

# 28th International Conference on Ground Control in Mining

## Preliminary Technical Program

Final acceptance of all the papers listed below contingent upon review of final papers by the Peer Review Committee. Approximately 41 papers will be selected for presentation at the conference and all others will be presented in the poster session. Both presentation papers and poster session papers will be included in the Proceedings.

### **Pillar Design and Evaluation**

1. Deep Cover Pillar Recovery in the US, Chris Mark, NIOSH – PRL, Pittsburgh, PA.
2. An Application of Energy Release Rate, Morgan Sears and Keith A. Heasley, West Virginia University, Morgantown, WV.
3. Determination of Coal Pillar Strength Based on In Situ Testing Method - Case Studies of Successful Pillar Performance, Kot F. v. Unrug, University of Kentucky, Lexington, KY, Ernie Thacker and Jeff Waggett, Alliance Coal, Lexington, KY

### **Roof Support Design and Evaluation**

4. The Forensics of Underground Roof Falls, Steve Tadolini, Minova USA, Inc., Georgetown, KY, John McDonnell, Minova USA, Grand Junction, CO, and Scott Shapko, Minova USA, Georgetown, KY.
5. Evaluation of Tailgate Ground and Support Interaction in the Illinois Basin for the Development of a Ground Reaction Curve Based Standing Support Design, Dennis Dolinar and Thomas Barczak, NIOSH – PRL, Pittsburgh, PA, and Harrold Gurley, Southern Illinois University, Carbondale, IL.
6. ALTS 2009 - A 10 Year Journey, Mark Colwell, Colwell Geotechnical Services, Coloundra, Australia and Russell Frith, University of New South Wales, Kensington, NSW, Australia.
7. Comparative Double Embedment Pull Testing of Commonly Used Post-Groutable Cable Bolts in the Australian Coal Industry, Mick Callan, Strata Engineering Pty Ltd, Charleston, NSW, Australia.
8. Roof Bolter Rocker Pad Deflector Systems, Arnold Hammons, David Webb, Rick Damron, Lone Mountain Processing LLC, St. Charles, VA and Tim Burgess, J.H. Fletcher & Co., Huntington, WV.

9. Laboratory Verification of High-Strength, Mechanical Shell Tensioned Bolts with High Percentage Grouted Length, Ben Mirabile, Jennmar Corporation, Pittsburgh, PA.
10. Development of a New Roof Bolt Bearing Plate to Improve System Performance, Safety, Cost, and Quality, Greg Smith and Frank Locotos, F.M. Locotos Co., Pittsburgh, PA.
11. Bolt Profile Configuration and Load Transfer Capacity Optimisation, Naj Aziz, Jan Nemcik, and Chen Cao, University of Wollongong, Wollongong, Australia.
12. The Back Pressures Associated with Resin Rock Bolt Installations and Methods to Control and Predict It, A.J.S. Spearing, Southern Illinois University, Carbondale, IL, M. Reilley, Frazier and Jones, Syracuse, NY, and B. Greer, Southern Illinois University, Carbondale, IL.
13. Application of HILTI OneStep Bolts for Roadway Support in German Deep Coal Mines, Bastian Danzebrink, Hilti Deutschland GmbH, Kaufering, Germany, Michael Bayerl, Hilti Entwicklungsgesellschaft mbH, Kaufering, Germany, Klaus Thyrock, Klaus Opolony, and Isabel Gollnick, Deutsche Steinkohle AG, Herne, Germany.
14. New Developments in Headed Rebar Ground Support, Matt Slatter, DSI Mining Americas, Salt Lake City, UT and Roland Walker, DSI Mining Americas, Clearfield, UT.
15. An Innovated Self-Screwed Bolting System(SBS)<sup>®</sup> to Reinforce Stability of Mine Entries, Xingtian Hui, Xi'an University of Science and Technology, Xian, Shaanxi, China, Liqiang Zhang, Shaanxi Mining Corp. Pubai Coal-Electric Company, Pucheng, Shaanxi, China, and Victor Son, Novartis Corp. East Hanover, NJ.

### **Longwall Mining**

16. Longwall Recoveries at Bailey Mine -- Issues and Solutions, D.W.H. Su, G.J. Hasenfus, T.J. Morris, L. Stull, and M. Petrovich, CONSOL Energy Inc., Canonsburg, PA.
17. Roof Control in Longwall Faces - Geological and Geotechnical Characteristics and IT Solution for Prediction, Holger Witthaus and Isabel Gollnick, Deutsche Steinkohle AG, Herne, Germany.

