

**ISRM International Symposium and
6th Asian Rock Mechanics Symposium
23-27 October 2010, New Delhi**

PROVISIONAL PROGRAMME AT A GLANCE

23 October 2010 (Saturday)	
Time	Activity
0900 – 1730 Hrs.	Registration (India Habitat Centre)
0930 – 1800 Hrs.	ISRM Board Meeting (Deck Suite, India Habitat Centre)
1000 – 1800 Hrs.	<ul style="list-style-type: none"> • Pre-Symposium Workshop on “Use of TBM/Road Header in Underground Works – Issues and Challenges” (Silver Oak Hall, India Habitat Centre) • Pre-Symposium Short Course on “Carbon Sequestration in Sedimentary Basins” (Registration and Technical Sessions at CBIP Secretariat, Malcha Marg, Chanakyapuri)
24 October 2010 (Sunday)	
0900 – 1730 Hrs.	Registration (India Habitat Centre)
0930 – 1800 Hrs.	<ul style="list-style-type: none"> • Pre-Symposium Workshop on “Use of TBM/Road Header in Underground Works – Issues and Challenges” (Silver Oak Hall, India Habitat Centre) • Pre-Symposium Workshop on “Rock Mechanics Methods and Tools for Mining Applications” (Registration and Technical Sessions at CBIP Secretariat, Malcha Marg, Chanakyapuri)
0930 – 1300 Hrs.	Asian Council Meeting (Deck Suite, India Habitat Centre)
0930 – 1030 Hrs.	ISRM Commission Meeting on Rock Engineering Design Methodology (Willow Hall, India Habitat Centre)
1030 – 1130 Hrs.	ISRM Commission Meeting on Testing Methods (Willow Hall, India Habitat Centre)
1130 – 1230 Hrs.	ISRM Commission Meeting on Education (Willow Hall, India Habitat Centre)
0930 – 1700 Hrs.	ISRM Commission on Preservation of Ancient Sites (Maple Hall, India Habitat Centre)
1400 - 1830 Hrs.	ISRM Council Meeting (Jacaranda Hall, India Habitat Centre)
25 October 2010 (Monday)	
0800 – 1730 Hrs.	Registration (India Habitat Centre)
0930 – 1030 Hrs.	Inaugural Session – 6 th Asian Rock Mechanics Symposium (Stein Auditorium, India Habitat Centre) and Exhibition (Charminar, India Habitat Centre)
1100 – 1300 Hrs.	<p>Rocha Medal Presentation (Stein Auditorium, India Habitat Centre):</p> <ul style="list-style-type: none"> • Dr. Jan Christer Andersson, Sweden <p>Keynote Lectures (Stein Auditorium, India Habitat Centre):</p> <ul style="list-style-type: none"> • Underground Radioactive Waste Disposal: The Rock Mechanics Contribution - Prof. John A. Hudson, U.K. • Deep Injection Disposal: Environmental and Petroleum Geomechanics - Prof. Maurice Dusseault, Canada

1400 – 1530 Hrs.	<p>Technical Session-I: Testing and Modelling of Rocks & Rock Masses (Silver Oak Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Non-uniqueness of Strength and Fracture Properties of Rock under Varying Load Rates - <i>B. Mohanty and M.J. Iqbal - CANADA</i> 2. Study on Mechanical Properties of Slates in Different Conditions - <i>Mao Haijun, Yang Chunhe and Liu Haiming - CHINA</i> 3. Characterization of Brazilian Tensile Strength of Schistose Rocks - <i>Arindam Basu and Eric Wilson Tigga - INDIA</i> 4. Effect of Boundary Conditions on Shear Behaviour of Rock Joint - <i>A.K. Shrivastava, and K.S. Rao – INDIA</i> 5. Evaluating Rock Mass Behaviour in Dilatometer Tests - <i>Morteza Gharouni-Nik and Siamak Hashemi - IRAN</i> 6. Geotechnical Evaluation of Khanas Small Dam Site - <i>Azhar A.G. Al-Khateeb and Arsen O. Capigian - IRAQ</i> 7. Experimental Study on Film Forming Effect of Water-Soluble Polymer for Polymer Sampling - <i>Takahiro Ishizaki and Kazuo Tani – JAPAN</i> 8. Post Failure Deformation Behaviour of Coal and Rocks - <i>G.M. Nagaraja Rao, S. Udayakumar, D. Raju and Praveena D. Jennifer - INDIA</i> <p>Poster Presentations:</p> <ol style="list-style-type: none"> 1. Study on the Engineering Properties of the Cement Stabilized Full Weathering Granite Soil- <i>Zhiyong Li, Cheng Dong and Zu'en Zheng, CHINA</i> 2. Analysis of Stress Wave Propagation through Viscoelastic Rock Mass- <i>L.F. Fan, J.C. Li and G.W. Ma, SINGAPORE</i> 3. Analytical Strength on a Jointed Rock Experiment- <i>N. Halakatevakis and Al Sofianos, GREECE</i> 4. Rock Mass Deformability: Empirical and Practical Approach- <i>D.V. Sarwade, K.K. Mishra, V.K. Kapoor and Nripendra Kumar, INDIA</i> 5. Post-Peak Behaviour of Sandstones and Effect of Confining Pressure on Modulus of Elasticity and Poisson's Ratio- <i>Rakesh Kumar, K.G. Sharma and A. Varadarajan, INDIA</i> 6. Effect of Contact Bonds on the Constitutive Behaviour of Cemented Rocks: Simulations using DEM- <i>Anitha Kumari S.D. and T.G. Sitharam, INDIA</i>
	<p>Technical Session-II: Slope Stability: Analysis & Design (Gulmohar Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Evaluation of Frictional Sliding along Geological Discontinuity in Rock Slope - <i>Atsushi Sainoki, Daisuke Fukuda, Junichi Kodama and Katsuhiko Kaneko - JAPAN</i> 2. Flexible Debris Flow Barriers as Hazard Mitigation System - <i>Corinna Wendeler, Christophe Balg and Gourango Singha, SWITZERLAND</i> 3. Monitoring of Ground Conditions Inside Decrepit Slopes by Compound Survey - <i>M. Nakamura, H. Kusumi, T. Yamamoto and T. Yamamoto - JAPAN</i>

