



# IAEG

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## NEWSLETTER

Issue No.2,2019

Website: [www.iaeg.info](http://www.iaeg.info)

Electronic Version



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Edited by the IAEG Secretariat, Shaoxing, China

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# 1. NEWS OF THE EXECUTIVE COMMITTEE

## • News of 12th ARC

The Korean National group of IAEG and the organizing committee of 12th ARC cordially welcome your participation and support for the 12th ARC. About 400 papers from 27 countries have been submitted for this coming event. Therefore, we believe that 12th ARC will provide an excellent platform not only for Asian Engineering Geologist but also for colleagues from all over the world to share their knowledge and experiences. We look forward to meeting you at the beautiful volcanic island, Jeju.

## • News from Prof. Bo-An Jang, VP of Asia

Prof. Bo-An Jang, VP of IAEG for Asia, has been devoting himself to organize the 12th ARC as a Chairman for IAEG Korea National Group. 400 abstracts were submitted and 137 participants were registered by 12th of July. The early-bird registration will be ended by 31st of July and the organizing committee will determine the proceeding and the final programs according to early-bird registration. Thus, the organizing committee encourages presenters and participants of the 12th ARC to register before 31st of July.



## • News from Prof. Faquan Wu, Secretary General of IAEG



Prof. Faquan Wu, together with the organizing committee of SXFRG, is actively preparing for the 2<sup>nd</sup> Shaoxing International Forum on Rock Mechanics and Engineering Geology (SXFRG). They held the second preparatory meeting, which covers the arrangement of technic program, accommodation, pre-investigation of the field trip spot, and some other issues concerning SXFRG. Following the successful hosting of the 1<sup>st</sup> SXFRG, we will learn from the experiences we have drawn from the 1<sup>st</sup> SXFRG, and we are confident of hosting the 2<sup>nd</sup> SXFRG successfully.

## • News from Prof. Kingdom Abam, VP of Africa

There has been a lot of interest in NAEGE from mostly the geological community in Nigeria. Membership has increased. We are continuing efforts with the planning of the 2nd IAEG Africa Regional Congress, scheduled for 27-30th October in Abuja, NIGERIA. The Final Call for papers has been issued. We have received a significant number of Abstracts. We have also commissioned a number of leading Environmental and Engineering Geologists to present lead papers. The Nigeria Geological Surveys Agency is now co-hosting the Congress along with Nigerian Mining and Geosciences Society (NMGS) and NAEGE.



### • News from Prof. Eugene Voznesensky, VP of Europe

Group of engineering geology students from Moscow State University specialized in engineering geology is guided through a 45-days field course by Prof. Eugene Voznesensky. The training aimed at field methods of geological mapping and took place in the South of Russia.



### • Applying for the host of IAEG Executive Committee Meeting and Council Meeting in 2021

Both Singapore and Argentina are applying for the host of IAEG Executive Committee Meeting and Council Meeting in 2021. They will present their will and confidence of holding the conference on the Council Meeting in Korea. The Council Meeting will decide the host country by vote.

## • Proposal for the 13th Asian Regional Conference of IAEG in 2021

Singapore is applying for the 13th Asian Regional Conference of IAEG in October or November, 2021. They specified the conference theme, scope, tentative program and possible venues in their application submitted to IAEG Secretariat. They will show their strengths, abilities and interests of hosting this conference in the council meeting this September in South Korea. The council will decide whether Singapore is a qualified candidate by vote.

15 March 2019

Professor Faquan WU  
Secretary General, IAEG  
Institute of Geology and Geophysics  
Chinese Academy of Sciences  
Beijing, China

Dear Professor Wu,

### LETTER OF INTENT TO HOST THE 13<sup>th</sup> ASIAN REGIONAL CONFERENCE OF IAEG IN SINGAPORE IN 2021

The Society for Rock Mechanics and Engineering Geology (Singapore) would like to express our unwavering intent for hosting the 13<sup>th</sup> Asian Regional Conference (ARC) of IAEG in Singapore in 2021.

Singapore, as a land scarce country, has been very active in underground space development in recent years, and the development of engineering geology practices and skills plays a key role in deep underground space creation in Singapore.

SRMEG has hosted the 13<sup>th</sup> World Conference of Associated Research Centre for the Urban Underground Space (November 2012) and 10<sup>th</sup> Asian Rock Mechanics Symposium (October-November 2018). Also we have conducted many international workshops and seminars on rock mechanics, engineering geology and tunnelling related subjects.

As you may aware that SRMEG representative had made a proposal at IAEG Council Meeting during the 11<sup>th</sup> ARC in Nepal in Nov 2017. However, it was concluded to make a decision by voting in the coming Council Meeting during 12<sup>th</sup> ARC in South Korea in 2019.

Our SRMEG representative will again make a proposal to host 13<sup>th</sup> ARC in Singapore in 2021 at IAEG Council Meeting in September 2019.

Yours Sincerely,



Zhiye ZHAO  
President, Society for Rock mechanics  
and Engineering geology (Singapore)



Wei WU  
Chair, Local Organizing Committee,  
13<sup>th</sup> Asian Regional Conference of IAEG



## • Proposal for the 14th Asian Regional Conference, and IAEG Executive Committee Meeting and Council Meeting in 2023

The Malaysian National Group of IAEG would like to bid for the host for the 14th Asian Regional Conference of IAEG in 2023. They expressed their enthusiasm and confidence of hosting the conference in their letter sent to the IAEG Secretariat. They will present the superiority of holding the conference in Malaysia on the Council Meeting in Korea.



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Our Ref: SEGRM/2019/29

20<sup>th</sup> July 2019

### Secretary General

### International Association of Engineering Geology and the Environment (IAEG)

Shaoxing University

No. 508, Huanchengxilu, Shaoxing,

Zhejiang Province

312000 China

**Attn: Professor Faquan WU**

Dear Sir,

### LETTER OF INTENT TO HOST THE 14<sup>TH</sup> ASIAN REGIONAL CONFERENCE OF IAEG 2023

The Society for Engineering Geology and Rock Mechanics Malaysia (SEGRM) is a non-profit scientific association supported by membership fees and grants/donations, and it is formed in affiliation with the **International Society for Rock Mechanics (ISRM)** and **International Association for Engineering Geology and Environment (IAEG)**. The main objective of the society is to contribute to academic and technological advancement through research and collaboration with practitioners and other professional institutions in the field of engineering geology and rock mechanics.

The IAEG Malaysia National Group through SEGRM together with Geological Society of Malaysia (GSM) would like to take this opportunity to show our interest to be the host for the 14<sup>th</sup> Asian Regional Conference of IAEG in 2023. Please note that we received strong support from our counterpart from Indonesia, Indonesian Society for Engineering Geology (MGTI) under the umbrella of Indonesian Association for Geologists (IAGI) to co-organise or become main supporter of the event.

Trust we can organise the event with lower fee due to low cost of living in Malaysia. Hence, may encourage more participation from neighbouring countries within Southeast Asia.

We propose the event to be organised either in;

- (i) Kota Kinabalu, Sabah (near to the UNESCO World Heritage Site of Mount Kinabalu, the highest peak of Southeast Asia, or
- (ii) Langkawi Island, the first World Global Geopark in Southeast Asia

We also received strong support from the Department of Mineral and Geoscience Malaysia (JMG), Malaysian Convention and Exhibition Bureau (MyCEB), Tourism Promotion Board of Malaysia, state and local governments as well as from most universities in Malaysia.

We look forward to your favourable reply.

Thank you.

Yours sincerely,

**Society for Engineering Geology and Rock Mechanics Malaysia**

A handwritten signature in black ink, appearing to read 'Abd Rasid Jaapar', followed by a long horizontal line extending to the right. Below the signature, there is a dashed line.

**ABD RASID JAAPAR**

Treasurer, SEGRM & Secretary, IAEG Malaysia National Group

## 2. CALL FOR MEMBERSHIP UPDATE 2019

The IAEG Secretariat is calling for the membership update of 2019. Since Bulletin will be published on-line only from the start of 2019, it is important for IAEG Secretariat to collect the updated membership, so as to ensure the members who pay for the Bulletin can actually read the digital version.

The new fee levels has been implemented from 2019 as listed in the table below.

	Type	2019 and later on
Members through National groups	<u>Members without bulletin</u>	
	Low-income Countries	7 €
	High-income Countries	20 €
	<u>Members with bulletin (+12€)</u>	
	Low-income Countries	19 €
	High-income Countries	32 €
Direct members	Individual member with Bulletin	45 €
	Individual member without Bulletin	33 €
	Associated members	150 €



### 3. EVENTS OF NATIONAL GROUPS

#### • China National Group

##### **SiDRR Conference was held in Beijing, China on May 11-12, 2019**

International Conference on Silk-roads Disaster Risk Reduction and Sustainable Development (SiDRR) On May 11-12, 2019, Beijing, China. It was co-hosted by the Chinese Academy of Sciences(CAS), the China Association for Science and Technology(CAST), the United Nations Environment Program(UNEP), the UN Office for Disaster Risk Reduction (UNDRR) and the Alliance of International Science Organizations (ANSO), a group created to connect the scientific communities of Belt and Road Initiative (BRI) participants.



