

Société Internationale de Mécanique des Roches
 INTERNATIONAL SOCIETY FOR ROCK MECHANICS
 Internationale Gesellschaft für Felsmechanik
NEWS JOURNAL



Will this be a historical moment? The Presidents of the Sister Societies sign an agreement to pursue collaboration, Lisbon, January 2004. Left to right: Michelle Deveughèle (Secretary General, IAEG), Niek Rengers (President, IAEG), William van Impe (President, ISSMGE), Nielen van der Merwe (President, ISRM), Luís Lamas (Secretary General, ISRM), Maria de Lourdes Eusébio (Executive Secretary, ISRM) and Neil Taylor (Secretary General, ISSMGE).

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Internationale Gesellschaft für Felsmechanik
NEWS JOURNAL

Volume 8, Number 3 • November 2004

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ISRM Homepage

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Back issues (\$8) are available from the Secretariat.



Rocha Medal

A Bronze Medal and cash prize has been awarded annually since 1982 by the ISRM to honour the memory of Past President Manuel Rocha and to recognize outstanding young researchers in the field of Rock Mechanics.

The award shall be for an outstanding doctoral thesis in rock mechanics or rock engineering. The thesis must have qualified the candidate for a doctorate or the equivalent. To be considered for the award, a candidate must be nominated within two years of the date of the official doctoral degree certificate. The nomination should be submitted to the appropriate ISRM Regional Vice-President by registered letter, and may be presented by the nominee, the nominee's National Group or some other person or organization acquainted with the nominee's work. The nomination should include the following supporting information:

- ❖ A one page curriculum vitae (include the name, nationality, place and date of birth of the nominee; also position, address, telephone & fax numbers);
- ❖ A thesis summary in one of the official languages of the Society, preferably English, of about 5,000 words, detailed enough to convey the full impact of the thesis, and accompanied by selected tables and figures, with headings and captions also in English;
- ❖ One copy of the complete thesis and one copy of the doctoral degree certificate;
- ❖ A letter of copyright release, allowing the ISRM to make copies for review & selection purposes.

Nominations for the 2006 Medal must be received by 31 December 2005.

Supplementary details of the selection procedure, conferring of the award, etc., are provided in ISRM By-Law No. 7, found on pages 30–31 of the ISRM Directory for 2000. National Groups and Corresponding Members will be officially reminded by the Secretariat as the deadline approaches, but are encouraged to consider possible nominees and to recommend names to the appropriate ISRM Regional Vice-President as early as possible.

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Message from the ISRM President

The first year of my term of office has been characterised by more than expected time demands, balanced by much more than expected pleasures. The time demands all arise from the fact that we are now on the brink of a new era for the ISRM, with regard externally to our relationships with our Sister Societies and internally with regard to our offering to members. Over the past decades, a number of developments have taken place culminating in the need for action right now. I will say a few words about these, and how we tend to mold the ISRM to fit the demands of our times and to capitalise on the potential benefits.

But first, the pleasures. These all arose from the opportunity to meet many of our members in different places all over the world and to be honestly impressed by what people are capable of

doing and prepared to do in order to provide something of value for others.

SINOROCK 2004

First, there was the SINOROCK 2004 Symposium in China at an impressive venue, the Three Gorges Dam site near Yichang in the Hubei Province. The symposium took place in what could be called a construction camp, but certainly one with a difference. The office buildings, as everything else, were built with a view to being suitable for holiday purposes later. So, the hotel was more than just convenient for a technical conference, it had all the facilities a holiday maker could want. And of course, it is situated in one of the world's more scenic environments.

The symposium itself was a major success, displaying none of the drawbacks one would expect of an event jointly organised by a person in the UK, John Hudson, and one in China, Xeng

Borehole core too small to reveal information about vertical joints? Drill a bigger hole – Mike Roberts of the CSIR in South Africa at the special core drilled for the Three Gorges Dam.





ordered to evacuate their areas, they were given at least the same, and more often better, accommodation in safer areas. From the time of conception of the idea to build the dam, to the current stage of completion of Stage 2 of the project, took more than 70 years. It is incredible to think that not only was it completed in time, it was also completed with a saving of 10% on the budget. The final phase, which is the construction of the second power generation plant, will be funded with income from the first power house's electricity sales.

Relaxing before a special lunch consisting of the famous “Fat Fish” in Yichang

Xiateng (bear in mind that China and the UK span more than a quarter of the globe). As a Regional Symposium of the ISRM, the international attendance exceeded that of several international symposia. The papers and the presentations were of very high standard and the overall organisation was excellent.

Everything about the Symposium was superlative. On the way there, one could see what an 8% growth rate looks like—everything is under construction, from highways and subways in the cities to new houses, roads and shops in the rural areas. A guide said that the yellow crane is the new national bird of China—if it isn't, the construction cranes certainly dominate every horizon. The dam is the largest in the world. The dam area is 700 km long.

This was also the source of one of the hottest environmental debates in recent times. It is true that more than a million people had to be relocated in order for the dam to be built. The opponents of construction, however, neglect to mention that the dam will protect more than 50 million people from the disastrous effects of the all too common floods of the Yangtze River and provide environmentally friendly electricity from which all will benefit. The relocated people were not simply

It was here that the idea for a Commission on the Environment was born. We need not only to be as environmentally sensitive as we already are, we also need to be seen to be so and we need a visible internationally acceptable environmental protocol in the ISRM. As engineers, we can sometimes be incredibly politically naïve. This Commission will be presided over by Professor John Gale of Canada.

4th International Symposium on Landslides

The second major event was the 4th International Symposium on Landslides in Rio de Janeiro, ISL2004. This was even more important when seen against the background of the desire for collaboration between the Sister Societies. The International Symposia on Landslides are jointly organised by the so-called Joint Technical Committee 1 (or JTC1) of all three of the Sister Societies, presided over by Professor Robin Fell of Australia.

As with the SINOROCK Symposium, this conference demonstrated the power of modern communication facilities. The organising committee was predominantly Brazilian, but actively assisted by members spread around the globe. The quality

National Group representatives during the visit of the ISRM President to the region, to participate in the IX International Symposium on Landslides, held in Rio de Janeiro, Brazil (June 2004).



of the presentations and the overall organisation, were equally good. As for the venue of course, it was Rio—certainly one of the most beautiful cities in the world.

SANIRE Annual Symposium

The third event was one that for a change did not involve extensive travel, being the local annual symposium of the South African National Institute for Rock Engineering, SANIRE. Here, the topic was mining and the challenges posed by new legislation. It is a strange world. While most of the country rejoices in the recent recovery of the local currency, the mining industry, being heavily dependent on exports, is in mourning. Also, it comes with technical challenges because most mines react to short term income losses by concentrating on the mining of higher grade reserves, which of course throws carefully-designed mine plans out the window. When the situation reverses, lower grade ores are again mined to keep the higher grade areas in reserve for bad times. In situations where the mining sequence is one of the major tools to control seismicity, this poses interesting challenges for the rock engineer and it emphasises the impact of external forces on technical matters.

Eurock 2004 — Salzburg

The fourth event was one with perhaps the oldest tradition in the fraternity of rock mechanics. It was the Eurock 2004 conference in the delightful

city of Salzburg, combined with the 53rd Geomechanics Colloquy. This is remarkable, bearing in mind that the ISRM is only 42 years old—the Colloquy thus preceded the creation of the ISRM. This event was another outstanding success, attended by more than 900 delegates.

Salzburg, where Leopold Müller was instrumental in creating the ISRM, is the permanent venue of the Colloquy and there are deeply rooted traditions associated with it. One is the Chamber Concert preceding the banquet. Salzburg, of course, is also the birthplace of Wolfgang Amadeus Mozart, as well as the famous conductor, Herbert von Karajan. According to another stalwart ISRM member, Horst Wagner, who grew up in Salzburg, von Karajan and Müller were at school together. Müller's first ambition was to be a musician while von Karajan wanted to be an architect...

These four events were totally different in character, shaped by the specialist topics of the discussions and the local culture and traditions. One can never divorce the consideration of the local culture from the nature of the technical solution to problems. For instance, would it have been possible to relocate over a million people to build a dam in a country like the USA? For the Chinese people, of course with the necessary compensatory measures, it was an acceptable solution for the common good.



Chairperson of the Organising Committee for Eurock 2004, Wulf Schubert, sharing a light moment with delegates.

Yet, there were more important commonalities. One was the common strive to understand the fundamentals of the earth's physical character better, be it in Yichang, Potchefstroom, Salzburg or Rio. The second was the demonstrated need for scientists and engineers to have face to face communication and their willingness to put their ideas on the altar for all to discuss, question and criticise. This must never be forgotten. Even while we are working hard to improve our electronic communication in the ISRM, it can never replace person to person contact. The cyber route will always be supplementary and should be used to enhance face to face communication, it can never replace it.

Perhaps the most important common aspect was the hospitality and the warmth displayed by the people. From Yichang to Potchefstroom to Rio de Janeiro to Salzburg, there were friends in abundance everywhere. Eda de Quadros, Bingjun Fu, Wulf Schubert, all gave their personal time to make these visits truly unforgettable and to just impress once more that the real reason we have an ISRM is because there are human beings involved.

E-Communications

It has been said that John Franklin was the President who brought the ISRM into the electronic age by arranging for its first computer for administration. Since that time, the ISRM has grasped the opportunities offered by computer development and extended it to communication by creating a web page. Now the time has come to

convert our communication means to the electronic. Discussions about a new web page and in fact a whole new philosophy of communication started some time ago and I am pleased to report that we are now on the brink of releasing the new web page. A contract has been awarded to a developer and the basic architecture has been designed. It is now being populated and will hopefully be completed by the end of the year.

This will not merely be a place to get information like announcements of conferences, the statutes, etc, it will be an active communication tool. There will be a public area and a private area reserved for members. There will be even more private work spaces, similar to chat rooms, for Commissions, the Interest Groups, the Board, etc.

This year, already, the Board has been active all the time (and not just at the time of annual meetings) by "round robinning" suggestions prior to finalisation. For instance, decisions regarding the nature of discussions and strategies with the Sister Societies, approvals of commissions, terms of reference of commissions, selection of commission presidents, proposals for by-law amendments, etc, were debated electronically. Had it not been for this, implementation of some of the measures already in place could have been delayed for up to two years. While the method worked, it could have worked substantially better with a dedicated area on a website. The reason I mention this is because I can see the same benefits for the modus operandi of Commissions and other groups.

Of course, these are additional benefits to the most important benefit of general communication offered to members. The *News Journal* will in future be an electronic publication, supplemented by an annual hard copy that will replace some of the items previously contained in the Directory, which was only published once every four years.