4. Rockfalls Risk Reduction and Redesign of Rock Slopes using Rocfall Program - *Bahaaeldin Sadagah* - SAUDI ARABIA
5. Precise Rock Deformation Monitoring for Assessing the Stability of Slopes by using Global Positioning System - *Norikazu Shimizu* - JAPAN
6. Study of the Stability Analysis of Rock Slopes on the Alps - *M. Curtaz, A.M. Ferrero, A. Segalini and G. Umili* - ITALY
7. Tetrahedral Wedge Sliding Analysis by 3-D Numerical Manifold Method- *Lei He, Guoyang Fu and Guowei Ma* - SINGAPORE
8. Effects of Time-Step Size on the Efficiency of Discontinuous Deformation Analysis - *M.S. Khan, A. Riahi and J.H. Curran* - CANADA

Poster Presentations:

1. Design Charts for Rock Slope Stability against Plane Failure under Seismic Loading Conditions- *Sanjay Kumar Shukla and Md. Monir Hossain*, AUSTRALIA
2. Application of Support Vector Machine in Slope Engineering- *Hongbo Zhao, Zhongliang Ru, Xiaojun Zhao and Yan Meng*, CHINA
3. Rock Engineering Investigations and Remediations of Hill Rock Slope Failure adjacent to Roadways - *R.K. Panigrahi and Sudhir Mathur*, INDIA
4. Bhilar Landslide - A Critical Appraisal- *Milind V. Dhakate and P.T. Ilamkar*, INDIA
5. Dimensioning of High-Tensile Spiral Rope Nets for Rock Face Protection - *Armin Roduner, Christophe Balg and Gourango Singha* - SWITZERLAND

Technical Session-III: Underground Structures: Analysis, Design & Construction (Stein Auditorium, India Habitat Centre)

Oral Presentations:

1. Evaluation of Underground Research Laboratories for Formulation of Interdisciplinary Global Networks - *Joseph S.Y. Wang, Peter Smeallie, Xia-Ting Feng and John A. Hudson* - USA
2. Mechanical and Hydromechanical Behaviour of Rock Joints and Rock Masses with Emphasis on Nuclear Waste Repositories – *Roger Olsson and Rajinder Bhasin*, Norway
3. Numerical Simulation on Excavation Damaged Zone in Fractured Rockmass under Coupled THM Conditions - *Wancheng Zhu, Chenhui Wei, Ya'nan Zhou and Tianhong Yang* - CHINA
4. NATM-Design Steps and Contractual Matters - *Robert Galler* - AUSTRIA
5. Analysis and Design of Large Storage Caverns- *A. Mandal, C.P. Chakravarthy, A. Nanda, R. Rath and S.K. Jain* - INDIA
6. Design of Power House Cavern at Koyna Left Bank Dam Foot Project using Three Dimensional Numerical Modelling - *John P. Loui, Roshan A. Rathod and Amalendu Sinha* - INDIA
7. Interpretation and Application of Monitoring Data - Case Study of Siah Bishe Power House Cavern - *M.R. Shahverdilo* - IRAN
8. Numerical Analysis of Time Dependent Behaviour of Siah Biseh Cavern- *S. Nadimi, K. Shahriar, M. Sharifzade and P. Moarefvand* - IRAN
9. Tunnel Sealing Systems for Rock Caverns, Underground Tunnels and Road Tunnels - *Alv Hanstvedt and Hans-Egil Larsen* - NORWAY

