



Time		Tuesday June 17			
	Cosmos 1 & 2				
08:30 - 10:00	Opening Ceremony				
10:00 - 10:30	Coffee break				
10:30 - 13:00	Plenary and Keynote				
	10:30	Rocha Medal Award - ISRM President Prof. Seokwon Jeon			
	10:45	Rocha Medal Lecture - Dr. Lucille Carbillat "How do microstructural attributes control the effective properties of porous rocks?".			
	11:15	Franklin Award - ISRM President Prof. Seokwon Jeon			
	11:30	Franklin Lecture - Dr Charalampos Saroglou "Engineering in anisotropic rock masses"			
	12:00	Fellows' induction ceremony - ISRM President Prof. Seokwon Jeon			
	12:20	Keynote 1 - Dr. Mark Diederichs "Brittle Damage in Rock Mechanics"			
13:00 - 14:00	Lunch				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 1	Session 2	Session 3	Session 4	Session 5
	Theme 04: Prognosis Models in Rock Tunneling	Theme 07: Laboratory Testing of Rock	Theme 02: Rock support design	Theme 08: Brittle Failure	Theme 05: Fluid Flow in Rock Mass
Chair	Michael Alber	Anna Maria Ferrero	Georg Erharter	Sevda Dehkoda	Helene Strømsvik
Co-Chair	Javier Macias	Hanne Wiig	Are Høien	Jorge Terrón-Almenara	Kristin Holmøy
14:00 - 14:20	12. Improved Analytical Thrust per Cutter Formulations for Hard Rock Tunnel Boring Machines <i>Thomas Marcher</i>	09. Laboratory tests for demonstrating two new methods for defining shut-in pressure in hydraulic tests for rock stress measurement <i>Nghia Trinh</i>	06. Numerical Investigation of Load Transfer and Uplift Mechanisms in Rock Masses Surrounding Rock Anchors <i>Bjarte Grindheim</i>	24. On modelling uniaxial quasi-static tension and compression tests on rock with explicit time stepping <i>Timo Sakala</i>	31. On the possible effect of roughness on hydraulic fracturing pressure <i>Alexandre Lavrov</i>
14:20 - 14:40	23. Modern tunnelling trends vs. the NTNU prognosis model for D&B blast design – a case study <i>Sondre Gjengedal</i>	32. Experimental study on the penetration characteristics of a button bit into rock <i>Kimihiro Hashiba</i>	11. Tension-torsion Coupling Effect and Failure Mechanism of Anchoring Section of Anchor Cable <i>Shuren Wang</i>	47. Monte Carlo Simulation of the Cohesion Weakening Friction Strengthening Approach for Assessment of Brittle Failure Around Underground Excavations <i>Fernando Gomez de Alba</i>	103. A THM coupled distinct element model for simulating hydraulic fracturing in discontinuum reservoir with application to enhanced geothermal system <i>Botong Du</i>
14:40 - 15:00	41. SEMMERING BASE TUNNEL – Challenges in predicting rock mass quality in a major fault system <i>Robert Holzer</i>	123. Experimental investigation of pore collapse in Brazilian pre-salt carbonates <i>Guilherme Righetto</i>	34. SEMMERING BASE TUNNEL – Extraordinary deformations in a major fault system <i>Mario Hein</i>	54. A novel perspective on the transition from the consideration of damage-plasticity to the incorporation of damage modelling for intact rocks <i>Hossein Masoomi</i>	168. Permeability Evolution in Shear-Induced Rough-Walled Fractures: Role of Roughness and Tortuosity <i>Min Gao</i>
15:00 - 15:20	60. Utilizing drilling data in data assimilation for prediction of ground deformation during construction of underground structures <i>Yasuhisa Aono</i>	59. Evolution of Mechanical Properties and Energy Loss in Cement Mortar under Loading and Unloading Cycles <i>Abhay Anand</i>	81. Effect of radial confining pressure on the mechanical behaviour of deformation-controlled rock bolts during tunnel excavation <i>Masataka Mishiho</i>	65. Evaluation of the Effectiveness of Face Destress Blasting for a Deep Drift Based on Energy Method <i>Zongze Li</i>	179. Design of Water Barrier Pillar for Safety in Underground Coal Mines <i>Abhiram Kumar Verma</i>