Collaboration with Sister Societies

The other topical issue is the nature of collaboration with our Sister Societies. The desire to collaborate has been in circulation for a very long time and limited measures have been implemented. For instance, the series of International Symposia on Landslides is overseen by a Joint Technical Committee, the Presidents have reciprocal invitations to Council Meetings and they have intermittent other meetings.

This is not enough. Together, the Sister Societies can have a much greater impact on the political arena to get due recognition of our relat-

ed and overlapping sciences than each on its own. We deal with the same fundamentals on the same projects and there is much to be learnt scientifically by standing a bit closer than we do at the moment.

There are also one or two pitfalls to be mindful of, not the least important one being the loss of identity of one or more of the Societies if we allow one to dominate the collaboration. This must never happen, each has the right to their unique character.

This year, there have been two positive and constructive meetings of the three Presidents on the issue of collaboration. It is clear that each is sensitive to the concerns of the others, yet there is an overriding desire to move into a position where the benefits of real collaboration can be reaped without in the process causing damage to any one of the Societies.

A Joint Task Force (JTF) consisting of the Secretaries General and three other representatives of each of the Societies has been created. The ISRM team consisted of Luís Lamas, Luís Ribeiro e Sousa, Claus Erichsen and Marc Panet. Their first meeting was held in Athens, following which they proposed a basic structure for a Federation, to be called the Federation of International Geo-Engineering Societies (FIGS). Each of the member societies would retain its unique identity and own structure with its own secretariat. The FIGS would be governed by a President and a Board, with members being nominated in equal numbers by the Sister Societies.

Following the report of the JTF, the Presidents met again in Paris and decided in principle to accept the recommendations and to continue with the work of the JTF. It was agreed that the JTF should proceed to quantify the financial impact of the FIGS on the Sister Societies and to begin work on a draft constitution.

Approval will be sought from the ISRM Council in Kyoto to continue with these negotiations. Obviously, no agreements can or will be entered into without the approval of Council. It could take another year to two years to finalise the work before any firm recommendation can be presented to Council for discussion.

Fee Structure

Another important matter relates to the fee structure of the ISRM. ISRM members in small groups pay disproportionately more than members in large groups to belong to the ISRM, because there is a standard fee for National Group affiliation, irre-

spective of the size of the group. Members in the largest group effectively pay an amount of just over USD10 per year, while a member in the smallest group pays USD60 per year. Council approval will be sought in Kyoto to redress this obvious imbalance in order to bring relief to members in the small groups.

Interest Groups

The one issue that needs urgent attention is the creation of Interest Groups in the ISRM. One of the strengths of the ISRM is the diversity of interest areas that it covers, from deep level mining to shallow tunnels and dam foundations. This is also one of its weaknesses, as it is very difficult for a special-

ist in any of these areas to have contact with colleagues in other parts of the world. How does one identify others amongst the 5,000-odd members spread all over the globe who have similar interests? How does one make contact in order to share experience or ask advice? Only a relatively small number of our members are in the fortunate position of being able to travel and meet others face to face, and even then it is difficult to find the others, as all are strangers to one another at the beginning of a conference.

The one issue that needs urgent attention is the creation of Interest Groups in the ISRM....

How does one identify others amongst the 5,000-odd members spread all over the globe who have similar interests?

How does one make contact in order to share experience or ask advice?

Lindsay Linzer — Rocha Medal Award 2003

The Rocha Medal is awarded annually for the best Ph.D. thesis submitted to the ISRM. Nominations from the regions are received and ranked by the Vice Presidents, following which the Rocha Medal Award Committee selects the best thesis. There are thus three screening levels, from national to regional to international.

The 2003 Award was made to Dr. Lindsay Linzer of CSIR Mining Technology in South Africa.

Lindsay was born in Windhoek, Republic of Namibia and went to school in Pretoria, South Africa. She graduated from the University of Natal, majoring in geology and physics. She then completed an Honnours degree in geophysics at the University of the Witwatersrand, moving on to the award winning Ph.D. in geophysics, also at the University of the Witwatersrand.

She has been with the CSIR Mining Technology since 1995 where she has been involved in several research projects. The research topics ranged from her thesis work to practical application of seismic knowledge to mine and support design. During 2000 she spent time on a mine to gain practical experience.

When not contributing to the field of geophysics, Lindsay enjoys listening to a wide range of music, re-learning to play the piano, oil painting, jewellery creation and gardening.

Lindsay Linzer, Rocha Medal Award recipient



The title of her award winning thesis was “A Relative Moment Tensor Inversion Technique applied to Seismicity induced by Mining.” The full paper is to be published in *Rock Mechanics and Rock Engineering*.

Report from the President, *continued from page 7*

One solution is to create Interest Groups within the nationally-oriented structure of the ISRM. Members with similar interests can join these and then have the necessary contact via a special area in the Website. Interest Groups will cut across national boundaries. Workshops can be arranged to coincide with International Symposia of the ISRM, resulting in the double benefit of attending an international event to learn about the latest developments in the fundamental sphere and having the specialist contact internationally. We have the ISRM, the new communication facility is on our doorstep, let us use it to make special contact without losing the benefit of our wide range of activities.

Anyone who has the desire to create such a group, is invited to contact me so that we can make the necessary arrangements and get the job done.

— Nielen van der Merwe
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Charles Fairhurst — 2003 Leopold Müller Award Winner

The coveted Leopold Müller Award was awarded to Charles Fairhurst at the ISRM Congress in Johannesburg, in September 2003. This is the prime international recognition in Rock Mechanics and is only awarded once every four years. There have been three previous recipients, Evert Hoek, Neville Cook and Herb Einstein.

Few have made the magnitude and diversity of contribution to Rock Mechanics that Charles has, none have continued at his level of activity and support of the ISRM over so long a period.

Charles was born and educated in England, crowning his early years with a Ph.D. in mining engineering from Sheffield University in 1955. A year later he moved to the USA, taking up a position as Research Associate in the School of Mines at the University of Minnesota, where he was to spend the next several decades. During his time there he mentored and advised 23 doctoral and more than 30 masters students.

During his stay at the University of Minnesota, he was inter alia Head of the School of Mining and Metallurgy and Head of the Department of Civil and Mining Engineering. He is a member of two Academies of Engineering (USA and Swedish) and received four honorary doctorates.

Charles was always at the cutting edge, a true pioneer in rock mechanics. He was instrumental in the development of hydraulic fracturing as a stress measurement technique at great depth, determination of post peak failure response of rock using servo controlled testing machines, the distinct element method to model the behaviour of blocky rock masses and several others.

One of the founder members of the ISRM in 1962, he has always supported the ISRM and was president from 1991 to 1995. He still is active in the Society and attends meetings whenever he can. He has a passion for innovative research, new

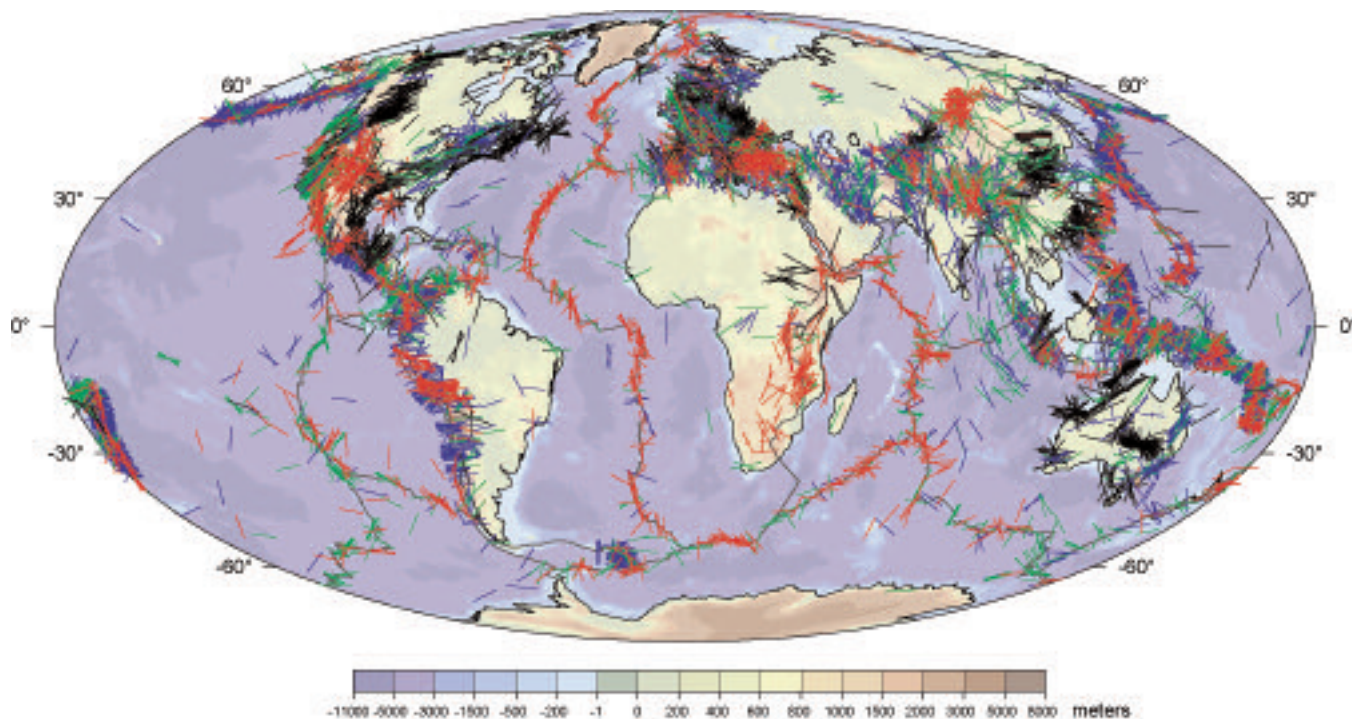


Charles Fairhurst where he loves to be: underground. The picture was taken in a mine in the Lorraine District of France during 2003.

ideas and consistently emphasises the application of rock mechanics principles to rock engineering.

It is no exaggeration to state that Charles Fairhurst has devoted a lifetime to rock mechanics and its application, rock engineering. The ISRM is proud to be in a position to honour a person of his calibre.

ISRM and the World Stress Map — An Old Love Rekindled



Call to Enhance Shallow Rock Stress Information

Information on rock stress is required for a wide spectrum of engineering problems such as stability of underground structures, design of rock support systems, assessment of rock burst hazard, fluid flow, fracturing and fracture propagation. In most cases, a campaign for rock stress estimation has to be set up on the site of construction. In order to develop a suitable approach strategy, information on the far field tectonic stress field and at the local scale are required.