### **Rib or Roof Skin Control**

18. Application of a Polymer-Based Sealing Material to Prevent Roof From Weathering, Peter Zhang, Mike Mishra, Rod Lawrence, and Gary Meade, Foundation Coal, Waynesburg, PA, Haydn Whittam and Uwe Wyink, BASF, The Chemical Company, Cleveland, OH.

19. Rib Support Innovation at Daw Mill Colliery, J. Bowler, UK Coal plc, Dorcaster, UK, P.F.R. Altounyan, Rock Mechanics Technology Ltd., Bretby, UK, and G. Robinson, UK Coal plc, Dorcaster, UK.
20. Deterioration of Moisture-Sensitive Roof Rock in a Central Ohio Coal Mine, Ted Klemetti, Gregory Molinda, and David Oyler, NIOSH – PRL, Pittsburgh, PA.
21. Geotechnical Assessment of Skin Reinforcement in Underground Mines, Jan Nemcik, Ian Porter, Ernest Baafi, and Christopher Lukey, University of Wollongong, Wollongong, NSW, Australia.

### **Dynamic Loading and Bumps**

22. Control of Mining-Induced Seismicity in the Western U.S. Mines, Hamid Maleki, Maleki Technologies, Inc., Spokane, WA.
23. Integrated Ground Monitoring at Willow Creek -- Lessons Learned, Andrew P. Schissler, Schissler Consulting, Littleton, CO and Jeffrey K. Whyatt, NIOSH – SRL, Spokane, WA.
24. Coal Bumps and Odd Dynamic Phenomena -- A Numerical Investigation, Jeffrey K. Whyatt, NIOSH – SRL, Spokane, WA and Marc C. Loken, Shoreview, MN.
25. In-situ Testing of Dynamic Yielding Rock Bolts for their Application in Bump Prone Coal Mines, Sean Harvey and Ugur Ozbay, Colorado School of Mines, Golden, CO.
26. Trail Mountain Mine: A Case Study for Improving Locations of Mining-Induced Seismicity with Double-Difference Relocation, E. Sonley, K.L. Pankow, and M.K. McCarter, University of Utah, Salt Lake City, UT.
27. Seismic Events in German Hard Coal Mining, Axel Preusse, RWTH Aachen University, Aachen, Germany, Anton Sroka, Freiberg University of Mining & Technology, Freiberg, Germany, and Heinz-Jürgen Kateloe, RWTH Aachen University, Aachen, Germany.
28. Controlling Factors of Outburst Potential at Sihe Coal Mine, China, Mingju Liu, Henan Polytechnic University, Jiaozuo City, China, and Hani Mitri, McGill University, Quebec, Canada.

### **Hazard or Risk Assessment Studies**

29. Major Hazard Risk Assessment Applied to Pillar Recovery Operations, Anthony Iannacchione, University of Pittsburgh, Pittsburgh, PA and Chris Mark, NIOSH – PRL, Pittsburgh, PA.
30. Determination of Horizontal Stress Direction by Underground Mine Mapping, Sandin Phillipson, MSHA, Pittsburgh, PA.

31. New Methodology for Stress and Geologic Analysis and Support Design, John Stankus, Hanjie Chen, Xiaoting Li, and Kevin Ma, Jennmar Corporation, Pittsburgh, PA.
32. Roof Fall as an Inherent Risk Accompanied by Underground Coal Mining, K. Oraee, Stirling University, Stirling, UK, K. Shahriar and E. Bakhtavar, Amirkabir University of Technology, Tehran, Iran

### **Mine Design**

33. Ground Control Design Challenges at the El Boleo Copper Project, Scott Britton, Baja Mining Corp., Vancouver, Canada, Tim Ross and David Conover, Agapito Associates, Inc., Lombard, IL.
34. Design and Backfill Installation Considerations for Cut and Cover Coal Mine Slope Entry Using Steel Supports and Lagging, Larry DeGraff and Ron Smith, DSI/American Commercial, Bristol, VA, John Kortas, Greenbrier Minerals, LLC, Rupert, WV, and Tiff Hilton, Wopec, Lewisburg, WV.
35. Indian Experiences of Mechanised Coal Pillar Extraction, Arun Kumar Singh and Rajendra Singh, Central Institute of Mining and Fuel Research, Dhanbad, India.
36. Ground Control Problems at Ombilin Coal Mine, Indonesia, H. Furukawa, Japan Coal Energy Center, Tokyo, Japan, K. Matsui, T. Sasaoka, and H. Shimada, Kyushu University, Fukuoka, Japan, and S. Kramadibrata and B. Sulistianto, Institute of Technology, Bandung, Indonesia.
37. Feasibility Study and Design of a New Underground Coal Mine Developed from Open Cut Highwall in Indonesia, Takashi Sasaoka, Hideki Shimada, and Kikuo Matsui, Kyushu University, Fukuoka, Japan.
38. Study on the Safety and High Efficient Mining Technique with Large Mining Height and Longwall Mining to the Dip in Complicated Geological Condition, Ke Yang, Xin-zhu Hua, and Guang-xiang Xie, Anhui University of Science and Technology, Anhui, China.

