



PROCEEDINGS

-  **ID: 1**
CONTINUOUS IMPROVEMENT OF THE RETURN AIR RAISE SILENCER SYSTEM AT TOTTEN MINE
ENRIQUE ACUNA, ANDREW DOBSON, CHERYL ALLEN

-  **ID: 2**
STUDY OF RE-ENTRY TIME POST BLASTING AT CIGUHA PT ANTAM UBPE PONGKOR UNDERGROUND GOLD MINE
PUTRA HANIF AGSONGANI, NUHINDRO PRIAGUNG WIDODO, T. SITORUS

-  **ID: 4**
EMERGENCY PLAN METHODOLOGY FOR MINE FIRE SIMULATIONS IN CHUQUICAMATA UNDERGROUND MINE
ROBERTO ALVAREZ, J. D. STINNETTE, J. E. CARRASCO

-  **ID: 7**
NEW MINE FIRE LOCATION MODEL UTILIZING REAL-TIME GAS MONITORING DATA
DAVOOD BAHRAMI, LIMING YUAN, LIHONG ZHOU, JAMES H. ROWLAND

-  **ID: 9**
SELF-HEATING BEHAVIOUR OF A HEAT-AFFECTED COAL SEAM
BASIL BEAMISH, J. THEILER

-  **ID: 10**
PREVENTING AND MANAGING FIRES AT DEEP LEVELS IN ULTRA-DEEP LEVEL GOLD MINES
MORNE BEUKES

-  **ID: 13**
VENTILATION DESIGN AND OPERATING ISSUES RELATING TO UNDERGROUND MINES WITH HIGH ELEMENTAL SULPHUR CONTENT
D J (RICK) BRAKE
















-  **ID: 14**
EFFICIENT MINE VENTILATION SYSTEMS THROUGH PROPER FAN DESIGN
JAVIER FERNANDEZ, DARA BREEUWER, LUIS JAVIER DIAZ, LOUIS VAN WYK

















-  **ID: 15**
INVESTIGATION OF THE TECHNO-ECONOMIC FEASIBILITY OF RECOVERING WASTE HEAT OF DIESEL GENERATOR EXHAUST FOR HEATING MINE INTAKE AIR
MARCO BRITO, ALI MADISEH, DURJOY BAIDYA
















-  **ID: 17**
DIESEL AND WELDING AEROSOLS IN AN UNDERGROUND MINE
ALEKSANDAR BUGARSKI, TERESA BARONE, JON HUMMER
















-  **ID: 18**
AUXILIARY VENTILATION LAYOUTS FOR HARD ROCK MINES
FELIPE CALIZAYA, S. BHATTACHARYYA
















-  **ID: 19**
MINE VENTILATION ON DEMAND SYSTEM AT NICKEL RIM SOUTH MINE; TESTING PROCEDURES, SYSTEM MAINTENANCE, AND RESULTS
JOFFRE SANFTENBERG, C. CAMERON, E. MCLAREN, H. DELLO SBARBA