The World Stress Map (WSM) database is the global source to contemporary tectonic stress data. From its very beginning, the WSM contained a

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large number of shallow rock stress data since one of the first major contributions to the WSM was the Fennoscandian Rock Stress database. The WSM provides orientations and magnitudes of principal stresses or maximum horizontal stress orientations world wide. Furthermore, the WSM provides report and paper citations from disparate and difficult to find sources, and thus accelerates access to the original data.

The World Stress Map is a research project of the Heidelberg Academy of Science and Humanities. Currently the WSM database contains more than 13000 quality-ranked data sets, primarily from earthquake focal mechanism solutions, borehole breakouts, overcorings, hydraulic fracturing and geological indicators. The WSM database is updated annually and can be downloaded free of charge from the WSM website <http://www.world-stress-map.org>. Users can create their own stress map (adding their own data) using the CASMO (Create A Stress Map Online) web tool.

The WSM is a widely used resource in the earthquake research and petroleum communities. However, the value of this resource for shallow civil engineering applications largely depends on the amount and density of shallow stress data

from overcoring and hydraulic fracture test data within the WSM database. Yet, despite the large amount of measurements world wide, only minimal amounts of shallow rock stress data flow into the WSM and thus, these data are poorly represented. This joint initiative of ISRM and WSM aims to improve the value of the WSM for rock mechanics applications. Both the WSM and the ISRM are committed to aiding and providing information for assessing problems in rock mechanics. Therefore, the key components of this initiative are to:

- increase the amount of “shallow” (<200 m) rock stress data in the WSM database in order to make it more relevant to the rock engineering community;
- provide a long-term, safe repository for shallow rock stress data, and;
- enhance the service provided by the WSM for the specific needs to assess stress related problems in rock mechanics.

Our idea is to develop a global network on the basis of ISRM contacts. Partners of this network

would routinely contribute rock stress data to the WSM and thereby ensure continuous growth of the near-surface stress database. The ultimate ambition of this initiative is to compile detailed stress maps worldwide, thus creating an invaluable resource for all rock engineers and other WSM users.

What we want from you – the potential WSM user – now is:

- take a few minutes to have a look at the WSM homepage: www.world-stress-map.org;
- check the database structure and the WSM services for their application to rock mechanics, and;
- contact us and let us know your needs!

Reports from the ISRM Vice Presidents

Africa – Martin J Pretorius, ISRM Vice President for Africa

Marketing: Investment in Africa Congress

The Organising Committee of the Investment in Africa Congress that is held annually in Cape Town, South Africa, was contacted with the objective to introduce the ISRM and the discipline of rock engineering to potential exploration companies, mine developers, investors and consulting companies. This opportunity is also viewed as a tool to re-organise the geotechnical and rock engineering related disciplines on the African continent.

Communication/Networking

Communication was initiated in order to establish a forum where practising engineers from the different countries in Africa outside the Republic of South Africa may have the opportunity to network and share know-how and local experience. To date very little progress has been made on this due to the low number of practising engineers, poor communication and travelling distances between the different countries.

SANIRE

The Rock Engineering fraternity that is related to the mining industry in South Africa is very active. The newly elected Council started on a relatively high note after the success of the ISRM Congress that was held in Sandton, Johannesburg during September 2003. The same level of activity is unfortunately not true for the civil industry in South Africa due to the relatively low level of activity in this field. We are optimistic that some tunnelling work will be generated with the construction that is planned with the so-called Gautrain surface and underground rail network in the Gauteng Province. It is foreseen that this infrastructure will be completed before the Soccer World Cup in 2010.

The main activities of SANIRE for the past year can be summarised as:

Annual Symposium: The annual SANIRE symposium with the theme: “The miner’s guide through the earth’s crust” was held in Potchefstroom during September 2004. This symposium was a major success and was attended by approximately 180 delegates from different disciplines and companies serving the South African

mining industry. An Organising Committee was put together for the Regional Symposium to be held during 2005. One of the objectives of this symposium is to involve members from African countries outside the borders of South Africa.

Professional Registration

The SANIRE Council, under the leadership of Professor Mathew Handley, plays a very active role in the professional registration of the members of SANIRE. This is quite a complex issue due to the different levels of academic background of rock engineering practitioners in South Africa.

Qualifications/SAQA

Members of SANIRE Council are involved in developing levels of qualifications related to excavation stability for the South African mining industry. Input is being given with the development of unit standards that are related to strata control and rock engineering and form the basis of MQA (Mines Qualifications Authority) The MQA is a subset of SAQA (South African Qualifications Authority) and applicable to the mining industry.

Rocha Medal Nomination

Dr Alan Bye was nominated by South Africa for the Rocha Medal Award. His thesis was titled: “The development and application of a 3D geotechnical model for mining optimisation, Sandsloot Open Pit Platinum Mine, South Africa.”

Asia – Jhian Zhao, ISRM Vice President for Asia

October 2003 – September 2004

At present, the Asian region has 10 national groups (China, India, Iran, Japan, Korea, Nepal, Singapore, SE Asia, and Vietnam). In year 2003-2004, there is a marked increase of over 100 ISRM memberships in the region, and increase of activities.

International and Regional Conferences

Three international and regional conferences were held in Asia, organized or sponsored by ISRM National Groups and/or ISRM Commissions:

- ISRM Regional Symposium, SinoRock-2004 International Symposium, 18–22 May 2004, Yichang, China, organised by the China NG.
- International Symposium on Protection of the Long-You Grottoes, 18–20 September 2004, Longyou, China, co-organised by the China

NG and Commission on Preservation of Natural Stone Monuments.

- International Symposium on the Fusion Technology of Geosystem Engineering, Rock Engineering and Geophysical Exploration, 18-19 November 2003, Seoul, Korea, organised by Korea NG.

Several international and regional conferences will be organized by the ISRM National Groups or ISRM Commissions in Asia:

- 3rd Asian Rock Mechanics Symposium (ISRM International Symposium) in November 2004 in Kyoto, organized by Japan NG.
- 4th Asian Rock Mechanics Symposium (proposed ISRM International Symposium) in November 2006 in Singapore, organized by Singapore NG.
- 5th Asian Rock Mechanics Symposium in 2008, to be decided at a later date.
- 12th ISRM Congress in 2011, in Seoul (proposed by Korea NG) or in Beijing (proposed by China NG jointly with Singapore NG).

In addition, there are many national and local conferences and symposiums planned by the National Groups and Commissions.

China

The Chinese Society for Rock Mechanics and Engineering, ISRM China NG, has 12,500 local individual members, 217 individual and 7 corporate ISRM members. It hosts 2 ISRM Commissions: Case Histories in Rock Engineering, and Education. It organized more than 50 local symposiums by sub-committees and regional branches, including the 8th National Congress in October 2004, and Symposium on Geological Treatment for Radioactive Water Storage in July 2004. It also published 19 issues of the *Chinese Journal of Rock Mechanics and Engineering*, 4 issues of News Magazines and a book "Achievements of Rock Mechanics and Engineering in China in the 20th Century."

India Society for Rock Mechanics

India National Group organized the Conference on Large Dams and Hydropower Development in May and distributed 2 issues of Newsletters.

Iranian Society for Rock Mechanics

ISRM Iran NG, is organizing the 2nd Iranian Rock Mechanics Conference in November 2004, organized bi-month seminars and issued Newsletters.

Israel Rock Mechanics Association

ISRM Israel NG organized two special rock mechanics sessions were held during the annual meeting of Israel Geological Society in March, on underground space technology and theoretical aspects of rock mechanics and earthquake risks. It also organised a workshop on new results on fracture, faulting, and brittle deformation of rocks in May.

Japanese Committee for Rock Mechanics

ISRM Japan NG has 345 individual and 48 corporate ISRM members, and hosts 3 ISRM Commissions: Swelling Rocks, Application of Geophysics to Rock Engineering, and Preservation of Natural Stone Monuments. It is organising the 3rd Asian Rock Mechanics Symposium in November 2004, published "Rock Mechanics '02 CD-ROM" (containing rock mechanics publications in Japan), and 3 issues of Newsletters. It also plans to set up the Rock Net to promote international exchange with other Asian countries.

Korean Society for Rock Mechanics

IRSM Korea NG has 1231 individual and 23 corporate local members, 81 individual and 20 corporate ISRM members. It organized the 2004 National Congress in April, a workshop on "Numerical analyses in rock mechanics—new development and case studies" and a seminar on "Changes in underground hydraulic condition according to excavation and its impact on the environments," a workshop on "Mechanical tunneling technologies in hard rock and soft ground." It published *Tunnel and Underground Space* journal, 6 issues of KSRM magazine.

Singapore

Singapore National Group co-hosted a local conference, "Underground Singapore 2003" in November, jointly organised a monthly seminar on underground technology and rock engineering, and a workshop on "Oil and Gas Storage in Rock Caverns" in May.

Australasia – John St George, ISRM Vice President for Australasia

In February 2004, Auckland New Zealand hosted the 9th Australia New Zealand Conference on Geomechanics which, although not a ISRM sponsored event, attracts a lot of interest from the rock mechanics community. One of the highlights of the conference was the John Jaegar Memorial

Lecture presented by Professor Ted Brown on the mechanics of discontinua.

There have been some positive moves to encourage membership from fractional technical groups associated with mining to the Sister Societies (mainly ISRM). Dr Meyers (VP nominee Australia) made a presentation to the East Coast Strata Control Group in an attempt to persuade them to join ISRM. At this stage they have preferred to align with the mining institute AusIMM.

A number of local technical committees and groups are working on matters related rock mechanics: ground anchors, slope stability and landslide risk management.

The National Groups in both Australia and New Zealand have published a collection of their Journal and News publications.

The collection of the Australian Geomechanics Society Journal and News 1971 – 2003 64 issues (2 CD set).

New Zealand Geomechanics News Collection, 1970 – 2003, Vol 1-66, (CD)

Europe –

ISRM Regional Symposium

EUROCK 2004 & 53rd Geomechanics Colloquy

The EUROCK 2004 conference this year was held in Salzburg, Austria from October 7th to October 9th in conjunction with the traditional Geomechanics Colloquy, organized by the Austrian Society for Geomechanics.

A total of 65 papers were presented orally in seven sessions, while about 100 papers were presented as posters.

The conference attracted 935 participants from 32 countries. Forty companies took the opportunity to present their products and services at the technical exhibition.

Social functions included a welcome reception at the conference centre, a buffet dinner at the traditional Salzburg Residence, and a chamber orchestra concert. An accompanying persons program and field trips to two railway tunnels completed the programme.

North America – Francois Heuze, ISRM Vice President for North America

CANADA (with input from Professor John, Hadjigeorgiou, CARMA President)

Background

In Canada, the ISRM National Group is the Canadian Rock Mechanics Association (CARMA). Membership to CARMA is through either the Rock Mechanics Committee the Canadian Institute of Mining and Metallurgy (CIM) or the Rock Mechanics Division of the Canadian Geotechnical Society (CGS).