Opening Ceremony

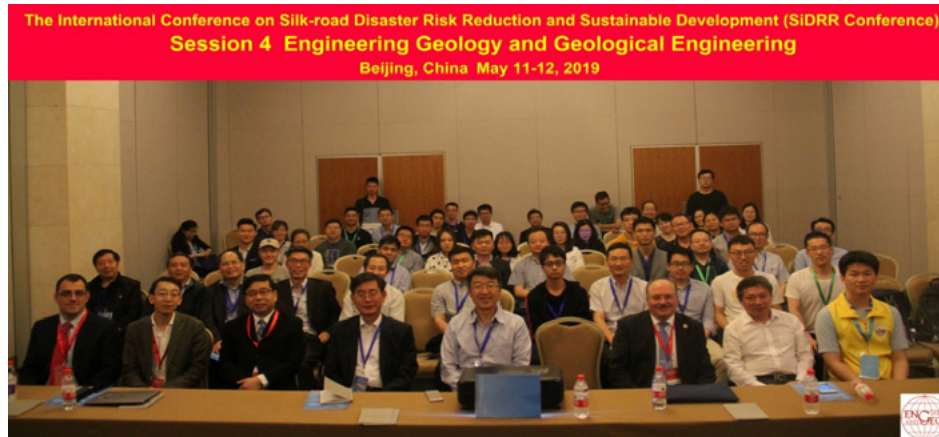


Keynote Report addressed by IAEG President Prof. Rafiq Azzam

As one of the key sponsors to the SiDRR conference, IAEG has made a great support to the academic conference. IAEG President Prof. Rafiq Azzam was invited as plenary keynote speaker and attended the Alliance of International Science Organizations (ANSO) working meeting. IAEG Vice President for Asia Prof. Huiming Tang was invited as the chair in plenary keynote address.

The SiDRR Session 4 - Engineering Geology and Geological Engineering was well organized by IAEG C29 Structure and Behavior of Soil and Rock Mass and IAEG C38 Rockmass Characterization with Emphasis in Rock Slope Hazards.

IAEG Secretary General Prof. Faquan Wu, IAEG Vice President for Asia Prof. Bo-An Jang, Chair of IAEG C29 Prof. Shengwen Qi (Session convener and chairman), Chairman of IAEG C36 Prof. Weimin Ye, Chair of IAEG C37 Prof. Hengxing Lan, Chair of IAEG C38 Prof. Haris Saroglou (Session convener and chairman) were invited speakers in Session 4. There are 9 invited speeches, 19 oral presentations and 6 posters in session 4.



Group photo of Session 4

The theme of the SiDRR Conference 2019 is Towards Safe, Green, and Resilient Silk Road. Centered on this theme, more than 20 sessions focusing on various topics have been organized by several international academic organizations and societies. Scientists from China and other countries involved in the Belt and Road Initiative (BRI) will work together to enhance scientific and technological cooperation in disaster prevention and mitigation, according to a joint declaration, the Beijing Declaration, after the SiDRR conference.

More than 700 scientists from around 40 countries, regions and international organizations supported the declaration. It recommended actions including data-sharing, investing in disaster risk reduction technologies and infrastructure, and jointly enhancing disaster preparedness and response protocols.

The Alliance of International Science Organizations (ANSO) includes around 30 institutions and universities from countries including Italy, Belgium, Nepal, Pakistan and Sri Lanka. The alliance will serve as a new platform for international coordination and provide scientific support for disaster relief and sustainable development.

More details available in <http://www.sidrr.com>

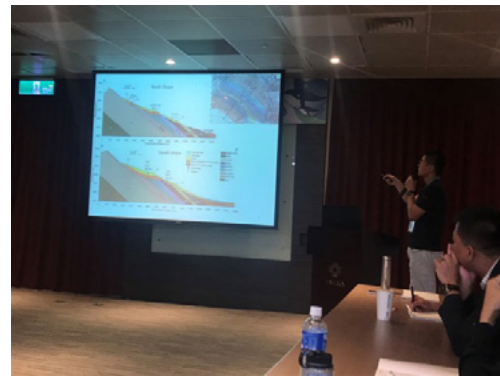
## • Chinese Taipei Regional Group

### Engineering Geological Forum (2019)

The Taiwan Geosciences Assembly held during 13-17 May, 2019. More than 2,000 domestic and foreign experts and scholars who specialized in various fields, including space, atmosphere, marine geology, hydrological geomatics, geographical, and science education joint this important event. Well used this important event of geoscience, Chinese Taipei Regional Group organized Engineering Geological Forum (2019) at 16 May, 2019. Two topics were focused: (1) the influence of geological structures on the susceptibility and activity of deep-seated landslides; (2) the uncertainty of

geological model. More than 40 engineering geologists joined this forum. Four lecturers with experiences in engineering geology were invited to address the aforementioned issues and share their experiences.

For the deep-seated landslides, Mr. M. M. Chen who is division chief of the Central Geological Survey pointed out the different deformation features of rock slopes composed of sandstones/mudrocks interbedded layers and slate formation. The failure mechanisms for dip slope and anacinal slope are also introduced. Two talks related to site investigation for slopes composed of sedimentary rocks (sandstone and mudrocks alternation) and slates in south-western Taiwan were delivered by two professional engineering geologists, Mr. K. H. Kang and Dr. C. M. Yang. The large-scale geological maps were used to demonstrate the possible failure mechanisms and inferred the activity of the slope deformation.



The event photos in Engineering Geological Forum

Regarding to the uncertainty of geological model, Mr. F.R. Wang (professional engineering geologist) reviewed the existing evaluation methods. Generally, uncertainties of geological model will highly related to the availability and quality of data, geological and geomorphological complexity, and experiences of the geologists. Based on the evaluated uncertainty, risk of the engineering projects could be evaluated. The cost may exceed the expense of the site investigation if the uncertainty of geological model is unreasonable high. He highlighted the importance role of the engineering geologists on engineering risk reduction.

During the discussion, many senior engineering geologists shared experiences on deep-seated landslides and uncertainty of geological model. They also provided their view on the future development of engineering geological profession. For example, Professor C. T. Lee from National Central University (NCU) shared the experiences of the countermeasures to suppress the slope movement. The Section Chief of the CGS, L. Y. Fei, raised the importance of groundwater investigation for deep-seated landslide. The former Deputy Director of the CGS, D. C. Lai, pointed out the directions of efforts should be devote in the future for young engineering geologists. At the end of the forum,

Professor J. J. Dong from NCU concluded that only the engineering geologists can provide realistic geological models for a variety of applications, e.g., engineering project, geohazards, groundwater resources, and environmental issues like nuclear waste disposal.

## • Greece National Group

### BI-ANNUAL WORKSHOP

The Greek National Group of IAEG organized a workshop on 28th of March 2019, entitled: **“The contribution of Engineering Geology for the mitigation of Geohazards. Innovative investigation and early warning techniques, case studies and legislation”**. Our National Group organizes one workshop every two years. This workshop was very successful as it was attended by more than 250 participants from both academia and industry. During the workshop, the NG, represented by its president Assoc. Prof. Constantinos Loupasakis, awarded a prize to Prof. Nikolaos Sabatakakis from the University of Patras for his long-standing contribution in the development of Engineering Geology.

The workshop was organised in three sessions. The first two sessions consisted from oral presentations on the topics of engineering geological studies with emphasis on the mitigation of geohazards and applications of remote sensing in Engineering Geology given from colleagues from Universities, public Authorities and companies from industry.

The NG is also promoting the support of the Young Engineering Geologists, through awards and other activities. In this respect during the third session, an award for the best publication from a Ph.D. thesis was presented to Dr. P. Tzamboglou (from the School of Mining and Metallurgical Engineering, NTUA).

In the same session, a discussion about the professional aspects of Engineering Geology in Greece was encouraged. Assoc. Prof. Vasilis Marinos, Vice President of IAEG, has presented the recent activities of the Association. Dr. Haris Saroglou, Secretary of the NG and Chair of the new Technical Commission C38 “Rock mass characterisation with emphasis on rock slope hazards” has presented the activities of the newly founded Commission. Finally, the activity of the Young Engineering Geologists Group of the NG, which was founded in January 2019, was presented by Mr. Stratis Karantanelis, representative of the group.

The workshop included also a poster session dedicated to the presentation of recently completed MSc theses. At the end of the workshop the best poster presentation was awarded.





View from the room, where the workshop was organised



Photo from the award to Prof. N. Sabatakakis

## OTHER EVENTS

The Greek NG has organised two invited lectures during the period of December 2018 to May 2019, given from speakers from academia and industry. Dr. G. Tsifoutidis, presented on “The Doha Metro - Construction and management challenges”. Prof. N. Vlachopoulos, from the Royal Military College of Canada, on “The use of embedded fiber optics from the monitoring of the ground and its behaviour for the support of underground works”. Additionally, the NG of IAEG invited in collaboration with Technical Commission C38, Prof. B. Murphy from University of Leeds to give a presentation on “Earthquake-induced rock slope failures in natural slopes”. The lectures were well participated by the members of our National Group but also from colleagues from other disciplines.