15:20 - 15:40	83. Investigating Time and Stress-Dependent Behaviour of Swelling Rocks <i>Cigdem Culha</i>	64. Investigation of anisotropic failure in slate under thermo-hydro-mechanical coupling using the discrete element method <i>Meng-Chia Wang</i>	88. Calibration of 2D Finite Element Models using Pre-Yield Axial Testing Data for Fully Grouted Rebar Rockbolts <i>Caitlin Fischer</i>	112. Implementing emergent properties from PFC2D to control the constitutive behavior in FLAC2D in response to the maximum principal strain <i>Fedilberto J. Gonzalez</i>	190. Complete Permeability Tensor of Single Fracture Surface and Its Influence on Flow Characteristics <i>Tai-tien Wang</i>
15:40 - 16:00		68. Experimental Assessment of the Geomechanical Properties of Mowry Shale <i>Kam Ng</i>	98. Estimation of the Failure Probability of Attenuator Rockfall Protection Structures Using a Reliability Analysis Approach (RBD) and Kriging Metamodel <i>Maria Teresa Carriero</i>	149. A rational method for assessing the occurrence of brittle failure in deep tunnels <i>Alessandra Insana, Lorenzo Milan</i>	191. Improving porosity and permeability of sandstone reservoirs for CO2 storage by enhancing mineral dissolution with bio-based biodegradable chelating agents <i>Ryota Tamura</i>
16:00 - 16:20	Coffee break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 6	Session 7	Session 8	Session 9	Session 10
	Theme 04: Prognosis Models in Rock Tunneling	Theme 07: Laboratory Testing of Rock	Theme 02: Rock support design	Theme 08: Brittle Failure	Theme 05: Fluid Flow in Rock Mass
Chair	Michael Alber	Anna Maria Ferrero	Georg Erharter	Sevda Dehkoda	Helene Strømsvik
Co-Chair	Javier Macias	Hanne Wiig	Are Høien	Krishna Panthi	Marco Barla
16:20 - 16:40	117. The NTNU model 1976 – 2016 <i>Helge-Ivar Frostad</i>	71. Experimental investigation of mechanical properties of gypsum over a range of strain rates <i>Peerzadi Arzeena Imtiaz</i>	102. Practical span and support design strategies for underground rooms in stratified rock masses <i>Ignacio Pérez-Rey</i>	231. Numerical modeling of Rock Spalling in the Mine-by experiment, using Zero-thickness interface elements with a fracture-based visco-plastic constitutive model <i>Laura Crusat</i>	217. Impact of Tunnel Induced Stress Redistribution on Hydraulic Conductivity in Fractured Rocks <i>Romain Le Goc</i>
16:40 - 17:00	253. Modelling the interaction between jointed rock and concrete pillar structures for Korsvägen railway station in Gothenburg, Sweden <i>Roger Olsson</i>	85. Predicting time-to-failure of rocks based on secondary creep strain rate <i>Hossein Masoomi</i>	118. The Potential of Distributed Fiber-optic Sensing for Improved RRS Understanding <i>Theresa Maier</i>	269. Mechanical stability of salt caverns under intensive gas storage conditions using LOCAS and DISROC <i>Hajar Habbani</i>	245. Estimation of groundwater inflow into tunnels in layered rockmasses <i>Simone Markus</i>
17:00 - 17:20		101. Experimental study on the fracture toughness alternation of transversely isotropic shales in response to CO2-water-rock interactions <i>Xuefeng Li</i>	119. Interpreting Energy Absorbing Values for Rockbolts from Quasi Static and Impact Tests <i>Greig Knox</i>	298. Effect of Splay Fractures on Fault Shear Behaviour and Microseismicity: A Discrete Element Analysis <i>Lie Kong</i>	267. Preliminary self-sealing laboratory test results for mudstones of the Mercia Mudstone Group and Anchole Group in England <i>Thomas Berry</i>
17:20 - 17:40		122. Effective Parameters on the Self-Healing Behavior of Rock Salt <i>Sasan Moravej</i>	124. Investigation of spiling behavior with respect to block size and joint orientation <i>Mateusz Maciej Swillo</i>		287. Simulating Cyclic Hydraulic Fracturing with a Novel Hydromechanical Damage Model <i>Chang Xia</i>
17:40 - 18:00					300. Fault Thickening and Permeability Variations: Implications for 3D Hydraulic Models <i>Mo Akbariforouz</i>