Current Situation

Membership to the Canadian Geotechnical Society includes in its fee structure for the automatic adherence to an international society of their choice. In 2003 50 people identified CARMA, and by consequence the ISRM, as the society of choice, and another 60 identified Rock Mechanics as a second division choice (without membership to CARMA & the ISRM).

Members of the Canadian Institute of Mining indicate a field of interest (Metal Mining, Mineral Economics Society, Maintenance Engineering, Rock Mechanics etc.). Currently only Rock Mechanics members of the CIM have an option to join an international society. This costs an additional 30\$Cnd for CARMA and ISRM Membership (including the ISRM quarterly *News Journal*). In 2003 598 people indicated rock mechanics as their area of interest and are members of the rock mechanics committee. Further 115 paid the additional fees for membership to CARMA and by consequence to the ISRM.

So, the ISRM membership from Canada currently stands at 165.

The last few years have seen a big dissatisfaction of members of the CIM Rock Mechanics Community with the ISRM. This escalated to the point where the Canadian Institute of Mining questioned the practice of facilitating adherence to the ISRM. All complaints were related to the ISRM Journal: irregular dates of publication, wrong addresses. The CIM Rock Mechanics Committee refunded members who should have, but did not receive the Journal.

Currently, there is a degree of dissatisfaction on the part of both CIM and CGS members over the last paper issue of the Journal (lack of technical content). The same complaints begin to resurface about the Journal not being available on a regular basis. Further complaints have focused on the ISRM web page. If the ISRM Journal is to be available to all surfers over the web, what do paying members gain with adherence? Unless these issues are resolved in the immediate future the

number of Canadians who also are ISRM members is expected to further decline.

CARMA Activities

In 2004 CARMA cooperated with the American Rock Mechanics Association (ARMA) in the organization of the North American Rock Mechanics Symposium in Houston. CARMA members have also contributed in the development of Rock Mechanics Sessions during the Canadian Institute of Mining & Metallurgy, Annual General Meeting in Edmonton (May 2004) and the Canadian Geotechnical Conference in Quebec City (October 2004).

Mexico

Over the past two years, numerous attempts have been made by the VP North America (VPNA) and the ARMA staff to establish contact with a person speaking for Mexico with regard to ISRM. These attempts did not establish a viable correspondent. Mexico, a country of 105 million people has five members in ISRM.

In August 2004, the VPNA wrote a message to Mr. Carlos Garcia, President of the Mexican Society for Rock Mechanics, highlighting the fact that Mexico was long overdue in its ISRM dues and informing him of the options that the ISRM Board was offering to such countries to remedy their situation. He was also informed that, in case of further delinquency, Mexico could be expelled from ISRM. Although the receipt of that message was acknowledged, to this day there has been no other response to these communications. This does

not bode well for the future of Mexico within ISRM.

United States of America (USA)

ARMA is the National Group for the USA. The VPNA is also the current President of ARMA. The USA now has 352 ISRM members, a significant increase from the previous year.

ARMA organized a North American Rock Mechanics Symposium (NARMS) in Houston, Texas, in June 2004. This NARMS was supposed to be organized in and by Mexico. When Mexico defaulted, the U.S. stepped in. Mexico having also declined to hold the next NARMS, in 2006, the Board of ARMA terminated the 3-country (Canada, Mexico, U.S.) NARMS agreement. It then established a new joint Symposium process with Canada (CARMA), 2 years in the U.S. and 1 year in Canada over each 3-year cycle.

The 2005 US/Canada Rock Mechanics Symposium will be held in June 2005, in Anchorage, Alaska. The 2006 US/Canada Rock Mechanics Symposium will be held in Golden, Colorado, This will be the 50th/golden anniversary of the first U.S. Rock Mechanics Symposium that was held in Golden in 1956. The 2007 Canada/US Rock Mechanics Symposium will be held in Canada.

South America – Eda F. de Quadros, ISRM Vice President for South America

Regional and International Conferences



Participants of the IX International Symposium on Landslides, Rio de Janeiro, Brazil (June 2004).

Some important events occurred during this last year involving the rock mechanics community: firstly the II National Congress in Geotechnical Engineering — **II COPAINGE 2003**, in Asunción, Paraguay and the **SINERGIA 2004** (National Congress in Argentine) held in the historical city of Córdoba (October, 2004). The Vice-President were invited to participate in both events by the Presidents of the Organizing Commissions – Prof. Michel Stanischevsky and Prof. Roberto Terzariol, respectively. The third event was the **IX International Symposium on Landslides – IX ISL**, which the President of ISRM (Prof. Nielen van der Merwe) attended. During his stay in Brazil, he participated in profitable meetings involving representatives of ISRM South American NGs.

SINERGIA 2004, was a multidisciplinary event enclosing the areas of soil and rock mechanics, dam engineering, environmental and geotechnical mapping.

A remarkable aspect was the involvement of the Academy in the whole event. Córdoba University is one of the three oldest in the Americas (~400 years). A well deserved title of “Dr. Honoris Causa” was given for the first time in the area of Geotechnics to **Dr. Nick Barton**, one of the prominent members of ISRM.

The title was given as a recognition of his great contribution to the development of the Rock Mechanics Science and application of concepts in the field of Rock Engineering, in a traditional ceremony and Aula Magna, which was given in the presence of the Dean, the highest level Professors of the University of Córdoba and invited professionals.

There is a proposal in development for the **VI South American Congress in Rock Mechanics** in 2006, to be organised by one of the ISRM NGs in the region.

During this year, the Vice-President was also invited to participate in the **IX Geotechnical Portuguese Congress** (Aveiro, Portugal) and in the **Chinese International Symposium on Rock Mechanics** (SINOROCK, 2004).

Recently, following the international trend for strengthen the collaboration during the event **SINERGIA 2004** in Córdoba, the three Vice-Presidents of ISSMGE, IAEG and ISRM signed a term of compromise establishing an agreement amongst the three sister societies in the continent termed “**Declaration of Córdoba.**” This docu-

ment contains some principles of collaboration and states the creation of “Joint South American Working-Groups” (**JWSGs**), as well as the creation of a Council formed by the Vice Presidents and Past Vice Presidents in the Region.

Some Considerations about the Region

There are eleven **Geotechnical Societies** in South America belonging to ISSMGE. The **ISRM Rock Mechanics Groups** are in general a branch (or a committee) in those Societies.

There is an expected potential for future memberships from the mining and petroleum communities. Due to the circumstances linked to political restraints in the region and smaller demand for rock mechanics works, it might be realistic to think of an increased number no more than ~10-20% if the Vice-President succeeds in her efforts for new countries to be affiliated to ISRM in the continent. In negotiation at this moment is the return of Chile and Peru.

Cooperation with **ISSMGE** and **IAEG** is one of the main goals of this Regional Vice President. In South American Region, the Vice Presidents of the three sisters societies are very keen to promote common links and the “Córdoba Declaration” referred to before shows their wish toward that.

East meets West and West meets East:

A review of the ISRM SINOROCK2004 Regional Symposium held in China, May 2004

by John A Hudson* and Xia-Ting Feng** Co-Chairmen, SINOROCK2004

Our aim in organizing the first SINOROCK symposium on “Rock Characterization, Modelling and Engineering Design Methods,” held on 18-21 May 2004, was to highlight the characterization, modelling and design sequence in rock engineering. Too often, these three components have been considered as separate disciplines, rather than as a unified rock engineering design process.

Because there is probably more rock mechanics research and more rock engineering construction taking place in China than in any other country, the venue at the Three Gorges Dam Project on the Yangtze River, Hubei Province, seemed highly appropriate for such a Symposium. The Three Gorges Project is the largest engineering scheme of its kind in the world and the considerable infra-structural development at the site includes the Three Gorges Project Hotel where the SINOROCK symposium was held.

Following the naming style of its predecessors, i.e., the EUROCK and INDOROCK symposia, this symposium was named using the prefix SINO—meaning “pertaining to China.” The Symposium was organized by the *International Journal of Rock Mechanics and Mining Sciences* (based in the UK) and the Chinese Academy of Sciences, through the Institute of Rock and Soil Mechanics at Wuhan, thus a Sino-British initiative.

Three Short Courses preceded the Symposium:



Hubei Province

- “Q rock mass classification, tunnel engineering and water flow,” Nick Barton and Eda Quadros;
- “Itasca numerical programmes: updating information,” Roger Hart, Christine Detournay and Dr. Huanchun (Peter) Zhu; and
- “Environmental issues in rock mechanics and engineering,” Lanru Jing, John

Hudson, Xia-Ting Feng, Wulf Schubert and Ove Stephansson.

The subjects of these three Short Courses represented the two main methods of rock engineering design and the relatively recent emphasis on the need to include consideration of environmental factors.

SINOROCK2004 was well attended by about 250 registrants from 21 countries, with approximately equal numbers of Chinese and non-Chinese delegates. There were 149 papers presented in English (selected from the more than 350 submitted abstracts) and 34 presented in Chinese, comprising an excellent suite of technically and geographically diverse papers. The abstracts of the English papers can be found in the hard copy version of the SINOROCK Special Issue of the *International Journal of Rock Mechanics and Mining Sciences*, (41-3, April 2004). Abstracts and full papers can also be found at sciencedirect.com.

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Commission Reports

Commission on Application of Geophysics to Rock Engineering

Professor Koichi Sassa, Commission President

July 2003 to October 2004

(1) **The Suggested Methods for Land Geophysics in Rock Engineering** had been approved by ISRM as the ISRM Suggested Methods in 2003. This ISRM Suggested Methods had been published in the *International Journal of Rock Mechanics and Mining Sciences*, Volume 41, Number 6, September 2004.

(2) The core members in the working group on standardization of geophysical methods for rock engineering in this commission are now drafting the first draft of the **Suggested Methods for Borehole Geophysics in Rock Engineering**. The first draft will be circulated in the working group members and also in the commission members for revision shortly.

(3) The **6th International Workshop on the Application of Geophysics to Rock Engineering** is scheduled to be held on Monday, 29 November 2004, in conjunction with the 2004 ISRM International Symposium (3rd ARMS). The contents are shown in the web page of the commission. As shown in the program, the commission report, twelve papers and also a preliminary draft of the *Suggested Methods for Borehole Geophysics in Rock Engineering* will be presented at the workshop. The proceedings of about 80 pages will be published. Any one who want to purchase it (hard copy or CD-R), please make contact with Dr. Yoshinori Sanada (sanada@tansa.kumst.kyoto-u.ac.jp). The price is JPY 3,000 excluding postage.

