



Eighteenth International Symposium on Mine Planning & Equipment Selection (MPES 2009)

and

Eleventh International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production (SWEMP 2009)

**[November 16-18, 2009, Banff Park Lodge,
Banff, Alberta, Canada]**



**UNIVERSITÉ
LAVAL**

WELCOME TO MPES 2009

Dear Colleagues,

We are inviting you to participate in a Joint Meeting of MPES and SWEMP. Both of these symposia have come to be recognized as leading venues for promoting international technology transfer. The Joint Meeting will begin with a common Plenary Session, on Monday, November 16, 2009, which will be attended by all delegates to MPES 2009 and SWEMP 2009.

Of these two symposia, MPES has been more global having been held in the past in several countries including Australia, Brazil, Canada, China, Czech Republic, Greece, India, Italy, Poland, Turkey, and Ukraine. MPES 2009 includes more than 100 papers over a three-day period. Major topics to be covered include:

- New & Innovative Handling Technologies
- Advances in Mine Planning, Design & Computer Applications
- Mine Reclamation, Mine Closure & Environmental Issues
- Mine Evaluation & Financial Management Planning
- Mine Equipment Selection, Utilization & Maintenance
- Health, Safety & Training
- Rock Mechanics, Geotechnical Applications & Mine Environment

Our plenary session speakers, luncheon and banquet speakers, and session chairs are leaders in their own fields of expertise. The following few pages provide you with their biographies and a summary of the Technical Program. Please note that all MPES presentations will be held in Summit and Assiniboine Rooms of the Banff Park Lodge.

For further details, please consult the symposium website at:
<http://www.mpes-cami-swemp.com/>

Yours Sincerely,

Dr. Raj K. Singhal, Symposium Chair

TECHNICAL PROGRAM

MONDAY, NOVEMBER 16 SUMMIT ROOM

9:00 – 12:30 JOINT PLENARY SESSION – MPES 2009 & SWEMP 2009

9:00 – 10:30 PLENARY SESSION – I

Introduction: Dr. Raj K. Singhal, Symposium Chair

Chair: Professor Richard McNearny
Montana Tech of the University of Montana, USA

Opening Remarks: Ms. Martina Shehata
Vice President, Krupp Canada Inc, Canada

Speakers: Mr. Achmad Ardianto
Human Resources Director, PT ANTAM Tbk, Indonesia

Mr. Jaroslav Tourek
SD Coal Mining Company, Czech Republic

Professor Paul Dunn
Director WASM, Curtin University of Technology, Australia

Dr. Pierre Meulien
Chief Scientific Officer, Genome BC

Dr. Sue Baldwin
University of British Columbia, British Columbia

10:30 – 11:00 Coffee Break

11:00 – 12:30 PLENARY SESSION – II

Chair: Professor Raimando Ciccu
University of Cagliari, Italy

Speakers: Mr. Greg Fauquier
Global Managing Director Mining & Mineral Processing, HATCH

Professor Kostas Fytas
Universite Laval, Quebec, Canada

Professor Uday Kumar
Lulea University of Technology, Sweden

Professor Anders Lagerkvist
Lulea University of Technology, Sweden

Professor Zhenqi Hu
China University of Mining & Technology, Beijing, China

12:30 – 14:00 Lunch Break

MONDAY, NOVEMBER 16
SUMMIT ROOM

14:10 – 15:30 Session 1 – New & Innovative Handling Technologies

Chair: Professor Laeeque Daneshmend (Canada)

Truck Haulage Benchmarking: Australian Best Practices
Gary Poxleitner (Canada)

Application of Vertical Conveyors in the Mining Industry
Gary Poxleitner (Canada)

The Application of Pneumatic Capsule Pipeline Systems to Materials Transport in Mining Operations
Steve Hall, Brink Weaver, Hani Mitri and Lionel Rudd (Canada)

