SAG Conference 2023 - Preliminary Technical Program

Monday, September 25, 2023

Session 1			AG Milling (5)
08:00	08:30	**Chairperson - Welcome and Opening Remarks**	
08:30	08:45	Paper 2	Will AG milling make a comeback? (M. Powell)
08:45	09:00	Paper 3	AG mill design for low competence ores (A. Mainza)
09:00	09:15	Paper 4	Pilot study of rock transport rates in AG milling (G. Chiasson)
09:15	09:30	Paper 5	Enhancing AG milling circuit performance through advanced liner design, modelling, material selection and digital tools (W. Chen)
09:30	10:00	Question Period	
10:00	10:15	Coffee	

Session 2			Operations Optimization and Design (6)
10:15	10:30	Paper 6	Secondary Crushing Synergy with the Mount Milligan BAG mill (A. Doll)
10:30	10:45	Paper 7	Successful conversion of Autogenous Mill to Semi-Autogenous Milling a Unki Platinum Mine (J. Kalala)
10:45	11:00	Paper 8	Review and Optimization of the Hudbay Constancia Comminution Circuit (R. Valle)
11:00	11:15	Paper 9	Unique Campaign Processing of ores from Santa Elena and Ermitaño mines using the same comminution circuit (M. van de Vijfeijken)
11:15	11:30	Paper 10	Improvements in Grinding Circuit Performance at the Fekola Gold Mill, Mali West Africa (K. Bartholomew)
11:30	11:45	Paper 11	Processing Stockpiled Scats at Glencore Kamoto Copper Company (J. Illanes Treswalt)
11:45	12:15	Question Period	
12:15	13:00	Coffee	

Session 3			Ball Mill Comminution Circuit Design (5)
13:00	13:15	Paper 12	The Fundamentals of Tumbling Mill Design (A. Giblett)
13:15	13:30	Paper 13	Application of the Natural Selection Function to Grate Discharge Mills (A. VIEN)
13:30	13:45	Paper 14	Tumbling Mill Modelling: A 3-Way Comparison of Real-Time Predictions From a New Granular Flow Model Against Both DEM and Experiment (T. Moodley)
13:45	14:00	Paper 15	High Efficiency Trommel Screen Operation at Spence Mine (G. Barthold)
14:00	14:15	Paper 16	Cadia's HPGR-Ball Mill Versus HPGR-SAB Circuits and Their Comminution Efficiency (C. Haines)
14:15	14:45	Question Period	
14:45	15:00	Coffee	

Session 4			HPGR Comminution Circuit Design (6)
15:00	15:15	Paper 17	Energy Effects of dry grinding with HPGR (F. Heinicke)
15:15	15:30	Paper 18	Prediction of the product size distribution of pilot HPGRs using the DEM-MBD-PRM approach (V. Rodriguez)
15:30	15:45	Paper 19	Experiences and operating results from the application of rotating side plates to high-pressure grinding rolls (HPGR) in minerals applications (T. Mackert)
15:45	16:00	Paper 20	Upgrading a 2.4-meter HPGR with Advanced Mechanical Skew Control and Flanged Roll Design (B. Knorr)
16:00	16:15	Paper 21	Development of Fine High-Pressure Grinding for Mineral Processing Plants (R. MCIvor)
16:15	16:30	Paper 22	Evaluation of the impact of HPGR on metallurgical performances of concentration processes (S. Makni)
16:30	17:00	Question Period	
17:00	18:00	Drinks	
18:00	20:00	Masterclass 1	

Tuesday, September 26, 2023

Keynote: Agnico Eagle

Session 5			Optimization (5)
08:00	08:30	Keynote	Implementation of high-pressure grinding rolls (HPGR) as the tertiary crusher at the Meadowbank process plant (F. Robichaud)
08:30	08:45	Paper 2	Operational Debottlenecking of the Cadia 40ft SAG Mill through Constraint Mapping Analysis (C. Geoghegan)
08:45	09:00	Paper 3	Low-cost SAG milling opportunities (M. Powell)
09:00	09:15	Paper 4	Optimization and continuous improvement of Oyu Tolgoi comminution circuit (G. Malkhuuz)
09:15	09:30	Paper 5	Throughput increasement at Doña Inés de Collahuasi Mining Company in SAG Mill through the adecuation on grinding media size, methodology, strategy and results obtained on this implementation (S. Olmedo)
09:30	10:00	Question Period	
10:00	10:15	Coffee	

Session 6			Practical Modelling and Control (6)
10:15	10:30	Paper 6	Prediction of the product size distribution of pilot HPGRs using the DEM-MBD-PRM approach (V. Rodriguez)
10:30	10:45	Paper 7	Online particle size distribution using acoustic and Expert System in Minera San Cristobal Mine (W. Churata)
10:45	11:00	Paper 8	Rio Tinto Kennecott's SAG Optimization Since 2020 (J. Mortensen)
11:00	11:15	Paper 9	Identification of Semi-Autogenous Grinding Mill Operating States using Clustering (N. Adhikari)
11:15	11:30	Paper 10	Machine Learning-accelerated SAG Mill Optimization (P. Shelley)
11:30	11:45	Paper 11	SAG Mill Advanced Process Control and Optimization Using BrainWave MPC (A. Kheradmand)
11:45	12:15	Question Period	
12:15	13:00	Coffee	