(4) **Publication** of the special issue on Geophysical Methods as applied to tunneling in the *Rock Mechanics and Rock Engineering Journal* is being discussed with the commission members and also Professor Giovanni Barla at Politecnico di Torino in Italy.

(5) All information regarding commission activities are shown on our web page: <http://web.kyoto-inet.or.jp/people/sassa/>.

Commission President Koichi Sassa and his wife



Commission on Education

Professor Meifeng Cai, Commission President

September 2004

The present and future activities of ISRM Commission on Education are:

(1) To reestablish the membership of the Commission. Invitation e-mails have been sent to each member due the Commission on Education in hope they could continue being the member in the new session. Since a few persons may not be ready and willing to continue their work as the Commission members, I asked them to recommend a new member to take over the membership for your country or region.

(2) To organize a Workshop on Education. By taking the opportunity of the 3rd ARMS, November 28-30, 2004 in Japan, a Workshop on Education has been proposed and will be

held during the symposium. Letters and e-mails have been sent to invite each member of the Commission on Education to attend.

- (3) Plans are underway to hold an International Symposium on Education of Rock Mechanics and Doctoral Forum of Rock Mechanics and Engineering in 2006, in Beijing.
- (4) We are planning to write a new textbook of Rock Mechanics and Engineering by members of the Commission for both undergraduate and graduate students.
- (5) To up-date the education information presented on ISRM web, including the Universities, material (books, software, videotapes and slides), and persons involved in education of rock mechanics.
- (6) To collect doctoral thesis all around the world and publish the abstracts through the ISRM website.

JTC-1 Joint Technical Committee on Landslides and Engineered Slopes

Professor Robin Fell, Commission President

1. Date and Venue of Last Meeting

27th June 2004, Rio de Janeiro, Brazil, in conjunction with the International Symposium on Landslides. The meeting was attended by 12 members, 7 persons formally representing other members, and 10 observers including Dr. Nielen van der Merwe.

2. Date and Venue of Next Meeting

Monday, 30th May 2005 in Vancouver, Canada, in conjunction with the International Conference on Landslide Risk Management.

3. Committee Activities since Last Report (September 2003)

In this period we have:

- (a) Had our second committee meeting in Rio de Janeiro
- (b) Held the International Symposium on Landslides in Rio de Janeiro. Xian in China was selected as the venue for ISL 2008.
- (c) Finalised arrangements for an International Conference on Landslide Risk Management which is to be held in Vancouver, Canada, from 31st May to 3rd June 2005. The Conference will include 8 State of the Art Papers and four invited papers, which will be published in a book which we see will be the authoritative text on the subject. The

Canadian Geotechnical Society is running the Conference.

4. Planned Activities

- (a) JTC-1 is organising a Workshop on the mechanics and prediction of velocity of very large landslides to be held in Longarone, Italy in May 2006. This workshop will be attended by 25-30 invited experts. The workshop will concentrate on the following questions:
 - (i) What methods are there available to determine whether a large (>1 million m³) landslide will travel rapidly or slowly and how reliably can this be done?
 - (ii) What methods are there to predict the time of collapse or rapid reactivation of a large landslide, and how reliable are these? These should concern, reactivated and active landslides.
 - (iii) What research is needed, and coordination between researchers is possible to develop these areas, and where are these sources of good data and possible funding for such research.
- (b) JTC-1 is developing a register of training courses in landslides and related matters. We will be developing a web page through ISSMGE, with links from/to ISRM and IAEG.
- (c) ISL 2008. We are beginning the planning of this Symposium and will determine themes at the meeting in Vancouver.

5. Other Issues

I have written to ISRM, IAEG and ISSMGE in respect to committee membership, the tenure of the chair, and fees to be paid to the International Societies for Conferences organised by JTC-1. We look forward to a response on these issues.

Commission on Maintenance and Repair of Underground Structures in Rock Masses

Professor Luís Ribeiro e Sousa, Commission President

Activities in 2004

Objectives of the Commission

To perform a synthesis of the main questions regarding maintenance and repair of underground structures in rock masses.

To analyse and investigate several topics, namely:

- deterioration of rock masses, main anomalies and their causes;
- modelling of masonry linings and grouting;
- methodologies of inspection and safety control;
- maintenance software and artificial intelligence techniques;
- road and railway tunnels—specific problems and case histories;
- underground hydraulic and hydroelectric schemes—specific problems and case histories.

To establish guidelines for inspection, safety control, modelling and repair of underground structures in rock masses.

Task List (tentative)

Task 1. Collection of case histories – road, railway, hydraulic and hydroelectric tunnels

Task 2. Deterioration of rock masses and linings – main anomalies and their causes

Task 3. Guidelines for inspection and safety control of underground structures

Task 4. Guidelines for repair of underground structures

Task 5. Final report to be published as a ISRM document

Task 6. Specialised Workshop at ISRM Congress, Lisbon, 2007

Meeting at ISRM Symposium, Kyoto

The first meeting is planned for 29 November 2004 during ISRM Symposium to be held in Kyoto, where activities will be planned. Members from ISRM NG Japan will participate.

Appendix 1 — Commission Membership

12 members from Brazil, China, France, Germany, Japan, Portugal, South Africa, Spain and USA.

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Member of ISRM NG Spain

To be designated by NG of Spain

Commission on the Preservation of Natural Stone Monuments

Professor Chikaosa Tanimoto, Commission President

Report on Activities in 2004

This commission has been restarted with the new commission members since July 2004. The tasks have been modified as follows: Instead of carrying out the standardized weathering tests, the commission concentrates on collecting case history, organizing workshops & conference and publication. Through eight years of experience it has been recognized that, although the interests of ISRM members in the preservation works of stone monuments seem to be high, I cannot help feeling that people's interest remains at a level of curiosity, for example, there were too few participants at the commission and workshop meetings in Madison, New York, Cancun, and Beijing. Of course, it was fully the commission president's responsibility.

For the period of 2004-2007, the commission president should try to indicate more objective tasks including the reconstruction of fundamental concept and commission members who are suitable for actual contribution to monuments sites. It means that a commission member is desirable to have been involved in some actual project and to

be able to bring his/her own case history into the commission activities. However, judging from the present situation, the commission may obtain only several people in its activities. In addition to actual involvement, the commission puts its objective on studying rock weathering mechanism and its reality.

Fortunately, Chinese Society for ISRM has been supporting the commission activity very much, and the workshop in Dunhuang and the international symposium on Protection of Longyou Grottoes could be materialized in September 2001 and September 2004, respectively. Both were very successful. The commission president would like to express his special thanks to Chinese ISRM for their kind and steady cooperation.

The responsibility of the commission president should be extended to not only Asia but also other areas. The commission needs more support for finding appropriate members and projects. At the last the commission organizes the international workshop on Preservation of Natural Stone Monuments and Rock Weathering on November 29, 2004, in conjunction with the 3rd ARMS. The special gratitude should be given to the organizing committee.

News from the Secretariat

Membership

The total number of National Groups is now 46. The table attached presents the situation regarding ISRM membership, per country and per region, in September 2004. The present numbers of individual and corporate members are:

Members	Individual	Corporate
Africa	340	3
Asia	889	74
Australasia	328	2
Europe	2625	47
N America	517	4
S America	140	0
Total	4839	130

When compared with the previous year, this corresponds to an increase of 84 individual members and to a decrease of 6 corporate members. It should be mentioned that the decreasing trend in corporate membership was compensated by 20 new corporate members from Korea.

The graphics at the bottom of the page present the evolution of the number of ISRM members in the last 9 years.

Awards

The 22nd Rocha Medal was conferred on Dr. Lindsay Marguerite Andersen for her thesis “A Relative Moment Tensor Inversion Technique Applied to Seismicity Induced by Mining” on the occasion of the 10th ISRM International Congress held in Sandton, South Africa, in September 2003.

The Award Committee selected, as the winner of the 23rd prize, the thesis submitted by Dr. Giovanni Grasselli entitled “Shear Strength of Rock Joints based on the Quantified Surface

Description.” This work, selected from among seven outstanding shortlisted theses for 2004, was approved in 2001 by the Civil Engineering Department, EPF Lausanne, Switzerland. The award will be conferred during the Kyoto Symposium this November.

Development of the New ISRM Website

At its meeting in Sandton, South Africa, in September 2003, the ISRM Board approved the following motions regarding the use of information technologies:

The main method of future communication between the ISRM and its members will be electronic, including:

- i) development of an interactive website;
- ii) distribution of the *News Journal*;
- iii) availability of abstracts of all ISRM sponsored conferences, commission and interest group reports.

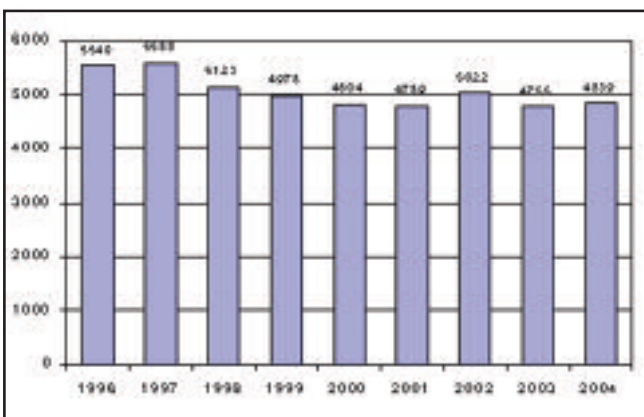
The Secretariat is instructed to find an appropriate IT service provider within easy access, but preferably within Lisbon, Portugal, for the creation and maintenance of the new ISRM website.

The first phase of the work consisted of preparing the terms of reference for a consultation with several IT service providers, selecting one company and preparing a first proposal for the development of an Internet-based, information and communication system for the ISRM. This proposal generated comprehensive discussions in the ISRM Board and a final document was approved.

