, the reinforcement is inserted into the borehole and subsequently, the borehole is filled with concrete. Fig. 4b shows a massive pile, 10 m deep and 2 m in diameter instrumented with an FO strain sensor for monitoring of pile-strain due to pile loading and creeping of the slope, in which the pile is embedded. The pile is part of a bridge pylon foundation in Fribourg, Switzerland.

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

a) Fixation to ground anchor tendon **b) Fixation to pile reinforcement**

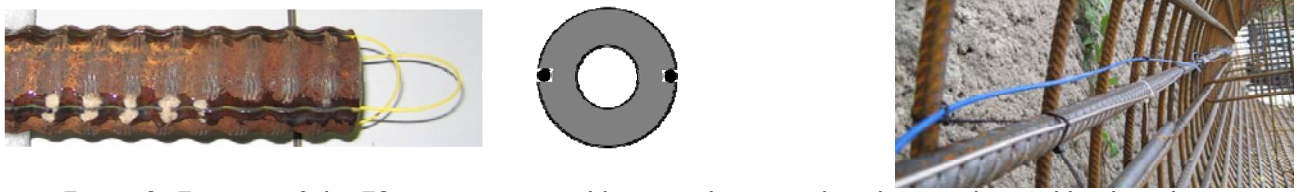

Figure 3: Fixation of the FO strain sensor cable to a) the ground anchor tendon and b) the pile reinforcement.

a) Monitoring ground anchor **b) Pile instrumented with FO**

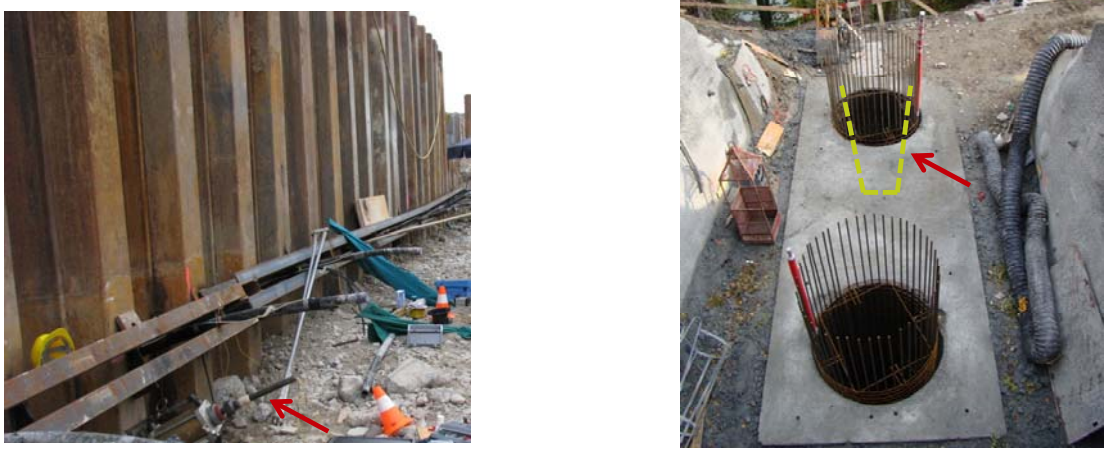

Figure 4: Two examples of construction sites in Switzerland which are instrumented with distributed FO strain sensors.

Monitoring and Data Analysis

During anchor pullout testing, the ground anchor was loaded in stages up to 470 kN (Fig. 5a), almost reaching its ultimate bearing capacity. BOTDA measurements were taken at each loading stage recording the load distribution along the tendon (Fig. 5b). This provides a better understanding of the real strength mobilization and progressive failure than some currently commercially available monitoring anchors. The greatest gradient of the curves in the middle part of the anchor implies significant friction development therein. The obtained data was validated against reference load readings at the anchor head (Fig. 5c).

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

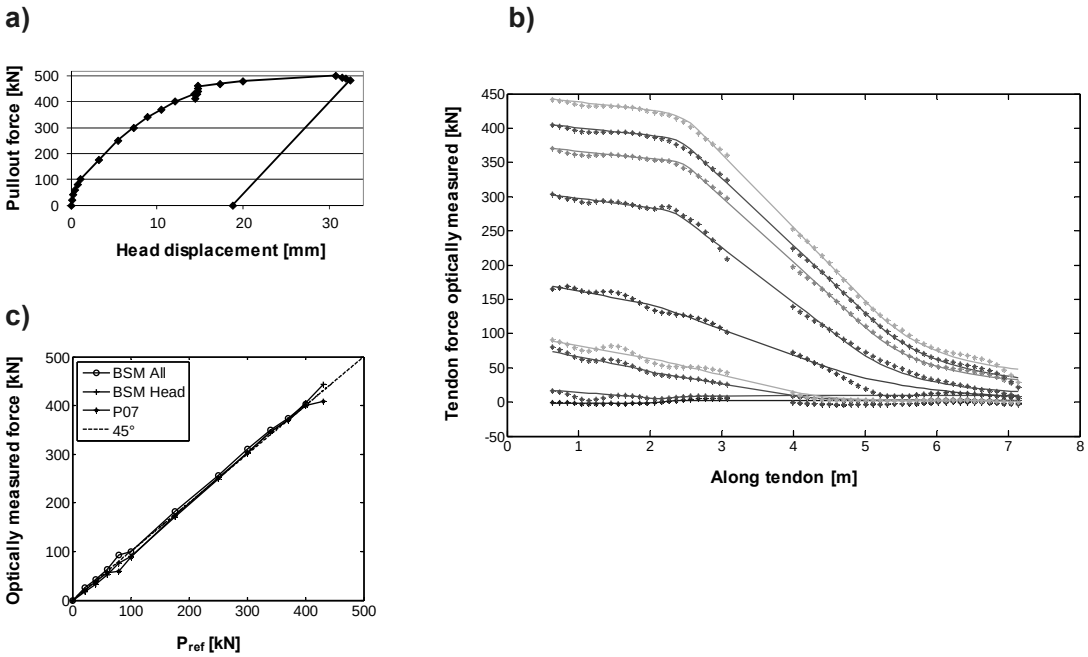

Figure 5: a) Head displacement and anchor head load (pullout force), b) load distribution along ground anchor tendon for increasing load steps and c) validation of results by comparing pullout force (P_{ref}) with load obtained from measured strain within the steel anchor tendon.

Pile load monitoring has been going on since the construction of the pile in October 2010. Only insignificant axial compression was observed so far, since the bridge is still under construction. However, a small pile bending was detected. This bending was also observed by other monitoring methods. The bending is believed to be due to the creeping of the slope, in which the pile is standing.

BOREHOLE-EMBEDDED SENSORS FOR LANDSLIDE AND SETTLEMENT MONITORING

Motivation and Principle

For measuring strains in soil in the vertical direction (settlements or heave) or detecting movements (sliding surfaces), distributed FO sensors can be embedded into boreholes (Fig. 6). The motivation behind such projects is that installation and data readout is much simpler than current methods (inclinometers, extensometers or sliding micrometers). In addition, the FO cable itself can be chosen of very low longitudinal stiffness and thus, in comparison to traditional methods, does not act as a reinforcement of the soil. The “reinforcement” of the soil due to inclinometer casings or other kind of tubes used for the measurement can have a significant impact on the measured data.

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

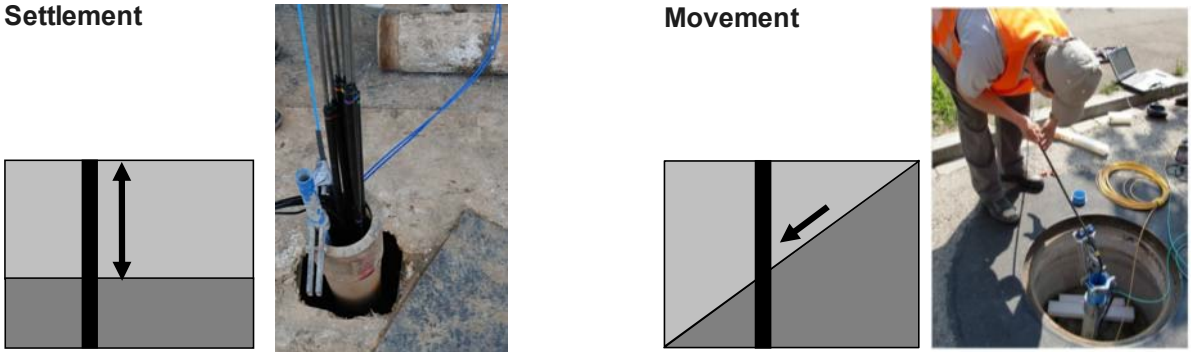

Figure 6: Borehole-embedded FO sensors can be either used for settlement monitoring and quantification (e.g. as a substitution of extensometers) or for movement detection (e.g. as a substitution of inclinometers).

Design and Installation

In order to monitor earth strains, the fiber has to be connected to the soil. The concept is that a FO cable is inserted into a borehole. The cable is then pre-strained (to be later able to measure compression) and a cement-bentonite grout is used to backfill the borehole. The grout, of similar stiffness as the surrounding soil, is intended for the overall bonding between the cable and the soil.

Careful attention should be given to the sensor cable selection, since this is a compromise between stiffness, bonding to grout properties and protection of the fiber inside. The choice significantly influences the overall system sensitivity.

Over 10 boreholes up to 50 m deep were instrumented with distributed FO sensors in Switzerland and the UK. Fig. 7 shows examples of borehole-embedded sensing projects.

St. Moritz, Switzerland
Landslide movement detection

Hyde Park, London, UK
Settlements monitoring due to construction of new tunnel (Crossrail)

Zurich, Switzerland
Monitoring settlements due to construction of high rise building

Figure 7: Commercial and scientific borehole-embedded FO strain sensing projects in Switzerland and the UK.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

Monitoring and Data Analysis

Usually, for borehole-embedded sensors periodic monitoring is carried out. No abrupt changes are expected, since the cause of the strain changes are either slowly creeping landslides or slow loading due to a progressing construction. However, real-time monitoring is possible and will be carried out at the London Hyde Park site in late 2012 during the actual passing of a tunnel boring machine.

The monitoring data provides the strain change along the sensor in correlation to the zero measurement, which was performed shortly after installation. For example, in Fig. 8a, the longitudinal strain change along a sensor installed on the creeping landslide of St. Moritz is shown. This sensor was installed inside an old, out-of-service inclinometer pipe. If the movement direction is known, also the horizontal displacements can be calculated from the strain data (Fig. 8b). In the case of the St. Moritz borehole, inclinometer readings from the same borehole carried out in the 80's were available and served for the comparison with the actual data. It can be seen in Fig. 8 that firstly, the shear surface is still active at the same depth and secondly, the order of magnitude of the movement is still the same. Therefore, borehole-embedded sensors offer a fast, cost-efficient and reliable method to detect such movements.

Monitoring data obtained for purely longitudinal strain (settlement) can be used to calculate the vertical displacement along the borehole depth. In Fig. 9, an example of vertical displacements along the borehole obtained with FO strain sensors during construction of a high-rise building above the borehole is shown. Five readings were taken, according to the construction progress. The monitoring data was verified with geodetical measurements.

ROAD- AND SOIL-EMBEDDED SENSORS FOR LANDSLIDE MONITORING

Motivation and Principle

Differential soil displacements initiated by creeping landslides can cause immense problems by damaging infrastructure and buildings in the sliding area. Often, the existence and especially the exact dimensions of sliding areas are unknown. In some cases, it is of crucial importance to determine the boundary between the landslide and the stable parts. If the extent is known before construction, adjustments to the planned infrastructure are possible. In the case the monitoring is part of the construction project and the sliding area is therefore only detected during the infrastructure's lifetime, necessary measures can be planned out of the knowledge obtained by the monitoring.

Geodetic measurements can identify the boundary on the surface, but not necessarily with high accuracy. In addition, for large areas, an unpractical large amount of single monitoring points are required. By embedding FO strain sensors into a road or into the soil close-by to one-dimensional (linear) infrastructures within the landslide prone area, the boundary and the moving area can be detected and monitored (Fig. 10) with high resolution.

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Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

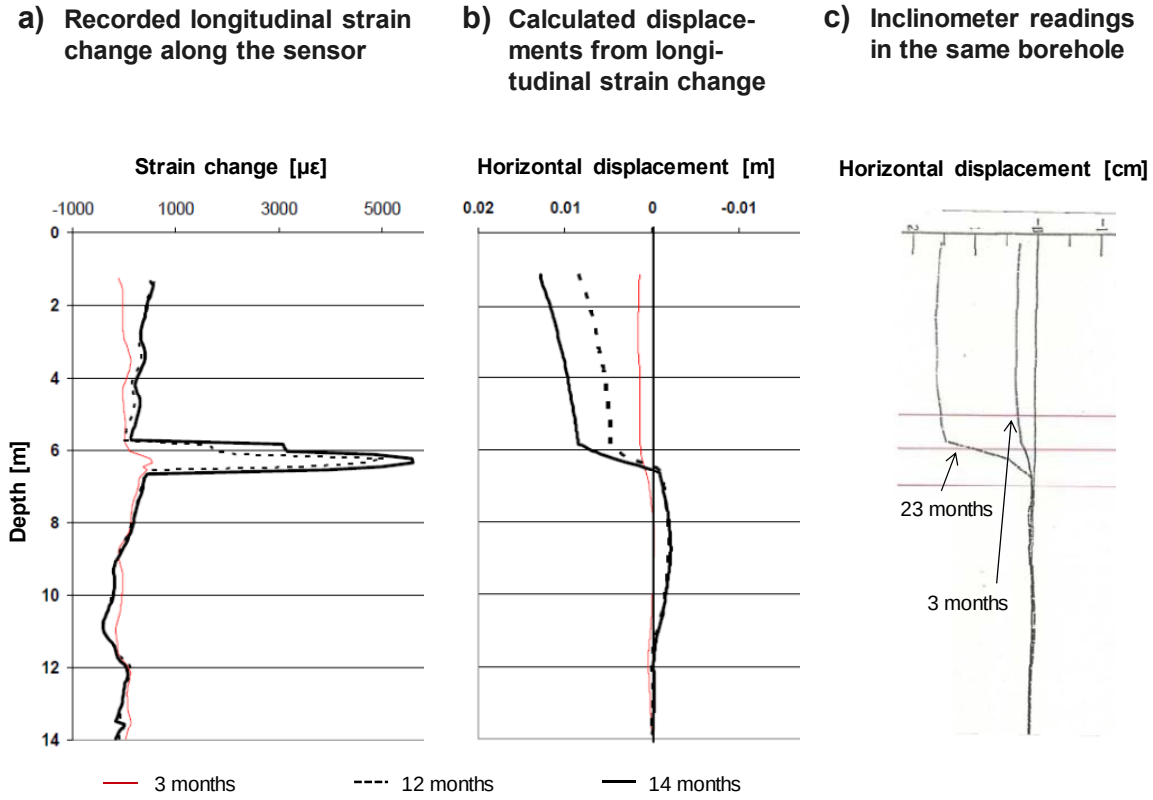

Figure 8: Monitoring of creeping landslide for sliding surface detection: a) longitudinal strain change along the borehole, b) calculated horizontal displacements along the borehole and, c) comparison with older inclinometer readings in the same borehole.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