19:00	Group walk to Nidaros Cathedral				
19:15	Bus transport to Nidaros Cathedral				
20:00-21:00	Evening organ recital, Nidaros Cathedral				



Time	Wednesday June 18				
	Cosmos 1 & 2 - Plenary sessions				
08:30 - 09:10	Keynote 2 - Marco Barla "The design of energy tunnels for a sustainable future"				
09:10 - 09:50	Keynote 3 - Åsa Fransson "Is it watertight? Observations and comments related to grouting of rock mass"				
09:50 - 10:20	Coffee break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 11	Session 12	Session 13	Session 14	Session 1: ECF
	Theme 02: Rock support design	Theme 07: Laboratory Testing of Rock	Theme 01: New Tools and Techniques	Theme 13: Sustainability in Rock Engineering	Theme: ECF
Chair	Nghia Trinh	Leandro Alejano Monge	José Pavón	Sondre Gjengedal	Fengshou Zhang
Co-Chair	Thomas Mathiesen	Håkon W. Bjørnsrud	Runa B. Frengen	Kristin Holmøy	Jorge Terron-Almenara
10:20 - 10:40	138. Design of an underground multilevel limestone mine <i>Michael Alber</i>	131. Mode I fracture toughness of a low-porosity rock subjected to freeze-thaw cycles <i>Giulia Torsello</i>	26. Predicting the Crack Stress Thresholds of the Intact Granitic Rocks by machine learning and multivariate analysis techniques <i>Vásárhelyi Balazs</i>	87. Early-Age Strength Performance of Shotcrete Mixes with Crushed Waste Glass as a Replacemat for Natural Sand <i>Dr. Mehdi Serati</i>	Welcome to ECF provided by ISRM President <i>Seokwon Jeon</i> and President of ISRM Educational Fund Committee <i>Fengshou Zhang</i>
10:40 - 11:00	145. Investigating Rock Fall Characteristics during Mountain Tunnel Construction via Machine Learning Approaches <i>Yasuhiro Yokota</i>	142. Evaluation of gas moisture absorption-desorption characteristics and volumetric deformation law of red-bed mudstone under the influence of environmental humidity gradient <i>Yu Fei</i>	30. Method of fundamental solutions in computational geomechanics <i>Alexandra Lavrov</i>	198. Fundamental Study on Chemical Reaction of Rocks with CO ₂ : Implication for Carbonate Precipitation <i>Yang Xiurong</i>	Senior ECF presentation 1 <i>Decide your role and become an expert in the frontline of rock mechanics and rock engineering</i> <i>Charlie C. Li</i>
11:00 - 11:20	162. Optimal rock slope support and geological survey from value of information analysis <i>Renato Pereira</i>	142. Evaluation of thermal damage in Bateig limestone through ultrasonic pulse velocity and resonant frequency technics <i>Chamran Kazemi</i>	70. Spatial analysis of intact rock strength properties using graph neural networks for geotechnical applications <i>Jorge Alvarez</i>	239. Modelling Hydrogen Embrittlement in Pressurised Lined Rock Caverns within Fractured Rock Masses <i>Qinghua Lei</i>	ECF. Numerical modelling of soil deformations due to ceiling breakdown of karst cavern in underlying rock <i>Maria Topalska</i>
11:20 - 11:40	Coffee break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 15	Session 16	Session 17	Session 18	Session 2: ECF
	Theme 02: Rock support design	Theme 07: Laboratory Testing of Rock	Theme 01: New Tools and Techniques	Theme 12: Rock Mass Grouting	Theme: ECF
Chair	Nghia Trinh	Leandro Alejano Monge	José Pavón	Sondre Gjengedal	Fengshou Zhang
Co-Chair	Thomas Mathiesen	Håkon W. Bjørnsrud	Javier Macias	Kristin Holmøy	Jorge Terron-Almenara
11:40 - 12:00	197. Investigation of the performance of PVC-Concrete prop for Mine Supports <i>Shatadru Kundu</i>	146. Evaluation of Analytical Models in Estimation of the Breakdown Pressure in Hydraulic Fracturing <i>Achini Ranasinghe</i>	86. A new method for rapid quantitative measurement of the strikes and dips of cracks on the tunnel face <i>Kazuhiko Masumoto</i>	10. Reducing subsidence technology by overlying bed separation grouting in thick coal seams top coal caving mining <i>Wenbing Guo</i>	ECF. Full stress tensor determination using the CCBO method, sensitive to the variable stiffness matrix of the same rock material <i>Alice Petrlikova</i>