Session 7			Test Work & Characterization (5)
13:00	13:15	Paper 12	A Review of SAG Milling – History of Mill Selection and Testwork Analysis (R. Chandramohan)
13:15	13:30	Paper 13	Insights Into Rock Breakage Experience For Over 30 Years (A. Morrell)
13:30	13:45	Paper 14	Assessing comminution circuit performance using precision measurement of size specific energy (S. Ali)
13:45	14:00	Paper 15	Engineering and commissioning of Las Chispas project (F. Behzadian)
14:00	14:15	Paper 16	Comparison of pilot and industrial scale AG/SAG mill performance – A case study on UG2 Platinum ore (A. Mainza)
14:15	14:45	Question Period	
14:45	15:00	Coffee	

Session 8			Energy Efficient and More Sustainable Comminution (6)
15:00	15:15	Paper 17	The flowsheet of the future: HPGR, vertical stirred mill, coarse particle flotation, vertical stirred regrind mill (M. van de Vijfeijken)
15:15	15:30	Paper 18	Paradigm change in mining comminution; OZ Minerals decides to install 2 Loesche Vertical-Roller-Mill dry grinding-classifying circuits in its West Musgrave Copper-Nickel Project (C. Gerold)
15:30	15:45	Paper 19	Circuit Energy Savings of Microwave-Assisted Comminution and Ore Sorting (X. Tian)
15:45	16:00	Paper 20	Rock pulverization and mineral liberation with transcritical carbon dioxide (tCO2) cycling (M. Hesse)
16:00	16:15	Paper 21	The Conjugate Anvil Hammer Mill – a new, high efficiency, coarse grinding machine (G. Hollcroft)
16:15	16:30	Paper 22	Gravity-Induced Stirred Mill (TowerMill) in Coarse Grinding Applications (S. Palaniandy)
16:30	17:00	Question Period	
17:00	18:00	Drinks	
18:00	20:00	Masterclass 2	

Wednesday, September 27, 2023

Keynote: Teck Resources

Session 9			Project Delivery, Construction, Commissioning (5)
08:00	08:30	Keynote	The Quebrada Blanca 2 Project: Development of a Multi-Line SABC Chilean Copper Concentrator from Concept through to Operation (B. Rairdan)
08:30	08:45	Paper 2	Is the Capital Cost of Your Grinding Circuit too High? (G. Lane)
08:45	09:00	Paper 3	Concentrator Grinding Circuit Layout and Design – Considerations from the past, present and for the future emerging upbeat market conditions. (D. Meadows)
09:00	09:15	Paper 4	Commissioning of Single-Stage SAG mill at the Meliadine process plant (F. Robichaud)
09:15	09:30	Paper 5	Ahafo Mill Expansion Commissioning (E. Asakapo)
09:30	10:00	Question Period	
10:00	10:15	Coffee	

Session 10			HPGR Energy Efficient and More Sustainable Comminution (6)
10:15	10:30	Paper 6	Improvements in asset efficiency through tyre wear life optimisation at Cerro Verde (J. Hofmann)
10:30	10:45	Paper 7	Trade-off Realities in HPGR vs SAG milling - A Practical Comparison of Tropicana and Gruyere Comminution Circuits (M. Becker)
10:45	11:00	Paper 8	Kamoa-Kakula Copper Mine Complex Phase I &II : Review of Commissioned Plant Performance and Back-Referencing HPGR & Comminution Testwork (P. Morgan)
11:00	11:15	Paper 9	Trial Results of the Novel SmartCone Control System at Freeport McMoRan Morenci Canyon Crushing Circuit (D. Jacobson)
11:15	11:30	Paper 10	Remote grinding mill operation – a key contributor to the low emission mining society (A. Fernandez)
11:30	11:45	Paper 11	Optimizing Energy and Throughput for HPGR: A Case Study for Copper Mountain Mine (G. Pamparana)
11:45	12:15	Question Period	
12:15	13:00	Coffee	

Session 11			Advances in Mill & Liner Design (5)
13:00	13:15	Paper 12	Revolutions in SAG Mill Liner Design Through Ingenious Use of DEM Modelling (R. Stephens)
13:15	13:30	Paper 13	Evaluating the economic and safety aspects of mill liner design for performance (C. Ndimande)
13:30	13:45	Paper 14	Liner Optimization of Ahafo Mine Ball Mill (J. Delgadillo)
13:45	14:00	Paper 15	SAG Digital Twin – Hybrid approach for Jb-Jc and liners wear modeling. Results from implementation at Los Pelambres Mine. (A. Medina)
14:00	14:15	Paper 16	Using SAG Mill Vibration for APC Strategies and Monitoring Liner Improvements (A. Jordens)
14:15	14:45	Question Period	
14:45	15:00	Coffee	