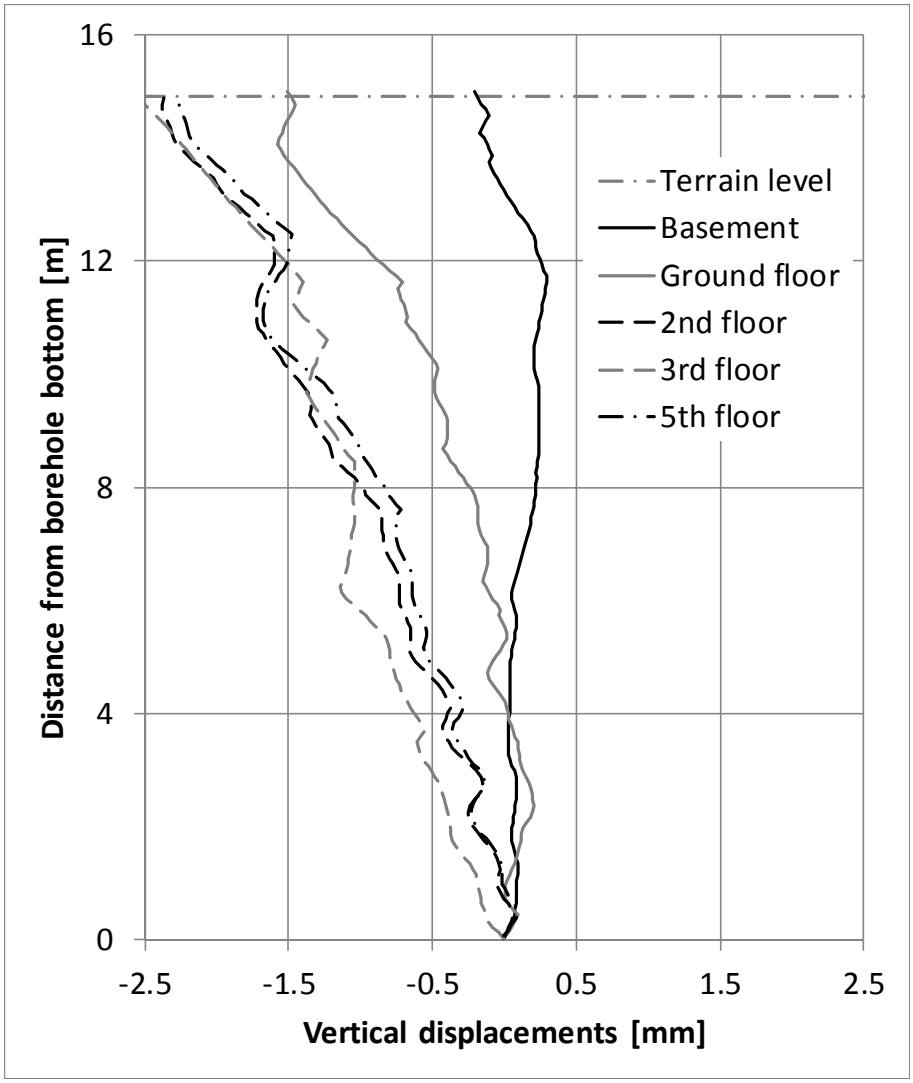

Figure 9: Vertical displacements along a borehole caused by progress of a high-rise building construction above the borehole.

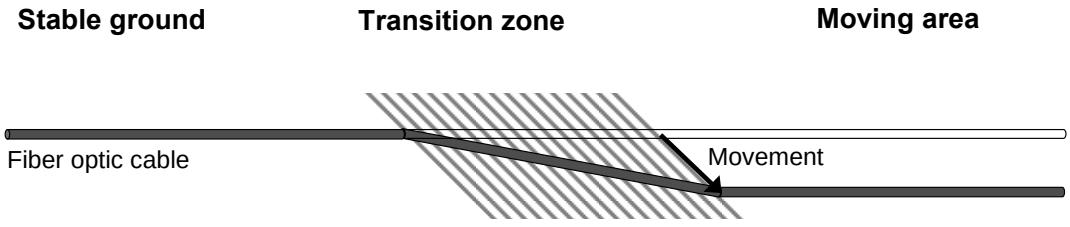

Figure 10: Simple model for movement interpretation from strain data.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

Design and Installation

In order to monitor the movement, the fiber has to be somehow connected to the moving soil, so that the cable experiences the same movement as the soil around it. In the case of a road, the cable can simply be glued within a trench cut into the road (Fig.11a). For the boundary identification in a project where attachment of the cable to a road or other infrastructure is not practicable, the cable is directly embedded into the soil. In order to improve the bonding of the cable to the soil, several measures can be taken: low longitudinal stiffness of the cable, rough surface of the outer protection or even fixing of "micro-anchors" to the cable (Fig. 11b).

Several sensing systems were installed over the past years. For example, a road-embedded (90 m) and a soil-embedded (80 m) sensing system were installed in St. Moritz, Switzerland, where a part of the city is built on a creeping landslide, while the other part is on a stable slope (Fig. 12a). Furthermore, a 1 km long soil-embedded sensing system was recently installed next to a massive soil-embedded water pipeline for a new hydropower plant in the Alps. The pipeline routing crosses steep, landslide-prone slopes. Zero measurement in this project was successfully carried out in October 2012 (Fig. 12b).

a) **Cable embedded in trench cut into the asphalt**

b) **«Micro-anchor» for cable fixation to soil**

Figure 11: Systems for embedding and fixing FO strain sensing cables to a) asphalt and b) soil.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

a) The leaning tower of St. Moritz

b) Soil-embedded FO sensors for hydropower pipeline montoring

Figure 12: a) “Visible” landslide boundary: the leaning tower in the front is built on the moving area, while the tower in the back is on stable ground; b) Large, soil-embedded FO strain sensing project in the Swiss Alps for hydropower.

Monitoring and Data Analysis

For the road-embedded sensor, as early as 7 months after installation the transition zone could be clearly identified as a 15 m long section (Fig. 13) and the landslide movement was estimated at about 2 cm per year. This was later independently verified by geodetical data.

For the soil-embedded sensors, an extensive laboratory program was first carried out. The large scale testing of the system in a 9 m long shear box proved the FO monitoring to be very efficient (Hauswirth et al., 2011). The most sensitive sensing system is, as expected, the “micro-anchor” cable system. However, even by simply embedding a cable into soil, the applied shear zone could still be detected (Fig. 14). Whereas the monitoring of the 80 m long soil-embedded section in St. Moritz over the past four years indicated clearly the presence of a creeping landslide (Hauswirth et al., 2012), the monitoring for the large hydropower field installation is still going on and no results can be presented at this stage. However, with prove of concept in the laboratory testing and the first good results from several field installations, very valuable data for commercial clients are expected.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

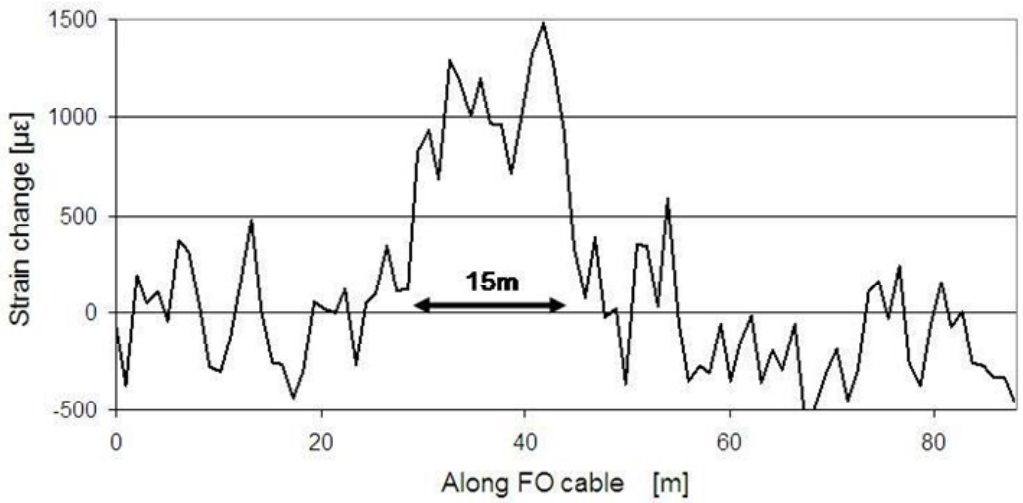

Figure 13: Strain change along the road-embedded FO cable over a 7 months period. Between 30 m and 45 m, the transition zone can be detected.

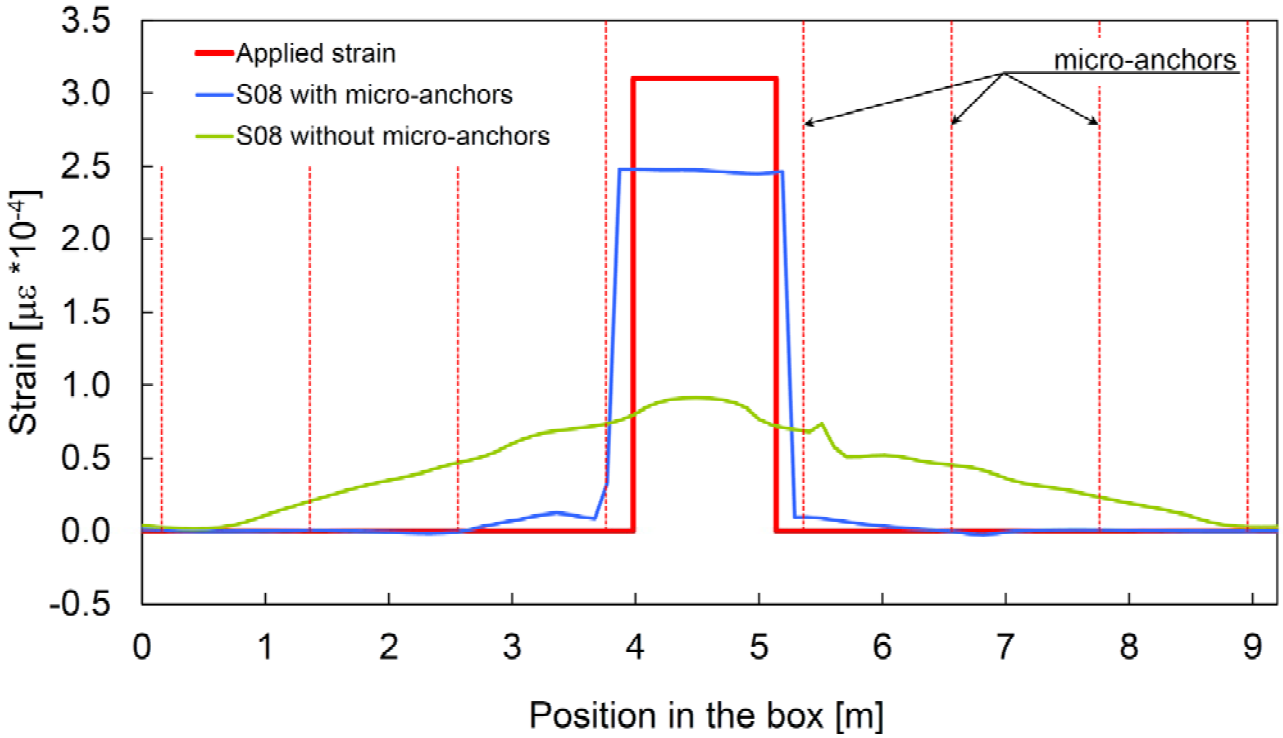

Figure 14: Laboratory simulation of a 1 m wide shear zone between 4 m and 5 m (applied strain in red). In blue the strain readings along a FO sensor fixed to soil by “micro-anchors” and in green the strain readings of a bare soil-embedded FO sensor.

TECHNICAL ARTICLE (Continued)

Distributed FIBER-OPTIC Sensors in Geotechnical Engineering Monitoring

CONCLUSIONS

The ability of the distributed FO strain sensors to provide an unprecedented amount of spatially resolved data at low cost per reading is a convincing fact, which is more and more acknowledged by the engineering community. In contrast to structural health monitoring, FO sensing applications are not that widespread in geotechnical monitoring yet. Nevertheless, the applicability to a wide range of geotechnical problems and soil-embedded infrastructure has been shown in scientific as well as in commercial projects.

The issues that have to be handled with care and were overcome in the presented applications are the sensor selection, the sensor integration and the data interpretation. As it has been shown, sensor cables of a broad range of cable stiffness and protection are now available. The sensor integration is project specific and methods have been briefly outlined. The data interpretation requires background knowledge of optical sensors.

The authors are convinced that for the shown applications, FO sensors are a valuable alternative to conventional methods. In addition to the usually simpler installation and readout process than provided by the conventional sensors, a larger amount of spatially resolved and accurate data can be expected. And in some cases, distributed fiber-optic sensors provide the only applicable solution.

Acknowledgments

Our acknowledgments go to the many individuals and companies involved in one or several of the demonstrated projects: Brugg Cables AG, Omnisens SA, Solexperts AG, Stump AG, Verein Schweizer Strassenfachleute VSS, Swiss Innovation Promotion Agency KTI, Implenia AG, Imperial College London, Axpo AG, Gemeinde St. Moritz and Dr. Carlo Rabaiotti.

