

PROGRAM SLOPE STABILITY SYMPOSIUM 2018

Miércoles 11 de abril de 2018 / Wednesday April 11th 2018

SLOPE STABILITY SYMPOSIUM

Sala / Room Sevilla 3 y 4

08:15 – 11:30

Keynote Lecture A

John Read

Developments in Open Pit Slope Design since 2009

Papers

Session 1.

Geotechnical and geological modelling in mine planning and operative mining

El modelado geológico y geotécnico en la planificación y operación minera

Chairman: Stephen Cooper, Cobre Las Cruces

- Management of Geotechnical Data – AngloGold Ashanti Experience. J.M. Seery, C. Franklin and E.C.F. Hamman
- Evaluation of geomechanical parameters through Factor Analysis. T. Barreto dos Santos, L. Regina Costa Silveira, M. Sabino Lana, T. Martins Pereira
- Applicability of Strain Softening Models to Slope Stability Analyses. C. Cancino, C. Álvarez, M. Díaz, R. Ledezma
- Quantifying Transitional Rock Mass Disturbance in Open Pit Slopes Related to Mining Excavation. N.D. Rose, M. Scholz, J. Burden, M. King, C. Maggs and M. Havaej
- Suggested standards for improving structural geologic definition for open pit design. T.G. Carter
- Approach to Geotechnical Characterization and Slope Design in Specific Deposits Types. B. Murphy, W. Barnett
- The application of run out analysis to mine site landslides. M. Llano-Serna

11:30 – 12:00 Pausa – café y visita pósteres / Coffe break and poster visit

12:00 – 14:00

Papers

Session 2.

Pit slope monitoring and processing of geotechnical data

Monitoreo y procesamiento de datos geotécnicos

Chairwoman: Mercedes Ferrer, IGME

- Use of radar system for real-time safety-critical slope monitoring and long-term mine planning in Siilinjärvi mine, Finland. S. Mononen, M. Suikkanen, N. Coli, F. Meloni
- DFN based analysis of step path failure pathways for improved slope stability analysis. S. Rogers, P. Hamdi, K. Moffett and B. Dershowitz

- The use of the Maptek I-Site 8820 laser scanner and Sentry software system in managing brittle rock movements at the Kanmantoo Copper Mine in Australia. B. J. Hutchison, J. Chambers, S. Gannon, and J. Herrmann
- State-of-the-Art Monitoring Techniques for Samarco Tailings Dams. L. Clarkson, S. Carneiro; B. de Matos Castilho; D. Williams; M. Ruest; M. Llano; and D. Noon
- Managing Large Scale Failures – A Case Study from Ok Tedi Mine, Papua New Guinea. F.M. Weir, A.G. Smith, J. Watton, M. Koek and P. Kuira
- A Multi-Disciplinary Approach to Dip Slope Mining in Jwaneng Mine Botswana. K. Gabanakgosi, K. Mosebi, O. Mogorosi, O. M. Barei, K. Ntlotlang, T. Thokweng
- Comparing traditional and televiewer methods of structural data collection. K. Llewelyn, A. McCracken, and M. Brown

14:00 – 15:00 Almuerzo / Lunch

15:00 – 16:30

Keynote Lecture 1

Geoff Beale

How our understanding of water and slope stability has improved since 2009

Papers

Session 3.

Risk assessment and management of effects of groundwater in mining pits

Gestión y evaluación del riesgo asociado al agua subterránea en la minería a cielo abierto

Chairman: Geoff Beale, Piteau

- Managing water pressures in a steeply dipping coal-mine footwall. A. Duran and R.W. Seedsman
- Numerical Investigation of Potential Pore Water Pressure Changes In Jointed Brown Coal Due To Waste Material Placement Against A Brown Coal Open-Cut Batter. T. Shaghaghi, A. Tolooiyan and R. Mackay
- Operational Risk Management of Land Based Beach Mining 30m Below the Atlantic Ocean. S. Kirkpatrick, P. de Graaf, SW Jacobsz

16:30 – 17:00 Pausa – café y visita pósteres / Coffe break and poster visit

17:00 – 19:00

Keynote Lecture 2

Pedro Ramírez

Slope stability problems in the Iberian Piritic Belt (IBP) and the Ossa-Morena geological zones

Papers

Session 4.

