KEYNOTES

Rock engineering as a creator of value
T.R. Stacey, University of the Witwatersrand, South Africa

Mythperceptions in rock engineering
N. van der Merwe, Stable Strata, South Africa

Lessons from large failures: geology, stress and support
N. Barton, Nick Barton & Associates, Norway

Stress measurements for underground powerhouses – three recent cases
L. Lamas, ISRM

The Grosvenor strata control journey: learning and adapting from new and challenging experiences
P.S. Buddery, Anglo American Met Coal, Australia

ABSTRACTS

Stability analysis on the layered surrounding rock mass of large underground powerhouse of Wudongde Hydropower Station
China Three Gorges Corporation, China

Rock anchoring beam excavation and shaping technology for the underground powerhouse of Hydropower Stations
China Three Gorges Corporation, China

Deformation and stability analysis for the large-scale tailwater surge chamber of the Baihetan Hydropower Station
China Three Gorges Corporation, China, Hydro China Itasca Research and Development Center, Powerchina Huadong Engineering Corporation Limited, China

Deformation and failure analysis of large underground hard-rock chambers under high geo-stress: A case study of the underground powerhouse on the right bank of Baihetan Hydropower Station
China Three Gorges Corporation, China

Research of deformation and failure characteristics, mechanism, and engineering countermeasures for surrounding rocks in underground chambers of Baihetan Hydropower Station
China Three Gorges Corporation, China, Hydro China Itasca Research and Development Center, Powerchina Huadong Engineering Corporation Limited, China

The dam foundation grouting engineering management based on 3D geological model and monitoring system
China Three Gorges Corporation, China

Research of countermeasures for excavation of medium- and high-stress basalts at Baihetan Hydropower Station
China Three Gorges Corporation, China

Research of excavation and shaping of medium-high-stress basalt underground chambers at Baihetan Hydropower Station
China Three Gorges Corporation, China

Research of excavation and support measures for columnar jointing sections in the diversion tunnel of Baihetan Hydropower Station
China Three Gorges Corporation, China

Research on the excavation and support technology of underground chambers in the steep, small-inclined-angle rock stratum at Wudongde Hydropower Station
China Three Gorges Corporation, China

Research of countermeasures for phyllite excavation in the water diversion tunnel of Nepal Upper Madi Hydropower Station
China Three Gorges Corporation, China

Research of key technology for excavation and shaping of large-scale granite chambers in the Three Gorges Underground Powerhouse
China Three Gorges Corporation, China

A case study on a risk based approach to stope design
SRK, South Africa

Conceptual design for an arched sub-level pillar at Lace Diamond Mine in Kroonstad South Africa
Brentley, Lucas and Associates, South Africa

Comparison between thin spray on liners and shotcrete as surface support mechanisms in tunnels
University of Cape Town, South Africa

Time dependent failure of open stope at Target Mine
Brentley, Lucas and Associates, South Africa

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University of Pretoria, South Africa

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Khalda Petroleum Company, Egypt

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Institute of Rock Mechanics and Tunnelling, Graz University of Technology, Austria

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Hexagon Mining, South Africa, IDS GeoRadar, Italy

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South Africa

An investigation in to the uncharacteristic in-stope support behaviour on the UG2 Reef horizon at Lonmin’s K3 shaft
Lonmin, South Africa

Slope design aspects considerations for shallow open pit mines: A case study at Mamatwan Mine, Northern Cape Province
University of Johannesburg, South Africa

A novel approach to establish the Merensky reef crush pillar stability and the impact of sidings and pillar holing width
Bafokeng Rasimone Platinum Mine, South Africa

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Advisian, South Africa
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Glencore, South Africa

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South Africa

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Bafokeng Rasimone Platinum Mine, South Africa

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Lesotho Letseng Diamonds, University of KwaZulu Natal, South Africa

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Groundwork Consulting, South Africa

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GeoSindile (Pty) Ltd, South Africa

