

# Preliminary Programme — Deep Mining 2019 Conference — 24–25 June 2019

## DAY 1 — 24 JUNE 2019

07:00–08:00	<b>Registration and Early Morning Refreshments</b>		
08:00–08:10	<b>Emergency procedures presentation</b>		
08:10–08:25	<b>Welcome Address - SAIMM President</b> A.S. Macfarlane, <i>Mandela Mining Precinct</i>		
08:25–08:35	<b>SANIRE presentation</b> P. Couto, <i>Middindi, SANIRE, Conference Co-chairperson</i>		
<b>Session Chairperson</b>	P. Couto, <i>Middindi, SANIRE, Conference Co-chairperson</i>		
<b>Session 1</b>	<b>Plenary</b>		
08:35–09:15	<b>Keynote 1: Layout design criteria for deep tabular mines: Quo vadis?</b> D.F. Malan and Y. Jooste, <i>University of Pretoria and Harmony Gold, South Africa</i>		
09:15–09:35	<b>DM30: The geotechnical evolution of deep level mechanised destress mining at South Deep</b> P.G. Andrews, R.J. Butcher, and J. Ekkerd, <i>Gold Fields, Australia and South Africa</i>		
09:35–09:55	<b>DM33: Accounting for rock mass heterogeneity and buckling mechanisms in the study of excavation performance in foliated ground at Westwood mine</b> L. Bouzeran, M. Pierce, P. Andrieux, and E. Williams, <i>Itasca Consulting Group Inc. (ICG), Pierce Engineering, A2GC, IAMGOLD, CVM Consultants, USA, Canada</i>		
09:55–10:15	<b>DM62: Artificial Intelligence and / big data analytics in mining geomechanics</b> J. McGaughey, <i>Mira Geoscience Ltd, Canada</i>		
10:15–10:25	<b>Sponsor Presentation: New Concept Mining</b>		
10:25–10:35	<b>Sponsor Presentation: Minova</b>		
10:35–11:00	<b>Mid-Morning Refreshments</b>		
<b>Session Chairperson</b>	W.C. Joughin, <i>SRK, Conference Co-Chairperson</i>	<b>Session Chairperson</b>	D. O'Connor, <i>Minova</i>
<b>Session 1A</b>	<b>Mine design and performance</b>	<b>Session 1B</b>	<b>Support design and testing</b>
11:00–11:20	<b>DM37: Geotechnical assessment of stope design for the SF3 Orebody at Rosh Pinah Zinc Mine</b> G.P. Shali and A. Vakili, <i>University of the Witwatersrand, Rosh Pinah Zinc Corporation, South Africa, Namibia, Australia</i>	11:00–11:20	<b>DM73: Large scale testing of surface support</b> R. Brändle, R. Luis Fonseca, and T. Hangartner, <i>Geobrugg AG, Geobrugg Ibérica S.A., Switzerland, Spain</i>
11:20–11:40	<b>DM71: The seismic response to mining during the extraction of the Thuthukani shaft pillar, Kloof Operations, South Africa</b> R.T. Masethe, R.J. Durrheim, and M.S.D. Manzi, <i>University of the Witwatersrand, Sibanye Still Water Limited, South Africa</i>	11:20–11:40	<b>DM10: A practical design approach for an improved resin anchored tendon</b> B. Crompton and J. Sheppard, <i>New Concept Mining, Australia</i>
11:40–12:00	<b>DM19: Effects of stoping activities on tunnel conditions in a deep, hard rock mine in Austria</b> T. Ladinig, H. Wagner, and A. Daborer, <i>Montanuniversitaet Leoben, Austria</i>	11:40–12:00	<b>DM14: An evaluation of the bond strength of multiple resin bolt and capsule combinations through laboratory testing and applied methodologies</b> R. Bierman, L. Gardner, and P. Piper, <i>Groundwork Consulting (Pty) Ltd, Impala Platinum Ltd, South Africa</i>
12:00–12:20	<b>DM28: Support and reinforcement damage initiation and design adjustments in a deep mine environment - Case study: Cuibá Mine, Minas Gerais, Brazil</b> L.C.B. Costa, R.C. Padula, L.M.V. Pimenta, R.S. Pereira, and D.T. Peterle, <i>Anglogold Ashanti, Brazil</i>	12:00–12:20	<b>DM35: Case Story: LKAB Malmberget, self-drilling anchors and pumpable resin</b> P. Bray, A. Johnsson, and H. Schunnesson, <i>Epiroc Rock Drills AB, LKAB, Luleå University of Technology, Sweden</i>
12:20–13:20	<b>Lunch</b>	12:20–13:20	<b>Lunch</b>
<b>Session Chairperson</b>	L. Scheepers, <i>Anglogold Ashanti</i>	<b>Session Chairperson</b>	N. Chittenden, <i>BASF</i>
<b>Session 1A continued</b>	<b>Mine design and performance</b>	<b>Session 1B continued</b>	<b>Support design and testing</b>
13:20–13:40	<b>DM34: Numerical modelling of the high rock stress challenges at Rana mine, Norway</b> N.Q. Trinh, T.E. Larsen, S. Molund, B. Nost, and A. Kuhn, <i>SINTEF, Rana Gruber AS, Norway</i>	13:20–13:40	<b>DM22: A New method to evaluate dynamic bolts and the development of a new dynamic rock bolt</b> B. Darlington, M. Rataj, and W. Roach, <i>Sandvik Mining and Rock Technology, Australia</i>
13:40–14:00	<b>DM75: Seismic risk management practices in metalliferous mines</b> Y. Potvin, J. Wesseloo, G. Morkel, S. Tierney, K. Woodward, D. Cuello, <i>Australian Centre for Geomechanics, the University of Western Australia, Newcrest Mining Ltd, Australia</i>	13:40–14:00	<b>DM26: Laboratory full-scale rock bolt testing: Analysis of recent results</b> S.A. Hagen, T. Larsen, A. Berghorst, and G. Knox, <i>SINTEF AS, New Concept Mining Canada, Norway, Canada</i>
14:00–14:20	<b>DM09: Application of laser scanner to determining ground surface displacement rate in block caving mine</b> B. Agusta, M. Safkaur, and E. Wandra, <i>Freeport Indonesia, Indonesia</i>	14:00–14:20	<b>DM79: Development of a remote control rock bolting system for narrow seam hard rock mines</b> D. O'Connor and Tsertic, <i>Minova Africa (Pty) Ltd and Doking Africa Pty Ltd, South Africa</i>