Highwall Mining – How Can You Increase Your Extractable Coal Reserves?
Pieter-Jan Kleiterp (The Netherlands)

15:30 – 15:50 Coffee Break

16:00 – 17:30 Session 2 – Advances in Mine Planning, Design & Computer Applications

Chairs: Professor Nick Vayenas (Canada)
Professor Emmanuel Chanda (Australia)

An Application Underground Coal Mining System in Thick Seams
Kikuo Matsui, Takashi Sasaoka, Hideki Shimada and Hirofumi Furukawa (Japan)

Transfer Geological Uncertainty through Mine Planning
Behrang Koushavand and Hooman Askari-Nasab (Canada)

Noen Open Pit Mining Technology-Bucket Wheel Excavators KK1300, KK550
Vladimir Hlavacek, J. Marek, S. Ptacek, P. Melicherik and R. Tichy (Czech Republic)

Development of a Mine Hoist Simulator
Nick Vayenas and XiangXi Wu (Canada)

Long Term Mine Planning to a Brazilian Phosphate Deposit
Rodrigo Peroni, Luciano Capponi, Diego Campos Da Veiga, and Edilson Borges Gontijo (Brazil)

19:00 – 21:00 Reception

MONDAY, NOVEMBER 16
ASSINIBOINE ROOM

14:10 – 15:30 Session 3 – Advances in Mine Planning, Design & Computer Applications

Chairs: Professor Kikuo Matsui (Japan)
Dr. K. Anistratov (Russia)

System of Scheduling of Open Mining Operations and Its Data ware
A. Zharmenov, Bekmurzayev Batyrkhan, Dias Bukeikhanov, Vladimir Syedin and Zulkarnayev Yerkebay (Kazakhstan)

Overburden Removal Equipment Selection through MADM Methods: Application of Modified VIKOR Method
Abbas Aghajani Bazzazi, Morteza Osanloo and Behroz Karimi (Iran)

Economic-Mathematical Model of Cost Price Formation of Open-Pit's Mining and Transport Complex Work
Assiya Boyandinova (Kazakhstan)

A Linear Programming and Stochastic Analysis of Mining Replacement Rate for Typical Bushveld Complex Platinum Reef Conventional Mining under Variable Geological Losses
Cuthbert Musingwini, M. Ali and T. Dikgale (South Africa)

An Overview of Some Current Research within Mine Planning
Paul Dunn and B. Maybee (Australia)

15:30 – 15:50 Coffee Break

16:00 – 17:30 Session 4 – Advances in Mine Planning, Design & Computer Applications

Chairs: Professor Morteza Osanloo (Iran)
Dr. Hidaki Shimada (Japan)

A Generic Linear Program for Optimal Mine Production Plan
Michel Gamache, Luc Hébert-Desgroseillers and Guy Desautniers (Canada)

Production Scheduling with Minimum Mining Width Constraints using Mathematical Programming
Yashar Pourrahimian, Hooman Askari-Nasab and Dwayne Tannant (Canada)

Developing and Supporting an Integrated Geological Modeling and Mine Planning
Louise Michaud and Matthew Oommen (Canada)

Enhancement of Rock Classification Performance for Monitoring-While-Drilling: Comparison and Combination of Neural-Networks and Statistical Techniques
Laeque Daneshmend, Jorge Martin and Jonathan Peck (Canada)

Specific Features of the Russian Market of Mining Optimization and Planning Software Products

Nikola Belyakov (Russia)

19:00 – 21:00 Reception

TUESDAY, NOVEMBER 17
SUMMIT ROOM

9:00 – 10:30 Session 5 – Mine Reclamation, Mine Closure & Environmental Issues

Chairs: Dr. Maria Menegaki (Greece)
Professor Euler M. De Souza (Canada)

Planning for Closure - Copperbelt Environment Project, Zambia
Frederic Claridge, Solomon Phiri and Wes Funk (United Kingdom)