Session 12			Safer Operation & Maintenance Practice (6)
15:00	15:15	Paper 17	Mill liner separation methodology that enables recycling of worn rubber and Poly-Met mill liners (L. Furtenbach)
15:15	15:30	Paper 18	New Technology for Safer and Faster Mill 3D Scans (A. Araya)
15:30	15:45	Paper 19	Proactive maintenance for HPGRs using wear soft sensors (Y. Felah)
15:45	16:00	Paper 20	Indoor Versus Outdoor Materials Handling at Mt. Milligan (T. Marques)
16:00	16:15	Paper 21	Site Trials for Latest Developments in Mechanisation of Grinding Mill Relining Practices (J. Salomon)
16:15	16:30	Paper 22	PTFI & RME Collaboration: Technology Makes Mill Relines Safer and More Efficient (A. Raharjo)
16:30	17:00	Question Period	
17:00	18:00	Drinks	
18:00	21:00	Banquet	

Thursday, September 28, 2023

Keynote: Ausenco

Session 13			Energy Efficient and More Sustainable Comminution (5)
08:00	08:30	Keynote	The impact of GHG emission costs on the "true economics" in comminution trade-off studies (G. Ballantyne)
08:30	08:45	Paper 2	SAG Mill Design and Benchmarking Using Trends in the JKTech Database (T. Vizcarra)
08:45	09:00	Paper 3	Evaluate the Integration of Sensor-based Pebble Sorting into SABC Grinding Circuit for the Pulang Copper Mine (P. Li)
09:00	09:15	Paper 4	Is coarse particle liberation the elixir for the new mineral processor? (R. Bearman)
09:15	09:30	Paper 5	Trusted automation, the pathway toward process automation of SABC circuit (M. Yahyaei)
09:30	10:00	Question Period	
10:00	10:15	Coffee	

Session 14			Process Control (6)
10:15	10:30	Paper 6	Optimisation of the Leinster Nickel Mine Comminution Circuit (A. Harris)
10:30	10:45	Paper 7	Optimization of the Damang Comminution Circuit (C. Kuupol Kuutor)
10:45	11:00	Paper 8	Implementation of a novel advanced process control strategy to reduce power consumption (C. Pheloung)
11:00	11:15	Paper 9	Leveraging Digital Tools for Improving SAG mill operation for stable charge and near real time grind performance prediction (W. Chen)
11:15	11:30	Paper 10	RAPID Diagnostics and Observations of the Internal Operation of a SAG Mill in the Context of its Grinding Circuit. (R. Pax)
11:30	11:45	Paper 11	Mine to Mill the next phase – incorporating Soft Sensors and Data Analytics (G. Forbes)
11:45	12:15	Question Period	
12:15	13:00	Coffee	

Session 15			Geometallurgy & Mine to Mill (5)
13:00	13:15	Paper 12	Improving orebody knowledge with high-resolution rock strength characterization using the Minpraxis Tester (S. Nadolski)
13:15	13:30	Paper 13	Applied Geometallurgy at Agnico Eagle's Kittila Operation using the Geopyörä Breakage Test (M. de Paiva Bueno)
13:30	13:45	Paper 14	Ore Hardness Mapping of Batu Hijau Ore Deposit using the HIT (Hardness Index Tester) Device (D. Varianemil)
13:45	14:00	Paper 15	Integrated Mine-To-Mill Optimization of Toromocho Operation at Minera Chinalco Peru (R. Valle)
14:00	14:15	Paper 16	Full Mine-To-Mill Optimization & Continuous Improvement of Lundin Mining's Chapada Operation In Brazil (R. Valle)
14:15	14:45	Question Period	
14:45	15:00	Coffee	

Session 16			Future Design (6)
15:00	15:15	Paper 17	Extending STM's Large Vertical Stirred Mill Portfolio up to 12.5 MW (E. Zhmarin)
15:15	15:30	Paper 18	Pebble Crushing Circuits: The SAG mill's Unappreciated Saviour (K. Erwin)
15:30	15:45	Paper 19	Evaluating the Operating Performance of 40' SAG Mill Circuit Designs (B. Cornish)
15:45	16:00	Paper 20	Impact of large grinding mill drives on mines powered by renewable energy sources (N. Vijayakumar)
16:00	16:15	Paper 21	The World's Highest Capacity SAG Mill (A. Filidore)
16:15	16:30	Paper 22	The Next Generation of Very Large Horizontal Grinding Mills (D. Bordi)
16:30	17:00	Question Period	
17:00	18:00	Drinks	

Notes:
1) Indicated author is the corresponding author, presenting author may be different at the conference
2) This is a preliminary tehcnical program; the SAG Conference Technical Committee reserves the right to modify this program as necessary