	<p>Poster Presentations:</p> <ol style="list-style-type: none"> 1. Analysis of Heat Field in Various Parts of a Conceptual Deep Geological Repository of Nuclear Waste by Numerical Modeling- <i>R.D. Dwivedi, R.K. Goel, A. Swarup, V.V.R. Prasad, R.K. Bajpai and P.K. Narayan, INDIA</i> 2. Estimation of the Required Thrust for Tunnel Excavation by using 3D Numerical Modeling - A Case Study of the Beheshtabad Tunnel - <i>S. Mahdevari, F. Ayati and M. Hashemi, IRAN</i> 3. Hydraulic Confinement of Hydrocarbons in Unlined Rock Caverns - <i>A.Usmani, A. Nanda, G. Kannan and S.K. Jain, INDIA</i> 4. Planning, Design and Construction of Transformer Cavern for an Underground Hydroelectric Project- <i>C Purushothaman, INDIA</i> 5. 5P System of Excavation in Flowing Ground Condition- <i>M.M. Madan , INDIA</i>
1600– 1730 Hrs.	<p>Keynote Lectures (Stein Auditorium, India Habitat Centre):</p> <ul style="list-style-type: none"> • On Site Visualization as a New Paradigm for Field Measurement in Rock Engineering - Dr. Shinichi Akutagawa, Japan • Deep Underground Instrumentation And Monitoring - Prof. Herb Wang, J.R. Gage, D. Fratta, M. MacLaughlin, L.C. Murdoch and T. Tokunaga
26 October 2010 (Tuesday)	
0930 – 1100 Hrs.	<p>Keynote Lectures (Stein Auditorium, India Habitat Centre):</p> <ul style="list-style-type: none"> • Progress in the Understanding of Deep-Seated Landslides From Massive Rock Slope Failure - Prof. Giovanni Barla, Italy • Modelling Dynamic Deformation in Natural Rock Slopes and Underground Openings with the Numerical DDA Method – Prof. Yossef H. Hatzor, Israel
1130 – 1300 Hrs.	<p>Technical Session-IV: Testing and Modelling of Rocks & Rock Masses (Silver Oak Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Strength of Jointed Rocks with Granular Fill - <i>Ashutosh Trivedi and Naresh Kumar – INDIA</i> 2. Effect of Anisotropy and Confining Pressure Ratio on Rock Mass Deformation Modulus at Bakhtiary Dam Site (Iran) - <i>M. Asadzadeh, H. Tavakoli, R. Rahmannedjad and A. Mehinrad - IRAN</i> 3. Deterioration of Granite by Cyclic Uniaxial Loading - <i>Youqing Chen, Kota Watanabe, Arata Yamazaki, Hiromu Kusuda, Eishi Kusaka and Mamoru Mabuchi - JAPAN</i> 4. Fracture Toughness of Rocks under Water Vapor Pressure - <i>M. Kataoka, Y. Obara, T. Yoshinnaga and M. Kuruppu - JAPAN</i> 5. Relationships between Strength Properties obtained by Rock Shear Tests and those by Block Shear Tests - <i>Yota Togashi and Kazuo Tani - JAPAN</i> 6. Rock Physics Model for Interpreting Dynamic and Static Young's Moduli of Soft Sedimentary Rocks - <i>Toru Takahashi and Soichi Tanaka - JAPAN</i>

7. Influence of Inherent Damage Factor on Penetrability of Sandstone from Upper Kaimur Group, Vindhyan Supergroup, India
- *R.K. Dubey - INDIA*

Poster Presentations:

1. Relationship between Compressive Strength and Modulus of Rupture of Some Buildings and Decorative Stones of Iran- *K. Shahriar, M.S. Dehkordi and H.A. Lazemi, IRAN*
2. Relationship between Axial Point Load Strength and Uniaxial Compressive Strength of Hydrothermally Altered Rocks from Northeastern Hokkaido, Japan - *Masanori Kohno and Hiroyuki Maeda, JAPAN*
3. Effects of Loading History on Mechanical Properties of an Artificial Rock in Multiple-Step Loading Test- *A. Taheri, Y. Sasaki and F. Tatsuoka, JAPAN*
4. Measurement of Fracture Aperture in Granite Core using Microfocus X-Ray CT and Laser Beam Profiler - *S. Nakashima, D. Hasegawa, K. Kishida and H. Yasuhara, JAPAN*
5. Discerning Patterns of Indian Basalts - *Hasan Abdullah, INDIA*
6. An Overview of the Geological, Mechanical and Physical Features of Oligocene Limestone, Al-Ain, U.A.E. – *Hasan Arman, Osman Abdelghany, Mohamad El Tokhi, Waheed Hashem and Ayman El Saiy, UAE*

Technical Session-V: Slope Stability, Foundations, Instrumentation and Rock Dynamics (Gulmohar Hall, India Habitat Centre)