12:00 - 12:20	248. Dynamic Tensile-Shear Responses of Rock-Concrete Interfaces with Varying JRC Profiles <i>Abhishek Mohapatra</i>	151. Height to Diameter Ratio Effect on Sample Failure modes and Mechanisms - Implications for Pillar and Underground Excavations Design <i>Fidelis T Suorineni</i>	93. Digital tools to enhance design optimization and tunnel construction in the sotra link project <i>Guido Barbieri, Marte Jarstad Uthus</i>	16. Investigating the Relationship Between Grouting Response Curves and Stress Measurements at Fornebu Metro Line <i>Martin Hovda Haugsand</i>	ECF. Lessons learned from the seismic event "Haouz Earthquake", and the approach used to evaluate geohazards in mountainous regions <i>Ilyasse Lamsaougar</i>
12:20 - 12:40	264. Consideration of the initial stress state for deep tunnels design - lessons learned from a collapse on Avrieux (TEL) <i>Gabriel Lopard, Nicolas Berthoz, Adrien Sallta</i>	154. Understanding the mechanics of drilling in rocks through experimental methods <i>Shwetabh Yadav</i>	136. Exposing the rockmass response by means of radar technologies <i>Jan Abram Maritz</i>	259. Semmering Base Tunnel: Prediction of Groundwater Inflows and Aquifer Boundaries based on Hydraulic Field Testing carried as part of Grouting <i>Robert Holzer</i>	ECF. Effect of introducing porosity in numerical simulation of rock indentation by drilling insert <i>Salma Souissi</i>
12:40 - 13:00	268. A simplified analytical method for bolt reinforcement of the tunnel face in deep conditions <i>Wassim Mohamad</i>	156. Investigations into the Effect of Standardized Stress Rates on the Strength and the Deformation Behaviour of a Crystalline Rock Material <i>Jens Schneider</i>	150. Tackling missing data: ML approaches for reliable rock engineering design applications <i>Asieh Hamidi</i>	261. Reducing CO ₂ emissions from grouting in hard rock tunnelling <i>Helene Strømsvik</i>	ECF. Integrating archival data and remote sensing for landslide inventory: a case study of Polog region, N. Macedonia <i>Natasha Nedelkovska</i>
13:00 - 14:00	Lunch				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 19	Session 20	Session 21	Session 22	Session 3: ECF
	Theme 10: Geohazards	Theme 07: Laboratory Testing of Rock	Theme 01: New Tools and Techniques	Theme 09: Rock Mass Monitoring	Theme: ECF
Chair	Alla Sapronova	José Muralha	Jorge José Delgado	Therese Maier	Fengshou Zhang
Co-Chair	Mari Lie Arntsen	Henki Ødegaard	NN	Are Høien	Jorge Terron-Almenara
14:00 - 14:20	225. Investigation of the impact of chemical dissolution on the mechanical behavior of calcareous rocks <i>Stephan Rollbühler</i>	174. Non-destructive testing in weathering evaluation - from rock massifs to stone sculpture <i>Małgorzata Sokolowska</i>	152. Slope wall convergence-based design for open stopes in narrow vein orebodies <i>Darkhan Abdur</i>	18. Stress monitoring of tunnel support during excavation using distributed fibre optic sensing technology <i>Hayato Nonaka</i>	Senior ECF. The Long Game: Building a Career in Research and Engineering Consulting <i>Savda Dehkhoda</i>
14:20 - 14:40	170. Enhancing Seismic Damage Assessment in Rock Tunnels: A Comprehensive Classification Approach <i>Ainala Dinesh Reddy</i>	184. Effects of freeze-thaw history on the stability of rock slopes <i>Dai Nakamura</i>	158. Large-strain poro-elastoplastic analysis of axisymmetric boreholes <i>Michalis Kattis, Doctor Euripides Papamichos, Doctor Alexandre Lavrov</i>	45. Multi-scale monitoring of rock mass deformations at mid-latitude through an optical FBG array at the Acuto Field Laboratory (Central Italy) <i>Matteo Fiorucci</i>	ECF. The influence 19th century underground hard coal mining on the conditions of foundation of buildings in the 21st century <i>Magda Dujasz-Rybicka</i>