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## DAY 1 — 24 JUNE 2019 (Continued)

14:20–14:45	<b>Mid-Afternoon Refreshments</b>
<b>Session Chairperson</b>	R. Mitra, <i>The University of the Witwatersrand</i>
<b>Session 2</b>	<b>Modelling / Monitoring</b>
14:45–15:05	<b>Sponsor Presentation: Reutech</b>
15:05–15:25	<b>DM63: Fracture model for rockburst mitigation based on the strain energy concept</b> R. Zepeda and G. Karstulovic, <i>Codelco, Universidad Central, Chile</i>
15:25–15:45	<b>DM32: Stopping sequence optimisation at Eleonore Mine based on stress analysis through horizon scale numerical modelling</b> L. Bouzeran, M. Pierce, A. Jalbout and M. Ruest, <i>Itasca Consulting Group Inc, Pierce Engineering, Goldcorp Inc, USA, Canada</i>
15:45–16:05	<b>DM41: Advanced techniques for the monitoring of pillar and excavation behaviour at a deep level massive mine</b> P.G. Andrews, L. Rwodzi, and J. Ekkerd, <i>Gold Fields, Australia, South Africa</i>
18:30–21:00	<b>Conference Dinner - Carnivores Restaurant</b>

## DAY 2 — 25 JUNE 2019

07:00–08:00	<b>Registration and Early Morning Refreshments</b>
08:00–08:10	<b>Emergency procedures presentation</b>
<b>Session Chairperson</b>	D.F. Malan, <i>University of Pretoria</i>
<b>Session 3</b>	<b>Plenary</b>
08:10–08:50	<b>Keynote 2: Deep infrastructure tunnels - experience from the Alpine Crossing</b> T. Jesel
08:50–09:30	<b>Keynote 3: Addressing some misconceptions regarding seismic hazard assessment in mines</b> J. Wesseloo, <i>Australian Centre for Geomechanics, The University of Western Australia</i>
09:30–09:50	<b>DM66: Ideal stope configuration to manage seismicity in deep tabular narrow reef mines</b> O. Rakumakoe, <i>AngloGold Ashanti, South Africa</i>
09:50–10:10	<b>DM68: Anisotropic rock mass behaviour in large deformation ground at CSA mine</b> B Chapula, <i>Australia</i>
10:10–10:20	<b>Sponsor Presentation: OHMS</b>
10:20–10:30	<b>Sponsor Presentation: Rocscience Africa</b>
10:30–10:50	<b>Mid-Morning Refreshments</b>
<b>Session Chairperson</b>	R. Durrheim, <i>The University of the Witwatersrand</i>
<b>Session 4</b>	<b>Seismicity</b>
10:50–11:10	<b>DM49: Do stopes contribute to the seismic source?</b> L. Linzer, M. Hildyard, S.M. Spottiswoode, J. Wesseloo, <i>SRK Consulting, University of Leeds, Independent Consultant, Australian Centre for Geomechanics, University of Western Australia, United Kingdom, South Africa, Australia</i>
11:10–11:30	<b>DM59: Analysis of the Gutenberg-Richter <i>b</i>-values of overlapping seismic clusters with application to Cooke 4 Mine</b> J. von Ketelhodt, D. Ligaraba, and R.J. Durrheim, <i>University of the Witwatersrand, South Africa</i>