## • India National Group

### IAEG India National Group Organised “EGCON-2018” at Hyderabad, India



Indian Society of Engineering Geology (ISEG), in association with Geological Survey of India (GSI) successfully organised the EGCON 2018: National Conference on Prospects and Retrospect in Engineering Geology, Geophysics and Instrumentation during 3-5 December 2018 at GSI Training Institute, Hyderabad. This 3-day scientific event was inaugurated on 3rd December 2018 at M.S. Krishnan Auditorium, GSI Training Institute, Hyderabad, where Shri M. Sridhar, Addl. Director General & HoD, GSI, SR graced the occasion as the Chief Guest. Shri Ch. Venkateswara Rao, Dy. Director General & Head: Mission V and Shri Narendra Kumar, Executive Director (Design), NHPC Ltd., Faridabad were present on the occasion as Guests of Honour. EGCON-2018 received 96 abstracts on 11 thematic groups. 60 oral presentations were made through 11 Technical Sessions, out of which, seven sessions were kept at the main Auditorium while four sessions were arranged concurrently in Conference Hall-1. Amongst the oral presentations, 15 were invited presentations on different themes, delivered by reputed domain experts. During the Inaugural function, Chief Guest released “Abstracts & Souvenir Volume” containing all abstracts and Keynote addresses. ISEG also felicitated 50

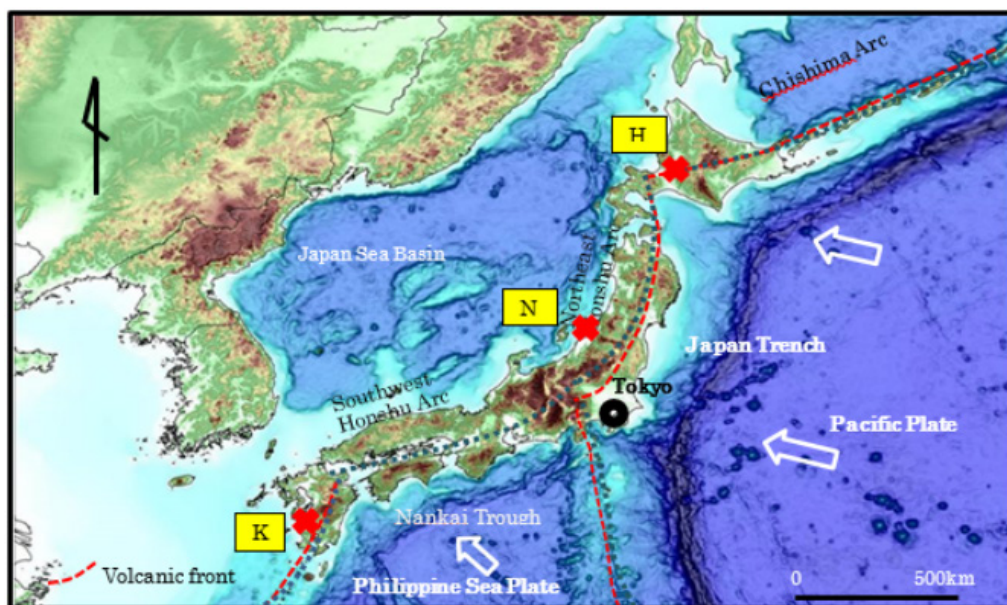


Engineering Geology experts and mentors from the past generation during the Conference.

During the evening of 4th December 2018, the valedictory of Technical Sessions was marked by a panel discussion which included senior and retired professionals from GSI, Industry and academia who deliberated on various topics and finally put forward 10 concrete recommendations carved out from the technical discussions. Later in the evening, a traditional and classical dance rendition by a group of artists from the Ministry of Language & Culture, Government of Telangana enthralled the delegates with their performance. The day concluded with a Presidential Dinner hosted by ISEG. In order to encourage young engineering geologists, cash prizes were awarded for best oral and poster presentations. On 5th December, the participants were taken for a scheduled one-day field trip to Srisailem Dam and to the SLBC Tunnel for witnessing operations through Tunnel Boring Machine.

The event was sponsored by NHPC Ltd., Alphageo (India) Ltd., HES Infra, WAPCOS, SJVNL, PFCL, Greenko, Aimil, CVPP, Raghava Constructions, Power Grid Corporation Limited, NTPC Limited, Kholongchhu Hydro Energy Limited, Bhutan, Punatsangchhu HE Project Stage-I and II, Bhutan, Mangdechhu HE Project, Bhutan, THDC Ltd., Hindustan Copper Ltd., RITES, NEEPCO Ltd, Data Code, PLR Projects, Harsha Constructions and Jaypee Associates. Delegates from various organizations, especially from GSI, NIRM, MECL, NHPC, SJVNL, NTPC and many other PSUs and Private Organizations participated in the Conference.

#### • Japan National Group



Recent Earthquake in Japan

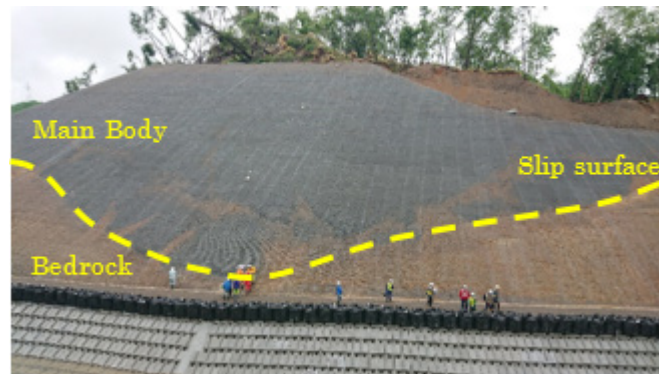
Recent Earthquake in Japan K; Kumamoto M7.3, 2016. H; East Iburi M6.7, 2018. N; Niigata M6.7, June 2019.

#### Special Report Meeting in Sapporo, Hokkaido, East Iburi Earthquake

Hokkaido branch of the JSEG held a special report meeting of the East Iburi earthquake on 19th April 2019. The East Iburi Earthquake occurred on September 6th, 2018 in the middle area of Hokkaido Island. JSEG sent an investigation team after the disaster. Please refer to No.1 Issue of 2019 Newsletter, JSEG reported, for the detail information of the East Iburi Earthquake.

In this meeting, damage situation of the public facilities, earthquake evidence on archaeological site, correspondence after the earthquake disaster of forest work and regional revitalization business were reported by administrative officials. Local newspaper also made a presentation about the earthquake from the viewpoint of mass media.

Participants got an opportunity to exchange their ideas about usage of scientific data among the social community.



Cut slope of landslide toe. Landslide was moved 350m from the back towards the front by the earthquake.

### **Japan Geoscience Union (JpGU) Meeting, Tokyo, 2019**

Japan Geoscience Union (JpGU) Meeting, 2019 was held from May 26th to 30th at the Makuhari Messe International Conference Hall in Chiba. JpGU is an academic union that covers all the disciplines of Earth and planetary sciences and related fields. The JSEG is belonging as a group member of JpGU.

8,390 participants joined this meeting. The number of participants of this year is slightly larger than last year. 5,028 participants made presentations including 655 participants from overseas.

Prof. Masahiro Chigira, the chairman of the IAGG Japan National Group, organized two sessions: "Landslides and related phenomena" and "Geohazards in humid, tectonically active countries and their precursors". Totally, 21 oral and 29 poster presentations were held in the sessions with fruitful discussions.

The participants exchanged their ideas in the various fields of earth sciences. The audiences, not only applied geologist but also any other fields such as an extraterrestrial planets topologist, also had lively debate.

JpGU 2020 is planned as the second joint event with the American Geophysical Union (AGU) from 24th May to 28th May 2020 at Makuhari Messe in Chiba. Joining more than 1,000 researchers from overseas are expected, and attractive activities are planned.



View of exhibition of JpGU

## • New Zealand National Group

### Obituary

#### **Bruce Wilson Riddolls MSc (Hons) PhD MNZGS MGSNZ**

1 October 1943 – 27 June 2019

#### Pioneering Engineering Geologist

Dr Bruce Riddolls was a noted engineering geologist who played a leading role in making geological considerations an integral part of project investigations in New Zealand. Having studied regional mapping for his MSc at Canterbury University and obtaining a PhD from Exeter University on geological mapping Bruce developed a strong appreciation of the importance of geological context to the safety and viability of major engineering works. This appreciation was

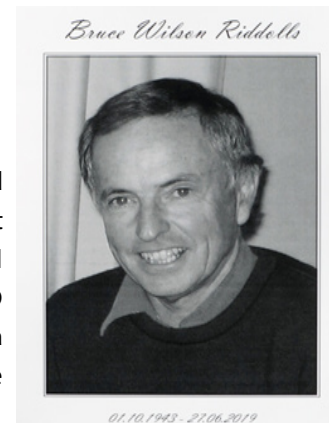
greatly enhanced during his ten years (1971-81) with the NZ Geological Survey (NZGS) Division of DSIR (later to become GNS Science). He joined at a time of rapid development of national infrastructure. NZGS had a long-standing role in providing geological advice to government and its Engineering Geology section grew to provide advice on hydro-electric and thermal power development, tunnelling, roading, railways and gas pipeline projects.