-  **ID: 20**
NUMERICAL STUDY ON DPM DISPERSION AND DISTRIBUTION IN AN UNDERGROUND DEVELOPMENT FACE BASED ON DYNAMIC MESH
GUANG XU, JINXIN HUANG, PING CHANG
-  **ID: 24**
COMPUTATIONAL ENERGY DYNAMICS MODEL FOR MINE CLIMATE SIMULATIONS
GEORGE DANKO
-  **ID: 25**
THE EFFECTS OF THERMAL HISTORY ON MINE CLIMATE SIMULATION RESULTS
GEORGE DANKO, CHAO LU
-  **ID: 27**
A PRAGMATIC METHODOLOGY FOR MINE VENTILATION PLANNING
EULER DESOUZA, ROBERT CLARKE
-  **ID: 28**
AIRFLOW REQUIREMENTS FOR MODERN DIESEL AND ELECTRIC EQUIPMENT
EULER DESOUZA, J. DANIEL STINETTE, JULIAN VARASCHIN
-  **ID: 29**
UNDERGROUND BOOSTER FAN PLACEMENT STRATEGIES
EULER DESOUZA, KYLE PENNER
-  **ID: 30**
VENTILATION MISTAKES AND CONSEQUENCES - REAL LIFE EXPERIENCES
EULER DESOUZA
-  **ID: 31**
PERFORMANCE ASSESSMENT OF A FIBER OPTIC METHANE SENSOR EXPOSED TO COAL SMOKE
HEATHER DOUGHERTY, THOMAS DUBANIEWICZ, MINGMING LI
-  **ID: 32**
DEVELOPMENT OF PRACTICAL RENEWABLE (SUSTAINABLE) ENERGY EFFICIENT COOLING SYSTEMS AND STRATEGIES
JON FOX, KAROLY (CHARLES) KOCSIS
-  **ID: 33**
A PRELIMINARY INVESTIGATION OF RESPIRABLE SILICA PARTICLE SURFACE IN CENTRAL APPALACHIAN COAL MINE DUST
LEAH FROST, EMILY SARVER, CIGDEM KELES
-  **ID: 34**
FAN INLET AIR VELOCITY PROFILE AND THE NEED FOR CAREFULLY DESIGNED DUCTWORK SYSTEMS
GEORGE GAMBLE
-  **ID: 35**
ENERGY SAVING STRATEGIES IN MINE COOLING: DISTRIBUTED VS CENTRALIZED COOLING SYSTEMS
MORY GHOMSHEI
-  **ID: 36**
BETTER PREDICTIONS OF HEAT TRANSFER INTO THE GROUND AND IMPACT ON TUNNEL THERMAL CONDITIONS
MARK GILBEY, RICHARD RAY, D. BIRKS, J. A. THOMPSON
-  **ID: 38**
COAL MINE ROCK DUST DISPERSIBILITY TESTS AFTER ABSORBING MOISTURE
RICHARD GILMORE, JÜRGEN BRUNE
-  **ID: 39**
DESIGN AND CONSTRUCTION OF A 1/40TH SCALE LONGWALL MINE MODEL FOR PHYSICAL TESTING OF METHANE EXPLOSIONS
RICHARD GILMORE, JASON MCMACK, CASEY DEROSA, GREGORY BOGIN JR., JÜRGEN BRUNE

-  **ID: 42**
NORDIC VENTILATION SYSTEM AND REGULATION: AN OVERVIEW
ADRIAN HALIM, TOMAS BOLSOY, STINA KLEMO
-  **ID: 46**
DIESEL EMISSION REDUCTION
KEVIN HEDGES
-  **ID: 48**
MOISTURE CONTENT'S EFFECT ON FRACTURE DEVELOPMENT IN COAL UNDER MICROWAVE IRRADIATION
JINXIN HUANG, GUANG XU, PING CHANG, GUOZHONG HU
-  **ID: 49**
HEAT GENERATION IN BATTERY ELECTRIC UNDERGROUND HAUL TRUCKS
BRIAN HUFF
-  **ID: 51**
SHOCK LOSSES CHARACTERIZATION OF SPLITS AND JOINTS FOR AUXILIARY VENTILATION PARALLEL DUCTS
JUAN HURTADO, HAROLD LEÓN-CADENAS
-  **ID: 52**
A STRATEGY TO REDUCE NITROUS GASES FROM BLAST FUMES IN UNDERGROUND MINING
ALEXANDER HUTWALKER, O. LANGEFELD, T. PLETT, E. CLAUSEN
-  **ID: 53**
COMPARISON OF MINE VENTILATION SOFTWARE TOOLS FOR UNDERGROUND COAL MINES IN HARSH CONDITIONS
THOMAS IMGRUND, SEBASTIAN SPÜRK, ANDREAS BISCHOFF
-  **ID: 54**
LALOR MINE: IMPACTS AND IMPLICATIONS OF A 2500HP MAIN EXHAUST FAN FAILURE
TYLER IRVING
-  **ID: 55**
DISCRETE MODELING OF A LONGWALL COAL MINE GOB FOR CFD SIMULATION
ADITYA JUGANDA, CLAIRE STREBINGER, JÜRGEN BRUNE, GREGORY BOGIN JR.
-  **ID: 57**
REDUCING HEAT-INDUCED HEALTH AND SAFETY PROBLEMS IN UNDERGROUND METAL MINES USING BY MEANS OF TECHNOLOGIES AND RENEWABLE ENERGY-BASED COOLING SYSTEMS
KAROLY (CHARLES) KOCSIS, J. PARRISH, M. TEIXEIRA, K. SCALISE
-  **ID: 59**
RE-UTILIZATION OF UNDERGROUND BULK-AIR-COOLER SPRAY WATER IN MINE AIR THERMAL PRE-CONDITIONING
ALI KUYUK, ALI MADISEH, FERRI HASSANI
-  **ID: 60**
DEVELOPMENT OF A MODIFIED PREDICTED HEAT STRAIN MODEL FOR HOT WORK ENVIRONMENTS
PALOMA LAZARO, MOE MOMAYEZ
-  **ID: 61**
SIMULATION OF AIRFLOW CHANGES IN A VOD SYSTEM AND EVALUATION OF ENERGY BENEFITS THROUGH VREX MODELING
GARY LI
-  **ID: 63**
MINE VENTILATION AIRFLOW DEMAND ESTIMATING AND PLANNING
IAN LOOMIS
-  **ID: 65**
AIRWAY VELOCITY "RULES OF THUMB"; MORE GUIDELINES THAN HARD AND FAST RULES
KATIE MANNS, R. VILJOEN, L. VAN DEN BERG
-  **ID: 67**
VENTILATION STRATEGY RELATED TO BATTERY EQUIPMENT AT MACASSA MINE
MIKE MAYHEW, S. ROSS