11:30–11:50	<b>DM40: Seismic response to mining the massive ore -body at South Deep gold mine</b> N. Naicker, <i>Gold Fields, South Africa</i>
11:50–12:10	<b>DM55: Modern seismic is illuminating the depths</b> R. van Buren, G. Turner, and G. Hird, <i>HiSeis, South Africa, Australia</i>

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## DAY 2 — 25 JUNE 2019 (Continued)

12:10–12:30	<p><b>DM65: 2019 status report: Drilling into seismogenic zones of M2.0–M5.5 earthquakes in South African gold mines (DSeis) project</b>  H. Ogasawara, B. Liebenberg, M. Ziegler, Y. Yabe, T. Ito, R.J. Durrheim, S. Manzi, S. Tau, B. Watson, D. Roberts, N.Z. Nkosi, S. Kaneki, Y. Yokoyama, T. Hirono, A. Funato, C. Onstott, T. Wiesberg, M. Zimmer, C. Kujawa, R. Conze, G. van Aswegen, N. Wechsler, A.K. Ward, DSeis Team, <i>Ritsumeikan University, Japan, Moab Khotsong mine, South Africa, ETH, Switzerland, Princeton University, USA, University of the Witwatersrand, South Africa, Tohoku University, Japan, Osaka University, Japan, Free State University, South Africa, i Water Solutions, South Africa, ICDP, Germany, Institute of Mine Seismology Ltd, South Africa, Tel Aviv University, Israel, Seismogen CC, South Africa, Council for Geoscience</i></p>
12:30–12:40	<b>Sponsor Presentation: Sigra</b>
12:40–13:40	<b>Lunch</b>
<b>Session Chairperson</b>	J. Wesseloo, <i>University of Western Australia</i>
<b>Session 4 continued</b>	<b>Seismicity / Monitoring</b>
13:40–14:00	<p><b>DM25: The validity of Es/Ep as a source parameter in mining seismology</b>  G. Morkel, J. Wesseloo, and Y. Potvin, <i>Australian Centre for Geomechanics, Australia</i></p>
14:00–14:20	<p><b>DM43: In-situ stress around source faults of seismic events in and beneath South African deep gold mines</b>  Y. Yabe, S. Abe, T. Ito, A. Ishida, K. Sugimura, M. Kanematsu, M. Higashi, R. Tadokoro, H. Ogasawara, A. Funato, H. Kato, B. Watson, S. Mngadi, R. Durrheim, G. Hofmann and L. Scheepers, <i>Tohoku University, Ritsumeikan University, Fukada Geological Institute, 3D Geoscience, Japan</i></p>
14:20–14:40	<p><b>DM76: Self-similarity in rock fracturing and the behaviour of large-scale faults in the mining environment</b>  E. Morton, E. Villaescusa, and A. Thompson, <i>AMC Consultants, United Kingdom, West Australian School of Mines, Curtin University, Australia</i></p>
14:40–15:00	<p><b>DM27: Advances and applications for automated drones in underground mining operations</b>  E. Jones, J. Sofonia, F. Kendoul, and S. Hrabar, <i>Emesent, Universidad de Concepción, Australia, Chile</i></p>
15:00–15:05	<p><b>Presentation: Deep Mining 2021</b>  Prof. J. Wesseloo</p>
15:05–15:15	<p><b>Conference Close</b>  W.C. Joughin, <i>Conference Chairperson</i></p>
15:15–15:45	<b>Mid-Morning Refreshments</b>