Blasting and slope stability

Voladuras y estabilidad de taludes

Chairman: Martyn Robotham, Rio Tinto

- Managing Blast-Induced Highwall Deformation Using an Improved Signature Hole Technique: A Case Study from Cortez Gold Mines, northeast Nevada, USA. P. Jenks, J. Silva Castro, M. Morfin
- Full Wall Control Blasting Optimization. B. Cebrian, M. Rocha, B. Morales, J.L. Castañón, J. Floyd
- Refining the Wall Control Blasting Program at Rio Tinto's Iron Ore Company of Canada Mine. G. Abrahams, G. Powell, J. Hardy

- Evaluation of building damages due to open pit mine activities. Application on Mavropigi open mine – Greece. M. Alheib, N. Koukouzas, I.E. Zevgolis, A. Deliveris, S. Coccia
- Importance of characterization and representation of fault damage zones in slope stability models. J. Severin

Cena libre / Free diner

SLOPE STABILITY SYMPOSIUM

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08:15 – 09:40

Papers

Session 5.

Slopes (Smarter Lignite Open Pit Engineering Solutions)

Soluciones de ingeniería inteligente para cortas de lignito

Chairwoman: Vanesa Pozo, Subterra Ingeniería

- A coupled probabilistic-numerical methodology for the reliability-based design of slopes. A. V. Deliveris, I. E. Zevgolis, N.C. Koukouzas
- Stability Analysis of the working face slope and the inner dump in a lignite open pit mine. V. Pozo, D. De Paz, J. Salas, J.M. Galera
- Geotechnical characteristics of spoil materials in European open pit lignite mines. Mohsen S. Masoudian, Hossein Zanganeh, Alec M. Marshall, Charles M. Heron
- Improved understanding of active slope instability mechanisms in lignite operations. C. Vanneschi, J. Burdab, L. Žižkab, M. Eyrea, M. Francionia, J. Coggan

09:40 – 11:30

Keynote Lecture 3

Rodrigo Silva Mandiola

Rosario Mine – Evolution of Geotechnical Understanding

Papers

Session 6.

Ground Control and Rockfall Management: Risk quantification and acceptance criteria

Control del terreno y gestión de caídas de bloques: cuantificación del riesgo y criterios de aceptabilidad

Chairman: Doug Stead, Simon Fraser University

- A rockfall hazard appraisal and management system for quarries and open pit mines. S. J. Collins, J. Hall
- Kinematic Evaluation of Pit Shell Designs using Geotechnical Block Model. J. Venter, K. du Plooy, E. Hamman
- The Yellowstone Talc Mine. D. Morrison
- Probabilistic stability analysis of slopes in highly heterogeneous rock masses. H. RafieiRenani, C. Derek Martin, P. Varona and L. Lorig

11:30 – 12:00 *Pausa – café y visita pósteres / Coffe break and poster visit*

12:00 – 14:00

Papers

Session 7.

FE/FD analysis techniques and their selection

Técnicas de análisis FE/FD y criterios de selección

Chairman: Leandro Alejano, Universidad de Vigo

- Effect of Rock Mass Strength Parameters Variation on the Fracturing Amount in Rock Slopes. A. K. Alzo'ubi
- Definition of intact rock bridges for 2D and 3D slope stability problems. D. Elmo, D. Stead
- A complex geotechnical modelling of an open pit slope. Application to Cobre las Cruces North Slope. S. Cooper, M.D. Rodriguez, V. Pozo, J. Salas, JM. Galera
- Use of Response Surface Methodology in computationally intensive 3DEC models of open pit slope influenced by a block caving operation. M. Marciniak, E. Widzyk-Capehart, V. Rivero, D. Díaz
- Application of monitoring data for calibrating numerical models. J. Jung, T.Katsaga, L.Lorig
- Computational tools for the determination of factor of safety and location of the critical failure surface for slopes in Mohr-Coulomb dry ground. C. Carranza-Torres and E. Hormazabal

14:00 – 15:00 *Almuerzo / Lunch*

15:00 – 16:30

Papers

Session 8.