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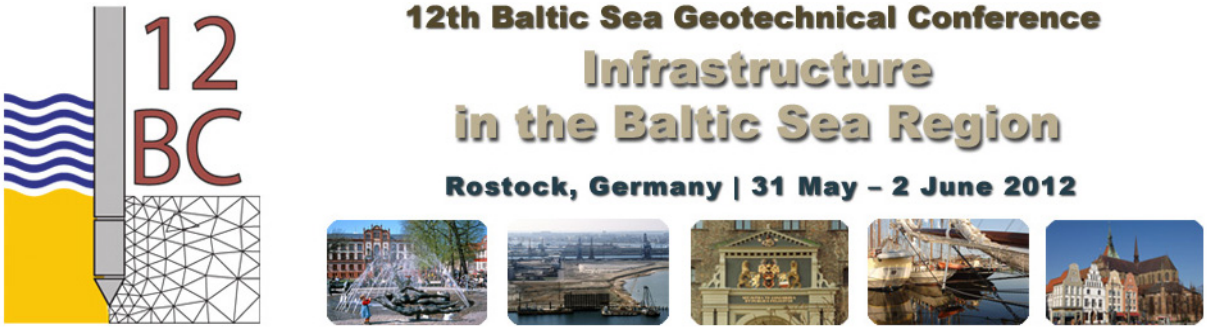
NEWS ON RECENT CONFERENCE



Reported by

Dr. K. Laackmann (Managing Director of DGGT) and
D. Busch (Secretary of DGGT)
DGGT Deutsche Gesellschaft für Geotechnik
German Geotechnical Society
Essen, Germany

Between May 31 and June 2, 2012, the 12th Baltic Sea Geotechnical Conference was held at the Stadthalle in Rostock, Germany. The conference was organized by the German Geotechnical Society (DGGT) in cooperation with the University of Rostock under the auspices of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE).

This series of conferences is the most important geotechnical event for the Baltic Sea Region. In former times the conference was a regional Baltic conference to bring knowledge within soil mechanics, geotechnical engineering and related areas to northeastern countries. It was a long way after the fall of the iron curtain before the eastern and western countries really came together.

In 2008 the conference was for the first time developed to be a platform for the whole Baltic Sea Region with the main purpose to provide a forum where researchers and practitioners can report and discuss their ideas and experiences with other engineering and research groups on an international level. After the 11th Baltic Sea Geotechnical Conference the decision was made to bring the next conference to Germany. Thus, following the success of the previous 11th Baltic Sea Geotechnical Conference held in Gdansk in 2008, the 12th Baltic Sea Geotechnical Conference had to fulfill great expectations.

The main theme of the 12th Baltic Sea Conference was “Infrastructure in the Baltic Sea Region”.

In the forefront a total of 145 papers were submitted, and two reviews were necessary to bring together 47 papers of a high level dealing with maritime engineering, geotechnical problems of ports, offshore and onshore structures and wind energy.

The Organizing Committee carried out a thorough work in preparing a highly interesting program. This committee consisted of:

Fokke Saathoff (Chairman)
Martin Achmus
Jürgen Grabe
Georg Heerten
Michael Heibaum
Kirsten Laackmann
Werner Möbius
Werner Richwien
Joachim Stahlmann
Hans-Heinrich Witte

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

The conference would not have been so successful without the International Scientific Committee that consisted of the following members:

Georg Heerten *(Chairman), Germany*
Fokke Saathoff, *Germany*
Zbigniew Lechowicz, *Poland*
Zbigniew Sikora, *Chairman of the 11th Baltic Sea Geotechnical Conference, Poland*
Anders T. Andersen, *Denmark*
Vidar Gjelsvik, *Norway*
Stefan Aronsson, *Sweden*
Jouko Viitala, *Finland*
Vyacheslav Ilyichev, *Russia*
Peeter Talviste, *Estonia*
Valters Celmins, *Latvia*
Liudas Furmonavicius, *Lithuania*
Meindert Van, *Chairman of TC "Dykes and Levees", Netherlands*
Vladimir Ulitsky, *Chairman of TC "Soil-Structure", Russia*
Michael Heibaum, *Chairman of TC "Scour and Erosion", Germany*
Mario Manassero, *Chairman of TC "Environmental Geotechnics", Italy*

The conference was supplemented by the International Advisory Committee consisting of:

Jean-Louis Briaud, *ISSMGE President*
Ivan Vanicek, *ISSMGE Vice President Europe*
Neil R. Taylor, *ISSMGE Secretary General*
Suzanne Lacasse, *ISSMGE Technical Oversight Committee*
Manfred Nußbaumer, *Past Chairman of DGGT*
Zbigniew Mlynarek, *Past President of the Polish Committee on Geotechnics*
Hans-Heinrich Witte, *President of Federal Waterways Directorate North, Germany*
Hans Peter Dücker, *Chairman of HTG (German Port Technology Association)*
Oliver Schild, *EnBW Erneuerbare Energien GmbH, Offshore Windenergie, Germany*
Manfred Zeiler, *BSH Federal Maritime and Hydrographic Agency of Germany*

The conference attracted more than 210 researchers, practitioners and students, and most of them were from countries in the Baltic Sea Region (Photo 1). However, the conference attracted some participants from many other countries like Japan, the USA and Brazil.

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

It was a special honor for the conference that Professor Jean-Louis Briaud, President of the ISSMGE, and Professor Ivan Vanicek, Vice President Europe of ISSMGE, attended the conference.

Photo 1 Attentive listeners of one of the technical presentations

In addition to the conference, an exhibition covered an area of 170 m^2 in the foyer of the Stadthalle Rostock and displayed some of the geotechnical equipments and services available for researchers and professional engineers. Twenty three exhibitors presented their latest products and developments.

Before the official start, the event began in the evening of Wednesday, May 30, with a special kind of highlight. To encourage the young geotechnical students and engineers to develop a broader scope in geotechnical engineering, a meeting between the ISSMGE President Professor Jean-Louis Briaud and geotechnical students and young participants took place (Photo 2).

Photo 2 Professor Briaud among the young participants and students from Poland during the “Meeting with the President”

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

Altogether 46 students took the opportunity to come to Rostock; 29 from German universities of Darmstadt, Berlin, Weimar, Hannover and Rostock and even 17 from Polish universities of Szczecin and Gdansk. For about one and a half hour Professor Briaud talked with the young participants about the ISSMGE, heard about what they had to say, shared his view with them and the students were able to ask questions and exchange ideas (Photo 3).

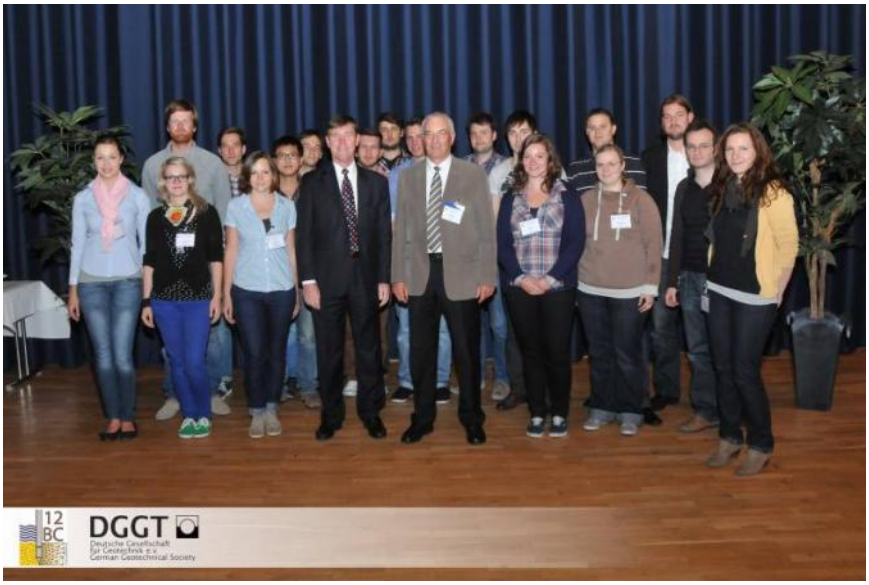


Photo 3 Group photo of Professor Briaud and Professor Heerten with some of the students from German universities

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

This meeting was followed by another highlight, the Mercer lecture. The Mercer lecture is named after Dr. Frank Brian Mercer, inventor of original geosynthetic products. It is a biennial lecture that is sponsored by Tensar International with the aim to help promote information exchange between the geotechnical engineering profession and the geosynthetics industry. In Rostock, the Mercer lecture for the period 2012/2013 under the title of "Geosynthetics for waterways and flood protection structures – controlling the interaction of water and soil" was presented by Dr.-Ing. Michael Heibaum, BAW (Federal Waterways Engineering and Research Institute), Karlsruhe, Germany (Photo 4).

Photo 4 Mercer Lecture presented by Dr.-Ing. Michael Heibaum, BAW

The German Geotechnical Society supported the young participants by organizing their journey to Rostock and providing free admission to the meeting with the president and the Mercer Lecture on Wednesday.

The welcome reception and the opening of the exhibition in the evening completed the first day.

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

The second day started with the official opening ceremony. Welcoming addresses were given by Professor Heerten, Chairman of the DGGT, as well as Professor Wolfgang Schareck, Rector of the University of Rostock, and Roland Methling, Mayor of the City of Rostock, followed by the welcoming speeches of Professor Jean-Louis Briaud, President of the ISSMGE, and Professor Ivan Vanicek, Vice President for Europe of ISSMGE (Photo 5).

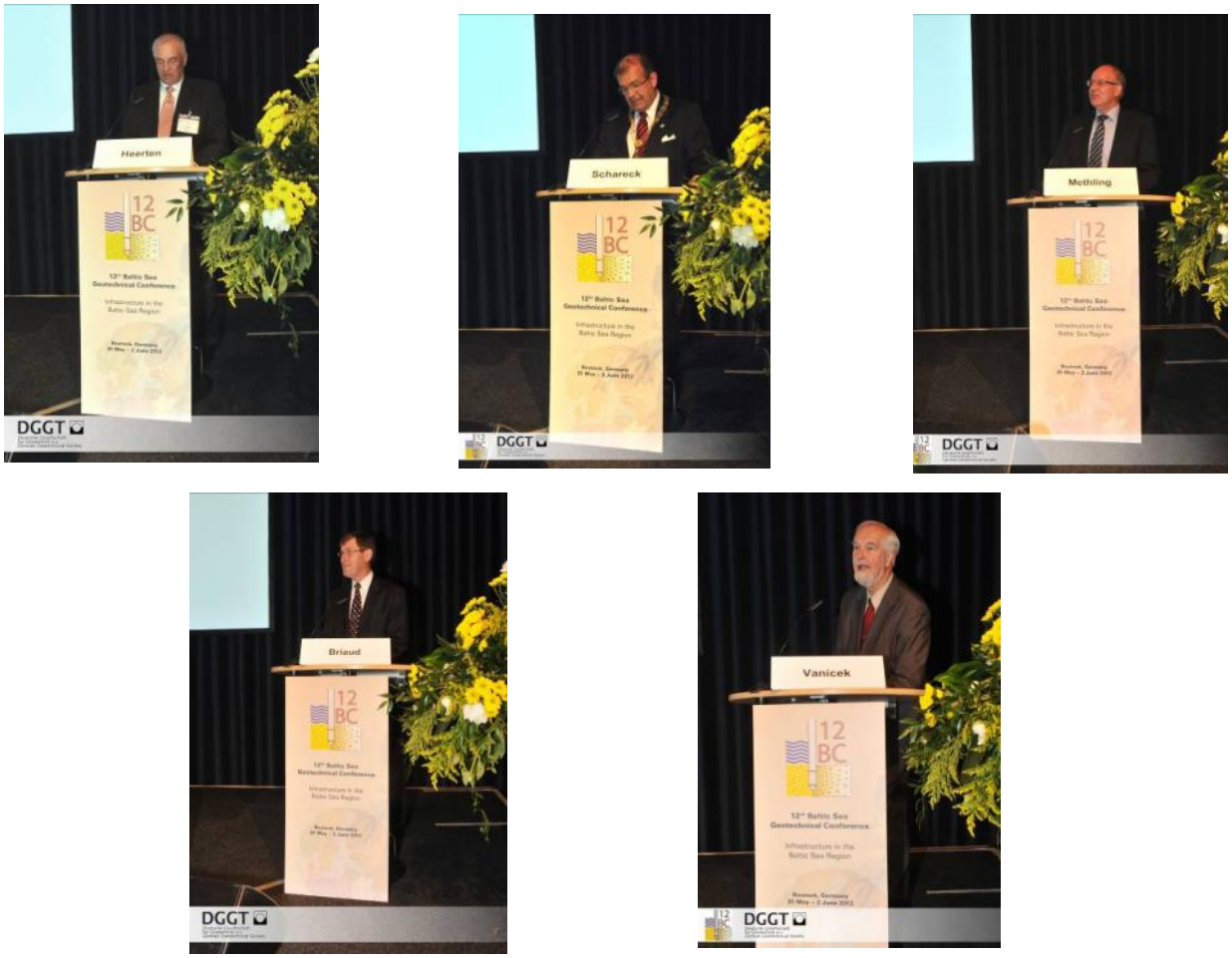


Photo 5 Welcoming addresses during the official opening of the Conference

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

Classical music, performed by students of the Hochschule für Musik und Theater, Rostock, created a pleasant atmosphere.

Following the opening ceremony, Keynote lectures were presented by Dr. Manfred Zeiler (Germany) about offshore wind energy and Project Manager Jens Kammer (Denmark) who described the geotechnical investigations concerning the Fehmarnbelt Fixed Link.

Forty seven technical presentations were given in the following six sessions on Thursday and Friday:

- Traffic Infrastructure
- Research and development projects
- Constructions in soft subsoil
- Harbour construction
- Coast protection
- Foundations for offshore wind energy plants

Speakers from 13 countries talked about their experiences in the field of geotechnical engineering and presented case studies. The conference provided an opportunity for the exchange of experiences and information on theoretical and practical issues.

Presentations about traffic infrastructure showed that there are similar problems in Poland and Germany and that they can benefit from the other's experiences.

Land reclamation in harbour construction was an important aspect of the conference in the context of the problems associated with settlement, ground water level and creep in sand and also with regards to climatic changes.

One of the other major important topics of the conference was the increase in generating capacity derived from wind energy over the next few years in the Baltic Sea Region. The whole session dealt with gravity based foundations, lab, chemical and mechanical tests, filter layer and geotextile sand filled containers and different versions of wind energy plants.

In several papers the increasing use of Geosynthetics in Geotechnical / Hydraulic and Coastal Engineering were highlighted.

After each presentation the participants were given the opportunity to ask questions to get a more complete picture of the themes. A lively discussion developed about topics like consolidation processes, soil conditions or geotextile layers.

Chair persons for each session were responsible for the formal order of the session.

The scientific program was complemented by two separate TC Meetings which also included oral presentations:

- Meeting of ISSMGE Technical Committee "Dykes and Leeves"
- Meeting of ISSMGE Technical Committee "Soil Structure"

In the closing ceremony, Professor Vanicek invited the delegates to various other conferences in the Baltic Sea area and it was revealed that the next Baltic Sea Geotechnical Conference will be held in Lithuania in 2016.