At a time when engineering geology was in its infancy in the private consulting engineering profession, Bruce accepted an offer from Worley Consultants (now AECOM) to establish and lead an engineering geology group. During his six years in Auckland, (1981 to 87) as Chief Engineering Geologist, Bruce carried out and led a wide range of assignments on major civil and mining engineering projects across New Zealand and overseas, including Laos, Indonesia and PNG. Engineering geology became recognised as a vital consideration on projects of any scale.

Having established his credentials in the private sector, Bruce set up his own consultancy, Riddolls Consultants Ltd with his wife Patricia, based in Queenstown. His work during that time (1987 to 89) centred on the massive challenges involved in the Clyde Dam development, not just with the dam itself but with the geographically extensive engineering impacts of the establishment of Lake Dunstan – notably the need to stabilise inundated slopes to avoid landslides which could cause overtopping of the dam. Up to 35 engineering geologists were involved and Bruce made strong contributions with his knowledge, insights and analytical skills. He stood out for his ability to visualise and conceptualise and determine the geological setting and its engineering implications. His ability to think laterally to generate bright ideas was much appreciated by his peers – though this ability could frustrate on occasion.

Having established Riddolls & Grocott with fellow engineering geologist, Guy Grocott in 1994, he moved to Christchurch in 1996. For the next four years he applied his skills and knowledge to government and private sector projects. Notable amongst a range of projects Bruce collaborated on was a 1999 report for BRANZ, Quantitative Assessment for Determining Slope Stability Risk in the Building Industry, which is an important reference work for practitioners still being cited in New Zealand geotechnical publications and internationally. Dr Riddolls served four years (1998-2002) as Vice President for Australasia for the International Association of Engineering Geology and the Environment, having previously served on the Management Committees of both the NZ Geotechnical Society and the NZ Society for Earthquake Engineering.

In 2000, RGL merged with Golder Associates Ltd a large international geotechnical consulting firm



headquartered in Canada. Bruce's focus shifted to project reviews and management of professional services. This broadened his perspectives and experience but did not satisfy his desire to be hands-on. In 2003, with an established reputation for insightful interpretations of geological and geotechnical aspects and concise reports, Bruce re-established Riddolls Consultants to focus on geological reviews, strategies, expert evidence and mentoring. Risks from natural hazards and their implications for major engineering developments formed a strong part of his work in this period. His 2007 co-authored report for EQC, *Managing Landslip Risk – Improving Practice*, highlights Bruce's understanding of the issues and demonstrates his ability to communicate simply, clearly and succinctly.

During this time Bruce exhibited an entrepreneurial spirit. In 2005, with two colleagues, he helped form B2G Energy Ltd to explore for coal-bed methane gas. B2G Energy was granted an exploration licence in part of the Roxburgh Coal Field but the one hole that the company drilled proved barren.

A particular strength Bruce developed in later years was high-level peer review of geological modelling for major projects and in that capacity he was retained by major clients including Transit NZ (now NZ Transport Authority), KiwiRail, Wellington City Council, Canterbury Waste Services Ltd, Fulton Hogan Ltd, and the Department of Conservation.

Bruce continued to provide consulting services until very recently, moving to Auckland in 2014 and then to Pegasus in 2018 where he could once again enjoy being on the Canterbury Plains and close to the Southern Alps.

Bruce Riddolls was not just a dedicated and highly skilled professional. He was passionate about passing on his knowledge and insights and acted as mentor for many younger engineers and engineering geologists. Few people with whom he interacted would realise the breadth of his knowledge and experience or the depth of his insights. He was unassuming and not particularly assertive in putting his views forward. But he was strong-minded with a drive towards excellence in all his work. His contributions were always very much to the point and reflected his deep knowledge and understanding. One of his many qualities was brevity in report writing – if it could be stated in one page, there was no need to say it in 10.

Rarely did he mention that he had spent a season exploring remote parts of Antarctica in 1966-67 – a challenging assignment in those days which gave him the opportunity to put Mt Riddolls on the map.

Bruce recently celebrated his 50th wedding anniversary. He met his geologist wife, Patricia, while studying in Exeter. They worked at NZGS together and formed their consultancy. These common interests no doubt enabled Bruce to refine and develop his knowledge and skills. The Riddolls family, Bruce, Patricia and daughters Ellen and Frances, lived in different parts of New Zealand. Bruce was able to use his innovative DIY and other skills on a range of properties, all to good effect. He was noted for his quiet and dry sense of humour and colleagues recall several (harmless) practical jokes played on them.

Bruce played and watched cricket, golf, football, tennis and squash. He enjoyed travel, reading and listening to music. He sang in choirs and performed on stage, notably in *Hello Dolly* and *Gilbert and Sullivan* operas.

With his wide professional and personal experience this man of gentle spirit quickly gained and then retained the respect and admiration of his friends and colleagues who rated him amongst the best of their acquaintance. Someone it was good to spend time with. And who will be sadly missed.

*Compiled by David Hopkins with input and assistance from Ian Parton, Guy Grocott, Ian Brown, Don Macfarlane, Geoff Farquhar, Nick Perrin, Simon Nathan and Patricia Riddolls.*



## • Nigeria National Group

Interest in NAEGE and IAEG is growing by the day. The publicity of the 2nd IAEG Africa Regional Congress has helped this growth. Membership has now increased to about 130. NAEGE held its mid-year Executive committee meeting in Abuja, Nigeria in June, 2019 hosted by NGSA (see photo). We are continuing efforts with the planning of the 2nd IAEG Africa Regional Congress, scheduled for 27-30th October in Abuja, NIGERIA. The Final Call for papers has been issued. We have received Abstracts from Ghana, Uganda, South Africa, USA and Nigeria. We have also commissioned a number of leading Environmental and Engineering Geologists to present lead papers. The Nigeria Geological Surveys Agency is now co-hosting the Congress along with Nigerian Mining and Geosciences Society (NMGS) and NAEGE.

Between March and July, the IAEG VP (Africa) has visited the Directors General of Nigeria Geological Surveys and the Nigerian Hydrological Services Agency. He has also attended the inauguration of the new President of the Nigerian Mining and Geosciences Society and the Stakeholders workshop on the Hydrogeological Mapping of the Lower Niger Hydrological Areas.



All are hereby invited to share in the rich African Experience.

Please refer to the meeting information for the copy of the Final Call for papers.

## • Portugal National Group

### **2nd International Workshop of Natural Hazards, Pico Island, Azores, Portugal**

The Regional Laboratory of Civil Engineering (LREC) from Portugal promoted on 9-10th May 2019, in the village of Lajes do Pico, the 2nd edition of the International Workshop on Natural Hazards (NatHaz), under the theme "Hydrological Risks". Pico is the biggest island of the Central Azorean Group and exhibits the highest point of Portugal (2351 m), the Pico Mountain volcano, which is the 3rd highest volcano of the North Atlantic Ocean.

The Workshop took place at the Whaling Museum, where about 50 participants attended it from several nationalities. The programme of the NatHaz was divided into two days. The first day was dedicated to a technical field visit in the Pico island highlighting the geology, volcanology, geotechnics and natural hazards aspects. On the second day were held scientific sessions through oral and poster presentations. That allowed an interesting debate between the international communities on engineering geology, hydrology, natural hazards, hydraulic engineering and geotechnics. The event hosted also the topical keynote lectures of the renowned colleagues: José Luís Zêzere (Portugal), Luis Ribeiro e Sousa (China) and Giuseppe Sappa (Italy).

The extended abstracts submitted and approved will be published, until late 2019, in a volume of proceedings of the Springer ASTI series (Advances in Natural Hazards and Hydrological Risks:



Meeting the Challenge). By the end of the year, all authors will be invited to submit a full paper in the international journal “Springer Nature Applied Sciences” aiming the publication of a Special Issue during 2020. In addition, were submitted to the Workshop near half a hundred abstracts by 131 authors from four continents (America, Europe, Africa and Asia).

After the successful outcome of the NatHaz, LREC will continue to promote the exchange and updating of scientific and technical knowledge among specialists, with the aim of putting the Azores on the map of international scientific events on natural hazards. The next edition of the NatHaz will be held in Terceira island, May 2021, under the thematic “Volcanological Risks”.

The Regional Government of the Azores, the Regional Laboratory of Civil Engineering and the Organizing Committee of NatHaz, expressed their gratitude to all participants and stakeholders of the 2nd International Workshop of Natural Hazards, recognizing the relevant and significant presence of all in this interchange of experiences and knowledge, crucial to the evolution of all professionals in the field.

Please click <https://sites.google.com/civil-event.pt/nathaz19/homepage> for more information.

### **Homage to Professor Ricardo Oliveira**

During the 11th Annual Meeting of the Portuguese Association of Geologists (APG), in 29th March 2019, Lisbon, was organized a ceremony of homage to Professor Ricardo Oliveira. The colleagues Dr. Filipe Telmo Jeremias (LNEC), Dr. Raúl S. Pistone (Coba) and Prof. Paula F. da Silva (UNL) highlighted the unique and diverse life career of Professor Ricardo Oliveira related to academia and practice. The core of his long and impressive career spanning over 50 years was to promote the practice, teaching and research of engineering geology, applied geosciences and geotechnics in engineering design, projects and works, as well as to challenges through an environmental, sustainable and ethical approach. Professor Ricardo Oliveira gave a Special Lecture on “The importance of geology in engineering works”.

