accepted abstracts*

KEYNOTE SPEAKERS

Cave mining — 16 years after  
G. Chitombo, Sustainable Minerals Institute, The University of Queensland, Australia

Some comments regarding development drifting practices with special emphasis on caving applications  
W. Hustrulid, Hustrulid Mining Services; and Spokane Research Laboratory, National Institute for Occupational Safety and Health, USA

DRAW CONTROL/MATERIAL FLOW

Modelling fines movement at the Ridgeway sublevel caving operation  
I. Brunton, Newcrest Mining Ltd, Australia; M. Pierce, Itasca Consulting Group, USA

Full-scale sublevel caving optimisation marker trials at Newcrest’s Telfer Mine  
N.A. Clark, M. Karlsson, Newcrest Mining Ltd, Australia

Numerical modelling material flow model in sublevel caving  
W. Gibson, J. Albrecht, A. Vakili, M. Sandy, AMC Consultants Pty Ltd, Australia; D. VanDoorselaere, Chirano Gold Mines, Ghana

Quantifying the effect of concurrent and non concurrent draw on extraction zone in block caving mines using a large-scale 3D physical model  
A. Halm, Barrick Australia Pacific, and Western Australian School of Mines, Curtin University, Australia (formerly University of Queensland, Australia); R. Trueman, Strata Engineering, Australia (formerly University of Queensland); R. Castro, University of Chile, Chile (formerly University of Queensland)

Large-scale simulations of gravity flow in block caving  
W.R. Hancock, D.K. Weatherley, G.P. Chitombo, The University of Queensland, Australia

Shear-strain assessments in block caving mines  
M.H.M. Hashim, G.B. Sharrock, The University of New South Wales, Australia

Understanding the flow of caved ore and its influence on ore recoveries and dilution in a block cave  
T.G. Heslop, Mine Geotechnics (WA) Pty Ltd, Australia

Considerations for drawpoint closure at the deep ore zone block cave mine  
C. Kurniawan, Hifzun, W. Yudanto, PT. Freeport Indonesia, Indonesia

Installing of smart markers to monitor Lift 2 North extension ore flow behaviour  
M. Pierce, Itasca Consulting Group, USA; D.K. Weatherley, The University of Queensland, Australia; T. Kojovic, SimSAGe Pty Ltd, Australia

A hybrid methodology for secondary fragmentation prediction in cave mines  
S. Talu, Rio Tinto, Australia; A. Van As, Rio Tinto, Australia; J. Hilton, D. Whiteman, Elexon Electronics, Australia; R. Henry, Rio Tinto, Australia

Modelling secondary fragmentation in cave mines using the discrete element method  
D.K. Weatherley, The University of Queensland, Australia; S. Abe, RWTH Aachen Geologie-Endogene Dynamik, Germany

The smart marker system — a new tool for flow investigation in mass mines  
D. Whiteman, Elexon Electronics, Australia

GEOMECHANICS OF CAVING MINES

Strategic considerations in block caving  
R.J. Butcher, G. Smith, Barrick Gold of Australia Ltd, Australia

Rock mass and ground support response through different geotechnical domains on the undercut level at Newcrest’s Ridgeway Deeps block cave mine  
G. Capes, T. Thornhill, Newcrest Mining Ltd, Australia

Rock mass geotechnical and structural characterisation at Cadia East underground project, New South Wales, Australia  
A. Catalan, Newcrest Mining Ltd, Australia; C. Suarez, Suarez and Associates, Chile

The role of geotechnical engineering during the prefeasibility studies and early works of Cadia East project, the largest and deepest panel caving in Australia  
A. Catalan, F. Sinaga, I.A. Qudraturrahman, Newcrest Mining Ltd, Australia

Interaction between a propagating cave and an active pit at Telfer Mine — Part II: monitoring the interaction  
R. Dixon, U. Singh, C. McArthur, Newcrest Mining Ltd, Australia

Design and implementation of a practical damage assessment in Argyle Diamond’s block cave project  
F. Fernandez, P. Evans, R. Gelson, Argyle Diamonds Pty Ltd, Australia