Oral Presentations:

1. Flexible Surface Slope Stabilization Systems made from High-Tensile Wire Meshes - State of the Art - *Armin Roduner, Christophe Balg and Gourango Singha - SWITZERLAND*
2. Stabilization and Preservation at World Heritage Historic Ajanta Caves: Problems and Issues - *M.N. Bagde, Yogita Bagde, A.K. Soni and A. Sinha - INDIA*
3. Stability Evaluation of Large Concrete Socket in Jinping I Arch Dam using Mutli-Grid Method - *Ying Yao, Jianhai Zhang, Zhong Zhou and Hongling Rao - CHINA*
4. Analysis on Dukouba Arch Dam's Replacement Depth of Coal Mined out Area and Reinforcement Effect - *Zhu-xiu Hu, Rong Li, Jian-hai Zhang, Zhi-xiong Zhang and Wei Bai - CHINA*
5. Elastic and Elasto-Plastic Analyses of Gravity Dam on Jointed Rock Foundation - *Manish Gupta and K.G. Sharma - INDIA*
6. Inclinomter Studies for Slope Stability Monitoring at Loktak Power Station, Manipur, India - *Gopal Dhawan, Ananda Sen and Vipul Nagar - INDIA*
7. Geotechnical Instrumentation Data Management - *John L. Gilby and Monica Socol - CANADA*
8. Influence of Geological Condition and Blasting Pattern on the Site Specific Parameters in PPV Prediction Model - *Sugeng Wahyudi, Hideki Shimada, Ganda Marihot Simangunsong, Suseno Kramadibrata, Takashi Sasaoka, Budi Sulistianto and Kikuo Matsui - JAPAN*

Poster Presentations:

1. Upper Bound Solution for Ultimate Bearing Capacity with a Non-Linear Hoek-Brown Failure Criterion - *Milad Moeen Sadat and Hasan Ghasemzadeh, IRAN*
2. Literature Review on Prediction of Surface Deformations caused by Fault Dislocation - *Naser Amirhesari and Kazuo Tani, JAPAN*
3. Concrete Faced Rock Fill Dams Example: Dim Dam (Antalya) - *Ayhan Kocbay, TURKEY*
4. Open Fractures Grouting in GIN Method of Siahbishe C.F.R.D.- *A. Azin and H. Naderi, IRAN*
5. Feasibility Study of DTSS for Measurement of Tunnel Pre-Displacement in Soft and Composite Ground- *S.K. Chung, D.W. Ryu, Y.B. Jung, C. Park, K.S. Chae and S.P. Lee, SOUTH KOREA*
6. Measurement of Geostructure Behaviour by Spiral Bolt Strain Gauge- *D.K. Je, A. Hirata, C.B. Kim and S.S. Kang, SOUTH KOREA*

Technical Session-VI: Underground Structures: Analysis, Design & Construction (Stein Auditorium, India Habitat Centre)

Oral Presentations:

1. Construction of Shallow Caverns in Blocky Ground - *Rolf Stadelmann, Helmut Wannemacher – SWITZERLAND*
2. Longitudinal Deformation Profile of a Tunnel Driven within a Burger Rock Mass - *P. Yiouta-Mitra, R. Rahmnannejad, A.I. Sofianos and - GREECE*
3. Large Time-Dependent Convergences in a Tunnel Excavated in a Carboniferous Rock Mass - *Frederic L. Pellet- FRANCE*
4. Feasibility Study for a Hydraulic Bypass Tunnel (Tuscany, Italy)- *Massimo Coli and Niccolo Moli – ITALY*
5. Tunnel Overstressing due to the Anisotropic Rock Structure- *S. Papavasiliou, P.P. Nomikos and A.I. Sofianos - GREECE*
6. Stability of Tunnels-Effect of Ground Supports and Reinforcement: 3 D Discrete Element Solutions - *Anitha Kumar S.D. and T.G. Sitharam - INDIA*
7. Analysis of Stability and Design Support System for Water Deviation Binary Tunnels - A Case Study - Bakhtiyari Dam of Iran - *F. Nezhadshahmohamad, S.M.F. Hossaini, M. Dadkhah and Hassan Vahidi - IRAN*
8. The 3D Stability Analysis of Rock Mass Surrounding Bazoft Dam Diversion Tunnel - *M. Hashemi, R. Ajalloeian and M. Salehi - IRAN*

Poster Presentations:

1. Geotechnical Risk Analysis in Water Transfer Tunnel of the Kerman-Iran -*H. Arabnejad, M. Sharifzadeh, P. Moarefvand and K. Shahriar, IRAN*
2. Analysis of Long-Term Environmental Effects on the Durable Design of Reinforced Concrete Lining of Tunnels- *Alan Showkati and Hossein Salari-rad, IRAN*
3. Case Study in Design and Construction of the Largest Tunnel Station in Korea, built 15 cm under Existing Subway Line and Superannuated Underground Shopping Complex- *Boo Seong Park, Hyun Cho, Dong In Park and Ki Hwan Lee, SOUTH KOREA*
4. Stability Evaluation and Modeling Excavation Induced Response of Jointed Rock Mass- *S.H. Wang, M.S. Zhang, M.D. Guo, Y. Xu and T.H. Yang, CHINA*

1400 – 1530 Hrs.	<p>Technical Session-VII: Testing and Modelling of Rocks & Rock Masses (Silver Oak Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Determination of In Situ Stresses using Large Flat Jack Tests - <i>Bruno Figueiredo, Luis Lamas and Jose Muralha</i> - PORTUGAL 2. Evaluation on the Overall Characteristics of In-situ Rock Stress State by Hydraulic Fracturing Test Results in Korea - <i>S.H. Bae, J.S. Kim, S.W. Jeon and C.I. Lee</i> - SOUTH KOREA 3. Polyaxial Strengths of Maha Sarakham Salt - <i>Tanapol Sriapai and Kittitep Fuenkajorn</i> - THAILAND 4. Geology and Geotechnical Conditions Encountered during the Bandra-Worli Sea Link Project - <i>C.W. Felice, D.N. Singh and H.W. Brennimen</i> - USA 5. A New Empirical Approach for Prediction of Rock Mass Strength based on a Strength Reducing Curve Zone instead of Unique Strength Reducing Curve - <i>O.S. Dinc, H. Sonmez, C. Tunusluoglu, K.E. Kasapoglu and A. Coskun</i> - TURKEY 6. The Value of Geomechanics in Tight Gas Reservoir Development - <i>Thomas Finkbeiner, Pawel Nawrocki, Rolf K. Bratli and Brian Smart</i> - U.A.E. 7. Investigation into Rock Mechanics Using Finite Element Method - <i>B. Aresh, A. Daadbin, M. Sarwar, W. Rudd and J.S. Burnell-Gray</i> - UNITED KINGDOM 8. Evaluation of Shear Strength Parameters of Highly Jointed Rock Mass for Bridge Abutment - <i>Rajbal Singh, D.V. Sarwade, K.K. Mishra and R.P. Yadav</i> - INDIA
	<p>Technical Session-VIII: Underground Mining (Gulmohar Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Impact of Climate Change on the Stability of Shallow Mines - <i>Christophe Didier and Jean-Marc Watelet</i> - FRANCE 2. Design of Cut & Fill Slope Parameters at Balaghat Mine - <i>C.D. Prasad and J. Loui P.</i> - INDIA 3. Numerical Modelling Investigations to Study Effect of Geotechnical and Explosive Properties in Limiting Rock Fracturing due to Blasting in Deep Mining Roadways - <i>Mani Ram Saharan and Hani S. Mitri</i> - INDIA 4. A Study on the Damage to a Mine Drift Caused by a Blast Welding - <i>Kong-chang Han, Hyong-doo Jang, Won-beom Kim, Hyung-sik Yang and Myoung-hwan Jang</i> - SOUTH KOREA 5. Rock Mechanics Considerations for the Success of Mechanised Coal Pillar Extraction in India - <i>Rajendra Singh, Arun Kr. Singh, P.K. Mandal and Rakesh Kumar</i> - INDIA 6. Development and Demonstration of Alternate Room and Pillar Mining Geometries for Improved Ground Control in Coal Mining - <i>Yoginder P. Chugh and Harrold Gurley</i> - USA 7. Gas Content Critical Values for Regional Prediction of Coal and Gas Outbursts - <i>Mingju Liu, Hani Mitri, Jianping Wei, Yanwei Liu and Lei Meng</i> – CHINA 8. Study of Outburst Elimination by Hydraulic Flushing - <i>Jianping Wei, Yanwei Liu, Hani Mitri and Mingju Liu</i> - CHINA 9. Study of Outburst Elimination Based on Large Diameter and Long Boreholes Along Coal Seams - <i>Yanwei Liu, Mingju Liu, Hani Mitri, Jianping Wei and Zhihui Wen</i> - CHINA