Prof. Ricardo Oliveira was elected Honorary President of IAEG during the 2018 Council Meeting, in San Francisco (USA).



### **• Russia National Group**

**“Sergeevskie chteniya” moved from Moscow to the Urals in 2019.**

The twenty-first annual conference “Sergeevskie chteniya” in commemoration of academician

E.M.Sergeev (past President IAEG, 1978-1982) was held in Perm, the Urals, Russia, on April 2-4, 2019. This is a traditional annual event organized by the Russian National group IAEG and the Scientific Council RAS on geoecology and engineering geology. Usually held in Moscow, this year the conference was supported and hosted by the Perm State National Research University. The conference discussed the main topic "The Balance between Ecology and Economy upon Nature Use in Mining Regions". The conference agenda included 1 plenary and 6 sectional meetings, within which 27 oral and 19 poster presentations were delivered. The sectional meetings were dealing with:

"Rational nature use. Ways to its optimizing and achieving economic efficiency"; "General issues of environmental safety in industrial regions"; "Environment contamination and the hydrosphere transformation in mining regions"; "Intensification of natural geohazards in mining regions"; "Rehabilitation of technogenically-loaded areas"; "Development of research methods and monitoring of environment transformation". The working language of the conference was Russian.

It was not by chance that the Perm region was chosen for such a discussion. Located at the juncture between the East European Platform and the Urals Mountains, the CisUrals region presents the entire variety of rocks of different age and a lot of mined mineral deposits. It is the old industrial region, the history of its industrial development dating back to the XVth century. Coal and rock salt have been mined there since the early times. In the beginning of the 20th century, the oil fields were also discovered in the region. Industrial development in combination with difficult geological conditions gave rise to a number of ecological problems. In Perm region, about 30% of territory is covered by karstic deposits, i.e., limestone, gypsum, anhydrite and rock salt. The entire region is the water-drainage basin of the Kama River, the largest tributary of the Volga River; therefore, water contamination is also a problem.

Therefore, the conference topic appeared to be very acute. The invited plenary reports at the conference were delivered by academician V.I. Osipov (IEG RAS, Moscow) "Nature use as the most important factor of sustainable development"; corresponding member of the Russian Academy of Sciences A.A. Baryakh (Perm Federal Research Centre, Urals Branch RAS, Perm) "Some geoenvironmental problems of the upper Kama region", and Dr. N.G.Maksimovich (Perm state university) "Ecological and economic problems arising upon the closure of coal industrial works".

Traditionally, at the conference "Sergeevskie chteniya", E.M. Sergeev's medal "For the Outstanding Contribution to Engineering Geology and Environmental Geosciences", which is a professional award in the Russian engineering geology and environmental geosciences, was awarded to the distinguished Russian engineering geologists. In 2019, the recipients of this medals were Prof. Dr. Sokolov V.N., Prof. Dr. Kalinin E.V., Prof. Dr. Dmitriev V.V. and Dr. Maksimovich N.G.

The conference was attended by about 150 participants from different regions of Russia: Perm, Moscow, Ufa, Yekaterinburg, Tomsk and other Russian cities. The volume of Conference proceedings was published (Sergeevskie chteniya, issue 21, Perm, 2019, 628 pp.). Proceedings and photos are available at: <http://sergeev2019.ru>

The magnificent geological trip to the main geological and cultural sites in Perm region was arranged after the conference.

The final point of the two-day-long post-conference geological tour around the Perm region was the famous Kungur ice cave. The Kungur ice cave is one of the main geological attractions of the Urals region. It is located on the right bank of the Sylva River under the Ledyanaya ("Ice") Hill. It is one of the largest gypsum karst caves in the European part of Russia. Being 5700 m long, containing 58 grottos and 70 subsurface lakes it ranks 7th in the world by its length. The age of the ice cave dates back to 10-12 thousand years ago.

Apart from the extremely interesting scientific and field excursion program, the conference was marked by a very hearty and friendly atmosphere. In fact, many thanks to the conference organizers, above all, to Prof. Nikolay Maksimovich and Dr. Olga Meshcheryakova (Perm State University), this event became an unforgettable event, a real meeting of old good friends. We invite more our colleagues to join us next year, 2020, at the 22nd conference in commemoration of academician E.M. Sergeev. The venue is to be announced soon.



Views inside the Kungur ice cave



The cover of the Sergeevskie chteniya Proceedings' volume.



The group of participants at the Sergeevskie chteniya conference in Perm, 2019. Academician V.I. Osipov is in the centre.

## 4. NEWS FROM COMMISSIONS

### Proposal to Create a New Commission

#### Commission on NOA (Naturally Occurring Asbestos)

##### - Mission Statement -

Inhalation of airborne mineral fibers, especially those which are or were mined as asbestos, has been documented as a cause of serious lung diseases (asbestosis, lung cancer and mesothelioma). The regulatory response related to asbestos exposure has focused on the mining and milling of asbestos, the manufacturing and use of asbestos-containing products, and the asbestos-abatement industry. Mineral fibers found in rock and soil which have not been mined as asbestos, and are known or suspected to cause asbestos lung disease, have been termed naturally occurring asbestos (NOA). Excavation and grading projects in NOA containing rock and soil have been observed to cause significant airborne fiber exposures even when low concentrations (<1%) exist. Concern over NOA has dramatically increased as the extent of its occurrence has become more widely recognized. The presence of NOA can have profound impacts on construction projects both small (schools, homes and real estate developments) and large (dams, highways and mines), especially when NOA is not properly identified early and management of NOA is not designed into the project.

Geologists, geotechnical engineers, mineralogists, and mineral chemists are called upon to undertake the difficult tasks of identifying, assessing and mitigating NOA hazards. The challenge of working with NOA is compounded when government agencies require compliance with regulations designed to address commercially exploited asbestos, rather than NOA. The 2018 IAEG NOA Symposium panel discussion with participants from around the world underscored that current guidelines and regulations to protect workers and the public from NOA exposure may not be adequate, and are too often very poorly-suited, for that purpose. In addition, the NOA regulations which do exist have not been standardized across jurisdictions.

In light of the above, the geologists, geotechnical engineers, mineralogists and mineral chemists identified below propose to IAEG that it form a Commission on NOA Assessment and Hazard Mitigation, the purpose of which will be to address development of the following:

Guidelines for identifying the occurrence, modes of formation and associated host rock types of the various NOA minerals

- Geological assessment and field sampling methods for NOA in rock and soil
- Laboratory rock and soil testing sample preparation & analysis protocols (PLM, PCM, TEM, SEM, XRD), including interpretation of EDS chemical analytical data
- Laboratory calibration standards
- Guidance in the interpretation and presentation of field data and lab test results
- Guidelines for the protection of workers and the public from large and small construction projects
- Training and certification programs for geologists, analysts, construction project designers, field supervisors, construction workers, and others to ensure expertise on NOA-related issues

**Key individuals expected to be involved on the NOA Commission include:**

· **Mark Bailey**, PG – President, Asbestos TEM Labs; Geologist/Mineralogist; Chairperson for eight NOA symposia w/ AEG, GSA, ASTM and IAEG 2018; Technical Contact/main author of ASTM Bulk Rock/Soil NOA Test Method WK65640 by PLM, TEM, SEM & XRD – in progress.

· **Alessandro Gualtieri**, Ph.D. – Chairman, Dept. of Chemical & Geological Sciences, Univ. of Modena and Reggio Emilia, Italy; Geologist/Mineralogist; Keynote speaker at IAEG 2018; Researcher in the field of asbestos and author of the textbook “Mineral fibres: Crystal chemistry, chemical-physical properties, biological interaction and toxicity”, EMU Notes in Mineralogy, 2017

· **Francesco Turci**, Ph.D. – Deputy Director, "G. Scansetti" Interdepartmental Center for the Study of Asbestos and other Toxic Particulates, Department of Chemistry, Univ. of Torino, Italy; Mineral Chemist

· **Sarah Kalika**, PG, CAC – Sr. Project Geologist, Cornerstone Earth Group; Geologist/Certified Asbestos Consultant; Co-chair of five AEG NOA symposia; Former Chair of San Francisco AEG Chapter & Northern California Representative on the AEG Board of Directors; Organizer of 2018 IAEG Congress.

· **Bradley Erskine**, Ph.D., PG, CEG, CAC – Sr. Geologist, Erskine Environmental Consulting; Geologist/Engineering Geologist/Certified Asbestos Consultant; Manager of the Calaveras Dam NOA Compliance Program

· **Martin Harper**, Ph.D., CIH FAIHA, CChem FRSC – Geologist, chemist and Certified Industrial Hygienist; Former NIOSH representative to the federal Inter-Agency Working Group on Asbestos; Co-author of NIOSH Technical Bulletin 62 (the “Asbestos Roadmap”); co-author of the AIHA Laboratory Quality Assurance Manual Chapter Analysis of Fiber-Containing Samples.

Once the committee is formed, future efforts to promote and grow international commission membership will be undertaken, including professionals in other NOA hazard mitigation fields such as toxicology, risk assessment, industrial hygiene, epidemiology and others.

In summary, the goal of the proposed new IAEG NOA Commission is to bring together the top international scientists in the field to provide much-needed guidance to industry and government authorities around the world to create best work practices and/or regulations consistent with the best science.