Shotcrete thickness measuring using modern technology  
A. Loomes, Underground Survey Services Pty Ltd, Australia; A. Loncaric, Stratacrete Pty Ltd, Australia

Rock mass response and long-term monitoring plan for the extraction level at Newcrest’s Ridgeway Deeps block cave mine  
R. Lowther, The University of New South Wales; and Newcrest Mining Ltd, Australia; G. Capes, Newcrest Mining Ltd, Australia; G.B. Sharrock, The University of New South Wales; and Newcrest Mining Ltd, Australia

Block 4 geotechnics, past present and future — the geotechnical history of a mechanised block cave  
C.A. Preece, De Beers Finsch Mine, South Africa

Interaction between a propagating cave and an active pit at Telfer Mine — Part I: interaction management  
U. Singh, R. Dixon, C. McArthur, Newcrest Mining Ltd, Australia

Lift 2 North extension cave performance  
S. Talu, W. Seloka, Rio Tinto, Australia; A. Van As, Rio Tinto, Australia; R. Gillinder, Helimetrex Pty Ltd, Australia

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ACCEPTED ABSTRACTS

NUMERICAL MODELLING

Application of advanced numerical modelling techniques for assessment of cavability, subsidence and airblast hazard in a sublevel caving mine J. Albrecht, W. Gibson, A. Vakili, M. Sandy, AMC Consultants Pty Ltd, Australia; K. Ross, Redback Mining Inc., Canada

An analytical process for estimating primary fragmentation for complete cave columns using discontinuum Finite Element models S. Arndt, D. Beck, B. Fillery, Beck Arndt Engineering Pty Ltd, Australia

Mechanisms of extraction level and undercut collapse in deep caves D. Beck, M. Pfitzner, Beck Arndt Engineering Pty Ltd, Australia

Multi-scale simulation of ground support designs for extreme tunnel closure D. Beck, Beck Arndt Engineering Pty Ltd, Australia; E. Villaescusa, C. Windsor, Western Australian School of Mines, Curtin University, Australia; S. Arndt, Beck Arndt Engineering Pty Ltd, Australia

Double difference passive tomography to estimate rock mass changes induced by hydraulic fracturing and cave mining D. Beck, Beck Arndt Engineering Pty Ltd, Australia; E. Westman, Mining and Minerals Engineering, Virginia Tech, USA; M. Morgan, D. Finn, Newcrest Mining Ltd, Australia

A finite element approach to caving in stratified, jointed rock masses W.G. Pariseau, Department of Mining Engineering, University of Utah, USA

A discrete fracture network based approach to defining in situ, primary and secondary fragmentation distributions for the Cadia East panel cave S. Rogers, D. Elmo, G. Webb, Golder Associates Ltd, Canada; A. Catalan, Newcrest Mining Ltd, Australia

Advances in numerical simulation of caving B. Sainsbury, Itasca Australia Pty Ltd; and The University of New South Wales, Australia

3D numerical modelling of surface subsidence caused by open pit block cave interactions J. Severin, K.S. Woo, E. Eberhardt, University of British Columbia, Canada

Estimating cave loads in block and sublevel caving G.B. Sharrock, M.H.M. Hashim, The University of New South Wales, Australia

Use of InSAR to constrain 3D numerical models of block caving induced surface subsidence K.S. Woo, E. Eberhardt, University of British Columbia, Canada; B. Rabus, MDA Systems Ltd, Canada; D. Stead, Simon Fraser University, Canada; A. Van As, Rio Tinto, Australia

PLANNING AND DESIGN OF CAVING MINES

Considerations in planning and scheduling a massive underground mining operation at depth P. Bartlett, South Africa

Developing a block cave under a sublevel cave — transition challenges and learnings at Ridgeway Deeps S. Duffield, G. Dunstan, Newcrest Mining Ltd, Australia

New approach for rapid preparation on block caving mines V. Encina, D. Méndez, C. Caballero, H. Osorio, JRI Ingeniería S.A., Chile