Open pit and underground mining interactions: assessment of reliability and safety of methods

Interacción entre el cielo abierto y labores subterráneas: evaluación de la fiabilidad y seguridad de los métodos de análisis

Chairman: Allan McCracken, SRK

- An application of point estimation methods to assess open pit slope stability. M. Valerio, S. D'Ambra, R. Woodward
- Geotechnical Review of an Open Cut Coal Mine Slope using 3D Limit Equilibrium Modelling and New Empirical Run Out Prediction Charts. A. McQuillan, I. Canbulat, J. Oh, S. Gale, T. Yacoub
- The Uncertainty of Rock Mass Shear Strength Estimates: How to Incorporate the Reduction in Variance Due to Spatial Averaging for Use in Probabilistic Analysis. S.D. Cylwik, J.A. Beck, T.M. Ryan
- Implications for other hard rock mines of slope steepening investigation and performance improvements at the Tio Pit, Rio Tinto Fer et Titane, Quebec. M. Rougier, F. Hees, C.Gravel,
- Overall probability of failure of rock slopes with multiple failure modes. J. Dong Du
- Managing the Interaction between the Unstable West Highwall and the 2B Underground at the Barrick Golden Sunlight Mine, Montana, USA. R. Turner, Nick D. Rose, Radford B. Langston, J. Cabello

16:30 – 17:00 *Pausa – café y visita pósteres / Coffe break and poster visit*

17:00 – 18:00

Keynote Lecture 4

Jonny Sjoberg

Analysis of large-scale pit slope stability — The Aitik mine revisited

Keynote Lecture 5

Phil Dight

Interpretation of instability/failure mechanisms based on surface and subsurface monitoring

Cena del Congreso en Hacienda Montelirio / Congress Dinner at Hacienda Montelirio

Viernes 13 de abril de 2018 / Friday April 13th 2018

SLOPE STABILITY SYMPOSIUM

Sala / Room Sevilla 3 y 4

09:00 – 11:30

Keynote Lecture B

Derek Martin

Strength of Weak Rocks in Open Pit Slope Design

Papers

Session 9.

Slope failure management and remediation

Gestión y remediación de la rotura de taludes

Chairwoman: Marnie Pascoe, Rio Tinto

- A review of the bench slope design at the Aitik and Salmijärvi open pits, Sweden. R. Ortiz and P. Gómez
- Aguablanca, a case study in slope stability management P. O'Bryan, M. Barrero Bouza, L. Merino Tores, C. Moreira Ascenso
- Risk assessment and management of effects of groundwater in mining pits. S. O'Neill
- Characterization of a large slope failure in an open - pit mine through the back - analysis of satellite InSAR and ground - based radar data. P. Farina, T. Carlà, E. Intrieri, H. Ketizmen, N. Casagli
- Complex rock slope failure mechanisms involving toppling. Leandro R. Alejano

11:30 – 12:00 *Pausa – café y visita pósteres / Coffe break and poster visit*

14:00 – 14:30 *Conferencia Clausura / Closing Lecture*

14:30 – 15:00 *Acto de Clausura / Closing*

15:00 – 16:00 *Cóctel de despedida / Farewell cocktail*

Sábado 14 de abril de 2018 / Saturday April 14th 2018

Visitas técnicas a / Technical visit to:

MATSA, MINAS DE RIO TINTO Y MUSEO, COTO DE DOÑANA, CENTRAL TERMOSOLAR GEMASOLAR DE FUENTES DE ANDALUCÍA, FUNDICIÓN DE ATLANTIC COOPER, ALMACENAMIENTOS DE IMPALA EN HUELVA Y MINA DE COBRE LAS CRUCES