An Investigation on the Utilization of Total Tailings for Paste Backfill Application for an
Underground Operating Mine
A. P. E. Dirige and J. Stratton

Quality Control and Environmental Evaluation in Quarrying by 3D Ore Body Modelling
Atac Bascetin (Turkey)

Perspective on coal waste management in China
Jing Li and Zhenqi Hu (China)

10:30 – 11:00 Coffee Break

11:00 – 12:30 Session 6 – Mine Reclamation, Mine Closure & Environmental Issues

Chair: Professor Richard McNearny (USA)

Ard in Gold Minds of the Brazilian Ferriferous Quadrangle
Adilson Curi, Paulo André Ribeiro Lopes and Márcia Cristina de Sousa (Brazil)

The Effects of Changing Block Size on Ore Quality Control and Environmental Impacts
Tansel Dogan, Atac Bascetin and Zeynep Sertabiboglu (Turkey)

The Study of Relationships between Economical and Environmental Parameters for
Sustainable Resources Management
Atac Bascetin (Turkey)

The Use of Inactivated Tailings in the Stabilization of Abandoned Underground Mines
Battista Grosso, Pier Paolo Manca and Erminia Marras (Italy)

Optimizations of Reclamation Approaches to Land Affected by Surface Brown Coal Mining
Martin Kabrna, Marketa Hendrychova, Miroslav Salek and Michal Rehor (Czech Republic)

12:40 – 14:00 Lunch Break

14:10 – 15:30 Session 7 – Mine Evaluation & Financial Management Planning

**Chairs: Dr. Vladislav Kecojevic (USA)
Professor R. Y. Poderni (Russia)**

Monorail System Risk Analysis and Hazard Control
Bunda Besa, Mahinda Kuruppu and Emmanuel K. Chanda (Australia)

The Use of the Net Smelt Return to Evaluate a Polymetallic Deposit
Rodrigo Peroni and Guilherme Barbosa (Brazil)

The Future of Coal - Overcoming Challenges through Technology and Partnerships
Leo Flaman (Canada)

Material Resources Constraints on Future Energy Technologies – How Much Resources Do We Need to Substitute Oil and Gas?
Gento Mogi (Japan)

15:30 – 15:50 Coffee Break

16:00 – 17:30 Session 8 – Mine Evaluation & Financial Management Planning

**Chairs: Dr. Assiya A. Boyandinova (Kazakhstan)
Professor Gento Mogi (Japan)**

Mine Expansion Decisions under Uncertainty
Richard Poulin and Sabry A. Abdel Sabour (Canada)

Multi-Index Mixed Integer Linear Programming Model for Open Pit Production Scheduling
Hooman Askari-Nasab, Kwame Awuah-Offei and Jozef Szymanski (Canada)

Monitoring of Dynamics of the Kazakhstan Metals World Prices in Crisis Conditions
Lissenkov Alexander (Kazakhstan)

Unique Push Back Exercises, Practiced at Iron Ore Company of Canada to Optimize Humphrey Pit Designs
Ali Chamanara and David R. G. Mitchell (Canada)

Monitoring of Dynamics of the Kazakhstan Metals World Prices in the Crisis Conditions
Bayan Rakishev, A.A. Lisenkov, Z.B. Rakisheva and S.K. Zhumabekova (Kazakhstan)

19:00 – 21:00 Banquet

Facilitated by: Dr. Raj K. Singhal

Banquet Speaker: Professor Carsten Drebenstedt (Germany)

Introduced by: Dr. Meena Singhal

TUESDAY, NOVEMBER 17
ASSINIBOINE ROOM

9:00 – 10:30 Session 9 – Mine Equipment Selection, Utilization & Maintenance

Chair: Professor Shigeru Sarata (Japan)

Integration of Drill Rigs with the CAD and Planning Systems of the Mine
Rolf Elsrud and Michael Andersson (Sweden)