	<p>Poster Presentations:</p> <ol style="list-style-type: none"> 1. Research on the Mining-Induced Subsidence Mechanics and Treatment Scheme of the Mahe Riverbed - <i>Wu Shunchuan, Pan Danguang and Gao Yongtao, CHINA</i> 2. Estimation of Penetration Rate of Rotary Drills using a New Drillability Index in Sarcheshmeh Copper Mine - <i>Alireza Cheniany, Syed Hasan Khoshrou, Kourosch Shahriar and Jafar Khademi Hamidi, IRAN</i> 3. A Field Demonstration of an Engineered Crib as Tail-Gate Entry Support in Longwall Mining- <i>Yoginder P. Chugh and Harrold Gurley, USA</i> 4. Dynamic Slope Stability of Chador-Malu Open Pit - <i>S. Aloodari, K. Ahangari and R. Noorani, IRAN</i> <hr/> <p>Technical Session-IX: Underground Structures: Analysis, Design & Construction (Stein Auditorium, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Excavation of Long Tunnels in Himalayas with TBM - Case Studies- <i>M.M. Madan - INDIA</i> 2. Design and Construction Aspects of Tunnelling through Soft Ground Conditions using Lattice Girders at Rampur Hydro-Electric Project (412 MW) - <i>H.K. Sharma, R.S. Chauhan and Rakesh Sehgal - INDIA</i> 3. Design and Construction of under River Crossing of Head Race Tunnel-Rampur Hydro Electric Project (412 MW) - <i>H.K. Sharma, R.S. Chauhan and R.K. Sharma - INDIA</i> 4. Stability Analysis and Support Design of Manipura Diversion Tunnels in Myanmar - <i>Banyar Soe and Kittitep Fuenkajorn - THAILAND</i> 5. Effect of Seismic Load Frequency on the Behaviour of Underground Structures - <i>Abdolhadi Ghazvinian, Hamid Reza Nejati and Mir Raouf Hadei - IRAN</i> 6. Consideration on the Performance Evaluation of Underground Structures- <i>Katsumi Kamemura – JAPAN</i> 7. Steel Fibre Reinforcement for Tunnels under Severe Geological Conditions - <i>R. Suter and B. de Rivaz – FRANCE</i> 8. Steel Fibre Reinforced Concrete for Underground Structures - <i>S. Dutta Dey, Ralf Winterberg, M. Korulla and A.D. Gharpure - INDIA</i>
1600 – 1730 Hrs.	<p>Keynote Lectures (Stein Auditorium, India Habitat Centre):</p> <ul style="list-style-type: none"> • Challenges in the Design and Construction of Tunnels in Jointed Rock - Dr. C. Erichsen, Germany • Rock Dynamics Research in Singapore: Fundamentals and Practices - Prof. Guowei Ma and Prof. Yingxing Zhou, Singapore
1930 – 2230 Hrs.	<p>Cultural Programme (Stein Auditorium, India Habitat Centre) and Dinner (Hub, India Habitat Centre)</p>
27 October 2010 (Wednesday)	
0930 – 1100 Hrs.	<p>Keynote Lectures (Stein Auditorium, India Habitat Centre):</p>

	<ul style="list-style-type: none"> • Application of Intelligent Rock Mechanics Methodology to Rock Engineering - Prof. Xia-Ting Feng and Quan Jiang, China • The Large Open Pit Project - Dr. John Read, Australia
1130 – 1300 Hrs.	<p>Technical Session-X: Testing and Modelling of Rocks & Rock Masses (Silver Oak Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Theoretical Model of Coal Containing Gases Creep Damage - <i>Baisheng Nie, Yueping Qin, He Xueqiu, Xiangchun Li, Shuiwen Liu and Wenxue Chen - CHINA</i> 2. Quantification of Shear-Strains in a 2D Block Cave Scaled Physical Model - <i>M.H.M. Hashim and G.B. Sharrock - AUSTRALIA</i> 3. Rock Mass Modeling Procedures for Rock Engineering - <i>Sergio A.B. da Fontoura and Vivian R. Marchesi - BRAZIL</i> 4. Rheology of Meso-Damage Factor in Constitutive Equation for Coal-Rock based on Computerised Tomography Image - <i>Wenxue Chen, Xueqiu He, Baisheng Nie and Ruming Zhang - CHINA</i> 5. Using of Multiscale Modelling and X-Ray Computer Tomography in Geotechnics - First Experience - <i>Radim Blaheta, Roman Kohut, Alexej Kolcun, Kamil Soucek and Lubomir Stas - CZECH REPUBLIC</i> 6. 3D Modelling of Geological Structure for Underground Caverns: A New and Simple Methodology - <i>P. Vaskou and, J. Morruzzi - FRANCE</i> 7. Fracture Toughness Measurement of Marble Specimens from Ma On Shan, Hong Kong by Chevron-notched Bend Test: Some Discussions based on Nonlinear Fracture Mechanics Approach - <i>Y.D. Zhou, L.G. Tham, X.W. Tang and T. Hou - HONG KONG</i> 8. Laboratory Experiments for Estimation of Static and Dynamic Elastic Modulus of Jointed Rock Mass - <i>M. Ramulu and T.G. Sitharam - INDIA</i> 9. Application of Anisotropy of Magnetic Susceptibility as a Gauge of Rock Strength Anisotropy - <i>C.S. Vishnu, Manish A. Mamtani and Arindam Basu - INDIA</i>
	<p>Technical Session-XI: Underground Mining (Gulmohar Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Stochastic Analysis of Haulage Drift Stability using Numerical Modelling- <i>Anand Musunuri, Hani S. Mitri and Denis Thibodeau - CANADA</i> 2. Practices to Control Rock Burst in Deep Coal Mines of Upper Silesian Coal Basin and Their Applicability for Disergarh Seam of Raniganj Coalfield - <i>Petr Konicek, Kamil Soucek, Lubomir Stas, Rajendra Singh and Amalendu Sinha - INDIA</i> 3. Performance Analysis of an Active Load Setting Mining Prop - <i>R. Kumar, M.R. Saharan, V.K. Singh and B.K. Srivastava - INDIA</i> 4. Study of Stability Status and Strengthening of Weak and Laminated Parting for Superimposed Development of Contiguous Seams/Sections - <i>Prabhat Kumar Mandal, Rajendra Singh, Arun Kumar Singh and Rakesh Kumar - INDIA</i> 5. A Displacement Based Approach to Coal Mine Intersection Stability Analysis- <i>Yoginder P. Chugh and Sheng Li - USA</i> 6. Risk Assessment Based Approach to Remediation of Abandoned Underground Coal Mines for a Motorway Upgrade - A Case