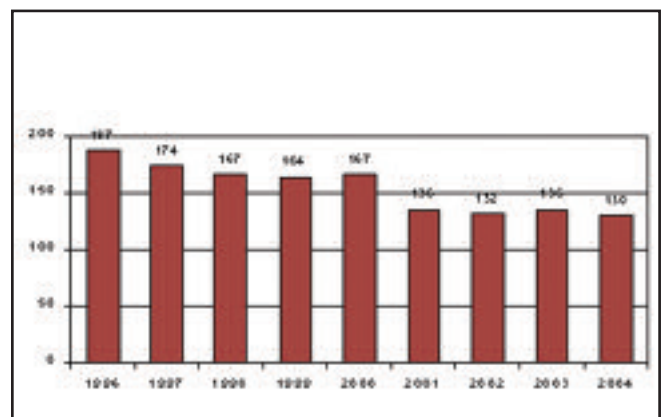
The following main objectives for the new system were defined by the ISRM:

- To promote the ISRM: To make available to the technical community, through a new website,

Individual members



Corporate members



ISRM Membership in September 2004

Countries	Ordinary Members	Corresponding Members	Corporate Members
Argentina	9	1	0
Australia	259	3	2
Austria	202	2	1
Bahrain	0	1	0
Belgium	48	0	4
Brazil	68	0	0
Bulgaria	0	2	0
Canada	176	1	1
China	200	6	6
Colombia	23	0	0
Costa Rica	0	4	0
Croatia	56	0	0
Czech Rep.	23	0	0
Denmark	3	0	0
Egypt	0	1	0
Finland	67	0	1
France	173	0	9
Germany	337	1	5
Ghana	41	0	0
Greece	99	2	0
Hong Kong	0	5	1
Iceland	7	0	0
India	70	1	0
Indonesia	0	5	0
Iran	85	1	0
Ireland	0	3	0
Israel	25	0	0
Italy	223	4	2
Japan	344	0	47
Jordan	0	2	0
Korea R	48	0	20
Malaysia	0	1	0

detailed information on the activity of ISRM, with the aim to be useful to rock mechanics practitioners and researchers, to increase the interest in rock mechanics and to attract new individual and corporate members to the ISRM.

- To serve the ISRM members: To make available to ISRM members, through a password protected area of the ISRM website, specific information, which should justify being a member, such as newsletters and other publications, directory of members and a virtual library.

- To support the ISRM activity: To improve ISRM efficiency by using specific IT tools for communication between Board members, Secretariat, National Groups, Commissions and Interest Groups, so as to stimulate electronic communication and to allow a better allocation of resources.

The autonomy of ISRM as regards introduction of new contents and maintenance of the system was considered as one of the priorities.

With the launching of the new ISRM website, the rock mechanics practitioners will have a new tool where they can find all sorts of information about the Society, its organisation and history, conferences and meetings, commissions and interest groups, awards, corporate members, suggested methods and other publications. In a restricted area, ISRM members will find materials of their interest, such as the *News Journal* and a virtual library, or may wish to participate in discussion forums. Board members will have access to working areas and new services that will facilitate their routine work.

Launching of the system is foreseen for the end of 2004 and

will be followed by continuous improvements that will prove necessary. It is hoped that this new system will be positively received by the rock mechanics community. Feedback from the users is essential, so that the system may become a useful working tool for all those involved in rock mechanics or in the activities of the ISRM.

Countries	Ordinary Members	Corresponding Members	Corporate Members
Mauritius	0	1	0
Mexico	13	0	0
Nepal	6	0	0
Netherlands	26	0	0
New Zealand	65	1	0
Norway	230	1	0
Panamá	0	1	0
Paraguay	11	0	0
Peru	0	2	0
Poland	42	0	0
Portugal	158	0	9
Russia	35	2	0
Saudi Arabia	0	3	0
Singapore	12	0	0
Slovakia	20	0	0
Slovenia	26	0	0
South Africa	281	0	3
SE Asia	50	0	0
Spain	145	3	0
Sweden	130	0	12
Switzerland	167	1	3
Taiwan	0	2	0
Turkey	70	1	0
United Kingdom	315	1	1
USA	323	4	3
Venezuela	20	1	0
Vietnam	22	0	0
Zambia	16	0	0
Total	4769	70	130

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Secretary/Treasurer: Dr C.
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2005 March 09-11, Perth WA AUSTRALIA - 6th International Symposium on Rockburst and Seismicity in Mines (RaSiM6), organized by The Australian Centre for Geomechanics (ACG), in conjunction with the UGOPS9 Conference (March 07-09). Mrs Josephine Ruddle, Australian Centre for Geomechanics, 7 Cooper Street, P.O. Box 3296 - Broadway, Nedlands, WA 6009, AUSTRALIA. Tel: 61/8/93801864 or 93803300, Fax: 93801130, E-mail: acg@acg.uwa.edu.au. Mrs Christine Neskudla, Centre Administrator, Australian Centre for Geomechanics, P.O. Box 3296 - Broadway, Nedlands, WA 6009, AUSTRALIA. Tel: 61/8/64883300, Fax: 64881130, E-mail: christin@acg.uwa.edu.au, Website: www.acg.uwa.edu.au or www.acg.uwa.edu.au/pdf_files/RaSiM6.pdf.

2005 April 25-29, Nice FRANCE - XXXth General Assembly of the European Geosciences Union (EGU). EGU Office, Max-Planck-Str. 13, D-37191 Katlenburg-Lindau, GERMANY. Tel.: 49/5556/1440, Fax: 4709; E-mail: egu@copernicus.org, Website: www.copernicus.org/EGU/EGU.html.

2005 May 07-12, Istanbul TURKEY - World Tunnel Congress '2005 and 31st ITA General Assembly, sponsored by the ITA. Mrs Esin Boge, Yollar Turk Milli Komitesi, Karayollari Genel Mudurlugu, F-Blok, Kat 1, TR-06100 Yucetepe (Ankara), TURKEY. Tel.: 90/312/4187905, Fax: 4258210, E-mail: erery@superonline.com or komite@ytmk.org.tr.

2005 May 18-20, Brno CZECH REPUBLIC - EUROCK 2005, the 2005 ISRM-Sponsored International Symposium, organized by the ISRM NG CZECH REPUBLIC. Dr Pavel Konecny, Inst. of Geonics AS CR, Studentská 1768, CZ-70800 Ostrava-Poruba, CZECH R. Tel.: (+420) 69 6979111; Fax (+420) 69 6919452; E-mail: konecpa@ugn.cas.cz; Website: http://www.ugn.cas.cz/data/eurock05/conference.htm.

2005 May 23-25, Lyons FRANCE - International Symposium on Geology and Linear Infrastructures (Geoline 2005), organized by the Comité Français de Géologie de l'Ingénieur et de l'Environnement (CFG) (the IAEG NG FRANCE), and the BRGM, and sponsored by the IAEG. Mr Patrick Ledru, BRGM, Direction de la Recherche, Av. Claude Guillemin, B.P. 6000, F-45060 Orléans Cedex 2, FRANCE. E-mail: geoline2005@brgm.fr. Mrs Coralie Hossenlopp, Transit Communications, 18, Place Tolozan, F-69001 Lyon, FRANCE. E-mail: coralie.hossenlopp@mci-group.com, Website: www.geoline2005.brgm.fr.

2005 May 25-27, N CYPRUS - International Conference on Problematic Soils (GEOPROB 2005), organized by the Dept of Civil Engineering, of the Eastern Mediterranean Univ., in co-operation with the Turkish National Committee of Soil Mechanics and Foundation Engineering, under the auspices of the ISSMGE. Dr Huriye Bilsel, Conference Chair, Civil Engineering Dept, Eastern Mediterranean Univ. N CYPRUS. Tel.: 90/392/6301268 or 6301320, Fax: 6302869; E-mail: geoprob2005@emu.edu.tr, Website: www.geoprob2005.org or www.geoprob2005.emu.edu.tr.

2005 May 31-June 02, Vancouver CANADA - International Conference on Landslide Risk Management (ICLRM), organized by the Joint International Technical Committee on Landslides (JTC-1), in collaboration with the Canadian Geotechnical Society (CGS). Scott Tomlinson, President. Website: http://www.cgs.ca/2005ICLRM.

2005 June 09-12, Izmir TURKEY - 19th International Mining Congress and Fair of Turkey (IMCET 2005), organized by the Chamber of Mining Engineers of Turkey. Dr Ahmet Hamdi Deliormanli, Dokuz Eylul Univ, Mining Engineering Dept, TR-35100 Bornova-Izmir, TURKEY. Tel.: 90/232/3883139 Ext. 134, Fax: 3738289; E-mail: ahmet.deliormanli@deu.edu.tr or imcet2005@org, Web: www.imcet.org.

2005 June 12-17, Reno NV USA - June Committee Week of the American Society for Testing and Materials International (ASTM), Section D18 - Soil and Rock. Dr Jack Touseull, Rock Mechanics Subcommittee D18.12, Chairperson, USA. E-mail: jtouseull@do.usbr.gov. D18 Office Manager, Mr Robert J. Morgan, 100 Barr Harbor Drive, W. Conshohocken, PA 19428-2959, USA. Tel.: 1/610/8329732; E-mail: rmorgan@astm.org.

2005 June 13-17, Madrid SPAIN - 67th Annual International Conference & Exhibition of the European Association of Geoscientists & Engineers (EAGE). E-mail: eage@eage.org, Website: www.eage.nl/conferences/index2.phtml?confid=17.

2005 June 19-24, Turin ITALY - The 11th International Conference of the International Association of Computer Methods and Advances in Geomechanics (IACMAG 2005), organized by the Politecnico de Torino - Department of Structural and Geotechnical Engineering and AGI - the Italian Geotechnical Society (the ISRM NG Italy). Secretariat: Via Gozzano 14, I-10073 Ciriè, Torino ITALY, Tel.: +39 011 9211467, Fax: +39 011 9224992; E-mail: iacmag@iacmag2005.it; Website: www.iacmag2005.it.

2005 June 27-29, Seattle WA USA - Rapid Excavation and Tunneling Conference (RETC) 2005, organized by The Society for Mining, Metallurgy, and Exploration, Inc. (SME), in conjunction with the American Society of Civil Engineers (ASCE). An exhibition will be held. RETC, c/o Meeting Dept, SME, Attn: Mrs Tara Davis, 8307 Shaffer Parkway, P.O. Box 277002, Littleton, CO 80127-

7002, USA. Tel.: 1/303/9739550, Fax: 9793461, E-mail: davis@smenet.org, Website: www.retc.org or www.smenet.org.

2005 July 06-08, Brisbane Que. AUSTRALIA - 8th International Mine Ventilation Congress, sponsored by The Australasian Inst. of Mining and Metallurgy. Mrs Alison McKenzie, Senior Conference & Events Coordinator, The Australasian Inst. of Mining and Metallurgy, P.O. Box 660, Carlton South, Vic. 3053, AUSTRALIA. Tel.: 61/3/96623166, Fax: 96623662, E-mail: conference@ausimm.com.au, Website: www.ausimm.com.

2005 September 07-11, Saragossa SPAIN - International Conference on Geomorphology, the 6th Quadrennial Conference of the International Association of Geomorphologists. Organizing Secretariat, Geomorfologia, Fac. de Ciencias, Univ. de Zaragoza, C/ Pedro Cerbuna 12, E-50009 Zaragoza, SPAIN. Fax: 34/976/761106, E-mail: iag2005@posta.unizar.es, Website: wzar.unizar.es/actos/SEG/.