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

Apart from the interesting technical program and the exhibition, a well organized social events program was also provided. The welcome reception which took place in the foyer of the Stadthalle Rostock on Wednesday gave the attendees the opportunity to get into contact with other attendees or exhibitors. Furthermore, the participants could enjoy a technical visit to the Seaport of Rostock and had the opportunity to go on a night-watchman walk to visit cultural and historical monuments in Rostock as well as to visit an organ concert in the St. Marien Church in Rostock.

A Conference Dinner was held in the evening of May 31st and offered a tasteful selection of German cuisine with regional accents and a special performance of the Shanty chorus “Breitling” at the beginning and Jazz music during the dinner (Photos 6 and 7).

Photo 6 Shanty chorus “Breitling”

Photo 7 Conference Dinner

NEWS ON RECENT CONFERENCE (Continued)

BC 2012 in Rostock, Germany

The Conference Dinner took place at the Yachthafenresidenz “Hohe Düne”, a top-class hotel in Warnemünde, a district of Rostock situated in the north of the city, where the river Warnow flows into the Baltic Sea. Located on the roof the restaurant offered a magnificent view of the spectacular cruise terminal with passing cruise ships and yachts.

The technical visit to the Seaport of Rostock on the closing day of the conference, showing the extension by seaside land reclamation for the example of the maritime trade territory III, was the crowning event and the perfect end of this remarkable conference (Photo 8).

Photo 8 Participants of the Technical visit to the Seaport of Rostock

The accepted papers were published on a CD which was distributed at the conference. Further CDs can be ordered. Please visit our website www.12bsgc.de for information.

NEWS ON RECENT CONFERENCE

9th International Conference on Testing and Design Methods for Deep Foundations, Kanazawa, Japan

Reported by

Tatsunori MATSUMOTO
Professor, Kanazawa University, JAPAN

The 9th International Conference on Testing and Design Methods for Deep Foundations (IS-Kanazawa 2012) took place in the city of Kanazawa, Japan from 18 September 2012 to 20 September 2012. It attracted more than 230 participants from 35 countries and 111 papers were presented. Prof. Keiichi Fujita Memorial Session was prosecuted subsequent to the Opening Session. Technical Exhibition was also done along with the conference by 13 international exhibitors.

This conference follows a series of the 1st to the 8th International Conferences on Application of Stress-Wave Theory to Piles. Foundation design is drastically changing from conventional design methods to more sophisticated design frameworks such as limit state approaches; performance-based design; load and resistance factor design or probabilistic design. Due to these circumstances, this conference aimed to cover a wide variety of themes relevant to testing and design methods. Oral presentations have also covered developments in testing and monitoring equipment, the application of load test results to design and reliability assessments of pile foundations, case studies involving static and dynamic load tests, rapid pile load tests, dynamic pile-soil interaction, environmental issues such as ground vibration induced by pile motion, and physical and numerical modeling of piles.

Eight keynote lectures were delivered as what follows:

Mr. G. Likins (USA): A brief overview of testing of deep foundations
Dr. J.-L. Briaud (USA): Testing of piles subjected to truck impact
Dr. R. Katzenbach (Germany): Combined pile-raft foundations – A sustainable foundation concept
Dr. K. Horikoshi (Japan): Construction of pier-type jacket structures for new runway at Haneda
Dr. S. Ishizaki (Japan): Overview of semi-rigid pile head connection methods and their effect on buildings in liquefiable soil
Dr. J. Grabe (German): Non-linear numerical model for the design process of deep foundations with regard to effects of pile installation
Dr. S. Paikowsky (USA): Design and testing of annulus equipped pipe piling for the Sakonnet River Bridge project
Dr. K. Yamashita (Japan): Field measurements on piled raft foundations in Japan.

- A technical meeting of technical committee TC212–Deep foundations was held on 19th September.
- The next conference of this series will be hosted by the Netherlands in the year of 2015.
- This conference was sponsored by Ishikawa Prefecture, Kanazawa City, Concrete Pile Installation Technology Association, Japan Foundations Engineering Association and Japanese Technical Association for Steel Pipe Piles and Sheet Piles.

NEWS ON RECENT CONFERENCE (Continued)

9th International Conference on Testing and Design Methods for Deep Foundations, Kanazawa, Japan

Photographs taken during the conference are shown in what follows;

Photo 1 Group photograph of participants

Photo 2 Prof. J.-L. Briaud delivering his Keynote lecture

NEWS ON RECENT CONFERENCE (Continued)

9th International Conference on Testing and Design Methods for Deep Foundations, Kanazawa, Japan

Photo 3 Discussion during the conference

Photo 4 Toast by Prof. M. Hyodo (Japan) during banquet

Photo 5 Discussion during the technical exhibition

NEWS ON RECENT CONFERENCE (Continued)

9th International Conference on Testing and Design Methods for Deep Foundations, Kanazawa, Japan

Some statistics about this conference are shown below:

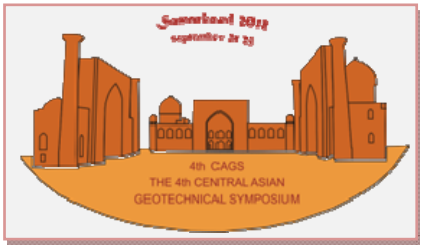
- Among 232 participants, 165 are from 11 countries in Asia, 48 from 17 countries in Europe, 12 from 3 countries in North and South America, and 5 from Australia and New Zealand.
- 108 published papers, inclusive of 8 keynote papers, consist of 42 from Japan and 66 from other member societies that are namely Australia (2 papers), Belgium (4), Brazil (1), Canada (1), China (3), Denmark (1), Egypt (1), Finland (1), France (2), Germany (7), Greece (1), Iran (5), Ireland (2), Israel (2), Kazakhstan (3), Korea (1), Luxembourg (1), The Netherlands (2), Pakistan (1), Poland (1), Portugal (1), Russia (2), Singapore (1), Sweden (1), Taipei (4), Thailand (4), United Kingdom (3), Ukraine (1), and USA (9).

NEWS ON RECENT CONFERENCE

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Reported by

Dr. Zokhir Khasanov,
General Secretary of Uzbekistan Geotechnical Society, Samarkand, Uzbekistan



The 4th Central Asian Geotechnical Symposium took place in the President Hotel of the historical silk-road city of Samarkand, Uzbekistan, from September 21st to 22nd, 2012, followed by a two-day (23 and 24 September, 2012) technical tour to another historical city of Bukhara (Uzbekistan). This event was made possible by the sponsorship of the Uzbekistan Geotechnical Society and GFP Co. LTD (Uzbekistan) and under the auspices of TC301 (Preservation of Historic Sites) and ATC19 (Conservation of Cultural Heritage and Historical Sites) of ISSMGE. It attracted about 100 participants from 14 countries and 64 papers were presented. Table-1 Participants with countries. The distribution of participants based on their nationalities is Uzbekistan 24, Russia 18, Japan 17, Kazakhstan 9, Iran 4, USA 4, Iraq 2, 8 Tajikistan 2, Algeria 1, France 1, Italy 1, Portugal 1, South Korea 1, and UAE 1.

The symposium theme of "Geo-Engineering for Construction and Conservation of Cultural Heritage and Historical Sites - Challenges and Solutions -" is recently attracting heavy concerns from the engineering discipline. Samarkand was inscribed as World Heritage in 2001 by UNESCO as Cross Road of Cultures.

The Symposium consisted of oral and poster presentations related with the next topics:

1. Regional Characterization of Soils and Foundation, and Geo-Construction
2. Adobe, Tomb, and Earthen Structures, Historical Sites, and Conservation of Cultural Heritage
3. Regional and Traditional Characteristics of Foundation and Structures
4. Mosque, Minaret, Towers, Citadel, Castles, Stone Masonry, and Heritage Structures
5. Ancient Caves, Underground Construction, Tunneling, Transportation, and Infrastructures
6. Ancient and Historical Dam, Embankment, and Ancient Highways
7. Soil Dynamics and Geotechnical Earthquake Engineering
8. Ancient, Traditional, and Present Soil Improvements
9. Damages from Salting and Frost including Geoenvironmental Engineering
10. Traditional and Innovative Technologies for Geotechnical Applications

The work of the symposium was dedicated to geotechnical problems of investigations on durability of architecture and cultural heritage sites, causes of deformation associated with problematic geological and geotechnical conditions, weathering earthen structures above ground, and underground structures as well.

Geotechnical exhibitions were shown for soil testing and instrumentation.

The first day of the symposium was initiated by the Opening Ceremony in which the Chair of Uzbekistan Geotechnical Society, Prof. Askar Khasanov, took the leading role. After that, the floor was given to Prof. Y. Iwasaki, the Co-Chairman of TC301 and Chairman of ATC19, and Prof. J.-L. Briaud, the President of ISSMGE, made a Welcome Address, followed by Prof. A. Zhussupbekov, the VP of ISSMGE for Asia, who opened officially “Year of Geotechnical Engineering for Conservation of Culture Heritage and Historical Buildings in Asian Region.”

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

The Keynote Lectures were delivered by

- J.-L. Briaud (USA): The Washington Monument Case History,
- Y. Iwasaki (Japan): The Measurements of Temperature and Humidity in Ancient Tomb in Dahshur, Egypt
- V.M. Ulitsky, A.G. Shashkin, K.G. Shashkin, and M.B. Lisyuk (Russia): Preservation and Reconstruction of Historical Monuments with Provisions for Soil-Structure Interaction analyses
- K. Watanabe and R. Vatandoust (Japan): Earthen Heritages Should Be Passed on to the Future
- I. Towhata, T. Sasaki, and Y. Taguchi (Japan): Behavior of Sandy Soils during the 2011 Gigantic Earthquake in Japan
- E. Tuncer (USA): Load Transfer Platform for Column-Supported Embankment

After the conference, a technical tour was organized to visit the ancient city Bukhara.

Japanese Delegation (17 participants) of ATC 19 and Board of Uzbekistan Geotechnical Society (10 participants) had a special technical session related with geotechnical discussion about possibility of joint investigations of historical buildings as those in Samarkand, Bukhara, Khiva, Kokand and other historical cities of Uzbekistan.

In the Closing Ceremony, Prof. Yoshinori Iwasaki invited participants of 4th CAGS to join the Workshop by ATC19 – Role of Geotechnical Engineering for Conservation of World Heritage in Asia, which will be held in Paris during the 18th International Conference on Soil Mechanics and Geotechnical Engineering in September 2013.

Prof. EC Shin (Korean Geotechnical Society) introduced Seoul as the candidate for the next venue of 19th ISSMGE conference in 2017 in South Korea. Several photographs were taken during the conference.

Photo 1 Group photograph of participants

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Photo 2 Prof. Khasanov delivering his welcome address

Photo 3 Key Note Address presented by Prof. Watanabe “Earthen Heritage should be passed on to the Future”

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Photo 4 Friendship during banquet

Photo 5 Dancing Prof. Askar Zhussupbekov from Kazakhstan

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Photo 6 Dancing Prof. Askar Khasanov from Uzbekistan

Photo 7 Technical tour in the Mausoleum of Timur in Samarkand

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Photo 8 Big wall of Bukhara Fortress

Photo 9 Uzbekistan's greatest minaret, the Minorai Kalon, in Bukhara that was constructed during the period of the Kara-khanid Dynasty in the 12th Century

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Photo 10 Chor Bakr Necropolis near Bhukara

Photo 11 Irrigation canal

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

My Impression on 4th Central Asian Geotechnical Symposium in Samarkand

By Yoshinori Iwasaki, Co-Chairman of TC301 and Chairman of ATC19

It was in Alexandria October, 2009, during the 17th ICSMGE when Askar Zhussupbekov told me that Uzbekistan Society has an intention to have the next central Asian Conference in Samarkand. After the establishment of ATC19 (Asian Technical Committee on Conservation of Cultural Heritage and Historical Sites), Askar, as the Vice President in Asian Region, added a day for ATC groups during the 18th Asian Regional Symposium in Hong Kong. I organized the Symposium of ATC19 during the Hong Kong Conference where Prof. Askar Khasanov, the president of Uzbekistan Society, and his son, Zokhir, joined the symposium. The Samarkand Symposium was planned as a joint activity with ATC19. Since then Dr. Zokhir worked very hard as the Secretary of the Symposium to lead to the successful symposium with the great support from the Vice President Askar Zhussupbekov.

I planned to organize a tour group from Japan to the Symposium. The group consisted of 14 members of ATC19. We were recommended by several sources to take land transportation between Tashkent International Airport and Samarkand because the domestic flight between Tashkent and Samarkand was not reliable. However, it was also revealed that train ticket was difficult to obtain from overseas. I asked an Uzbekistan person, who was introduced through Japan-Uzbek Friendship Association, was staying in Japan and was working for an Uzbek tour company to arrange the domestic tour with a guide in Japanese language as well as to visit the Department of Japanese Language in a Foreign Language School in Samarkand.

Fig. 1 Electric train “Afrasiab” on the left runs at 250 km/hour

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 2 A luxurious compartment of "Sharq" express (on the right of Fig. 1) from Tashkent to Samarkand

When we arrived at the Tashkent airport, the tour guide, Ms. Firuza Isroilova, was waiting for us outside the airport building. Firuza spoke good and perfect Japanese. She took care of us from the arrival at the airport through the whole period of the Symposium to the very end of the departure from the Tashkent. We took a ride on a train for three hours from Tashkent to Samarkand. It was quite comfortable as compared with air flight. We were able to enjoy the wide space in the deluxe sheet with the same price as air flight. The only thing that I felt some inconvenient was to walk down and up in the underpass tunnel to reach the departure platform. If an escalator and/or elevator had been available, the train trip might be much easier and more pleasant.

Symposium as the start of Year of Geotechnical Engineering for Conservation of Cultural Heritage

Symposium began at 10:00 AM on September 21st in the Conference Hall of the President Hotel with about 100 participants from 14 countries. The Vice President of ISSMGE for Asian Region, Prof. Askar Zhussupbekov, proposed and declared the start of *the Year of Geotechnical Engineering for Conservation of Cultural Heritage and Historical Sites*, commemorating the Symposium in Samarkand as the crossing point of Eastern and Western Cultures. The President of ISSMGE, Prof. Jean-Louis Briaud, attended and delivered an interesting case history of remediation of foundation of the Washington Monument Tower that was constructed in 1867.