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GeoSindile (Pty) Ltd, South Africa

The mineralogical and geotechnical properties of the sandstone 'parting' between the Alfred seam and the Gus seam in the Magdalena Colliery, Dundee
South Africa University of KwaZulu-Natal, Buffalo Coal, South Africa

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University of KwaZulu-Natal, South Africa

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Chile Chile University / Codelco El Teniente, University of Applied sciences Zurich, Geobrugg AG, Santa Maria University, Geobrugg Andina Groep T University / Geobrugg Southern Africa (Pty) Ltd, Chile, South Africa

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The University of the Witwatersrand, South Africa

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Oweis Engineering Inc, The Falcon Group, USA

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SibanyeGold, The University of the Witwatersrand, South Africa

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University of Pretoria, South Africa

Towards a formal Rock Engineering Qualification in the South African Mining setup
University of Pretoria, South Africa

Development of a site specific floor deformation index to assess floor heave risks
Anglo American Met Coal, Anglo American Grosvenor Mine, Australia

Characterization and numerical modelling of standard and cabled strapped pillars in a hematite mine
University of Vigo, Spain

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The University of the Witwatersrand, South Africa

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University of Vigo, Itasca Consultores SL, Spain

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Yangtze River Scientific Research Institute, China

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Nanyang Technological University, Singapore

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SRK, South Africa

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Hands on Mining cc, Groundwork Consulting, South Africa

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Middindi Consulting (Pty) Ltd, University of Pretoria, South Africa

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CSIRO Energy, Australia

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Chinese Academy of Sciences, China

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Lonmin Platinum, University of Pretoria, South Africa

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Terra Explora Consulting, South Africa

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Independent Consultant, Lonmin Platinum, Canada, South Africa

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Lonmin Plc, South Africa

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Middle East Technical University, Turkey

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China Geosciences University, Letseng Diamonds, Geological Survey of Namibia, China, Namibia

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Stable beam span re-design and support optimization for a shallow hard rock bord and pillar mine: The case of Unki mine, Zimbabwe
Unki mines (Pvt) Ltd, Zimbabwe

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Nanyang Technological University, Tsinghua University, China

The impacts of plastic deformation on productivity in low-permeability reservoirs during hydraulic fracturing
Petro-Geotech Inc., Canada

Two phase flow coupled to geomechanics by dual porosity model: simulating fractured reservoirs by finite element method
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Petro-Geotech Inc., Canada

Relating source mechanisms to damage phenomena in platinum mines of the western Bushveld complex
Yuba, South Africa

Numerical simulation of a segmental lining and rock mass interaction
Graz University of Technology, Austria

Numerical detection of voids within a pea gravel backfilled annular gap of a TBM using GPR
Graz University of Technology, Austria

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Amirkabir University of Technology, Iran
Continuum modelling of the behaviour of high rock slopes
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Chirano Gold Mines Ltd, Ghana

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University of Calabria, Italy

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Northeastern University, Chinese Academy of Sciences, China

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SRK, South Africa

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SRK, South Africa

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Curtin University-Western Australian School of Mines, Australia

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SRK Consulting (Pty) Ltd, South Africa

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Tractebel France, Gennevilliers, Independent Consultant, France, Belgium

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Geostock Entrepose, France

Discrete element modeling of rock cutting experiments under confining pressure
University of Mons, Belgium

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AEL, South Africa

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Graz University of Technology, Austria

Numerical modeling of the shallow crystal stress field in Chinese mainland with the constraint of in situ measured stress
China Earthquake Administration, China

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SRK Consulting (Pty) Ltd, South Africa

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Karadeniz Technical University, Turkey

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Chinese Academy of Sciences, China

The evaluation of rock bolt as rock support in underground gold mine Pongkor, west Java, Indonesia
Trisakti University, Indonesia

Assessment of closure by timber pack assessment method and its comparison to MAP3D convergence
University of the Witwatersrand, South Africa

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University of the Witwatersrand, South Africa