R. Mark Bailey, PG  
IAEG NOA Symposium Chair  
President, Asbestos TEM Labs



# GLOBAL STONE CONGRESS



## Call for candidates for the next Global Stone Congress

Call for the next GS Congress are open and any country can propose to host it.

The proposals must include a Scientific Entity of the hosted Country, Technological Centre, University, R&D Institute in the Organization.

The candidates must fill the application form until 30th JULY 2019 and send to:

[marta.peres@clustermaneralresources.pt](mailto:marta.peres@clustermaneralresources.pt)

APPLICATION FORM

1

APPLICATIONS  
DEADLINE

30th July 2019

2

DECISION  
ANNOUNCEMENT

30th September 2019



### Advisory Board:

Maria Heloísa Barros de Oliveira Frascá, (Stone Technology, MHB, **Brazil**), Bjorn Schouenborg (RISE, **Sweden**), Francisco Javier Fernán- dez Cortés, (CTMPM, **Spain**).



### Executive Secretary:

Marta Peres (Cluster of Mineral Resources, **Portugal**)



### Global Stone Council:

Nuria Castro (CETEM, research and RO industry) , **Brazil**; António Gilberto Costa (Federal University of Minas Gerais), **Brazil**; Nicola Careddu (University of Cagliari) and Paolo Marone (I.S.I.M.), **Italy**; Enrique Alvarez Areces (IGME), **Spain**; Zenaide C. Gonçalves da Silva (Nova University of Lisbon), Luis Lopes (University of Évora and Stone Industry), **Portugal**; Atiye Tugrul (Istanbul University - Cerrahpasa); Ali Bahadır Yavuz (Dokuz Eylül University of Izmir and Stone Industry), **Turkey**.

## Commission 29

Commission 29 and Commission 37 successfully held SiDRR Conference Session 4: Engineering Geology and Geological Engineering in Beijing, China on May 11-12, 2019.

International Conference on Silk-roads Disaster Risk Reduction and Sustainable Development (SiDRR) was held on May 11-12, 2019, Beijing, China. It was co-hosted by the Chinese Academy of Sciences (CAS), the China Association for Science and Technology (CAST), the United Nations Environment Program (UNEP), the UN Office for Disaster Risk Reduction (UNDRR) and the Alliance of International Science Organizations (ANSO), a group created to connect the scientific communities of Belt and Road Initiative (BRI) participants.

As one of the key sponsors to the SiDRR conference, the Session 4 - *Engineering Geology and Geological Engineering* was well organized by IAEG Commission 29 - *Structure and Behavior of Soil and Rock Mass* and IAEG Commission 38 - *Rockmass Characterization with Emphasis in Rock Slope Hazards*. IAEG President Prof. Rafiq Azzam, IAEG Secretary General Prof. Faquan Wu, IAEG Vice President for Asia Prof. Bo-An Jang, IAEG Vice President for Asia Prof. Huiming Tang, Chairman of IAEG C29 Prof. Shengwen Qi (Session convener and chairman), Chairman of IAEG C36 Prof. Weimin Ye, Chairman of IAEG C37 Prof. Hengxing Lan, Chairman of IAEG C38 Prof. Haris Saroglou (Session convener and chairman) were invited speakers in Session 4. There are 9 invited speeches, 19 oral presentations and 6 posters in session 4.



Opening address of Session 4 by IAEG President Prof. Rafiq Azzam (L)

Invited speech by IAEG Secretary General Prof. Faquan Wu (R)

SMRM GeoEngineer System — Make Rock GeoEngineering Survey

More Convenient, More Intelligent!



Invited speech by IAEG Vice President for Asia Prof. Bo-An Jang (L)

Fracture development in rock by plasma blasting

Invited speech by IAEG Vice President for Asia Prof. Huiming Tang (R)

Construction of field experimental site for geohazards in the Three Gorges areas





Invited speech by Chair of IAEG C37 Landslide Nomenclature Prof. Hengxing Lan (L)

Progress report on the IAEG C37 Commission - Landslide nomenclature



Invited speech by Chair of IAEG C36 Engineering Geology for Waste Disposal

Prof. Weimin Ye (R)

Study on conservation of earthen heritage sites along the ancient silk road



Invited speech by Prof. Qiang Xu (L)

Typical cases of geological hazards in Tibet Plateau caused by the global warming



Invited speech by Prof. Jia-Jyun DONG (R)

Laboratory measurement of mechanical and hydraulic aperture of joints and challenges for the prediction of fluid flow through jointed rocks



Invited speech by Chairman of IAEG C38 Rockmass Characterization with Emphasis in Rock Slope Hazards Prof. Haris Saroglou (Session convener and chairman) (L)

Assessment and mitigation of geohazards using new technologies



Invited speech by Chair of IAEG C29 Structure and Behavior of Soil and Rock

Mass Prof. Shengwen Qi (Session convener and chairman) (R)

A new method to predict the occurrence of rock burst

## Commission 38

Commission C38 “Rockmass Characterization with Emphasis on Rock Slope Hazards”, was established in the Council Meeting of IAEG in San Francisco in September 2018. The Chairman of C38 is Dr. Haris Saroglou (Greece) and the Technical Secretary is Dr. Christian Zangerl (Austria).

### MEMBERS

The members of the Commission are representing the following National Groups of IAEG: Austria, Canada, China, France, Italy, Malaysia, New Zealand, Norway, Turkey, UK, and USA.

In June 2019 a new call of members was launched.

Additional members from Bangladesh and Australia IAEG National Groups joined the Commission. The call for new members is still open, so interested members of IAEG are welcome to participate.

### TASKS

After suggestions by the members, the topics on which the Commission will emphasize are the as follows. Small working groups will be formed in order to promote the work on these specific topics.

#### TASK 1: Rock slope hazards

- Classification of rock slope hazards
- Failure mechanisms and failure types
- Mountain rock slope hazards (rockslides, rock avalanches etc.)
- Study of rockfalls (triggering, analysis, impact, mitigation)

#### TASK 2: Rock mass classification for rock slope stability applications

- Geological characterisation
- Discontinuity characterisation and analyses
  - Traditional methods
  - Mapping and data collection methods
- Digital analysis of structural discontinuities
- Geomechanical characterisation (e.g. strength)
- Applications in civil and mining engineering

#### TASK 3: Rock slope stability assessment

- Rock mass classifications for slope stability
- Slope stability assessment
- Slope stability design
- Slope monitoring

### OTHER ACTIVITIES

The Chair of Technical Commission C38, Dr. H. Saroglou, in collaboration with the NG of Greece invited Prof. Bill Murphy from University of Leeds, UK to give a presentation on “*Earthquake-induced rock slope failures in natural slopes*”. The topic is one of the main topics of interest of C38 and was attended with great interest.





Prof. Bill Murphy during his talk in the National Technical University of Athens for C38

Dr. Saroglou gave an invited lecture on the topic of "Rockfalls identification and modeling" during the 3rd Summer School on natural hazards and engineering geology applications organized by CNR IRPI and the Doctoral School of Earth and Environmental Sciences of the University of Pavia with support of IAEG. The topic of the Summer School was "Slope Instabilities in a human modified environment: the case study of Cinque Terre UNESCO area (Italy)". The area has significant rock slope hazards (Photo 2) and the Summer School proved very successful.



Slope instabilities in the coastal area of Cinque Terre

Dr. Saroglou gave an invited presentation in the International Conference on Silk-road Disaster Risk Reduction and Sustainable Development (SiDRR Conference) on the topic "Assessment and mitigation of geohazards using new technologies" which was held on May 11-12, 2019 in Beijing". Together with Prof. Shengwen Qi from the Chinese Academy of Sciences they chaired the IAEG Session 4 of Engineering Geology and Geological Engineering.

For the detailed information, please click <http://www.iaeg.info/commission-38-rockmass-characterization-with-emphasis-in-rock-slope-hazards/>



# 5. 12<sup>th</sup> ASIAN REGIONAL CONFERENCE OF IAEG



**KSEG**



## • Tentative Schedule

### • 9/24 (TUE)

Time	B2			B1	
	Sapphire	Emerald A	Emerald B	Board room 1	Board room 3
09:30 ~10:00	Opening ceremony (Sapphire)				
10:00 ~11:00	Keynote lecture 1, 2 (Sapphire) Dr. Lee / Dr. Guzzetti				
11:00 ~11:30	Poster session / Coffee break				
11:30 ~13:00	Technical session (Geo-hazards I)	Technical session (Env. And Hydro. I)	Technical session (Application New Tech. I)	Technical session (Site Investigation I)	Technical committee C25 Session I
13:00 ~14:00	Lunch				
14:00 ~15:00	Keynote lecture 3, 4 (Sapphire) Prof. Ichikawa / Prof. Burns				
15:00 ~16:30	Technical session (Geo-hazards II)	Technical session (Soil and Rock I)	Technical session (Const. and Maint. I)	Special session I	Technical committee C25 Session II
16:30 ~17:00	Poster session / Coffee break				
17:00 ~18:30	Technical session (Geo-hazards III)	Technical session (Soil and Rock II)	Technical session (Const. and Maint. II)	Special session II	YEG Session