-  **ID: 69**
JOHNSON MATTHEY'S MINING CRT TECHNOLOGY BRINGS LOW-NO₂ PM CONTROL TO THE EXISTING FLEET OF DIESEL ENGINES OPERATING IN THE MINING SECTOR
JOSEPH MCCARNEY, RITA AIELLO, STAN MACK, PETER WERTH
-  **ID: 70**
DIRECT COMPARISON OF HEAT PRODUCED BY BATTERY VS. DIESEL LHD
CHRIS MCGUIRE, K. MACDONALD, J. ARMBURGER, J. BAUMANN
-  **ID: 76**
EFFECTIVE MINE VENTILATION MANAGEMENT WITHOUT COMPROMISING MINE HEALTH AND SAFETY AND PRODUCTIVITY
WILLIAM OCHING, MORY GHOMSHEI
-  **ID: 77**
DESIGN AND IMPLEMENTATION OF A SUPPLEMENTAL ATOMIZING SPRAY SYSTEM FOR DUST CONTROL IN DEEP CUT CONTINUOUS MINING
TODOR PETROV, ZACH BROWN, JHOSH DILBECK, DAVID TURNER, JUSTIN RATLIFF
-  **ID: 78**
IMPLEMENTATION OF ADVANCED CONTROL STRATEGIES USING VENTSIMCONTROL AT SAN JULIAN MINE
JOSE PINEDO, DANIEL TORRES ESPINOZA
-  **ID: 79**
DESIGNING COAL PANELS IN THE CONDITIONS OF ASSOCIATED METHANE AND SPONTANEOUS FIRE HAZARDS
STANISLAW PRUSEK, EUGENIUSZ KRAUSE, JACEK SKIBA
-  **ID: 81**
ROADHEADER SHAFT SINKING - VENTILATION AND REFRIGERATION SYSTEMS
ALEX RAWLINS
-  **ID: 82**
INCORPORATING VENTILATION FAN PLANTS IN RAIL AND VEHICULAR ROADWAY OVERBUILDS
RICHARD RAY
-  **ID: 83**
USE OF REVERSIBLE JET FANS IN SHAFTS FOR "PUSH-PULL" EMERGENCY VENTILATION
RICHARD RAY, ETHAN FUSTER
-  **ID: 84**
IMPROVING VENTILATION AT HOYLE POND MINE WITH MONITORING AND CONTROL SYSTEM
JAVIER RICO PAEZ, BARRY HOPE
-  **ID: 85**
HEAT MANAGEMENT IN MINING INDUSTRY: PERSONAL RISK FACTORS, MITIGATION PRACTICES, AND INDUSTRY ACTIONS
PEDRAM ROGHANCHI, ELAHEH TALEBI, BEHROOZ ABBASI
-  **ID: 86**
DESIGN OF PACKED ROCK BED THERMAL STORAGE TO REDUCE VENTILATION HEATING AND COOLING DEMANDS IN UNDERGROUND MINES IN EXTREME CLIMATIC REGIONS
ALBERTO ROMERO
-  **ID: 87**
A TECHNO-ECONOMIC ANALYSIS OF THE USE OF ELECTRIC LOADING AND HAULING TECHNOLOGIES IN CANADIAN UNDERGROUND MINES
ALBERTO ROMERO, D. L. MILLAR, M. CARVALHO
-  **ID: 88**
THE IMPORTANCE OF ACCURATE ROCK PROPERTY AND VIRGIN ROCK TEMPERATURE DATA IN VENTILATION AND COOLING PLANNING REQUIREMENTS
ALEXANDER RUSSELL, FRANK VON GLEHN, ANDREW BRANCH, MORNE BEUKES
-  **ID: 89**
RISKS ANALYSIS FOR VENTILATION NETWORK OPTIMISATION PROCESSES IN KAZAKHSTAN METAL MINES
SERGEI SABANOV, Y. TUSSUPBEKOV, A. KARZHAY, B. ALDAMZHAROV