Technical Innovations and Advances Make Wirtgen Surface Miner Available Alternative to
Traditional Drill and Blast/Ripping Operations
Robert Bauer (USA)

Truck and Shovel Operations – What is the Real Cost per Tonne?
Pieter-Jan Kleiterp (The Netherlands)

Material Transportation in Mining - Trends in Equipment Development and Selection
Saxby Peter (Australia) and John Elkink (Canada)

Brazilian Quarry Truck Drivers' Occupational Risks
Wilson Iramina, Sergio Eston, Ivan Tachibana, Andre Beltrame and Eduardo Sansone (Brazil)

10:30 – 11:00 Coffee Break

11:00 – 12:30 Session 10 – Mine Equipment Selection, Utilization & Maintenance

Chair: Professor Michael Lipsett (Canada)

Pioneering Developments on HME's to Cope with High Altitude Operation
Erik Zimmermann and John Sammut (Germany)

The Impact of Global Crises on the Hydraulic Mining Excavator Market
Erik Zimmermann and John Sammut (Germany)

Loading Equipment Acquisition Based on Total Cost of Ownership Principles
Nate Rutter and Steve Droste (USA)

Experience of operation of BelAZ mine dump trucks in Russian Open-Pit Mines
Konstantin Anistratov (Russia)

Simulating the Production of a Multi Element Ore-Body with an Alternating Crushing Schedule
Eugene Ben-Awuah, Samira Kalantari, Yashar Pourrahimian and Hooman Askari-Nasab
(Canada)

12:40 – 14:00 Lunch Break

14:10 – 15:30 Session 11 – Mine Equipment Selection, Utilization & Maintenance

Chair: Professor S. Frimpong (USA)

Where Has the Time Gone? The Hidden Delays in a Truck/Shovel Operation and Their Effects on Calculating Equipment Requirements
Chris Reardon (United Kingdom)

Infrared Imager as a Tool of Power Shovels Gearcases Bearings and Electrical Motors Monitoring
V.Y. Sergeev (Russia)

Reliability Modeling and Analysis for Walking Draglines of GLI Mine, Turkey
Nuray Demirel and Sebnem Duzgun (Turkey)

Methods for Assessing Dynamic Performance of Shovels
Michael Lipsett (Canada)

Risk Assessment Methodology in Oil Shale Mining
Sergei Sabanov (Estonia)

15:30 – 15:50 Coffee Break

16:00 – 17:30 Session 12 – Mine Equipment Selection, Utilization & Maintenance

Chair: Dr. Hakan Schunnesson (Sweden)

Dump Truck Vibrations in High-Impact Shovel Loading Operations
Samuel Frimpong and Nassib Aouad (United States)

Shorter Path Planning for Loading Operation by Wheel Loader
Shigeru Sarata, Noriho Koyachi, and Takashi Tsubouchi (Japan)

Vibration Transmitted by Off-Road Vehicles: Assessment of the Seat Transmissibility
Valentina Dentoni, Giorgio Massacci and Letizia Piras (Italy)

Application of Flash Setting Material for Temporally Earthquake Disaster Restoration of Gas Pipe Line Using Flyash Cement Mixtures
Hideki Shimada; Yasuhiro Yoshida, Koichi Araki, Takashi Sasaoka, Shuichi Fujita and Kikuo Matsui (Japan)

Modeling the Optimal Haul Truck Retirement Age
Chris Ryan (Canada)

19:00 – 21:00 Banquet

Facilitated by: Dr. Raj K. Singhal

Banquet Speaker: Professor Carsten Drebenstedt (Germany)

Introduced by: Dr. Meena Singhal

WEDNESDAY, NOVEMBER 18
SUMMIT ROOM

9:00 – 10:30 Session 13 – Mine Equipment Selection, Utilization & Maintenance

Chair: Professor K. Oraee (UK)