## • 9/25 (WED)

Time	B2			B1	
	Sapphire	Emerald A	Emerald B	Board room 1	Board room 3
08:30~10:00	Technical session (Geo-hazards IV)	Technical session (Geo-hazards V)	Technical session (Const. and Maint. III)	Technical session (Application New Tech. II)	Technical session (Site Investigation II)
10:00~10:30	Keynote lecture 5 (Sapphire) Prof. Chigira				
10:30~10:45	Coffee break				
10:45~12:30	Technical session (Geo-hazards VI)	Technical session (Geo-hazards VII)	Technical session (Soil and Rock III)	Technical session (Env. And Hydro. II)	
12:30~18:00	Field trip				
18:00~20:00	Banquet				

## • 9/26 (THU)

Time	B2			B1	
	Sapphire	Emerald A	Emerald B	Board room 1	Board room 3
08:30~10:00	Technical session (Geo-hazards VIII)	Technical session (Geo-hazards IX)	Technical session (Site Investigation III)	Technical session (Env. And Hydro. III)	
10:00~10:30	Poster session / Coffee break				
10:30~11:30	Keynote lecture 6, 7 (Sapphire) Prof. Wu / Prof. Jang				
11:30~13:00	Technical session (Geo-hazards X)	Technical session (Geo-hazards XI)	Technical session (Soil and Rock IV)	Technical session (Env. And Hydro. IV)	
13:00~14:00	Lunch				
14:00~15:30	Technical session (Geo-hazards XII)	Technical session (Const. and Maint. IV)	Technical session (Soil and Rock V)	Technical session (Application New Tech. III)	Technical committee C29 Session I
15:30~16:00	Coffee break / Poster session				
16:00~17:30	Technical session (Geo-hazards XIII)	Technical session (Const. and Maint. V)	Technical session (Soil and Rock VI)	Technical session (Application New Tech. IV)	Technical committee C29 Session II
17:30~18:00	Closing ceremony (Sapphire)				

## • YEG (Young Engineering Geologist) Session

During the conference, the YEG social event will be supported by Korean National group of IAEG.

The ice-breaking reception will be held at the conference room of the venue hotel on **September 24** afternoon.

Then unofficial social event with Korean food will be followed after the reception. This event is opened to all young engineering geologists and professional.

## • Workshop

### "Landslides triggered by 1999 Chi-Chi earthquake: What we learned after 20 years"

**Date:** September 23rd (Mon) 2019

**Place:** a conference room at venue hotel (detailed room number will be announced)

#### Main Topics:

- Earthquake triggered landslides: From regional-scale susceptibility map to hazard map
- (Mega) catastrophic landslides triggered by earthquakes: Characterizing the dynamic strength of dominating structures
- Seismic site effects: Implications for regional- to local-scale assessment of slope susceptibility to earthquake triggered failures

**Organizers:**

•Earthquake-Disaster &Risk Evaluation and Management, E-DREaM Center, National Central University

•National Research Council, Italy

•Korean National Group of IAEG

**Contact person:** Jia-Jyun Dong, [jjdong@geo.ncu.edu.tw](mailto:jjdong@geo.ncu.edu.tw)

**• Special Session****"High Resolution Site Characterization and Geophysical Exploration for****Understanding the Fate and Transport of Contaminants in Subsurface Environments"**

**Date:** September 24, 2019

**Place:** conference room at venue hotel (detailed room number will be announced)

**Invited Lecturers:****• Prof. Craig H. Benson (University of Virginia, USA)**

Tackling Geoenvironmental Problems in the Unsaturated Zone: Principles and Practice

**• Prof. Kevin T. Finneran (Clemson Univ., USA)**

Using information to your advantage: data analyses and interpretation to design engineered and passive remediation strategies

**• Prof. Takeshi Katsumi (Kyoto University, Japan)**

Towards Sustainable Soil Management - Use of Excavated Soils with Natural Contamination

**• Prof. Andreas Weller (Clausthal University of Technology, Germany)**

Permeability prediction based on geoelectrical parameters

**• Dr. Kaveh Sookhak Lari (The Commonwealth Scientific and Industrial Research Organisation, Australia)**

MODELLING MULTI-PHASE MULTI-COMPONENT LNAPL DYNAMICS AND RECOVERY IN THE SUBSURFACE

**Organizers:**

• SMART SEM Center

• Korean National Group of IAEG

**• Registration**

Early Bird Registration: by July 31, 2019

Standard/Onsite: from August 1, 2019

**Cancellation and Refunds Policy**

- Cancellation by **August 31**, 2019: 100% refund
- Cancellation after **September 1**, 2019: No refund
- No cancellation is available for Onsite Registration.

The organizing secretariat will refund your registration fee after the conference. Refunds will be net of bank transfer costs. Notification of cancellation must be made in writing and sent via email to: [secretariat@iaegarc12.org](mailto:secretariat@iaegarc12.org) (\*Please refer to the following cut off for cancellation.).

## • Hotel Information

	Room Type	Size of room (m²)	Weekdays Price [Sunday–Thursday]	Weekends Price [Friday–Saturday]	Note
<b>HOTEL</b>	Standard Double Standard Twin	23.1m2	₩ 80,000 / \$70	₩ 110,000 / \$100	- Per room per night - Including surcharge & VAT - Free Parking - Free Wi-fi - <b>Breakfast not included</b>
	Deluxe Double Deluxe Twin	39.6m2	₩ 110,000 / \$100	₩ 140,000 / \$125	
	Deluxe Double Ocean Deluxe Twin Ocean	39.6m2	₩ 130,000 / \$120	₩ 160,000 / \$145	
	Junior Suite	46.2m2	₩ 140,000 / \$125	₩ 170,000 / \$155	
	Hollywood Hollywood Ocean	59.4m2	₩ 170,000 / \$155 ₩ 190,000 / \$170	₩ 200,000 / \$180 ₩ 220,000 / \$200	
<b>RESORT</b>	Premium Premium Ocean	75.9m2	₩ 130,000 / \$120 ₩ 150,000 / \$135	₩ 160,000 / \$145 ₩ 180,000 / \$165	
	Premium Suite Premium Suite Ocean	148.5m2	₩ 200,000 / \$180 ₩ 220,000 / \$200	₩ 230,000 / \$210 ₩ 250,000 / \$225	

Please click the link below for the detailed information.

[https://www.dropbox.com/s/oq2jvfr3ppruvre/12th%20ARC%20of%20IAEG\\_3rd%20Circular\\_0716.pdf?dl=0](https://www.dropbox.com/s/oq2jvfr3ppruvre/12th%20ARC%20of%20IAEG_3rd%20Circular_0716.pdf?dl=0)



## 6. MEETING INFORMATION

• Badong, China, August 24-25, 2019

### **The 2nd Badong International Geohazards Symposium**



**The 2nd Badong International Geohazards Symposium (BIGS)** will be held in Badong County, Hubei Province, China, from August 24-25, 2019. The theme of the symposium is Prevention and Control of Reservoir Geohazards and Ecological Environmental Protection.

Researchers who are interested in these areas are most welcome to join the Symposium, and we hope that this Symposium will bring together scientists and engineers to exchange ideas, experiences on issues related to geohazards and ecological environmental protection in order to promote the academic progress and sustainable development of the Yangtze River Basin.

#### **Conference Information**

The official website : <http://www.bigscug.org/>

Conference Date : August 24-25, 2019

E-mail : [bigscug.edu.cn](mailto:bigscug.edu.cn); Phone : +86-13607196969 ; Tel : +86-27-67884553

#### **Topic**

- Hypergenic geological process and evolution of geohazards
- Monitoring and early warning of geohazards
- Technologies of geohazards Prevention and Control
- Research and development of geohazards equipment
- Big data and artificial intelligence in geohazards
- Geohazards prevention and control harmonious development of ecological environment

### **• London, UK, September 18-19, 2019**

#### **MENA 2019 Oil & Gas Conference**

The 12th Middle East and North Africa Oil & Gas Conference

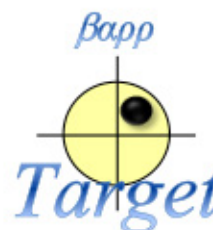
#### **Conference Information**

The official conference website : <https://www.targetexploration.com>

Conference Date : September 18-19, 2019

Venue : Imperial College, 180 Queens Gate, London SW7

E-mail : [m.ibrahim@targetexploration.com](mailto:m.ibrahim@targetexploration.com) Tel : +44-0-207-371-2240/+965-976-35026



## Conference Programm

<b>Pre- and Post-MENA 2019 Oil &amp; Gas Conference Courses</b>	<b>Date</b>
Acquisition, Processing & Interpretation of Gravity / Magnetic Data for Petroleum Exploration. (1 Day Course TarC-2)	17 Sep 2019
Petroleum Geology and Typical Fields of OMAN. (2 Days Course TarC-3)	16-17 Sep 2019
Petroleum Geology and Typical Fields of UAE. (2 Days Course TarC-7)	16-17 Sep 2019
Source-rock Kinetics: An Old Technique Reinvented, with Many New Applications. (1 Day Course TarC-8)	17 Sep 2019
Basin Modeling For Everyone: How a New Perspective will Change Your Life as a Geoscientist. (2 Days Course TarC-9)	20-21 Sep 2019
Introduction to Data Sciences, Artificial Intelligence & Machine Learning in Petroleum E & P. (2 Days Course TarC-16)	16-17 Sep 2019

For the detailed information, please refer to the link below :

<https://www.dropbox.com/s/5k1octsuamzkfyi/Mena%202019%20Oil%20and%20Gas%20Conference.pdf?dl=0>

## • Shaoxing, China, October 19-21, 2019

### 2nd Shaoxing International Forum on Rock Mechanics and Engineering Geology



The 2nd Shaoxing International Forum on Rock Mechanics and Engineering Geology (SXFRG) will be held on October 19th-21th, 2019 at Shaoxing University, China. It is hosted by Shaoxing University, sponsored by IAEG, NSFC, CSRME, ENGEO and JRMGE, and supported by more than 20 organizations.