The Conference Hall was half circle in shape as shown in Fig.3 and was good for the audience to see the screen at a short distance. The key note lecture on the restoration work for several earthen structures in central Asia was delivered by Prof. Watanabe under the title of "Earthen Heritages should be passed on to the Future." He has been studying characteristics of earthen structures at Ajina Tepa in Tajikistan as well as at Chogha Zanbile and Bam in Iran. He presented the decaying process of earthen structures by crystallizations of chemical salt that was produced by evaporation of water from the surface of an earthen structure. He further showed the remediation method by covering the surface of a structure with thick soil layer to prevent the damage of the existing surface from salting damage. The total number of presented papers was 40 in English and 20 in Russian languages. Simultaneous translation was provided during the symposium. President Briaud expressed his impression of the conference by saying "I deeply enjoyed and was impressed by such presentations of creative research of friction angle under zero gravity by Prof. I. Towhata and development of a simple yet useful field test of needle penetrometer by Mr. M. Yoshimura."

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 3 Lecture by Prof. J-L. Briaud in the Conference Hall of the President Hotel, Samarkand

The best arrangement of the Academic and City tour

Since Samarkand is the crossing Road of Cultures, the city is full of heritage structures and sites to visit. The two-day symposium was so arranged as the combination of symposium in the room until early afternoon and technical visit or sightseeing in the late afternoon before dinner. A post-symposium technical visit was an overnight visit to an ancient city of Bukhara. In Bukhara, we visited the Ark fortress that was originally constructed around 5th century AD on a natural hill of loess ground. The wall is of around 20 m in height and the retaining wall was reinforced by horizontal wooden logs.

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 4 Kalyan Mosque, Bukhara

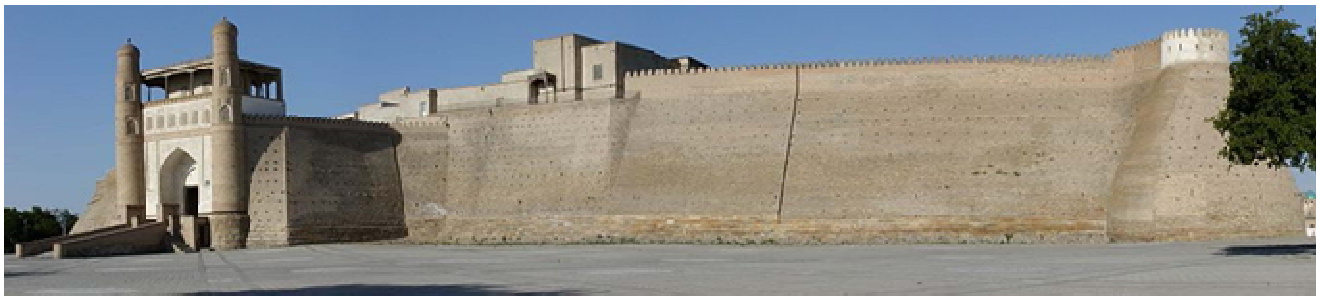


Fig. 5 Fortress of Bukhara

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 6 Retaining wall was reinforced by horizontal wooden logs

Fig. 7 Hotel Asia with Askar and Zokhir who designed piled raft foundation

Ishrat-Khana (Mausoleum of Delight) Mausoleum

On September 26, Prof. A. Khasanov brought us to the Ishrat-Khana Mausoleum, where Habiba Sultan, a wife of the Timurid Sultan Ahmed Mirza, constructed the domed building for Princess Havend Sultan-bika, a daughter of the ruler Abu Said in 1464. The building was beautifully decorated; the name was given as Mausoleum of Delight. Today the structure has been deteriorated. The central dome and drum finally collapsed after successive earthquakes in 1903. Prof. Askar Khasanov is working on the conservation of this monument.

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 8 Remains of Ishrat-Khana (Mausoleum of Delight)

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Paper Mill in Samarkand

In ancient times, Samarkand was famous for production of high-quality paper. We visited the Koni Ghil MEROS Paper Mill, where water wheeler works as energy to tamp skin of mulberry. We took lunch under a cozy tent and enjoyed green land in Samarkand.

Fig. 9 In Koni Ghil MEROS Paper Mill

Navoi Opera Ballet Theater, Tashkent

On April 26, 1966 at 05:22 local time, an earthquake of magnitude 5.0 took place in Tashkent. 10 were killed, 1,000 were injured, and about 100,000 were left homeless. 28,000 buildings were destroyed, including 200 hospitals and clinics, and 180 schools, in the Old Quarter of Tashkent, the principal damage area. Thousands of old one-story adobe dwellings were flattened. Additional damage was caused by hundreds of aftershocks that followed. However, the Navoi Theater that was constructed by Japanese citizen was safe and did not collapse.

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 10 Message devoted to Japanese citizens who constructed Alishor Navoi Theater in Tashkent from 1945 to 1946

NEWS ON RECENT CONFERENCE (Continued)

4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan

Fig. 11 In front of Navoi Theater, Tashkent

NEWS ON RECENT CONFERENCE

22nd European Young Geotechnical Engineers Conference in Gothenburg, Sweden

Reported by

The Swedish delegates Ms. Fanny Deckner, Ms. Sara Johansson and Mr. Jorge Yannie

The 22nd European Young Geotechnical Engineers Conference was held on 27th and 28th of August 2012 at Chalmers University of Technology in Gothenburg on the west coast of Sweden. In addition to the program, the conference contained a reception in the evening of the 26th and an exciting technical excursion to the debated tunnel project Hallandsås on 29th. The conference was organized by the Swedish Geotechnical Society with Ms. Victoria Svahn doing a great job as the chairman. A great acknowledgement should be given to the whole organizing committee for their effort in organizing this conference.

The EYGEC is a great place for young geotechnical engineers to learn more about geotechnics and to create contacts with fellow geotechnicians around Europe. Each European country can send two delegates and it was gladly observed that among the 52 delegates 26 different countries were represented. Apart from the 52 delegates the conference was attended by the leaders of eight different sessions as well as by prominent keynote speakers.

All submitted papers were reviewed by a scientific committee and each delegate got the opportunity to present their paper during one of the eight sessions concerning Site investigation and laboratory testing, Design parameters and modeling, Shallow and deep foundations, Deep excavations and retaining structures, Tunnelling and underground structures, Slope stability and landslides, Infrastructure projects, and Ground improvement. The delegates saw a large variety in the presentations and many interesting remarks and questions were put forward during the short discussion following each presentation. It was delightful to see that many of the discussions were continued after the end of the sessions. The conference also offered three keynote lectures presented by Professor Ivan Vaníček (Vice President of ISSMGE Europe, Czech Technical University), Professor Stefan Larsson (Royal Institute of Technology) and Professor Minna Karstunen (Chalmers University of Technology).

Apart from the very interesting presentations and lectures, the delegates also joined together in appreciated social activities in the Gothenburg area. Good food was mixed with entertainment, games and beautiful scenery. During the first night the group went on a sightseeing tour by boat through the channels and harbor of Gothenburg, which was followed by a dinner. The final evening of the conference was held at a beautiful restaurant in the Gothenburg archipelago.

NEWS ON RECENT CONFERENCE (Continued)

22nd European Young Geotechnical Engineers Conference in Gothenburg, Sweden

In summary, along with learning a lot of new things within geotechnical engineering, the delegates also got to know a whole bunch of new friends giving great contacts for the future. The atmosphere in the group was open, social and friendly, and all delegates seemed to enjoy themselves at the conference. The conference papers have been published in the proceedings which, for example, can be found through the website of the Swedish Geotechnical Society www.sgf.net.

Group photograph of the conference participants

NEWS ON RECENT CONFERENCE

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Reported by

Ryosuke Uzuoka,
Professor of Tokushima University, Japan

The 7th Asian Young Geotechnical Engineers Conference (7AYGEC) took place in the city of Tokushima, Japan, from September 12th to 14th, 2012, under the sponsorship of the Japanese Geotechnical Society with Prof. Ryosuke Uzuoka of Tokushima University (Japan) as the chairman of the Organizing Committee of 7AYCEC. It attracted 65 participants from 16counties/regions, and 34 papers were orally presented during the first two days (Photo 1).

The first day of the conference was started with the opening address made by Prof. Askar Zhussupbekov, the Vice President of ISSMGE for Asia, followed by another address made by Prof. Ikuo Towhata who is the Vice President of the Japanese Geotechnical Society.

Young geotechnical participants presented their works in 7 technical sessions of Soil Property and Laboratory Test, Soil Property and Modeling, Embankment and Dam, Landslide, Foundation and Underground Structure, Earthquake and Environment, and Soil Improvement. Three invited lectures were delivered as what follows;

Prof. Askar Zhussupbekov (Vice –President of ISSMGE for Asia) : Geotechnical and structural issues of megaprojects on problematical soil ground of Kazakhstan (Photo 2).
Prof. Ikuo Towhata (Vice President of Japanese Geotechnical Society) : Viscous-liquid modeling of liquefied sand and its application to evaluation of seismic performance of river levee.
Dr. Toru Sueoka (President of Japanese Geotechnical Society) : Geotechnical engineering – its freedom and attractions (my experiences in Africa, Australia, and Japan as a young geotechnical engineer).

One unique and unforgettable event was a workshop (Photo 3) called "Mini Soil Tower Contest." Being a traditional entertainment for young engineers of the Japanese Geotechnical Society, this event supplied certain amounts of clay, sand, and cement to groups of participants. People mixed those materials as they wanted, compacted it, and tried to achieve the highest unconfined compression strength. Prior to the measurement of the strength, each group was requested to present the philosophy of composition design. The winner of the contest was the No. 1 group that consisted of Yelbek Utepov (Kazakhstan), Frankie L.C. Lo (Hong Kong), Hadi Farahi Jahromi (Iran), Takao Ueda (Japan), and Eugene Wong (Hong Kong).

The Best Paper Award was given to Dr. Kuo-Hsin YANG (Taiwan) with due recommendations from the Scientific Committee of 7 AYGEC (Photo 4). In addition, the Best Presentation Award and the Best Student Award were given to Dr. Kazunori FUJISAWA (Japan) and Ms. Manika MAHARJAN (Nepal), respectively, with due recommendations from the Organizing Committee.

During banquet, the Organizing Committee nominated four participants who achieved the best performance in traditional Tokushima dance.

On the third day, the participants visited the site of Akashi Strait Suspension Bridge (Photo 6) whose span measures 1991 m. The participants were excited to reach the top of the suspension tower at the elevation of 300 m above the sea.

NEWS ON RECENT CONFERENCE (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Photographs taken during the conference are shown in what follows. The conference organizers express their sincere gratitude to the positive participation of young engineers and voluntary supporters as well as local sponsors without whom the successful organization of the conference was impossible.

Photo 1 Group photograph of participants of 7AYGEC.

Photo 2 Prof. A. Zhussupbekov delivering his invited lecture on geotechnical and structural issues of mega projects in problematic soil ground of Kazakhstan.

NEWS ON RECENT CONFERENCE (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Photo 3 Preparation of soil specimen by a geotechnical team.

Photo 4 Presentation by a young engineer Dr. Kuo-Hsin YANG (Chienese Taipei Geotechnical Society).

NEWS ON RECENT CONFERENCE (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Photo 5 Friendship activity during banquet.

Photo 6 Technical tour to Akashi-Strait Suspension Bridge.

PARTICIPANT REPORT TO ISSMGE FOUNDATION

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Reported by

Dr. Mohsin Usman Qureshi,
Professor of University of Wah, Wah Cantt, Pakistan

Dr. Mohsin Usman Qureshi of Pakistan recently obtained a financial support from ISSMGE Foundation to attend the 7th Asian Young Geotechnical Engineers Conference that took place in Tokushima, Japan. He submitted then the following report as requested by the Foundation.

What was learned:
I got an exposure to the on-going research activates in geotechnical engineering presented by the world's renowned geotechnical experts and the multinational young geotechnical engineers. I felt an improvement in my confidence of presentation and discussions. I received some challenging questions about my research which I believe has widened my scope of thinking and progress of my research on physical weathering behaviour of soft-rocks. The conference provided a significant opportunity to make contacts for future collaborative research activities.

People I met:
Prof. Askar ZHUSSUPBEKOV, Vice President of Asia, ISSMGE
Dr. Toru SUEOKA, President, Japanese Geotechnical Society, Japan
Prof. Ikuo Towhata, Vice President, Japanese Geotechnical Society, Japan
Prof. Ryosuke UZUOKA, University of Tokushima, Japan
Dr. Taro UCHIMURA, University of Tokyo, Japan
Dr. Netra Prakash BHANDARY, Ehime University, Japan
and many young geotechnical Engineers from the Asian countries

Remarks:
I attended the conference as a young presenter to represent the Pakistan Geotechnical Engineering Society. The conference received the young geotechnical engineers from 16 Asian countries in addition to many professionals, researchers and engineers. The conference was well organized in a city, Tokushima of Shikoku Island. The conference provided excellent platform for young geotechnical engineers to interact with the world renowned geotechnical professionals and improve their research progress.

The conference had outstanding keynote lectures from the senior geotechnical professionals which included the talk by Prof. Askar ZHUSSUPBEKOV on the geotechnical practice in the extreme environment of Kazakhstan, Prof. Ikuo Towhata from the University of Tokyo who talked on the geotechnical problems and the remedies in the light of the March 11, mega-earthquake in Japan, and Dr. Toru SUEOKA, President, Japanese Geotechnical Society, shared his worldwide experiences of geotechnical practice as a young engineer. The topics of the conference included a variety of geotechnical topics for which the young geotechnical engineers made presentations. Building the soil tower in the group of young participants led by a Japanese participants and the visit to the Akashi Straight Bridge on the last day added the versatility to the conference. It was a great experience for the participants to visit the World's largest bridge "Akashi Straight Bridge" and climb to one of the tower to view a part of Japanese archipelago.

The conference provided the discussions opportunity not only during the technical programs, but also banquets and coffee breaks were arranged for mutual exchange. In my short trip to Japan, I managed to visit the geotechnical laboratory at the University of Tokyo and being briefed by the on-going research activities by the multi-national students. The laboratory is well equipped with the modern testing facilities for studying the soil and rock behavior at various conditions, liquefaction studies, physical modeling and many other advanced topics.

PARTICIPANT REPORT TO ISSMGE FOUNDATION (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

I am very thankful to the ISSMGE Foundation for the financial support provided to attend the 7AYGEC. I am sincerely indebted to Prof. Ikuo Towhata for his support, the research guidance and the discussions about my on-going research. The appreciation also goes to the organizers of the conference that was led by Prof. Ryosuke UZUOKA of Tokushima University for making this event successful. Last but not least, I am very thankful to Dr. Amjad Agha (President, Pakistan Geotechnical Engineering Society, PGES), Dr. Tahir Masood (General Secretary, PGES) and Prof. Dr. Aziz Akbar for the review of the manuscript and the nomination to represent PGES at 7AYGEC.