Comparing Alternative Cutting Technologies in Marble Quarries: Wire Cutting vs. Chain Saw
Maria Menegaki; Kazatsanidis (Greece)

A Google Earth Tracking (GET) System in Open Pit Mining Operations
Antonio Nieto and Enji Sun (United States)

Automation and Process Monitoring in Mining Industry using Infrared Technology and
Industrial Image Processing
Karl Nienhaus and Fiona Mavroudis (Germany)

Structure of the Specialized Maintenance Company (SMC) for Mining Equipment Service
V.Y. Sergeev and M.S. Zhuravlev (Russia)

Risk Level Indicator Model of Mining Safety Risk Measurement
Nan Ning, Li Dafu, Zhang Xiang and Wu Chao (PR China)

10:30 – 11:00 Coffee Break

11:00 – 12:30 Session 14 – Mine Equipment Selection, Utilization & Maintenance

Chair: Professor Michael Gamache (Canada)

Advanced Service and Maintenance System for Mining Equipment
Poderni R.Y. (Russia)

Maintainability Issues in Mining Industry
Rupesh Kumar, Andi R Wijaya, Rajiv Dandotiya and Uday Kumar (Sweden)

Proposed MIP Model to Minimize Truck Maintenance Cost
Erkan Topal and Salth Ramazan (Australia)

Implementing Lean Principle into Mining Industry
Andi Wijaya, Rupesh Kumar and Uday Kumar (Sweden)

12:30 – 14:00 Lunch Break

14:10 – 15:30 Session 15 – Health, Safety & Training**Chair: Dr. Fiona Mavroudis (Germany)**

The Use of Visualization of Risk Factors in Creation of Work Safety
Winkler T., Michalak D., and Jaszczyk Ł. (Poland)

Automation of LHD machines, Issues and Challenges
Håkan Schunnesson, Zeaba Madani-Mousavi and Uday Kumar (Sweden)

Modern Condition and Outlook for Development of Cyclic-Flow Technologies at Open Casts of Kazakhstan
Bukeikhanov Dias, Dyussebayev Askar, Sapakov Yermek and Turdahunov Mukhamedjan (Kazakhstan)

Risk Assessment of Safety Violations for Coal Mines Using the MSHA Citation Database
Vladislav Kecojevic, Megan Orsulak and R. Larry Grayson (United States)

15:30 – 15:50 Coffee Break**16:00 – 17:30 Session 16 – Health, Safety & Training****Chair: Dr. Nuray Demirel (Turkey)**

Mining Safety Risk Measure Indicators Construction Based on FMECA
Nan Ning, Yao Zhengong, Jiang Peng and Wu Chao (PR China)

Multimedia Training Program for Underground Rock Bolters
Derek B. Apel, David Nutakor, R. Larry Grayson and Josef Szymanski (Canada)

Research on Mining Safety Risk Assessment Based on Chaos Theory
Xiong Yunyun, Hu Wei, Zhang Xiang and Zhou Keping (PR China)

Construct Mining Safety Risk Assessment Model by Grey Model Theory
Xiong Yunyun, Yao Zhengong, Tu Jiale and Wang Liguang (PR China)

WEDNESDAY, NOVEMBER 18
ASSINIBOINE ROOM

9:00 – 10:30 Session 17 – Rock Mechanics, Geotechnical Applications & Mine Environment

Chairs: Professor Giorgio Massacci (Italy)
Professor Ian Porter (Australia)

Determination of Stope Panel Geometry in Weak Rock Mass Based on Physical-Mechanical Analysis and Discontinuity Observation in Underground Cut and Fill Mine, Case Study: Pongkor Gold Mine

Yosep Purnama, Agus Sudharto and Herian Sudarman (Indonesia)

Indirect Determination of Concrete Compressive Strength of Buildings Located in Istanbul and Izmit (Kocaeli) Turkey as a Function of Ultrasonic Pulse Velocity