14:40 - 15:00	44. Fragmentation patterns during rockfall: analysis of the influence of discontinuities and impact conditions through drop tests <i>Maddalena Marchelli</i>	200. Fluid flow and heat transfer behaviors of fractured rock sample: physical test <i>Jiacheng Wang</i>	171. Application of Machine Learning and Explainable AI for prediction of Water Ingress in the Skaugum Tunnel <i>Abishek Shrestha</i>	66. Measuring and modelling the sea-waves impact on a cliff: first results from the Ventotene Field Laboratory (Italy) <i>Federico Feliziani, Gian Marco Marmoni, Guglielmo Grechi, Mattia Montagnese, Salvatore Martino</i>	
15:00 - 15:20	46. Prediction of residual rockfall risk in presence of net fences according to the location of the impact <i>Valerio De Biagi</i>	205. Unlocking Precision in Carbon Sequestration Monitoring: Advanced Lab-Scale Monitoring of CO ₂ saturation with Combined Acoustic and Resistivity Measurement <i>Kanithorn Adisornsupawat</i>	214. Multi-parameter responses at several monitoring stations in Cappadocia in relation to 2023 Kahramanmaraş Earthquakes of Türkiye <i>Ömer Aydan</i>	111. Passive seismic monitoring of a jointed rock mass at Acuto Field Lab (Italy) <i>Lorena Di Toro</i>	

15:20 - 15:40	85. Validation of the rockfall SIF and SAI indexes by a 3D analysis of a rock slope in Valsesia Valley (Italy) <i>Maria Lia Napoli</i>	207. Tensile-shear stress induced crack initiation in granite specimens loaded in compression <i>Lars Jacobsson</i>	272. Using Machine Learning for Predicting Collapse extending in Abandoned Underground Quarries <i>Nathalie Conil</i>	144. Deformation characteristics of surrounding rock in a large underground opening situated in Southwest China <i>Peiyang Yu</i>	
15:40 - 16:00	89. Simulation of Slope Movements at Åknes using 2D Distinct Element Modeling <i>Christian Cancino</i>	210. Behavior of H-B Parameters of Marble During Plastic Deformation <i>Debasis Deb</i>	274. Borehole tensor strainmeters based on interferometric displacement sensors <i>Jiayong Tian, Cheng Jiang</i>		
16:00 - 16:20	Coffee break				
Hall	Cosmos 1 & 2				
16:20-17:00	Keynote 4 - Jessa Vatcher "Are we in the golden age of numerical modelling?"				
17:00-17:10	Short break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
		Session 23	Session 24	Session 25	Session 26
		Theme 07: Laboratory Testing of Rock	Theme 01: New Tools and Techniques	Theme 09: Rock Mass Monitoring	Theme 11: 3D Modeling and Visualization
Chair		José Muralha	Jorge José Delgado	Therese Maier	Alla Sapronova
Co-Chair		Henki Ødegaard	NN	Are Høyen	NN
17:10 - 17:30	Rock Bowl final	212. An experimental study on the physico-mechanical properties of pumice from Cappadocia and Gölcük volcanic provinces of Türkiye <i>Ömer Aydan</i>	275. Deep-seated ground deformations measured by robotized system, Roma Metro C Line <i>Daniilo Godone</i>	244. Rock mass dynamics during coal longwall mining at great depth <i>Vlastimil Kajzar</i>	33. Assessing inertial effects on Rockfall Protection Embankments: field & numerical tests <i>Maddalena Marchelli</i>
17:30 - 17:50	Rock Bowl final	216. Experimental and Numerical Analysis of Single Joint around Circular Hole <i>Rakesh Kumar</i>	295. Numerical analysis of the mechanical stability of salt caverns for Underground Hydrogen Storage under Severe Solicitations <i>Hippolyte Dijanne</i>	266. Back analysis of a rockfall catalog using radar tracking <i>Qiuji Li</i>	56. Comparative Analysis of Multiple Mining Schemes for Large-Scale Deep Iron Ore Mines <i>Haoyan Wu</i>