The entrance to the University of Tokushima

Entrance to the Tokushima Castle through an old bridge

With Prof. Towhata from the University of Tokyo

Conference Participants in front of the Akashi Straight Bridge

PARTICIPANT REPORT TO ISSMGE FOUNDATION (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Reported by

Dr. Erdi Myftaraga,
Professor of Polis University, Albania

Dr. Erdi Myftaraga of Albania recently obtained a financial support from ISSMGE Foundation to attend the 7th Asian Young Geotechnical Engineers Conference that took place in Tokushima, Japan. He submitted then the following report as requested by the Foundation.

What was learned:
The conference helped me a lot to understand what the main geotechnical concerns are in other countries and what my colleagues are dealing with in their professional life. It was interesting to understand how the academic life in Japan is organized and what can be improved in Albania, following their experience.

People I met:
I met many research students from almost every Asian country and also other professionals participating in the conference. I also met many professors, among whom are Prof. Ryosuke Uzuoka, Prof. Mitsu Okamura. Prof. Ikuo Towhata, Prof. Askar Zhussupbekov, and Dr. Hiroki Ishikawa among many others.

Main features of conference:
The conference has a really comprehensive program and the two presentation days were really intense and fruitful. Other interesting features of the conference were the Technical Tour to Akashi-Kaikyo Bridge, the closing ceremony at the Pacific Harbor, the workshop for the Mini Soil Tower Contest, etc.

Remarks:
Participation at the 7th Asian Young Geotechnical Conference has been really exciting not only from the professional point of view. What makes this activity more beautiful is the fact that for me, and for most of Albanians, visiting a country like Japan was just a beautiful dream. This conference was a big event in my career as a young geotechnical engineer. I had the opportunity to meet colleagues from almost every Asian country and it was great to shear our knowledge and to discuss about topics regarding geotechnical engineering in our countries. It is amazing to realize that countries really far from each other (even in different continents), despite many distinctions, can face very similar realities. It was a good feeling to me to understand that my geotechnical knowledge can be applicable all around the world.

The most interesting feature of the conference was discussing for each paper with the authors and with the professors that were present. Since the conference covered a large number of geotechnical topics, I had a comprehensive understanding on what issues the participants, and also universities and research institutions, are dealing nowadays. During these discussions I had the opportunity to create contacts and links with researchers who deal with topics similar to mine and we can continue to communicate and to share ideas with each other.

PARTICIPANT REPORT TO ISSMGE FOUNDATION (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Other important aspects from the conference were activities such as the technical tour to the Akashi-Kaikyo Bridge, the Mini Soil Tower Contest, the closing ceremony, etc. The organizing committee did an excellent job in providing every necessary information and facility, all this accompanied with an unbelievable courtesy. The contest was especially interesting because, at the same time, it was really simple, interacting and entertaining.

Finally, I would like to thank all the people that helped me to attend the 7AYGEC, starting from Prof. Harry Poulos and ISSMGE Foundation who approved my grant request. I am also very grateful to Prof. Ryosuke Uzuoka for the work done in organizing the conference and for replying with patience to all my emails. I wish also to thank and congratulate ISSMGE and all member societies for the excellent and hard work in coordinating and supporting such activities.

Myself and Prof. R. Uzuoka

At the Akashi-Kaikyo suspension bridge

PARTICIPANT REPORT TO ISSMGE FOUNDATION (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

Reported by

Mr. Ching Hung, Columbia University, New York, USA

Mr. Ching Hung of Columbia University recently obtained a financial support from ISSMGE Foundation to attend the 7th Asian Young Geotechnical Engineers Conference that took place in Tokushima, Japan. He submitted then the following report as requested by the Foundation.

What was learned:

At the conference I have successfully integrated and presented my research with both the well-known and notable researchers in the geotechnical field and those top rising young geotechnical engineers from across the world. Moreover, I have been active in making many meaningful exchanges in idea and deep conversations among most of the participants which may have incited a few potential joint researches and collaborations in the near future.

I have also learned a great deal in how to make an excellent oral presentation among top researchers. In addition, by attending all of the state-of-the-art designs and research presentations, I have also better sharpened and cultivated myself on what I could improve for the purpose of contributing a greater advancement of the profession in the geotechnical society.

From another perspective, the conference was very beneficial to me because it has been immediately helpful to broaden and deepen my world as a student. For example, I was able to see more clear of the geotechnical society, and to make friends with all participants as well as many famous scholars in social activities which encouraged interaction in a less academic environment. This kind of opportunity is not very often for me when I lack this chance to participate this conference.

People I met:

Prof. Ryosuke Uzuoka (Chairman of the 7AYGEC, Univ. of Tokushima, Japan);
Prof. Mitsu Okamura (Vice President of the 7AYGEC, Ehime Univ., Japan);
Prof. Askar Zhussupbekov (Vice President for Asia of ISSMGE, Eurasian National Univ., Kazakhstan);
Dr. Toru Sueoka (President of the Japanese Geotechnical Society);
Prof. Ikuo Towhata (Chief Editor of ISSMGE Bulletin, Appointed member of ISSMGE, Univ. of Tokyo, Japan);
Dr. Minoru Yamanaka (Kagawa Univ., Japan);
Dr. Yoichi Watabe (General Secretary of Japanese Geotechnical Society, Port and Airport Research Institute, Japan);
Prof. Netra Prakash Bhandary (Ehime Univ., Japan);
Prof. Taro Uchimura (Univ. of Tokyo, Japan);
Prof. Albert Ho (Associate Director of ARUP, Hong Kong, China);
Prof. Hideaki Yasuhara (Ehime Univ.,Japan);
Prof. Kuo-Hsin Yang (NTUST, Taiwan);
Dr. Ruta Ireng Wicaksono (St, M.Eng, City Development Planning Agency, Indonesia);
Dr. Eric Sze (G.M. HKIE, Hong Kong);
Dr. Kazunori Fujisawa (Senior Lecturer, Okayama Univ., Japan);
Utepov Yelbek (Ph.D. Student, Eurasian National Univ., Kazakhstan);
Shahmov Zhanbolat (Ph.D. Student, Eurasian National Univ., Kazakhstan);
Razel Ramilo (Senior Geotechnical Engineer, GHD, New Zealand);
Michelle Lew Geok Theng (Associate Director, Kiso-Jiban Consultants Co LTD, Singapore);
Yuan-Tu Wang (Engineer, MAA, Taiwan);
Chao-Wen Wang (Ph.D. Student, NTUST, Taiwan);

PARTICIPANT REPORT TO ISSMGE FOUNDATION (Continued)

7th Asian Young Geotechnical Engineers Conference, Tokushima, Japan

and many young geotechnical Engineers from the Asian countries.

Remarks

The main theme of 7AYGEC is "Tradition and Evolution in Geotechnics". The conference features: laboratory testing, site investigation/field testing, foundations, ground improvement, seismicity and mitigation, numerical and analytical modelling, tunneling, rock mechanics, and geo-environments.

In addition, the conference provided a great opportunity for young geotechnical engineers to successfully demonstrate leadership, build network, and exchange beneficial knowledge among others and famous scholars.

Participation of the 7AYGEC required a nomination from Asian National Geotechnical Society, thus most of the presentations were exciting, creative, and beneficial. Given by the fact that most of the participants were still at the rising stage (below the age of 35 years old), the connection that participants built there was expected and would be proved to be long lasting and significant in the near future.

NEWS ON RECENT CONFERENCE

International Workshop on Advances in Multiphysical Testing of Soil and Shales, Lausanne, Switzerland

The ISSMGE TC-101 International Workshop "Advances in Multphysical Testing of Soil and Shales (ATMSS)" took place in the city of Lausanne (Switzerland) from the 3rd to the 5th of September, 2012. It was organized by Prof. Lyesse Laloui and Dr. Alessio Ferrari of the École Polytechnique Fédérale de Lausanne (EPFL). It attracted 80 participants from 22 countries. The Workshop aimed at stimulating the debate on the advances in experimental geomechanics; 48 contributions on unsaturated soil testing, non-isothermal experiments, shale testing, micro-scale investigations and image analysis techniques were presented and discussed. Six theme lectures were delivered as what follows:

Prof. L.R. Hoyos	*Advances in experimental modeling of unsaturated soil behavior over a whole range of paths and modes of deformation.*
Prof. F. Marinho	*Undrained shear of plastic soils under suction.*
Prof. E.C. Leong	*Triaxial testing of unsaturated soils.*
Dr. A. Ferrari	*Thermo-hydro-mechanical testing of shales.*
Prof. E. Romero	*Air tests on low-permeability claystone formations: experimental results and simulations.*
Prof. J. Kodikara	*Desiccation cracking on clayey soils: mechanisms and modeling.*

The proceedings of the workshop are published in the Springer Series in Geomechanics and Geoengineering:

Multiphysical Testing of Soils and Shales. L. Laloui and A. Ferrari (Eds.) Springer, 978-3-642-32491-8, Springer Series in Geomechanics and Geoengineering, 2012.

The social program included a welcome cocktail on September 2nd at the Rolex Learning Center at the EPFL and a workshop dinner on September 3rd.

A short course on Advanced Experimental Geomechanics completed the Workshop programme; lectures were delivered by Dr. Alessio Ferrari, Prof. Enrique Romero and Prof. Laureano R. Hoyos. About 40 participants attended the short course.

Photographs taken during the Workshop are shown in what follows.

Photo 1 Group photograph of participants

NEWS ON RECENT CONFERENCE (Continued)

International Workshop on Advances in Multiphysical Testing of Soil and Shales, Lausanne, Switzerland

Photo 2 General view of the workshop taken on 4th of September, 2012

Photo 3 Short Course on Advanced Experimental Geomechanics

NEWS ON RECENT CONFERENCE

International Geotechnical Seminar on Recent Developments, Construction, Challenges and Forensic Investigation of Geotechnical Works, Singapore

Reported by
Mr. T.S. Chua (GeoSS) and Askar Zhussupbekov (Asian VP)

The International Geotechnical Seminar on Recent Developments, Construction Challenges and Forensic Investigations of Geotechnical Works took place in Singapore from 24 to 25 October 2012. This event was jointly organized by the Geotechnical Society of Singapore (GeoSS) and BCA Academy with the support of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). It aimed to examine how geotechnical engineers had overcome various challenges when working in complex projects under difficult subsoil conditions. Sharing of the knowledge will develop into important lessons and help engineers prepare for future challenges especially when working in different parts of the world. Using case studies, prominent geotechnical experts from overseas and Singapore will be able to understand complexities of geotechnical design as well as construction, and make use of solutions that are available for complex problems.

This seminar attracted more than 100 participants from Singapore and Malaysia, and 11 papers were presented. The conference theme of construction challenges and forensic investigation attracts a lot of interest from the engineering discipline because of the presence of distinguished speakers and construction boom in this region.

The invited lectures were delivered as follows:

Speaker name: Prof. Pedro S. Pinto (Portugal)
Title of lecture: New Developments in the Design of Pile Foundations: Case-studies on Guadiana and Tagus Bridges; and Jet Grouting Plug and Combined Pile Raft Foundations – Case-study on Kilamba Building Project at Luanda, Angola.

Speaker name: Prof. Askar Zhussupbekov (Kazakhstan)
Title of lecture: Foundation Systems on Challenging Ground Conditions- Case-studies of Mega-Structures' Design; and Construction in Kazakhstan and Chernobyl Nuclear Power Plant Disaster – Impact Assessment on Geotechnical and Structural Issues

Speaker name: Prof. Charles W.W. Ng (Hong Kong)
Title of lecture: Centrifuge and Numerical Investigations of Pile Performances subjected to Stress Relief due to Deep Excavations; and The Three-Dimensional Centrifuge Modelling on the Effects of Twin-Tunnel Construction on Existing Piles/Pile Groups

Speaker name Dr. Wei F. Lee (Chinese Taipei)
Title of lecture: Geotechnical Impacts of "Close Construction" Works on Safety and Maintenance of Subway Tunnels; and Lessons Learnt from Kaohsiung MRT Tunnel Construction Failure in Taiwan: Forensic Investigation & Retrofit Works

Speaker name: Prof. C.F. Leung (Singapore)
Title of lecture: Forensic Analysis in Geotechnical Works – Case-studies from Singapore

Speaker name: Dr. T.Y. Poh (Singapore)
Title of lecture: Bored Tunnelling Works in Singapore: Requirements and Case Study

Speaker name: Mr. T.S. Chua (Singapore)
Title of lecture: Lessons Learnt from Analysis and Supervision of KPE, the Longest Road Tunnel in Singapore

NEWS ON RECENT CONFERENCE (Continued)

International Geotechnical Seminar on Recent Developments, Construction, Challenges and Forensic Investigation of Geotechnical Works, Singapore

Photographs taken during the conference are shown below.

Photo 1 Conference Participants

NEWS ON RECENT CONFERENCE (Continued)

International Geotechnical Seminar on Recent Developments, Construction, Challenges and Forensic Investigation of Geotechnical Works, Singapore

Photo 2 Invited speakers delivering their lectures (Prof. Pedro S. Pinto, Prof. Charles W.W. Ng, Prof. Askar Zhussupbekov, Dr. Wei F. Lee, Dr. T.Y. Poh, Mr. T.S. Chua and Prof. C.F. Leung)

NEWS ON RECENT CONFERENCE (Continued)

International Geotechnical Seminar on Recent Developments, Construction, Challenges and Forensic Investigation of Geotechnical Works, Singapore

Photo 3 Souvenir from Prof. Askar to GeoSS, received by T.S. Chua and Prof C.F. Leung

Photo 4 International friendship with GeoSS and BCA in Singapore

REMINISCENCE

PROF. TSUTOMU KIMURA RECEIVED THE JAPAN ACADEMY PRIZE IN THE PRESENCE OF HIS MAJESTY, THE EMPEROR OF JAPAN

June 4th, 2012, Prof. Tsutomu Kimura got the highly prestigious Japan Academy Prize awarded for his long-term studies on mechanical behavior of ground. To celebrate this memorable occasion, an interview was made of Prof. Kimura by the Bulletin.

The Japan Academy Prize was established in 1910 and has been awarded every year to several distinguished people who made remarkable achievements in all the fields of academia. Prof. Kimura started his studies in early 1960s on bearing capacity of two-layered subsoil by means of analysis as well as 1-G model experiments. The experiments quickly developed into centrifugal model tests and his methodology was extended to other fields of geotechnical engineering such as shear failure in slopes, soil improvement, earth pressure on retaining walls, and earthquake problems as well as liquefaction. It was highly evaluated by the Prize that his studies gave rational verification to many empirical knowledge in traditional geotechnical engineering and has been applied to stability of cables of the Akashi-Strait long suspension bridge, stabilization of soft marine clay under Tokyo Haneda Airport, liquefaction mitigation measures of oil storage tanks and many others. The awarding ceremony took place in the Japan Academy with the attendance of His Majesty, the Emperor Akihito and Her Majesty, the Empress Michiko.