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University of the Witwatersrand, SRK Consulting (Pty) Ltd, South Africa

Geotechnical data for Ivanplats
Platreef project Ivanplats (Pty) Ltd, SRK Consulting (Pty) Ltd, South Africa

Geological- and hydrogeological settings for rock engineering an example for grouting design at Åspö Hard Rock Laboratory, Sweden
Chalmers University of Technology, Norconsult AB, Sweden

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Russian Academy of Science, Russia

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Norwegian University of Science and Technology (NTNU), Norway

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Aristotle University of Thessalonik, SINTEF, Petroleum Research, Greece, Norway

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SRK Consulting (South Africa) (Pty) Ltd, South Africa

Design of weathered slopes to improve stability and economics
Kansanshi Mine, Zambia

Rock failure modes under uniaxial compression and indirect tension
Indian Institute of Technology Kharagpur, India

Experimental studies of variably saturated flow from a horizontal discontinuity to the vertical with and without an intersection
University of Pretoria, 2GaGE Consulting, South Africa
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Characterizing microtremor signals of a slope with deep-seated gravitational deformation
National Taipei University of Technology, Taiwan

Influence of scale on fluid flow through fractured rock masses
BG Tech Soil and Rock Engineering, Votorantim Metals, Brazil

Benchmarking of debris flow experimental tests using combined finite-discrete element method, FEMDEM
University of Turin, Imperial College of London, Italy, London

Towards a standardized methodology for collecting geotechnical data for mining projects
First Quantum Minerals Limited, Zambia

Influence of heterogeneity at grain-scale on rockburst proneness Investigations on artificial samples
University of Technology, Austria

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University of Technology, Austria

Development of a rocks mass quality model for an open pit mine
Norwegian University of Science and Technology (NTNU), Norway

Contributions to geomechanical stope optimization at Goldcorp
Eleonore Mine Goldcorp, Laval University, Canada

Numerical simulation of hydraulic fracturing process on composite rock mass
Tongji University, China University of Mining & Technology, China

Failure and debris mechanism of karst caves during drill and blast tunnelling
Tongji University, China University of Mining & Technology, China

Microseismic monitoring and stability analysis of deep underground powerhouse at the Lianghekou hydropower station, Southwest China
Powerchina Chengdu Engineering Corporation Limited, Sichuan University, China

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National Taipei University of Technology, China

Numerical modelling of longwall goaf dynamics and properties for gas drainage design
CSIRO, Australia

Stability analysis and failure evolution of large-scale underground caverns in bedded rock masses from microseismic monitoring
Sichuan University, Powerchina, Chengdu Engineering Corporation Limited, China

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University of Leeds, SRK Pty Ltd, Australian Centre for Geomechanics, United Kingdom, South Africa, Australia

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Geoid Geotechnical Engineers, South Africa

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SRK Consulting, South Africa

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University of Pretoria, Middindi Consulting (Pty) Ltd, South Africa

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Graz University of Technology.

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Bulent Ecevit University, Turkey

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Ecole Nationale d’Ingénieurs de Tunis, Université de Tunis El Manar, Tunisia

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Queen’s University, Canada

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Queen’s University, Canada

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OceanaGold Corporation, Philippines

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Observational studies in South African mines to mitigate seismic risks
CSIR, The University of the Witwatersrand, Council for Geoscience, Ritsumeikan University, SATREPS, Japan, South Africa, Switzerland, Australia, Italy, USA

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Optron Pty, Italy

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Konkuk University, Korea

An experimental study of wave propagation through fluid-filled rock joints
The Hong Kong Polytechnic University, Hong Kong

Technology transfer on minimising seismic risk in the platinum mines
SIM Mining Consultants (Pty) Ltd, Middindi Consulting (Pty) Ltd, Simulated Training Solutions (Pty) Ltd, South Africa

The determination of crustal stress direction based on the borehole geometric shape using panoramic stereopair imaging technology
Chinese Academy of Sciences, China