2005 September 12-16, Osaka JAPAN - XVth ISSMGE International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE). Prof. Masashi Kamon, The Japanese Geotechnical Society, Sugayama Building, 4F, Kanda Awaji-Cho 2-23, Chiyoda-Ku, J-101-0063 Tokyo, JAPAN. Tel.: 81/3/32517661, Fax: 32516688, E-mail: secretary@icsmge2005.org or 16icsmge@jiban.or.jp. Website: www.icsmge2005.org.

2005 September 13-15, Osaka JAPAN - International Young Geotechnical Engineer's Conference, organized by The Japanese Geotechnical Society (the ISSMGE MS JAPAN), and sponsored by the ISSMGE, in conjunction with the 16 ICSMGE (September 12-16). Prof. Masashi Kamon, The Japanese Geotechnical Society, Sugayama Building, 4F, Kanda Awaji-Cho 2-23, Chiyoda-Ku, J-101-0063 Tokyo, JAPAN. Tel.: 81/3/32517661, Fax: 32516688, E-mail: secretary@icsmge2005.org or 16icsmge@jiban.or.jp, Website: www.icsmge2005.org.

2005 September 14-16, Brighton UK - 3rd EFEE World Conference on Explosives and Blasting, organized by the European Federation of Explosive Engineers. Tel.: 44/1509/631530; E-mail: efee@tylerevents.co.uk, Website: www.efee-web.org.

2005 September 14-16, Hagerbach SWITZERLAND - IUT 2005, an exhibition and seminars held in an underground environment, with capability of live equipment demonstrations. Deltacom, Gesellschaft für Projektmanagement mbH, Stormarnstr. 47, D-22844 Norderstedt, GERMANY. Tel.: 49/40/3572320, Fax: 35723290, E-mail: info@deltacom-hamburg.de. Website: www.iut.ch.

2005 September 19-21, Perth AUSTRALIA - IS- FOG 2005 International Symposium on Frontiers in Offshore Geotechnics, organized by COFS - Center for Offshore Foundation Systems, in association with TC1 of the ISSMGE. Fax: 61 8 9380 1044, E-mail: monica@civil.uwa.edu.au; Website: www.cofs.uwa.edu.au.

2005 September 28-30, Kathmandu NEPAL - 5th Asian regional conference on Engineering Geology for major infrastructure development and natural hazards mitigation. The President, Nepal Geological Society, P.O. Box 231, Kathmandu, NEPAL. E-mail: bnupreti@wlink.com.np or ngs@wlink.com.np.

2005 October 10-12, Chambéry FRANCE - Tunnelling for a Sustainable Europe, organized by the French Tunnelling Association (AFTES) (the ITA NG FRANCE), the AETOS (the ITA NG SPAIN), the GTS (the ITA NG SWITZERLAND) and the SIG (the ITA NG ITALY). AFTES, c/o SNCF Infrastructure, 17, Rue d'Amsterdam, F-75008 Paris, FRANCE. Tel.: 33/1/153429469, Fax: 153420820, E-mail: contact@aftes.asso.fr, Website: www.aftes.asso.fr.

2005 October 13-14, Salzburg AUSTRIA - LIVth Geomechanics Colloquy, organized by the Österreichische Gesellschaft für Geomechanik (ÖGG) (the ISRM NG AUSTRIA). Österreichische Gesellschaft für Geomechanik, Bayerhamerstr. 14, A-5020 Salzburg, AUSTRIA. Tel.: 43/662/875519, Fax: 886748, E-mail: salzburg@oegg.at, Website: www.oegg.at.

2005 November 06-11, Houston TX USA - Annual Meeting and International Exposition of The Society of Exploration Geophysicists. Mr Steve Emery, 8801 S. Yale, Tulsa, OK 74137, USA. Tel.: 1/918/4975539, E-mail: semery@seg.org. Website: www.meeting.seg.org.

2006 April 22-27, Seoul KOREA R - World Tunnel Congress '2006, organized by the Korean Tunnelling Association, and sponsored by the ITA. Congress Secretariat - ITA 2006, 5F Marine Center New Building, #51 Songong-Dong, Jung-Gu, ROK-100-770 Seoul, KOREA R. Tel: 82/2/7265554, Fax: 7782514, E-mail: ita2006@hanjinpc.com. Korean Tunnelling Association, 44-3 Bangi-Dong, Hyundai Topics #1014, Soongpa-Gu, ROK-138-050 Seoul, KOREA R. Tel: 82/2/22033442, Fax: 22033553, E-mail: krtna@chollian.net, Website: www.ita2006.com or www.tunnel.or.kr.

2006 June 26-30, Cardiff UK - 5th International Conference on Environmental Geotechnique (5th ICEG), sponsored by the ISSMGE. E-mail: summers@Cardiff.ac.uk, Website: http://www.grc.cf.ac.uk/5icg/

2006 August 04-06, Hong Kong CHINA - International Conference on Physical Modelling in Geotechnics, Ms Shirley Tse, Geotechnical Centrifuge Facility, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong CHINA. Tel: +852-2358 0216; fax: +852-2243 0040; E-mail: gcf@ust.hk; Website: www.icpmg2006.ust.hk.

2006 August 27-31, Curitiba (Paraná) BRAZIL - IIIrd Portuguese-Brazilian Congress on Geotechnique, and XIIIth Brazilian Congress on Soil Mechanics and Geotechnical Engineering, organized by the Associação Brasileira de Mecânica de Solos (ABMS) (the ISRM NG BRAZIL), and the Sociedade Portuguesa de Geotecnia (SPG) (the ISRM NG PORTUGAL). Prof. Alessander Kormann, Curitiba, Paraná, BRAZIL. Fax: 55/41/3613436, E-mail: cobramseg2006@cesec.ufpr.br, Website: www.abms.com.br.

2006 September 14-17, Nottingham United KINGDOM - 10th International Congress of the International Association of Engineering Geology and the Environment. Engineering geology for tomorrow's cities. E-mail: info@iaeg2006.com; Website: www.iaeg2006.com.

2006 September 18-22, Yokohama JAPAN - 8th International Conference on Geosynthetics. Website: www.8icg-yokohama.org.

2006 November 08-10, Singapore SINGAPORE – 4th ARMS (Asian Rock Mechanics Symposium), an ISRM-Sponsored Regional Symposium, organised by the ISRM NG Singapore, the Tunnelling and Underground Construction Society (Singapore) and the Protective Technology Research Centre of the Nanyang Technological University. Theme: Rock Mechanics in Underground Construction. ARMS-4 Organising Committee, c/o Underground Technology and Rock Engineering Program, Protective Technology Research Centre of the Nanyang Technological University, Block N1, Nanyang Avenue, Singapore 639798, Tel.: (+65)

6790 5268; Fax: (+65) 6792 1650, E-mail: tust@ntu.edu.sg, chybian@ntu.edu.sg, camhefny@ntu.edu.sg; Website: www.ntu.edu.sg/home/

2007 July, Lisbon PORTUGAL - ISRM 11th International Congress on Rock Mechanics, organized by the Portuguese Geotechnical Society (SPG), (the ISRM NG PORTUGAL). Sociedade Portuguesa de Geotecnia, LNEC, Av. do Brasil, 101, 1700-066 Lisboa, PORTUGAL; Tel.: (+351)218443321; Fax: ((+351)218443021; E-mail: spg@lnec.pt; Website: www.isrm2007.org.

CLASHES

Conference organisers! A clash of dates can hurt your meeting. Please, carefully check the pre-booked dates in the ISRM NEWS JOURNAL or in this Events Calendar and notify the ISRM NEWS JOURNAL Editor or the ISRM Secretariat, as soon as you know your conference dates, theme, and venue.

ISRM SPONSORSHIP

Conference organisers! Apply early to the ISRM Secretariat for ISRM sponsorship, to help publicise your meeting. Regional, and International symposia, and the 4-yearly ISRM Congress, impose different requirements for ISRM recognition. Details are given in ISRM By-Laws 4 and 5, reprinted in the annual ISRM Directory and available in this Home Page

Web Links of Interest for ISRM Members

IAEG – International Association for Engineering Geology and the Environment

<http://www-cgi.ensmp.fr/iaeg>

ICOLD – International Commission on Large Dams

<http://www.icold-cigb.org>

IGS – International Geosynthetics Society

<http://www.geosyntheticssociety.org>

ISSMGE – International Society of Soil Mechanics and Geotechnical Engineering

<http://www.issmge.org>

ITA – International Tunnelling Association

<http://www.ita-aites.org>

IUGS – International Union of Geological Sciences

<http://www.iugs.org>

SPE – Society of Petroleum Engineers

<http://www.spe.org>

The Chinese papers can be found in the complementary SINOROCK Special Issue of the *Chinese Journal of Rock Mechanics and Engineering*, (23-10, May 2004).

We were especially pleased to have a distinguished group of Introductory and Keynote Lecturers: Nick Barton, Guangjing Cao, Charles Fairhurst, Lanru Jing, Chack Fan Lee, Nielen van der Merwe (President of the ISRM), Qihu Qian, Wulf Schubert and Sijing Wang.

There was also a successful Accompanying Person's Programme which included a boat trip on the Yangtze River, a visit to an ethnic Chinese village, a Chinese cooking demonstration and a talk on Chinese culture. The accompanying persons also enjoyed the two technical tours.

The two technical tours were spectacular: one was an all-day tour to the Shuibuya Hydroelectric Project (construction of a 233 m high concrete faced earth fill dam); and the other was a part-day tour of the Three Gorges Dam Project itself. These two hydroelectric projects represent respectively the highest dam and the greatest power output in the world.

The authors would like to acknowledge here the invaluable assistance for the SINOROCK Symposium provided by the various sponsors and financial supporters. Also, many members of the Institute of Rock and Soil Mechanics at Wuhan helped with the preparations, registration and audio-visual aspects of SINOROCK and we are especially grateful to them for the smooth running of the symposium. Indeed, their expert support, together with the staff and facilities at the Three Gorges Project Hotel, ensured the success of the symposium.



Sinorock Symposium Logo



Xiurun Ge: A highlight of the SINOROCK Symposium was the Lawn Banquet. Some of the registrants who can be spotted in the photograph above are Charles Fairhurst, Betsy and Bezalel Haimson, Fu Bingjun, Mrs and Professor Chung-In Lee, Nielen van der Merwe, Professor and Mrs Qihu Qian, Nick Barton and Yuzo Ohnishi.



The Shuibuya Hydroelectric Project



Village wedding party seen on Accompanying Persons' program

The SINOROCK symposium was a great success and we hope that it has indeed contributed to greater integration of the three components of rock characterization, rock mechanics modelling and engineering design methods. The symposium certainly enabled greater interaction between Western and Eastern researchers, engineers and approaches to the subjects. We also hope that this SINOROCK2004 initiative will be the first in a long line of successful SINOROCK symposia.