	<p>Study - <i>D.N.P. Rayudu, B.J. Land and E.T. Brown - AUSTRALIA</i></p> <p>7. Analysis of Peak Particle Velocity at Underground Mine Roof Originated from an Adjacent Surface Mine- <i>A.K. Jha and D. Deb - INDIA</i></p> <p>8. Numerical Simulation of a Major Depillaring Operation & Predicting Its Ground Response using DFM Model at Mochia Mine - <i>P.K. Rajmeny and A. Joshi - INDIA</i></p> <p>9. Airblast Reduction in the Ube-Isa Limestone Mine - <i>Shinsaku Harada - JAPAN</i></p>
	<p>Technical Session-XII: Underground Structures: Analysis, Design & Construction (Stein Auditorium, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Behaviour of Underground Openings under Dynamic Loading - <i>R.K. Goel and Bhawani Singh - INDIA</i> 2. The Optimum Distance of Roof Umbrella by using the Distinct Element Method - <i>Masato Shinji, Tsubasa Sato, Yusuke Doi and Tatsuhiko Ootani - JAPAN</i> 3. Design of a Hydroelectric Project Affected by Stress Perturbation - A Case Study -<i>S. Sengupta, D.S. Subrahmanyam, D. Joseph and R.K. Sinha – INDIA</i> 4. Rock Deformation Characteristics of High Sidewall of the Three Gorges Underground Power House - <i>Li Yongquan and He Mingwu - CHINA</i> 5. Excavation Technology and Stability Study of Surrounding Rock Mass in Underground Powerhouse of Xiangjiaba Hydropower Station - <i>Yi Wang and Yiyong Liu - CHINA</i> 6. Ventilation, Air-Conditioning and Fire Safety in Tunnels - <i>M.S. Ranadive and P.U. Patil - INDIA</i> 7. Design, Construction and Monitoring of Excavations through Weak Rock Masses and Under Water Pressure in the Athabasca Basin - <i>S. Theophile Yameogo- CANADA</i> 8. Analysis of Longitudinal Deformation Profiles using FLAC3D- <i>A. Rodriguez-Dono, L.R. Alejano and, M. Veiga - SPAIN</i>
1400 – 1530 Hrs.	<p>Technical Session-XIII: Testing and Modelling of Rocks & Rock Masses (Silver Oak Hall, India Habitat Centre)</p> <p>Oral Presentations:</p> <ol style="list-style-type: none"> 1. Application of Geophysical Seismic Refraction Technique for Delineation of Palaeochannel in Hydropower Project - <i>Ananda Sen, M.P. Singh and Vipul Nagar - INDIA</i> 2. AE Monitoring and X-Ray CT Observation for Failure of Berea Sandstone with Pore Pressure Increase - <i>T. Niwa, T. Ishida, D. Fukahori and M. Ishida, R. Sato, S. Murata, S. Onozuka, K. Oseto and K. Yamamoto - JAPAN</i> 3. Influence of Stress Larger than Preload but Acted for Shorter Duration in Tangent Modulus Method-A New Method to Measure In-situ Rock Stress - <i>Y. Fujii, K. Kondo - JAPAN</i> 4. Recognition of Potential Areas for the Extraction of Armourstone in Maritime Works (NW Portugal): Coupling GIS Mapping, Geomaterial and Geotechnics Aspects - <i>A. Pires, H.I. Chamine and F. Rocha - PORTUGAL</i> 5. Automatic Lineaments Extraction from Multi-Resolution Satellite Imagery - <i>Mohammed H.T. Qari - SAUDI ARABIA</i> 6. Some Peculiarities and Results of Explorations of Deformation Processes of the Rocks of Adzhalyksey Firth Valley Slopes - <i>E.</i>