REMINISCENCE (Continued)

PROF. TSUTOMU KIMURA RECEIVED THE JAPAN ACADEMY PRIZE IN THE PRESENCE OF HIS MAJESTY, THE EMPEROR OF JAPAN

Prof. Kimura graduated the University of Tokyo. After a few-year experience in the industry, he devoted most of his career to the Tokyo Institute of Technology as a civil engineering professor and finally as the President. He then became the President of the National Institution for Academic Degrees and University Evaluation. Currently he is an advisor of the Ministry of Education, Culture, Sports, Science and Technology and working for policies on higher education. One of his current concerns lies in the problem of degree mills that are producing unqualified masters and Ph. Ds all over the world.

Furthermore, He was the President of the Japanese geotechnical Society from 1998 to 2000. In ISSMGE, he chaired TC2 that concerned physical modeling and was also a Board Member from 1993 to 1997.

When Prof. Kimura was a young undergraduate student, he was attracted by the academic flavor of Prof. Mogami's lecture on soil mechanics; later, Prof. Mogami served ISSMGE as an Asian Vice President. Although Prof. Kimura decided to conduct his undergraduate and master research programs in soil mechanics, he was late in attending the topic selection meeting. Consequently, easy topics had been taken by class mates and he had only one difficult choice that was running an elastic analysis with a senior student, Kenji Ishihara, on two-layered subsoil undergoing external loading. He studied this topic extremely hard and successfully solved the problem, leading to a full satisfaction of Prof. Mogami who was usually not very generous to students. After joining Tokyo Institute of Technology, Prof. Kimura further conducted 1-G model tests on two-layered subsoil and submitted his interesting findings to the Asian Regional Conference on SMFE in Bangkok in 1971. Because his paper was strictly criticized by a general reporter during the conference, Prof. Kimura understood the limitation of 1-G model tests and started his long history of centrifuge model tests. He is saying today that difficulties, both technical and financial, were overcome by his enthusiasm and that he fully enjoyed the development of new geotechnical technology.

In 2004, Prof. Kimura was also awarded from the United Kingdom the Honourary Commander of the Most Excellent Order of the British Empire, of which he is highly proud of because he can share the same honour with Sir Elton John. As the awardee of the two distinguished honours, Prof. Kimura advises young people "*Not only to Challenge but also to Enjoy Challenge*."

The ISSMGE Bulletin expresses its wholehearted congratulations to the honourable career of Prof. Kimura.

Ikuo Towhata, Chief Editor of ISSMGE Bulletin
Akihiro Takahashi, Tokyo Institute of Technology

NEWS

NATIONAL YOUTH AWARD 2012 OF MEXICO

A geotechnical engineer was selected as one of the awardees of the honorable award of Mexico; the National Youth Award (Premiación Premio Nacional de la Juventud) for 2012. This award is delivered to Mexican youth whose age is between 12 and 29 years and whose conduct or dedication to work or study has caused excitement and admiration among the contemporaries and may be considered an encouraging example to develop reasons for personal improvement or community progress. Among 16 awardees for 2012 is Ms. Yolanda Alberto Hernández who is a geotechnical engineer and has achieved significant technical developments in construction of urban structures.

The National Youth Award is the highest public recognition that the Mexican Government provides to young Mexicans by a path of effort, excellence, creativity, productivity, initiative or relevant work performed on behalf of the country. This award is given in 16 categories: academic achievement, art, social work, enforcement of the native culture, environment protection, enterprising inventiveness, human rights, impairment and integration, politics and democracy, and science and technology. Ms. Yolanda Alberto received this award in the academic achievement category. She obtained her civil engineering degree at the National Autonomous University of Mexico where she received the Medal "Gabino Barreda" for the highest grades and an excellent dissertation. She received a NAFTA scholarship to assist one semester at Purdue University where she was in the honor and Dean's list. Then, she won a scholarship from Conacyt, a national organization, to pursue a Master degree at The University of California, Berkeley. After its completion, she worked in Mexico in the Line 12 Metro and in the East Outlet Tunnel, two of the biggest projects in Mexico City at the time. Since she had published 13 papers for international and national conferences by then, she was again awarded with the Conacyt scholarship to pursue a doctoral degree at the University of Tokyo where she currently studies.

The award ceremony took place in Mexico City on September 4th; in the Hispanic Hall of the Ministry of Public Education in downtown Mexico City. Dr. José Angel Córdova Villalobos, Secretary of Public Education, presented the award on behalf of the President of Mexico.

ISSMGE EVENT DIARY

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

2012

International Conference on Ground Improvement and Ground Control: Transport Infrastructure Development and Natural Hazards Mitigation
Date: 30 October - 2 November 2012
Location: University of Wollongong, Wollongong, New South Wales, Australia
Language: English
Organizer: The Centre for Geomechanics and Railway Engineering, University of Wollongong, Australia, and the Australian Geomechanics Society (AGS)
Contact person: Dr. Jayan Vinod
Address: Centre for Geomechanics and Railway Engineering, Faculty of Engineering,
University of Wollongong,
2522 Wollongong,
New South Wales,
Australia.
Phone: 61 02 4221 4089
Fax: 61 02 4221 3238
E-mail: icgi_2012@uow.edu.au
Website: www.icgiwollongong.com

IV Panamerican Landslides Symposium (31 Oct - 2 Nov)
Date: 31 October - Friday 02 November 2012
Location: Paipa Convention Center, Paipa, Boyacá, Colombia
Language: English and Spanish
Organizer: Colombian Geotechnical Society
Contact person: Colombian Geotechnical Society, Juan Montero Olarte
Address: Calle 14 No. 8-79, Of 51
Bogotá
Colombia
Phone: 57-1-3340270
Fax: 57-1-3340270
E-mail: scg1@colomsat.net.co
Website: http://www.scg.org.co/web%20IVSPD/HTML/index.html

Third African Young Geotechnical Engineering Conference (3AyGEC'12)
Date: 16 - 18 November 2012
Location: Engineering Auth'y Guest House, Cairo, Egypt
Language:
Organizer: Egyptian Geotechnical Soc .
Contact person: Dr. Fatma Baligh, Dr. Nagwa El-Sakhawy, Ms Yvonne Hanna
Address: 62 El - Orouba St.
Heliopolis,
11361 Cairo
Egypt
Phone: 202 24156573
Fax: 20 1220071671
E-mail: aygec3@yahoo.com

2013

4th International Seminar on Forensic Geotechnical Engineering
Date: 10 - 12 January 2013
Location: Atria Hotel, Bangalore, Karnataka, India
Language: English
Organizer: Indian Geotechnical Society
Contact person: Prof. G L Sivakumar Babu
Address: Department of Civil Engineering,
Indian Institute of Science, Bangalore
560012 Bangalore
KA
India
Phone: 918022933124
Fax: 918023600404
E-mail: gls@civil.iisc.ernet.in
Website: http://www.4isfge.org/

First Pan-American Conference on Unsaturated Soils (Pam-Am UNSAT 2013)
Date: 20 - 22 February 2013
Location: Convention Center, Cartagena de Indias, Colombia
Language: English
Organizer: UniAndes, UniNorte, Unal, Col
Contact person: Diana Bolena Sánchez Melo
Address: Carrera 1 Este No. 19A-40
Edificio Mario Laserna Piso 6
Departamento de Ingenieria Civil & Ambiental
Bogotá
Colombia
Phone: 571 3324312
Fax: 571 3324313
E-mail: panamunsat2013@uniandes.edu.co
Website: www.panamunsat2013.uniandes.edu.co

Experimental Micromechanics for Geomaterials
Date: Thursday 23 May 2013 - Friday 24 May 2013
Location: The University of Hong Kong, (Hong Kong S.A.R.)
Language: English
Organizer: TC101, TC105, HKGES, HKU
Contact person: Ms Bridget Lam
Address: Department of Civil Engineering,
The University of Hong Kong,
Pokfulam
Hong Kong (Hong Kong SAR)
Phone: (852) 2859 2666
Fax: (852) 2559 5337
E-mail: owlam@hku.hk

Second International Symposium on Geotechnical Engineering for the Preservation of Monuments and Historic Sites
Date: 30 - 31 May 2013
Location: Conference Centre Federico II, Napoli, Italy
Language: English
Organizer: AGI and TC 301
E-mail: secretariat@tc301-napoli.org
Website: www.tc301-napoli.org

TC215 ISSMGE - International Symposium on "Coupled Phenomena in Environmental Geotechnics (CPEG) - from theoretical and experimental research to practical applications"
Date: 1 - 3 July 2013
Location: Politecnico di Torino, Torino, Italy
Language: English
Organizer: AGI and ISSMGE TC 215
Contact person: Guido Musso - Andrea Dominijanni
Address: Politecnico di Torino
Corso Duca degli Abruzzi 24
10129 Torino
Italy
Phone: 39 011 0904837
E-mail: guido.musso@polito.it; andrea.dominijanni@polito.it

Fifth International Young Geotechnical Engineers' Conference (5iYGEC'13)
Date: Saturday 31 August 2013 - Sunday 01 September 2013
Location: École des Ponts ParisTech,Paris,,France
Language: English/French
Organizer:
Contact person: Prof. Yu-Jun Cui
Address: Paris, France
E-mail: yujun.cui@enpc.fr
Website:
http://www.lepublicsystemepco.com/EN/events.php?IDManif=696&IDModule=21&PPAGE=&PAGE=&TEMPLATE=&CSS=&IDRub=

18th International Conference for Soil Mechanics and Geotechnical Engineering
Date: 1 - 5 September 2013
Location: Paris International Conf. Ctr , Paris, France
Contact person: Violaine Gauthier
Address: Le Public Système,
38, rue Anatole France –
92594 Levallois-Perret Cedex
France
Phone: 33 1 70 94 65 04
E-mail: vgauthier@lepublicsysteme.fr
Website: www.issmge2013.org/

2014

8th International Conference on Physical Modelling in Geotechnics 2014 (ICPMG) (14-17 January)
Date: Tuesday 14 January 2014 - Friday 17 January 2014
Location: University Club, The University of Western Australia, Perth, Western Australia, Australia
Language: English
Organizer: Centre for Offshore Foundation Systems, The University of Western Australia
Contact person: arinex pty limited

Address: GPO Box 316,Belmont WA 6984 Australia
Phone: +61 2 9265 0890
Fax: + 61 2 9265 0880
E-mail: icpmg2014@arinex.com.au
Website: http://icpmg2014.com.au/

8th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE14)
Date: 18 - 20 June 2014
Location: Delft University of Technology, Delft, Netherlands
Language: English
Organizer: Prof. Michael Hicks
Contact person: Mrs. Hannie Zwiers
Address: Delft University of Technology, Faculty of Civil Engineering & Geosciences
Stevinweg 1
2628 CN Delft
The Netherlands
Phone: +31 15 2788100
E-mail: info@numge2014.org
Website: www.numge2014.org

TC204 ISSMGE International Symposium on "Geotechnical Aspects of Underground Construction in Soft Ground" - IS-Seoul 2014
Date: Monday 25 August 2014 - Wednesday 27 August 2014
Location: Sheraton Grande Walkerhill,Seoul,,Korea
Language: English
Organizer: TC204 of ISSMGE and Korean Geotechnical Society
Contact person: Prof. Chungsik Yoo
Address: 300 Chun-Chun Dong
Jang-An Gu,440-746
Suwon, Kyoung-Gi Do,
Korea
Phone: +82-32-290-7518
Fax: +82-32-290-7549
E-mail: csyoo@skku.edu

2015

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,
Reading,
Berkshire, RG1 8AH,
UK
Phone: +44 1189566066
Fax: +44 1189576066
E-mail: derek_smith@coffey.com
Website: http://www.xvi-ecsmge-2015.org.uk/

NON-ISSMGE SPONSORED EVENTS

2012

37th Annual Conference on Deep Foundations: Foundations and Ground Improvement Techniques: Adapting them to an Ever Changing Environment
Date: 16 - 19 October 2012
Location: The George R. Brown Convention, Houston, TX, United States
Organizer: DFI
Contact person: 2012 Program Chair c/o Deep Foundations Institute,
Address: 326 Lafayette Avenue
07506 Hawthorne, NJ
United States
Website: www.dfi2012submissions.org

XXVI Reunión Nacional de Mecánica de Suelos e Ingeniería Geotécnica
Date: Wednesday 14 November 2012 - Friday 16 November 2012
Location: Hotel, Cancún, Quintana Roo, Mexico
Language: Español
Organizer: Sociedad Mexicana de Ingeniería Geotécnica A.C.
Contact person: Raúl Aguilar Castillo
Address: Av. Valle de Bravo No 19
Col. Vergel de Coyoacán,
14340, Tlalpan,
Distrito Federal,
México
Phone: +5255 56773730
Fax: 5255 56793676
E-mail: smmsgerencia@prodigy.net.mx
Website: http://www.26rnmsig.org.mx

GA2012 - Geosynthetics Asia 2012 - 5th Asian Regional Conference on Geosynthetics
Date: 10 - 14 December 2012
Location: Centara Grand, Bangkok Conv Ct , Bangkok, Thailand
Language: English
Organizer: IGS-Thailand
Contact person: GA2012 Secretariat
Phone: +66-2-524-5523
Fax: +66-2-524-6050
E-mail: igs-thailand@ait.ac.th or acsig@ait.ac.th
Website: www.set.ait.ac.th/acsig/GA2012 /

2013

3rd International Conference on Geotechnical Engineering (ICGE'13
Date: 21 - 23 February 2013
Location: Hotel Médina , Hammamet, Nabeul, Tunisia
Language: English and French
Organizer: URIG ENIT
Contact person: Dr Wissem FRIKHA
Address: Ecole Nationale d'Ingénieurs de Tunis
Unité de Recherche Ingénierie Géotechnique,
1002 BP 37, Le Belvédère 1002 .
Tunis
Tunisia
Phone: 216 98 594 970
Fax: 216 71 872 729
E-mail: frikha_wissem@icge13.com or frikha.wissem@gmail.com
Website: www.icge13.com