Coming Events

ISRM Sponsored Meetings

2004 November 30-December 02, Kyoto JAPAN – 3rd ARMS (Asian Rock Mechanics Symposium) 2004, the

2004 ISRM-Sponsored International Symposium, organized by the Japanese Committee for Rock Mechanics (the ISRM NG JAPAN). Theme: Contribution of Rock Mechanics to the New Century. 3rd ARMS 2004, c/o Prof. Kenji Aoki, Secretary General, Dept. of Earth Resources Engineering, Kyoto University, Sakyo, Kyoto 606-8501, JAPAN. Tel.: (+81) 75 7534770; Fax: (+81) 75 7534771; E-mail: arms2004@geoenv.kumst.kyoto-u.ac.jp or arms2004_tc@geoenv.kumst.kyoto-u.ac.jp (for technical papers); Website: <http://www.geoenv.kumst.kyoto-u.ac.jp/arms2004>.

2005 January 25-28, Moscow RUSSIA – Rock Mechanics for Underground Environment.

An ISRM-Sponsored Regional Symposium, organised by the ISRM NG RUSSIA. Prof. Sergey A. Yufin, Center of Underground and Special Engineering, Moscow State University of Civil Engineering, Yaroslavskoye Shosse 26, 129337 Moscow, RUSSIA. Tel.: 7/095/9180543(also fax); E-mail: info@acuus-isrm05.ru; Website: <http://www.acuus-isrm05.ru>.

2005 May 18-20, Brno CZECH REPUBLIC – EUROCK

2005, the 2005 ISRM-Sponsored International Symposium, organized by the ISRM NG CZECH REPUBLIC. Dr Pavel Konec, Inst. of Geonics AS CR, Studentská 1768, CZ-70800 Ostrava-Poruba, CZECH R. Tel.: (+420) 69 6979111; Fax (+420) 69 6919452; E-mail: konecpa@ugn.cas.cz; Website: <http://www.ugn.cas.cz/data/eurock05/conference.htm>.

2006 November 08-10, Singapore SINGAPORE – 4th ARMS (Asian Rock Mechanics Symposium),

an ISRM-Sponsored Regional Symposium, organised by the ISRM NG Singapore, the Tunnelling and Underground Construction Society (Singapore) and the Protective Technology Research Centre of the Nanyang Technological University. Theme: Rock Mechanics in Underground Construction. ARMS-4 Organising Committee, c/o Underground Technology and Rock Engineering Program, Protective Technology Research Centre of the Nanyang Technological University, Block N1, Nanyang Avenue, Singapore 639798, Tel.: (+65) 6790 5268; Fax: (+65) 6792 1650, E-mail: tust@ntu.edu.sg, chybian@ntu.edu.sg, camhefny@ntu.edu.sg; Website: www.ntu.edu.sg/home/cjzhao/arms.

2007 July, Lisbon PORTUGAL – ISRM 11th International Congress on Rock Mechanics

organized by the Portuguese Geotechnical Society (SPG), (the ISRM NG PORTUGAL). Sociedade Portuguesa de Geotecnia, LNEC, Av. do Brasil, 101, 1700-066 Lisboa, PORTUGAL; Tel.: (+351) 218443321; Fax: (+351) 218443021; E-mail: spg@lnec.pt; Website: <http://www.isrm2007.org>.

Other Events

2004 November 04-05, Perth WA AUSTRALIA - Open Pit Slope Stability and Modelling, a seminar, organized by the Australian Centre for Geomechanics (ACG). Mrs Josephine Ruddle, Australian Centre for Geomechanics, 7 Cooper Street, P.O. Box 3296 - Broadway, Nedlands, WA 6009, AUSTRALIA. Tel.: 61/8/93801864 or 93803300, Fax: 93801130, E-mail: acg@acg.uwa.edu.au, Website: www.acg.uwa.edu.au.

2004 November 10-11, Clausthal GERMANY - Climatization and Ergonomics in Underground Cavities, a specialty seminar, organized by the Inst. for Mining, of the Technical Univ. Clausthal. Dipl.-Ing. R. Spier, Inst. für Bergbau, Erzstr. 20, D-38768 Clausthal-Zellerfeld, GERMANY. Tel.: 49/5323/722319, E-mail: ron.spier@tu-clausthal.de.

2004 November 12, Freiberg GERMANY - Honorary Colloquy Prof. F. Heinrich - 33rd Geomechanics Colloquy, organized by the Inst. for Geotechnique, of the TU Bergakademie Freiberg, and the Inst. for Rock Mechanics Ltd, of Leipzig GERMANY. TU Bergakademie Freiberg, Inst. für Geotechnik, Dipl.-Ing. A. Hausdorf, Gustav-Zeuner-Str. 1, D-09596 Freiberg, GERMANY. Tel.: 49/3731/392787, Fax: 393638; E-mail: axel.hausdorf@ifgt.tu-freiberg.de.

2004 November 15-17, Hamburg GERMANY - International No-Dig 2004. CCH Organisation, P.O. Box 302480, D-20308 Hamburg, GERMANY. Tel.: 49/4035/692238, Fax: 692343, E-mail: info@nodig2004.de. Website: www.nodig2004.de.

2004 November 16-17, Washington DC USA - International Symposium on Tunnel Safety & Security (TSS). NI2 Center for Infrastructure for Expertise, 100 Arboretum Drive, Suite 306, Portsmouth, NH 03801, USA. Tel.: 1/603/7663390, Fax: 7663399, E-mail: jproulx@ni2.org.

2004 November 22-24, São Paulo SP BRAZIL - Vth Seminar on Special Foundation Engineering, and Geotechnique (SEFE). Acqua Consultoria, Av. Brig. Luiz Antônio, 317, cj 53, BR-01317-901 São Paulo, SP, BRAZIL. E-mail: sefe@acquacon.com.br. Website: www.abef.org.br or www.abms.org.br.

2004 November 23-26, Bangkok THAILAND - 15th SE Asian Geotechnical Conference (15th SEAGC), organized by the SE Asian Geotechnical Society (SEAGS) (the ISRM MNG SE ASIA), and the Engineering Inst. of Thailand (EIT). Theme: Development in Geotechnical Engineering for Practice. Dr Wanchai Teparaksa, Secretary, 15th SEAGC, Dept of Civil Engineering, Chulalongkorn Univ., P.O. Box 2045, Chulalongkorn Post Office, T-10332 Bangkok, THAILAND. Tel.: 66/2/6523007(also fax); E-mail: seagc15@eng.chula.ac.th. Website: www.eng.chula.ac.th/seagc15.

2004 November 30-December 02, Kyoto JAPAN – 3rd ARMS (Asian Rock Mechanics Symposium) 2004, the 2004 ISRM-Sponsored International Symposium, organized by the Japanese Committee for Rock Mechanics (the ISRM NG JAPAN). Theme: Contribution of Rock Mechanics to the New Century. 3rd ARMS 2004, c/o Prof. Kenji Aoki, Secretary General, Dept. of Earth Resources Engineering, Kyoto University, Sakyo, Kyoto 606-8501, JAPAN. Tel.: (+81) 75 7534770; Fax: (+81) 75 7534771; E-mail: arms2004@geoenv.kumst.kyoto-u.ac.jp or arms2004_tc@geoenv.kumst.kyoto-u.ac.jp (for technical papers); Website: <http://www.geoenv.kumst.kyoto-u.ac.jp/arms2004>.

2004 December 14-17, New Delhi INDIA - Tunnelling Asia '2004, an international conference and exhibition, organized by the Indian Committee on Large Dams (INCOLD) (the ICOLD NC INDIA), and the Central Board of Irrigation and Power (CBIP), and sponsored by The Committee of the International Society for Rock Mechanics (India) (the ISRM NG INDIA), and the ITA NG INDIA. Mr G.N. Mathur, Secretary, Central Board of Irrigation and Power, Malcha Marg, Chanakyapuri, IND-110021 New Delhi, INDIA. Tel.: 91/11/26115984 or 26116567, Fax: 26116347, E-mail: cbip@cbip.org or cbip@vsnl.com, Website: www.cbip.org.

2005 January 09-13, Washington DC USA - Geotechnical Instrumentation in Extreme Environments: New Developments and Case Histories, a session at the 84th Annual Meeting of the Transportation Research Board, organized by the AFS20 Committee on Soil and Rock Instrumentation, of the AFS00 Section on Soil Mechanics. Website: www.trb.org.

2005 January 25-28, Moscow RUSSIA – Rock Mechanics for Underground Environment. An ISRM Sponsored Regional Symposium, organized by the ISRM NG RUSSIA, in conjunction with the 10th Associated Research Centers for the Urban Underground Space (ACUUS) conference, on "Underground Space: Economy and Environment". Prof. Sergey A. Yufin, Center of Underground and Special Engineering, Moscow State University of Civil Engineering, Yaroslavskoye Shosse 26, 129337 Moscow, RUSSIA. Tel.: 7/095/9180543(also fax); E-mail: info@acuus-isrm05.ru; Website: <http://www.acuus-isrm05.ru>.

2005 February 06-09, Orlando FL USA - 31st Annual Conference on Explosives and Blasting Technique, organized by the International Society of Explosives Engineers. Mrs Lynn Mangol, ISEE Conference Manager, International Society of Explosives Engineers, 30325 Bainbridge Rd, Cleveland, OH 44139-2295, USA. Tel.: 1/440/3494400, Fax: 3493788, E-mail: isee@isee.org, Website: www.isee.org/conference/confmtg.htm.

2005 February 10-11, Houston TX USA - International Conference on Seismic Geomorphology, sponsored by the Geological Society of London, and the SEPM. Mrs Jessica Canfor, Geological Society of London, Burlington House, Piccadilly, London W1J 0BG, UK. Tel.: 44/20/74349944, Fax: 74940579, E-mail: jessica.canfor@geolsoc.org.uk, Website: www.geolsoc.org.uk/seismicgeomorphology.

2005 February 28-March 02, Salt Lake City UT USA - Annual Meeting of the Society for Mining, Metallurgy, and Exploration. An exhibition will be held. SME, 8307 Shaffer Parkway, P.O. Box 625002, Littleton, CO 80162-5002, USA. Tel.: 1/303/9739550 or 9793461(fax); E-mail: meetings@smenet.org, sme@smenet.org, or smenet@aol.com.

2005 March 07-09, Perth WA AUSTRALIA - 9th Underground Operators Conference (UGOPS9), organized by The Australian Inst. of Mining and Metallurgy (AusIMM), in conjunction with the RaSiM6 Symposium (March 09-11). Mrs Miriam Way, AusIMM, AUSTRALIA. E-mail: conference@ausimm.com.au or miriamw@ausimm.com.au.

Other Events, continued on page 30