-  **ID: 91**
RESPONSE OF THE FLIR AIRTEC MONITOR TO AIRBORNE COAL DUST
EMILY SARVER, CIGDEM KELES, EMANUELE CAUDA, KENT PHILLIPS
-  **ID: 92**
UTILIZATION AND IMPLEMENTATION OF GEOTHERMAL SYSTEMS AND GROUND SOURCE HEAT PUMPS FOR UNDERGROUND MINE COOLING
KYLE SCALISE, MARCELO TEIXEIRA, KAROLY (CHARLES) KOCSIS, KEITH ROBERTSON
-  **ID: 93**
CASE STUDY: USING POLYMER DUCTING FOR FACE VENTILATION OF COAL MINES
MICHAEL SCHULTE, BRYON CERKLEFSKIE
-  **ID: 94**
DESIGN OF A WATER CURTAIN TO REDUCE ACCUMULATIONS OF FLOAT COAL DUST IN LONGWALL RETURNS
CLARA SEAMAN, MICHAEL R. SHAHAN, TIMOTHY W. BECK, STEVEN E. MISCHLER
-  **ID: 97**
CASE STUDY - VENTILATION DUCT CRITERIA PRO'S AND CON'S. HOW TO EFFECTIVELY LOWER OPERATING COSTS DURING THE TENDER PROCESS
MICHAEL SHEARER, JOHANNES HOLTZHAUSEN
-  **ID: 98**
PERFORMANCE ANALYSIS OF SURFACE GOAF HOLE GAS DRAINAGE SYSTEMS AND USE OF TRIGGERS FOR SPONTANEOUS COMBUSTION RISK MANAGEMENT IN AUSTRALIAN COAL MINES
GUANGYAO SI, BHARATH BELLE
-  **ID: 99**
OPTIMIZED MODEL BASED CONTROL OF MAIN MINE VENTILATION AIR FLOWS WITH MINIMIZED ENERGY CONSUMPTION
STEFAN SJOESTROEM, E. KLINTENÄS, P. JOHANSSON, J. NYQVIST
-  **ID: 100**
OVERVIEW OF ACTIVE EXPLOSION BARRIER SYSTEMS FOR NORTH AMERICAN UNDERGROUND COAL MINES
AREND SPAETH, LAURA STEEVES, JHON SILVA, INOKA ERANDA PERERA
-  **ID: 101**
VENTILATION SYSTEMS IN UNDERGROUND COPPER MINES IN POLAND IN TERMS OF PREVENTING AEROLOGICAL THREATS
RADOSLAW STACH, S. GOLA, K. SOROKO, P. ZGRZEBSKI
-  **ID: 102**
IMPROVEMENT OF CLIMATIC CONDITIONS IN THE UNDERGROUND EXCAVATIONS IN THE ASPECT OF TYPES VENTILATION DAMS WHICH ARE USED IN SEALING ABANDONED AREA IN POLISH COPPER MINES.
RADOSLAW STACH, K. SOROKO, P. ZGRZEBSKI, S. GOLA
-  **ID: 103**
SENSITIVITY ANALYSIS OF VENTILATION MODELS - WHERE NOT TO TRUST YOUR STIMULATION
MARTIN GRIFFITH, CRAIG STEWART
-  **ID: 104**
IMPROVING THE PERFORMANCE OF THE HARDY CROSS ALGORITHM FOR LARGE VENTILATION MODELS
CRAIG STEWART, SAIIED AMINOSADATI, MEHMET KIZIL
-  **ID: 105**
CFD MODELING OF METHANE FLAME INTERACTION WITH A SIMULATED LONGWALL COAL MINE GOB
CLAIRE STREBINGER, GREGORY BOGIN JR., JÜRGEN BRUNE
-  **ID: 106**
APPLICATION OF PLASTIC VENTILATION DUCTING IN MINE TUNNELING
REMI THIBAUT, DARRYL WITOW, DANIEL LAMOUREUX, DAN KULCHYSKI
-  **ID: 107**
AN OVERVIEW OF COAL SPONTANEOUS COMBUSTION STUDIES IN CHINA
JERRY TIEN, YINGJIAZI CAO