- Freiberg, E. Bellendir, V. Golitsyn, N. Ablyamitov, E. Cherkez, E. Tchujko and G. Bich – RUSSIA*
7. Sensitivity Analysis of the Effective Parameters during Laser Perforation in Sandstone: A Neural Network Approach - *Reza Keshavarzi, Reza Jahanbakshi, Payam Pazhouhesh Moghadam and Mahdi Aliyari Shoorehdeli - IRAN*
 8. Prediction of Stress-Strain Response of Jointed Rocks using Artificial Neural Networks - *Gali Madhavi Latha and Arunakumari Garaga - INDIA*

Technical Session-XIV: Opencast Mining (Gulmohar Hall, India Habitat Centre)

Oral Presentations:

1. Factor of Safety Determined by Back Analysis of Measured Displacements - A Case Study on an Open Pit Coal Mine - *S. Sakurai, A. Farazmand and K. Adachi - JAPAN*
2. Geotechnical Study of Coal Rib and Associated Dump Failure at a Coal Mine - *V.K. Singh - INDIA*
3. Mining Lignite over a Confined Aquifer: A Case Study- *D.M. Surana and S.K. Parihar - INDIA*
4. A Developed Technique to Predict Support System for Plane Failure: Case Study: Lead-Zinc Anguran Mine - *Mohammad Darbor, Hossein Jalalifar and Parviz Moarefvand – IRAN*
5. Numerical Modelling of Footwall Slopes in Surface Coal Mining with NMM - *Xinmei An, Youjun Ning and Guowei Ma – SINGAPORE*
6. A Study of Slope Failures in the Opencast Coal Mines of Wardha Valley Coalfield in Central India - *J.C. Jhanwar and N.R. Thote – INDIA*
7. Research on Visual Technology in Mining Graphics Information - *Xi-Kun Chang, Wei-Jia Guo, Dong-Mei Huang and Jun-Tao Chen - CHINA*

Poster Presentations:

1. Slope Designs of Two Limestone Opencast Mines working under the Constraints of Surface Structures- *J.C. Jhanwar, INDIA*
2. Potential Roof-Fall Area Estimation vis-à-vis Reinforcement Strategy Application in Coal Pillar Mining - *Satyendra K. Singh, A. Kushwaha and K. Manwendra, INDIA*
3. Study on Mining Susidence with Semi-Analytical Method - *Wei-Jia Guo, Xi-Kun Chang, Li-Ming Yin, Jun-Tao Chen, Jun-Wei Shi and Yang-Yang Li, CHINA*

Technical Session-XV: Underground Structures: Analysis, Design & Construction (Stein Auditorium, India Habitat Centre)

Oral Presentations:

1. Database Supported Approaches to Geotechnical Design and Construction Time Estimate - *Florian Krenn - INDIA*
2. Analysis of Fully Grouted Rock Bolt based on Enriched Finite Element Method Interaction between Decoupled Bolts and Rock Mass- *Debasis Deb and Kamal C. Das - INDIA*

	<ol style="list-style-type: none"> 3. Critical Wellbore Pressures Using Different Rock Failure Criteria - <i>Pawel A. Nawrocki</i> - U.A.E. 4. Extension of the Dry Docks at Haakonsvern - <i>Jan K.G. Rohde</i> – NORWAY 5. Three Dimensional Modeling and Design of Tohid Highway Urban Tunnel based on the Analysis of Controlled Underground Deformation and Settlement - <i>A. Talebinezhad, M. Moosevi, M. Kiani, B. Unver and H. Chakeri</i> - IRAN 6. Numerical Evaluation of the Influence of Bolted and Non-Bolted Joints on Segmental Tunnel Lining Behaviour in Line 4 Tehran Subways - <i>Abbas Majdi, Hamed Ajamzadeh and Kayumars Emad</i> - IRAN 7. An Artificial Neural Network Model to Predict the Performance of Hard Rock TBM - <i>Mansour Hedayatzadeh, Kourosh Shahriar and Jafar Khademi Hamidi</i> – IRAN 8. Predicting Penetration Rate of a Tunnel Boring Machine using Artificial Neural Network - <i>M. Eftekhari, A. Baghbanan and M. Bayati</i> - IRAN <p>Poster Presentations:</p> <ol style="list-style-type: none"> 1. Optimal Tunnelling Method Selection using Fuzzy Multiple Attribute Decision Making Approach - <i>Hadi Bejari, Kourosh Shahriar, Mohsen Akbarpour Shirazi and Jafar Khademi Hamidi, IRAN</i>
1600 – 1730 Hrs.	Concluding Session (Stein Auditorium, India Habitat Centre)

1100 – 1130 Hrs. Tea
1300 – 1400 Hrs. Lunch
1530 – 1600 Hrs. Tea