A. Bozkurt, C. Kurtulus and H. Endes (Turkey)

A Methodology to Assess the Vulnerability of Design Alternatives in Burst-Prone Mines

David Cheung, Vassilios Kazakidis, and Brad Simser (Canada)

Modelling of Connected Geomechanical, Hydromechanical and Gasdynamic Processes for Potash Minerals Deposits

Michael Zhuravkov, O.L. Konovalov, A.V. Krupoderov and A.A. Kushunin (Belarus)

Seismic Activity and Compression Strength of Roof Rocks in Lubin Copper Ore Deposit

Anna Gogolewska and Stanisaw Lusarczyk (Poland)

A Geometrical Approach for Slope Curves and Discontinuities in Open Pits

A. Turanboy and M. Kemal Gokay.

10:30 – 11:00 Coffee Break

11:00 – 12:30 Session 18 – Rock Mechanics, Geotechnical Applications & Mine Environment

Chairs: Professor Derek Apel (Canada)
Professor M. Grenon (Canada)

Predicting Geotechnical Parameters of Fine-Grained Dredge Materials of the Gulf of Izmit (NW of Turkey) Using the Slump Test Method and Index Property Correlations

C. Kurtulus, A. Bozkurt, and H. Endes (Turkey)

A Survey of Seismic Risk in Mines

Marty Hudyma (Canada)

Reconciliation of Mine Production Planning and Ventilation for Reducing Energy Costs and Achieving Improved Safety in an Underground Mine

Euler De Souza and Cristian Gherghel (Canada)

Employment of Propellant Explosives in Quarrying: Analysis of a Case Study

Marilena Cardu, Alessandro Giraudi and Enrica Michelotti (Italy)

Assessment of Drift Stability using Probability of Failure
Anand Musunuri, Wei Wei, Hani Mitri and Denis Thibodeau (Canada)

12:30 – 14:00 Lunch Break

14:10 – 15:30 Session 19 – Rock Mechanics, Geotechnical Applications & Mine Environment**Chair: Dr. Marilena Cardu (Italy)**

The Influence of Porosity on the Unconfined and Triaxial Shear Strength of Cemented Rock Backfill

Richard McNearny and Clifford Stout (USA)

An Investigation into the Mechanical Behaviour of Hydraulic Sand Fill and Gelfill

Mehrdad Kermani and Ferri Hassani (Canada)

Development of a Polymer Based Skin Reinforcement System for Underground Coal Mine Roadways

Ian Porter and Ernest Baafi (Australia)

Stability of Haulage Drift in the Dynamic Mine Environment

Wei Wei, Anand Musunuri, Hani Mitri and Denis Thibodeau (Canada)

Improvements in 3D-Canvent – An Integrated Computer Package for Simulating the Underground Mine Ventilation Systems Software, for example, Applied with Automated Programs in Simulating the Real Time Conditions in Operating Mines

Gary Li, Charles Kocsis and Stephen Hardcastle (Canada)

15:30 – 15:50 Coffee Break**16:00 – 17:30 Session 20 – Rock Mechanics, Geotechnical Applications & Mine Environment****Chair: Dr. Tansel Dogan (Turkey)**

Heat Recovery in Underground Ventilation

Kostas Fytas; Hugo Dello Sbarba and Jacek Paraszczak (Canada)

Improvement in Auxiliary Ventilation Calculation Studies by CFD Modeling and Underground Measurements

Javier Toraño, Susana Torno, Mario Menendez, Malcolm Gent and Judith Velasco (Spain)

Stability Analysis of Sill Drifts under Reinforced Sill Mat

Mehdi Razavi (Canada)

Proposal of a Mathematical Model to Design the Optimal Composition of Mixtures for Ceramic Crafts

Pier Paolo Manca and P. Tronci (Italy)

An Integrated Structural Stability Analysis for the Portage Open Pit.

M. Grenon, A.M. Laflamme and J. Hadjigeorgiou (Canada)