# Keynotes

An overview of coal burst phenomena
   *W Gale*

Bingham Canyon Mine – from adversity to excellence
   *M Robotham*

A personal review of South African rockburst research, experience and lessons learnt
   *T R Stacey*

Standardisation on rock characterisation, testing and monitoring with emphasis on ISRM suggested methods, practical issues and difficulties, and future trends
   *R Ulusay*

## Best practice case studies

The evolution of seismicity and ground control measures at Ernest Henry Mine
   *H Esterhuizen*

Stabilising and filling the Beaconsfield Hart Shaft
   *D Johnson, A Turner and P Hills*

Modified ground support with alternative fill material for ground control at Munsar underground manganese mine of MOIL Limited, India
   *G Manekar, D Shome and M Chaudhari*

Evolution of rock fill consolidation at Pajingo Gold Mine
   *K McTyer and J Carswell*

Managing floor heave in an underground longwall coal mine
   *P Sheffield and P Corbett*

Research on supporting technology for production level roadways of block caving in Pulang Copper Mine
   *W Sun, K Hou, X Zhang, X Feng, H Liu, Y Zhe and B Zhao*

Understanding and modelling squeezing ground conditions at the Ballarat Gold Mine
   *R Talebi, B Roache and A Vakili*

Mt Wright – geotechnical learnings from a sub level shrink
   *P Wilson*

## Dynamic failures and multiseam mining

The quality of backfilling of abandoned lignite mines on ground settlement under static and dynamic conditions
   *Ö Aydan, K Sugiura and A Sakamoto*

The ground motions induced by blasting in open pit lignite mines and its environmental effects
   *Ö Aydan and R Ulusay*

Investigating the tunnel closure using convergence confinement method and 2D plane strain finite difference analysis
   *E Kabwe, M Karakus, E Chanda and S Akdag*
The relationship between the magnitude of impact velocity per impulse and cumulative absorbed energy capacity of a rock bolt
G Knox, A Berghorst and B Crompton

Proneness of competent over-stressed intact rock to violent fracturing
M F Lee, A Penney and B L Sainsbury

Modelling multi-seam interactions for longwall mining
A Lines

A review of floor heave mechanisms in underground coal mine roadways
S Mo, H Ramandi, J Oh, H Masoumi, W Timms, I Canbulat, B Hebblewhite and S Saydam

Forecasting mine seismicity – towards a more established methodology
A Vakili, F Harvey and H Greaves

Intensity quantification of coal and rock burst risk – a review
C Wang, C Zhang, I Canbulat, D Zhang and G Fan

Geotechnical risk management and numerical modelling
A geotechnical risk assessment tool for underground mine drives
W Hartman and H Esterhuizen

Modelling of height of connective fractures during longwall mining
M Khanal, B Poulsen, D Adhikary and H Guo

Experimental investigation on borehole beakout and its implication on stress magnitudes
H Lin, J Oh, I Canbulat, H Masoumi and Y Zhao

Numerical study of annulus thickness on overcoring stress measurements
M Zoorabadi

Ground support
Challenges in determining the capacity of mesh
J Hadjigeorgiou and T R Stacey

A comparison of the performance of fully versus partially encapsulated cable bolts based on laboratory-scale testing
B Loh, P Hagan, D Li and S Wang

Design and testing of high capacity surface support
T Roberts, S Talu and Y Wang

Single pass drill, install and inject self-drilling resin bolt application in poor ground
G Watt, T Roberts and D Faulkner

Mine design
Instability analysis in three-way and four-way coal mine intersections
B Abbasi and Y P Chugh

The practicalities of effective stress measurement in rock
I Gray

Wide area mapping of ground instabilities from space: InSAR for geotechnical risk assessment and hazard monitoring
J Morgan
Elevating geotechnical considerations in the Australian underground coal industry and mine planning process

T Stambolie

383

New challenges and innovations in ground control

New tools for ground control in freeze shaft sinking

S Bock, J Franz and N Hentrich

393

Analysis of premature failure of rock bolts and cable bolts failed in underground coal mines

H Chen, H Ramandi, P Craig, A Crosky and S Saydam

407

How efficient is DigiMine technology in recording earth movements? A look at the Botswanan earthquake

J Kwiri, T Zvarivadza, F Cawood and R Mitra

414

Geotechnical strata characterisation using geophysics and its application for coal mine design

T Medhurst

420

Raise bore stability and risk assessment empirical database update

A Penney, R M Stephenson and M J Pascoe

434

Monitoring as an input to support and sequence design

K Williams, B Keogh, C Hall and S Wong

446

Experimental studies on interactive failure characteristics of jointed rock

S Zhang, B Shen and Y Li

453

Slope stability

Mine rockfall and rock wall failures – proven digital laser-based approach for monitoring slopes at the Kanmantoo Copper Mine

B Hutchison, J Richards, J Richards and J Herrmann

463

New risk assessment method for coal mine excavated slopes

A Mcquillan, I Canbulat, D Payne and J Oh

473

Evaluation of a UAV-LiDAR system for mapping geological structures in an open pit highwall

S Raval, B Banerjee, X Shen, H Masoumi and D Tannant

496

Vibration control blasting for low stability final walls

G Wyartt

504