### **Multiple Seam Issues**

39. Multiple Seam Highwall Mining in Appalachia, David Newman, Appalachian Mining and Engineering, Inc., Lexington, KY.
40. Regional Two-Seam Stress Analyses at the Deer Creek Mine, Hamid Maleki, Maleki Technologies, Inc., Spokane, WA, Ken Fleck, Chuck Semborski, and Larry LaFrentz, Energy West Mining Company, Huntington, UT
41. Evaluation and Design Considerations for Pillar/Roof Separation in an Operating Coal Mine, Mike Amick, National Coal of Alabama, Birmingham, AL, Mark Mills and Bill Snodgrass, National Coal Corporation, Knoxville, TN, Kot Unrug, University of Kentucky, Lexington, KY.

42. Behaviour of Strata during Extraction of Coal from Contiguous Seams - Sections Under Weak Parting, Prabhat Mandal, Rajendra Singh, and Jhareswar Maiti, Central Institute of Mining and Fuel Research, Dhanbad, India.

### **Floor Stability Assessment**

43. Successful Implementation of Gamma Technology, Greg Hasenpus, CONSOL Energy, Inc., Canonsburg, PA, Bob Pease, American Mining Electronics, Inc., Huntsville, AL, Al Artman, CONSOL Energy, Inc., Canonsburg, PA, and Rob Fowler, CONSOL PA Coal Co., LLC, Canonsburg, PA.
44. Weak Floor Stability during Perimeter Mining in the Illinois Basin Coal Mines, Murali Gadde and Syd Peng, West Virginia University, Morgantown, WV.

### **Numerical Modeling Studies**

45. Influence of Cutting Sequence on Development of Cutters and Roof Falls in Underground Coal Mine and their Prevention, Anil Ray and Syd Peng, West Virginia University, Morgantown, WV.
46. Design and Control of Working Support in Polish Coal Mines based on Three-Dimensional Numerical Modeling, Slawomir Bock, Stanislaw Prusek, and Marek Rotkegel, Central Mining Institute, Katowice, Poland.
47. Numerical Modelling of the Range of Rock Fracture Zone around Gateroads on the Basis of Underground Measurement Results, A. Walentek, Z. Lubosik, S. Prusek, and W. Masny, Glowny Instytut, Gornictwa, Poland.
48. Calibrating Numerical Model for Room-and-Pillar Coal Mining Section Simulation in Weak Immediate Roof based on In-situ Tests, Andre Zingano, Cleber Gomes, Jair Koppe, and João Costa, University Federal, Rio Grande do Sol, Brazil.

### **Stone Mining Ground Control**

49. Portals, Declines, and Shafts for Stone Mines, Frank Kendorski, Agapito Associates, Inc., Lombard, IL.
50. Stability Mapping to Examine Ground Control Failure Risk: A Field Study at a Limestone Mine, T.S. Bajpayee, NIOSH – PRL, Pittsburgh, PA and S.R. Schilling, Pleasant Gap Mine, Graymont, PA.
51. A Roof Quality Index for Stone Mines Using Borescope Logging, John Ellenberger, NIOSH – PRL, Pittsburgh, PA.

**Subsidence**

52. Techniques to Investigate Subsidence Events Over Inactive Room-and-Pillar Mines, Yi Luo, West Virginia University, Morgantown, WV.
53. Optimization of Partial Pillar Extraction Beneath Sensitive Surface Topography, Johann van Wijk and David Hill, Strata Engineering Pty Ltd, Charleston, NSW, Australia.

**Mine Seals**

54. Cementitious Seal/Rock interface under Hydrostatic and Dynamic Loadings, Khaled Morsy, Asmaa Yassien, Reddy Kalu, and Syd Peng, West Virginia University, Morgantown, WV.
55. 3D Dynamic Simulation of Reinforced Concrete Seals for 120 psi Design Standard, R. Reddy Kalu, Asmaa Yassien, Khaled Morsy, and Syd Peng, West Virginia University, Morgantown, WV.