The Goldex Mine mining method P. Frenette, Agnico-Eagle Mines Ltd, Canada

The Shaft Boring System for mechanical excavation of deep shafts C. Frenzel, W. Burger, Herrenknecht AG, Germany; F. Delabbio, Rio Tinto, Australia

Geomechanical assessment of macroblocks options using 3D numerical modelling at Chuquicamata underground project E. Hormazabal, SRK Consulting, Chile; F. Villegas, Codelco, Chile; F. Rovira, SRK Consulting, Chile; C. Carranza-Torres, University of Minnesota Duluth, USA

Alternative mining method at Kvannevann Mine S. Nævermo Sand, Rana Gruber AS, Norway; and Skaland Graphite AS, Norway

Impact of poor fragmentation on cave management S. Ngidi, D. Pretorius, Beck Arndt Engineering Pty Ltd, Australia

Lift and production limits for hoists and belt conveyors in underground mass mining operations J. Severin, K.S. Woo, E. Eberhardt, University of Minnesota Duluth, USA

Block cave optimisation — a value driven approach C. Stewart, A. Allman, B. Hall, AMC Consultants Pty Ltd, Australia

Northparkes E48 block cave project — geotechnical update A. Van As, Rio Tinto, Australia; S. Talu, Rio Tinto, Australia

A new mine planning tool for sublevel caving mines D. Villa, Gemcom Software International, Canada

PRECONDITIONING

Measurement of hydraulic fracture growth in a naturally fractured orebody for application to preconditioning R.G. Jeffrey, CSIRO Petroleum, Australia; A. van As, Rio Tinto, Australia; X. Zhang, A.P. Bunger, Z.R. Chen, CSIRO Petroleum, Australia

Microseismic monitoring of hydraulic fractures in block cave mining P. Joubert, ISS International, South Africa

Mapping of hydraulic fracture planes — Ridgeway Deeps block cave M.J. Morgan, Newcrest Mining Ltd, Australia

Simulating the impacts of hydro fracture preconditioning on cavability and fragmentation at the planned Cadia East panel cave S. Rogers, D. Elmo, G. Webb, Golder Associates Ltd, Canada; A. Catalan, Newcrest Mining Ltd, Australia

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<td>Bulk caving technology for deep level ore mining</td>
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<td>Seismic monitoring system design for caving mines</td>
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<td>quantify cave propagation on a routine basis</td>
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<td>Automated cave tracking using seismic monitoring</td>
<td>M. Marina, The University of Western Australia, Australia; J. Wesseloo, Australian Centre for Geomechanics, Australia</td>
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<td>Interpretation of seismic data and numerical modelling of fault</td>
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<td>reactivation at El Teniente, Reserva Norte Sector (Reno)</td>
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<td>Microseismic tools for the analysis of the interaction between open</td>
<td>J.M. Reyes-Montes, Applied Seismology Consultants, UK; B. Sainsbury, Itasca Australia Pty Ltd; and The University of New South Wales, Australia; W.S. Pettitt, Applied Seismology Consultants, UK; R.P. Young, University of Toronto, Canada</td>
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<td>Microseismic monitoring of caving at Goldex Mine</td>
<td>A. Ringeri, ESG Canada Inc., Canada; P. Frenette, Agnico-Eagle Mines Ltd, Canada; D. Collins, I. Leslie, ESG Canada Inc., Canada</td>
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<td>The critical earthquake concept applied to block caving — evidence</td>
<td>H. White, Coffey Geotechnics (NZ) Ltd, New Zealand; A. van As, Rio Tinto, Australia; B. O’Keefe, Coffey Geotechnics (NZ) Ltd, New Zealand</td>
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<td>An integrated FEM/DEM — discrete fracture network synthetic rock</td>
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<td>mass approach for the modelling of surface subsidence associated</td>
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<td>with panel cave mining at the Cadia East underground project</td>
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<td>Investigation of caving-induced subsidence at the abandoned Grace</td>
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<td>T. Villegas, Luleå University of Technology, Sweden; and Universidad de Sonora, Mexico; E. Nordlund, Luleå University of Technology, Sweden</td>
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