The forum will focus on New Technologies in Rock Mechanics and Engineering Geology. The aim of the forum is to share the practical experiences and achievements on the development of engineering methods and geo-techniques in infrastructure construction. We sincerely invite you to be together on the forum.

Top scientists will attend the forum, including the vice minister of Ecology and Environment Ministry, P.R.C, the president and past presidents of IAEG, the presidents of IGS, well-known experts, scholars and technical consultants in the fields of Rock Mechanics and Engineering Geology.

## Main Themes

New Technologies in Rock Mechanics and Engineering Geology

## Keynote Speakers



**Runqiu Huang**  
MEEP, China



**Rafiq Azzam**  
RWTH, Germany



**Xiating Feng**  
Northeastern  
University, China



**Chungsik Yoo**  
Sungkyunkwan  
University, Korea

## Contact Information

Website: <http://www.sxfrg.org/>

Phone :+86-88341139 ; Email: [sxfrg@usx.edu.cn](mailto:sxfrg@usx.edu.cn)

## Important Date

September 1: Deadline of Abstract Submission

October 1 : Deadline of PPT Submission and Registration

For more information, please click

## • Abuja, Nigeria, October 27-30, 2019

2nd IAEG Africa Regional Congress & 4th NAEGE Annual International Conference

**2<sup>ND</sup> IAEG AFRICA REGIONAL CONGRESS &  
4<sup>TH</sup> NAEGE ANNUAL  
INTERNATIONAL CONFERENCE**  
IN PARTNERSHIP WITH  
**Nigerian Geological Survey Agency**  
FINAL CALL FOR PAPERS  
**VENUE: HOTEL DE BENTLY, PLOT 892 NGOZI OKONJO IWEALA STREET,  
UTAKO DISTRICT, ABUJA, NIGERIA**  
**DATE: 27<sup>TH</sup> – 30<sup>TH</sup> OCTOBER 2019**  
Website: [www.naenge.org.ng](http://www.naenge.org.ng)

The 2nd IAEG Africa Regional Congress & 4th NAEGE Annual International Conference will be held on October 27-30, 2019 in Abuja, Nigeria. The theme of the conference is ***Environmental and Engineering Geological Mapping for Sustainable Development***, which reflects on the role of geology in the sustainable development of African Countries. The conference is calling for papers. The participants who are willing to submit papers, please refer to the sub-themes and submit by August 15, 2019.

### Sub-Themes

- Engineering Geological Mapping for sustainability of structures
- Environmental Geological mapping of urban series
- Spatial Distribution of Geo-materials (Naturally occurring construction material)
- Engineering Geological mapping of coastal hazards
- Engineering Geological mapping for Mitigation of Mining and Drilling/Hazards
- Geo-Mapping for sustainable waste management
- Engineering Geology and stability of Structures in seismically prone areas
- Material testing for sustainability of roads

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Email: [info@naege.org.ng](mailto:info@naege.org.ng) [naegesecretariat@gmail.com](mailto:naegesecretariat@gmail.com)

Venue : Hotel De Bently, Plot 892 Ngozi Okonjo Iweala Street, Utako District, Abuja, Nigeria

### Important Date

August 15 : Deadline for Submission of Papers

September 1 : Notification of Paper Acceptance

September 15 : Deadline for Submission of Corrected Paper

Please click the link below for the detailed information.

<https://www.dropbox.com/s/hl2r270bdbwxqli/the%202nd%20IAEG%20Africa%20Regional%20Congress.pdf?dl=0>

### • Delhi, India , March 2-8, 2020

#### 36th International Geological Congress



36TH INTERNATIONAL  
GEOLOGICAL CONGRESS  
2 - 8 MARCH 2020, DELHI, INDIA

The preparatory activities for congress are being looked after by a Local Organizing Committee, with the 36th IGC Secretariat as its front office.

The Indian sub-continent offers the entire gamut of geological episodes, representing every geological period, with the oldest rocks spanning 3.6 Ga of Earth's history to the youngest, active fold mountain belt of the world. The subcontinent houses precious and rare earth minerals; extinct and active volcanoes; exuberant rivers and river confluences; mature foreland basins and youthful landforms; extensive deltas and fans; hot and cold deserts; salt ranges and deep oceans; hot springs and waterfalls; majestic mountains and seemingly bottomless valleys.



The sub-continent has made substantial contributions in the areas of fundamental science as well as applied research over the years. The quantum leap in science & technology and infrastructure over the past few decades in India and its neighboring countries makes this venue the ideal destination for the IGC 2020.

### Contact Information

Website: <http://36igc.org/index.php> Phone :+91-11-29965750

Email: [igc.delhi2020@nic.in](mailto:igc.delhi2020@nic.in) [igc.delhi2020@gmail.com](mailto:igc.delhi2020@gmail.com)

Venue : India Expo Centre & Mart

### Main Theme

Geosciences: The Basic Science for a Sustainable Future

### Science Program

The Science Program of the 36th IGC comprises 266 Symposia under 44 Themes.

### Professional Development Workshops / Short Courses

The 36th IGC is offering opportunities to individuals, companies, institutions and organizations to conduct Professional Development Workshops/ Short Courses during the Congress.

The following are the options:

- PRE-CONGRESS: At a suitable venue depending on the proposals received.
- DURING CONGRESS: At the Congress venue after 7:00 PM during 2-8 March, 2020.
- POST-CONGRESS: At a suitable venue depending on the proposals received.

Accepted proposals will be incorporated in the 36th IGC Program, and announced on the website. Participation will be open to registrants of the Congress only. For the courses/workshops conducted during the Congress, 36th IGC will provide the space (classroom style) and standard audio-visual equipment. For the pre- and post-Congress courses/workshops, the proposers will make the necessary arrangements and pay for the associated costs; however, on request 36th IGC will provide assistance.

The last date for receiving the proposals is **31st August 2019**.

### • Athens, Greece, June 24-25, 2021

International Conference on Geotechnical Engineering Education



The Conference Geotechnical Engineering Education 2020 (GEE2020) is organized by the Technical Committee TC306 for Geo-Engineering Education of the International Society for Soil Mechanics and

Geotechnical Engineering (ISSMGE), under the auspices of the Hellenic SSMGE and the School of Civil Engineering of the National Technical University of Athens.

The International Conferences on Geotechnical Engineering Education are now well established since TC306 took over their organization under the auspices of ISSMGE. The conference in Athens will be the fifth, after Sinaia, Romania (2000), Constantza, Romania (2008), Galway, Ireland (2012) and Belo Horizonte, Brazil (2016). The proceedings of the 2008, 2012 and 2016 conferences are available through the Online Library of ISSMGE.

### Themes

- Two-way interaction between industry and academia for co-production of educational material and curriculum development familiarizing young geotechnical faculty and late-stage PhD candidates with research-based good practices in engineering education.
- Reinforced by awarding – on a competitive basis– the surplus of the conference to covering the expenses of young geotechnical engineering researchers participating in engineering education conferences.

### Contact Information

Website: <https://www.erasmus.gr/microsites/1168>

Phone :+30-210-7414700

Email: [gee2020athens@gmail.com](mailto:gee2020athens@gmail.com); [info@gee2020.org](mailto:info@gee2020.org)

Venue : TheAcropolis Museum (15 Dionysiou Areopagitou Street Athens 11742, Greece)

### Registration

Opens on November 1, 2019

Registration Fee

Early Bird Fee (until May 15, 2020): €270

Regular Fee: €350

Graduate Student Fee: €100

### • Cordoba, Argentina, September 7-10, 2021

IAEG South American Regional Conferences & 2021 Congress of the IAEG National Group of Argentina



**1st IAEG South American Regional Conference and**

**2nd Argentine Congress of Geology**

**Applied to Engineering and the Environment**

IAEG South American Regional Conference will be held on September 7-10, 2021, in occasion of the 2021 Congress of the IAEG National Group of Argentina. The main goal of the conference is to share knowledge and practical experience in dealing with issues on Geology applied to society development.

### **Contact Information**

Email: [aw@tradeshowsa.com.ar](mailto:aw@tradeshowsa.com.ar)

### **Theme**

Geological Engineering aspects in the construction of works and land pathologies

- Thematic cartography
- Environmental geology
- Coastal Geology
- Medical Geology
- Ornamental rocks
- Geological modelling
- Geological parks and geotourism
- Urban Geology and Territorial Planning

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