-  **ID: 108**
HEAT LOAD ESTIMATION OF CONVEYED ORE IN UNDERGROUND MINES
KEVIN TOM, JANE LI
-  **ID: 109**
TECHNO-ECONOMIC OF AN ICE STOPE THERMAL STORAGE FOR MINE HEATING AND COOLING IN SUB-ARCTIC CLIMATES
KIM TRAPANI
-  **ID: 110**
MONITORING AND ASSESSMENT OF UNDERGROUND CLIMATIC CONDITIONS USING SENSORS AND GIS TOOLS
PURUSHOTHAM TUKKARAJA, ANKIT JHAA
-  **ID: 111**
COMPUTATIONAL AND EXPERIMENTAL INVESTIGATION OF CAVE CHARACTERISTIC CURVES IN A BLOCK CAVING MINE
PURUSHOTHAM TUKKARAJA, Y. PAN, R. BHARGAVA, K. KATZENSTEIN
-  **ID: 116**
VENTILATION SYSTEM DESIGN FOR THE WASSA UNDERGROUND MINE
KEITH WALLACE, BRIAN PROSSER, R. REDDEN, A. AKANSOBE
-  **ID: 119**
DISTURBANCES OF AIR PARAMETERS CAUSED BY THE OPERATION OF THE SHEARER IN THE LONGWALL
STANISLAW WASILEWSKI, W. DZIURZYŃSKI, A. KRACH, T. PAŁKA
-  **ID: 122**
NEW THRESHOLD LIMIT VALUES FOR GASES IN EUROPE AND RESULTING PROBLEMS IN MINES
JUERGEN WEYER
-  **ID: 123**
AN ANALYSIS OF A DETAILED ENGINEERING STUDY IN ACCORDANCE WITH IESO IAP REQUIREMENTS
NATHAN WINEINGER, J. JODOUIN
-  **ID: 124**
CHARACTERIZATION OF NOISE PROPAGATION IN A HARD ROCK MINE VENTILATION APPLICATION
DARRYL WITOW, CODY GOBBS, JOSH LAM, WENDY HARRIS, ELEANOR MAGDZINSKI, MERVYN CHOY, ARIEL KADIAYI
-  **ID: 125**
LUNDIN EAGLE EAST PROJECT - MINE VENTILATION UPDATE
DARRYL WITOW, CODY GOBBS, JOSH LAM, WENDY HARRIS
-  **ID: 128**
HYBRID CFD-NETWORK METHODOLOGY FOR IMPROVED DPM MODELLING
HONGBIN ZHANG, LORRIE FAVA, MING CAI, NICK VAYENAS, ENRIQUE ACUÑA
-  **ID: 131**
STUDY ON INTEGRATION OF REAL-TIME ATMOSPHERIC MONITORING SYSTEM MONITORING DATA AND MFIRES SIMULATION
LIHONG ZHOU, DAVOOD BAHRAMI, LIMING YUAN, RICHARD A. THOMAS, GREGORY P. COLE, JAMES H. ROWLAND
-  **ID: 134**
EUROPEAN LEGAL FRAMEWORK RELATED TO UNDERGROUND MINING AND TUNNELING CONCERNING COMMISSION DIRECTIVE (EU) 2017/164, 31 JANUARY ESTABLISHING A FOURTH LIST OF INDICATIVE OCCUPATIONAL EXPOSURE LIMIT VALUES
MIGUEL TATO DIOGO
-  **ID: 135**
RESEARCH ON TURBULENT FLAME PROPAGATION STATES OF GAS EXPLOSION IN PIPE BASED ON IMAGE PROCESSING
BAISHENG NIE, CHAO PENG, JIE GONG, YE WANG, XIANGCHUN LI
-  **ID: 137**
CHALLENGES OF MINES RESCUE IN EXPANDING MINE OPERATIONS
KENT ARMSTRONG, C. FEYERABEND



ID: 138
NEW SECONDARY MINE VENT FAN DESIGN
REMY BOURCIER



ID: 141
FRICTION FACTOR CORRELATION FOR AIR FLOW THROUGH BROKEN ROCKS AND ITS APPLICATIONS IN MINE VENTILATION
LEYLA AMIRI, FERRI HASSANI, AGUS SASMITO, ALI MADISEH



ID: 144
EVALUATION OF DIESEL OXIDATION CATALYSTS ON NO₂ PRODUCTION FROM MINING VEHICLES
JOZEF STACHULAK, CHERYL ALLEN



ID: 145
DIESEL ENGINE EXHAUST AND CANCER IN MINING
PAUL DEMERS, JOANNE KIM, VICTORIA ARRANDALE, KATE JARDINE