International Conference on "Landslide Risks" (14-16 March)
Date: Thursday 14 March 2013 - Saturday 16 March 2013
Location: Ain Draham, Tabarka, Tunisia
Language: English
Organizer: Civil Engineering Laboratory (National Engineering School of Tunisia)
Contact person: Professor Mehrez Jamei
Address: National Engineering School of Tunis
The Civil Engineering Laboratory,
BP 37,
Le Belvédère, 1002,
Tunis,
Tunisia
Phone: +216 (98) 665 556
Fax: +216 (71) 872 729
E-mail: mehrez.jamei@enit.rnu.tn
Website: http://www.iclr13.com/#HOME_PAGE.A

International Conference on Installation Effects
Date: Sunday 24 March 2013 - Wednesday 27 March 2013
Location: Rotterdam, The Netherlands
Language: English
Organizer: TU Delft
Contact person: Marti Lloret
Address: Stevinweg 1
PO-box 5048,
2628 CN Delft ,
The Netherlands
Phone: +31 1527 84009
E-mail: geoinstall@tudelft.nl
Website: http://geo.citg.tudelft.nl/geoinstall/

EURO:TUN2013
Date: Wednesday 17 April 2013 - Friday 19 April 2013
Location: Ruhr-Universität Bochum, Bochum, Germany, Germany
Description:
Language: English
Organizer: Günther Meschke, Josef Eberhardsteiner, Tom Schanz (tom.schanz@rub.de), Kenichi Soga, and Markus Thewes
Website: http://www.eurotun2013.ruhr-uni-bochum.de/

Seventh International Conference on Case Histories in Geotechnical Engineering
Date: 29 April - 4 May 2013
Language: English
Organizer: Missouri S&T
Contact person: Kay Tillman
Address: Missouri S&T,
Distance & Continuing Ed.,
216 Centennial Hall,
300 W. 12th St.
65409 Rolla. MO
United States
Phone: 573-341-6222
Fax: 573-341-4992
E-mail: 7icchge@mst.edu
Website: www.7icchge.mst.edu

18th Southeast Asian Geotechnical Conference cum Inaugural AGSSEA Conference
Date: Wednesday 29 May 2013 - Friday 31 May 2013
Location: Singapore
Language: English
Organizer: Geotechnical Society of Singapore
Contact person: Office of Professional Engineering & Executive Education
Address: Faculty of Engineering,
National Univ of Singapore,
Block E1 #05-15,
3 Engineering Drive 2,,
17578 Singapore
Phone: +65 65165113
Fax: +65 68745097
E-mail: 18seagc@nus.edu.sg
Website: http://www.18seagc.com

International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures
Date: 14 - 16 October 2013
Location: Faculty of Engineering, Bologna, Italy
Language: English
Organizer: Tatsuoka, Gottardi, Ling, Han
Contact person: Hoe I. Ling
Address: 500 West 120th Street,
Columbia University
10027 New York, NY
USA
Phone: 12128541203
Fax: 12128546267
E-mail: ling@civil.columbia.edu
Website: www.civil.columbia.edu/bologna2013/

The 19th NZGS Symposium "Hanging by a Thread – Lifelines, Infrastructure and Natural Disasters
Date: Wednesday 20 November 2013 - Saturday 23 November 2013
Location: Millennium Hotel, Queenstown, New Zealand
Description: The 19th Symposium website is now LIVE! Go to to see the stunning location for this
Language: English
Organizer: New Zealand Geotechnical Soceity
Contact person: Amanda Blakey
Address: Auckland,,New Zealand
Phone: +64 9 575 2744 or +64 21 025 11 628
E-mail: secretary@nzgs.org
Website: http://www.nzgs13.co.nz/

10th International Symposium of Structures, Geotechnics and Construction Materials
Date: Tuesday 26 November 2013 - Friday 29 November 2013
Location: International Convention Center, Santa Clara, Villa Clara, Cuba
Language: English, Spanish
Organizer: Facultad de Construcciones, Universidad Central de Las Villas
Contact person: Dra. Ana Virginia González - Cueto Vila
Address: Facultad Construcciones, UCLV
Carretera a Camajuani, km 5.5,
54830, Santa Clara,
Villa Clara,Cuba
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Fax: (53) 42 281655
E-mail: ana@uclv.edu.cu, quevedo@uclv.edu.cu
Website: www.uclv.edu.cu

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

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São Paulo/SP - 05533-000
Brazil

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Rua Olimpiadas, 200, 13° Andar
Cep: 04551-000 Vila Olímpia
São Paulo / SP
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8445 PK Heerenveen
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Rua Romualdo Davoli, 375
Cond. El Dorado
CEP 12238.577 São José dos Campos SP
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AECOM Asia Company Ltd
Attn: Dr Axel KL Ng
8/F, Tower 2, Grand Central Plaza
138 Shatin Rural Committee Road
Shatin, NT
HONG KONG

Novatecna Consolidações e Construções S/A
Attn: Giorgio GuatteriRua Banibás 142São Paulo/SP
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Via Kennedy 10
40069 Zola Predosa (Bologna) ITALT

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Seoul 138-200, KoREA

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1033-2 Guseo Dong
Geumjeong-gu, Busan, KOREA

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101 Ogeumno, Songpa-gu
Seoul 138-828, KOREA

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Mulgrave, VIC 3170
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Over Arup & Partners Ltd
13 Fitzroy Street, London W1T 4BQ,
UK.

INVITATION TO PAGE OF CORPORATE ASSOCIATES

Dear ISSMGE Corporate Associates,

The International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) is eager to express its deepest gratitude for your continuous support of the society's many activities world-wide. One of the benefits offered by the MPAC (Membership, Practitioners, and Academicians Committee) in conjunction with the Editorial Board of the ISSMGE Bulletin, is a one-page article in the Bulletin as described below (An example is attached to this e-mail for reference).

The ISSMGE Bulletin is an official publication of the society, and as such has a potential readership of over 19,000 individuals. Currently, 6 issues are produced and distributed a year. Corporate associates are invited to use one page of the bulletin once a year free of charge, in order to highlight their achievements (technical, environmental, social, etc) or maybe give an indication of any current recruitment programmes. As long as the content meets the general mission of ISSMGE, details can be decided by individual corporate associates.

You can make a draft WORD file and send it to the chief editor (Ikuo Towhata at Towhata@geot.t.u-tokyo.ac.jp) at any time. One request is that your one-page draft does not exceed approximately 300 kB in its file size so that the total size of the bulletin remains manageable. Please feel free to consult the editor, however, if you have any questions or problems.

The ISSMGE Bulletin is published with Trebuchet MS font (minimum 10 points). But you can use bigger fonts if you like. The page size is A4 and the margin size is 60 mm at the top and 20 mm at left, right, and bottom. However, there is no need to take care of the format because the editor will make necessary adjustments in the submitted manuscripts.

ISSMGE Bulletin: Volume 4, Issue 4 Page 55

Message from Corporate Associate:
Arjuna Consulting Inc.

Arjuna

Arjuna Consulting is a geotechnical consulting firm that is based in Kurukshetra City of Paradiseland where infrastructure construction is very active. Its majoring fields are planning of field investigation, interpretation, and application to design of foundation. Some of its recent achievements are illustrated in the pictures below. In recognition of its remarkable contributions to the public welfare for decades, Ajuna Consulting has got recently a special award from the King of Paradiseland.

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Position vacancies: We currently want Project Supervisor, Financial Director, Specialist of Numerical Analysis (Nonlinear FEM), and Geophysicist.

Contact person: Dr. Ashwathama at ashwathama@pandavas.arjunacon.co.qq
Address: P.O.Box 777, Kurukshetra, Kuru Province, 939-3704, PARADISELAND
http://www.arjunacon.co.qq

Example of Corporate Associate page

Foundation Donors

The Foundation of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) was created to provide financial help to geo-engineers throughout the world who wish to further their geo-engineering knowledge and enhance their practice through various activities which they could not otherwise afford. These activities include attending conferences, participating in continuing education events, purchasing geotechnical reference books and manuals.

- **Diamond: $50,000 and above**
  - **a.** ISSMGE-2010 http://www.issmge.org/

- **Platinum: $25,000 to $49,999**
  - a. Prof. Jean-Louis and Mrs. Janet Briaud
    https://www.briaud.com and
    http://ceprofs.tamu.edu/briaud/

- **Gold: $10,000 to $24,999**
  - a. International I-G-M
    http://www.i-igm.net/
  - b. Geo-Institute of ASCE
    http://content.geoinstitute.org/
  - c. Japanese Geotechnical Society
    http://www.jiban.or.jp/
  - d. The Chinese Institution of Soil Mechanics and Geotechnical Engineering – CCES
    www.geochina-cces.cn/en

- **Silver: $1,000 to $9,999**
  - a. Prof. John Schmertmann
  - b. Deep Foundation Institute
    www.dfi.org
  - c. Yonsei University
    http://civil.yonsei.ac.kr
  - d. Korean Geotechnical Society
    www.kgshome.or.kr

Foundation Donors (Continued)

e. CalGeo – The California Geotechnical Engineering Association
www.calgeo.org

f. Prof. Ikuo Towhata http://geotle.t.u-tokyo.ac.jp/
towhata@geot.t.u-tokyo.ac.jp

g. Chinese Taipei Geotechnical Society www.tgs.org.tw

h. Prof. Zuyu Chen http://www.iwhr.com/zswwenglish/index.htm

i. East China Architectural Design and Research Institute ECADI
http://www.ecadi.com/en/

- **Bronze: $0 to $999**

a. Prof. Mehmet T. Tümay http://www.coe.lsu.edu/administration_tumay.html
mtumay@eng.lsu.edu

b. Nagadi Consultants (P) Ltd www.nagadi.co.in

c. Professor Anand J. Puppala
University of Texas Arlington
(http://www.uta.edu/ce/index.php)

Message from ISSMGE Foundation

The ISSMGE Foundation is requesting donations from industries as well as individuals. The donated fund is spent to financially support promising geotechnicians who intend to further their geotechnical engineering knowledge and enhance their practice through various activities which they could not otherwise afford. These activities include attending conferences, participating in continuing education events, purchasing geotechnical reference books and manuals. All our ISSMGE members can contribute to the ISSMGE Foundation by sending President Briaud an email (briaud@tamu.edu). If you wish to apply for a grant, on the other hand, you can download the form
(http://www.issmge.org/web/page.aspx?pageid=126068),
fill it, and send it to the general secretary of ISSMGE at issmge@city.ac.uk. A request for grant above $2000 is unlikely to be successful. Smaller requests especially with indication of cost sharing have the best chance.

Invitation to ISSMGE's International Journal of Geoengineering Case Histories

CALL FOR PAPERS for the ISSMGE Case History Journal

The International Journal of Geoengineering Case Histories (IJGCH) is an official journal of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) and Geoengineer.org, focusing on the publication of well- documented case histories. **The journal is the ONLY refereed journal focusing exclusively on geoengineering practice and has many unique features.**

Topics of Interest

The IJGCH covers the broad area of practice in geoengineering. Researchers and practitioners worldwide are invited to submit their paper related to Soil Mechanics, Engineering Geology, Geotechnical Earthquake Engineering, Soil Dynamics, Geoenvironmental Engineering, Deep and Shallow foundations, Retaining structures, Deep Excavations, Rock Mechanics, Tunneling, Underground Structures, Applications of Geosynthetics, Landslides and Slope Stabilization, Dam Engineering and Embankments, Special Geotechnical Structures, Forensic Engineering, Applications of Constitutive Modelling, Landfill Engineering, Reconnaissance of Natural Disasters, Geotechnical Aspects of Monuments and Historic Sites.

Five top reasons to submit a case history paper for publication in the Case Histories Journal

1. **Expedited Review and Publication.** High quality submitals may be reviewed and published within only 3 months!
2. Wide circulation. All published papers are widely circulated to thousands of readers and available online for digital download at no cost.
3. All case history papers are also positioned in GeoMap (www.mygeoworld.info/pg/map)
4. Colored figures and electronic data are included in all papers.
5. Your paper will be eligible for the "Outstanding Paper in the International Journal of Geo-Engineering Case Histories Award" awarded by ISSMGE. This is a new award to recognize the best paper in this ISSMGE Journal on a bi-annual basis and the first will be presented at the 18th International Conference for Soil Mechanics and Geotechnical Engineering in Paris, France, 2-5 September 2013.

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.

From the editor of ISSMGE Bulletin

There is some confusion about case-history articles in this fantastic journal and those in Bulletin. As the editor of Bulletin, I would clarify the differences between them. Bulletin is something like a magazine that emphasizes simplicity, clarity, and speed. Hence, there is no peer review and I do my best to improve the submitted draft quickly so that the readers may get the latest information from the article. The articles are usually short and nice photographs are considered important. In contrast, the International Journal of Geoengineering Case Histories seeks for high quality as an academic journal with good peer reviews. Thus, the two publications of ISSMGE are different but work together as evidenced by many Bulletin articles that are invited to be re-submitted to the journal after their quality is improved and more information is added.

FROM THE EDITOR

Invitation to submission of article to ISSMGE Bulletin

ISSMGE Bulletin always welcomes contribution from readers who are interested in submitting technical and event articles. The number of subscribers in the world is more or less 19,000.

Bulletin is not an academic journal. It aims to increase the interest of readers in what are going on at the earth's surface as an interaction between human and our planet. Examples of desired type of articles in recent issues have addressed "*Soil Improvement under New Levees in New Orleans,*" "*Development of New Cone Penetrometer,*" "*Harbour Construction in Australia*" and "Preliminary Understanding of the 1255 Seti River Debris-Flood in Pokhara, Nepal" as well as "Development of Small-Scale Exciter for Condition Rating of Retaining Structures" among many others. For more idea, you can freely download past issues of the bulletin from the website of ISSMGE;

http://www.issmge.org/web/page.aspx?refid=430

In particular, the editor is waiting for submission on recent great technical achievements such as foundation of big buildings under difficult natural conditions and tunneling through Alps, for instance.

Because the Bulletin is an electronic publication, there is no page limitation. Color photographs and illustrations are highly welcome. Moreover, you can submit draft by a WORD file and there is no fixed format; the editing team will take care of formatting.

There is no fixed due date of submission. Submission is certainly free of charge. There is no peer review because the bulletin is not an academic journal but a newsletter. Only one request to authors is that the article has to be clear and easily understandable for practitioners. It is very advisable to use nice photographs and illustrations.

I am happy to acknowledge the support provided by the editorial board member, Dr. Marcelo Gonzalez to bring out this issue of the Bulletin.

I would like to express my sincere thanks for you to consider this invitation in a positive manner and send me a reply at your earliest convenience. Please take this good opportunity to demonstrate to the world **THAT YOU ARE VERY GOOD**.

Yours sincerely

Ikuo Towhata