17:50 - 18:10	Rock Bowl final	227. Experimental Investigation on the Influence of Swelling on Hydraulic Conductivity in Sulfate Rocks <i>Maximiliano R. Vergara</i>	297. Phase field modeling of brittle-ductile fracture on OpenGeoSys <i>Hanzhang Li</i>	289. Understanding the behavior of intersections excavated at the URL of Andra: a feedback concerning three intersection experiments <i>Jan Cornet</i>	67. Stress-strain analysis of SLC mine design in Kyrgyzstan <i>Alison McQuillan</i>
18:10 - 18:30	Rock Bowl final	135. Determination of the mode I fracture toughness of different types of rocks under the influence of temperature and pressure <i>Yan Li</i>	304. Advancing a Unified Data Repository for Decision-Making in Tunnel Construction: Automated Knowledge Extraction from Archived Documents <i>Alla Sapronova</i>		74. Uncertainty and probability analysis of rock slope engineering based on 3D modelling <i>Jessica Ka Yi Chiu</i>
18:30 - 18:50	Rock Bowl final	241. Degradation Due to Swelling-Induced Cracking in Gypsum-Bearing Dolomite and Its Potential Impact on High-Speed Rail Infrastructure <i>Zhangjun Dai</i>	311. Advanced Acoustic Signal Classification for Rockfall Detection Using Machine Learning <i>Kamel Drif</i>		
20:00 - 23:00	Banquet Dinner				



	Thursday June 19				
	Cosmos 1 & 2 - Plenary sessions				
08:30 - 09:10	Keynote 5 - Hongwei Huang "Machine learning for safety risk assessment on Rock Tunnel Driving"				
09:10 - 09:50	Keynote 6 - Thomas Marcher "The challenges of "hard soil and soft rock": an inside into this material's brittle to ductile behaviour"				
09:50 - 10:20	Coffe break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 27	Session 28	Session 29	Session 30	Session 31
	Theme 06: Ground Investigations	Theme 07: Laboratory Testing of Rock	Theme 03: Rock Mass Characterization	Theme 10: Geohazards	Theme 11: 3D Modeling and Visualization
Chair	Roger Olsson	Pål D. Jakobsen	Krishna Panthi	Seokwon Jeon	Jonny Sjöberg
Co-Chair	Mari Ervik	Henki Ødegaard	Jorge Terrón-Almenara	Mari Lie Arntsen	NN
10:20 - 10:40	25. In-situ rock stress determination from hydraulic fracturing test data by combining generalized least squares inversion and statistical analysis <i>Yared Bekele</i>	247. A Study on the Compressive to Tensile Dynamic Strength Ratio of Synthetic Sandstone Rock under varying Loading Conditions <i>Sumita Mishra</i>	194. Classification systems for Geotechnical data collection <i>Charles Baylis</i>	80. Comparison of erosion risk index methods for rocky coastal flysch cliffs, SW Slovenia <i>Timotej Verbovšek</i>	84. Hydromechanical simulation of post-mining flooding and the associated seismicity <i>Sevda Dehkoda</i>
10:40 - 11:00	76. Quality Assurance and Review of Acoustic Emission Based In-situ stress Measurements <i>Arthur De Alwis</i>	291. Evaluation of the impact of heating and subsequent liquid nitrogen cooling on the properties of Rajahmundry basalt <i>Rajeswar Das</i>	130. Non-destructive and destructive tests for mechanical characterization of an ornamental stone quarry under flexural buckling <i>Federico Vagnon</i>	99. An innovative design solution for mitigating rockfall risk: the Darfo Boario case study <i>Gessica Umili</i>	97. Analysis of behavior of underground coal panel surrounded with goaved-out workings <i>Shatadru Kundu</i>
11:00 - 11:20	204. Development of roadway through backfilled slope for underhand mining: a case study <i>Pradeep Kumar, Rakesh Kumar</i>	286. Micromechanical Effects of Chemical Weathering on Carrara Marble <i>Anna Maria Margherita Ferraro</i>	63. MWD Data-Based Rock Mass Classification Using Machine Learning Techniques <i>Tek Bahadur Katuwal</i>	100. Surveying existing rockfall flexible barriers to create a cartographic database aimed at the maintenance planning process <i>Gessica Umili</i>	108. Rock mechanical optimization of the shape and depth for a high-pressure lined rock cavern <i>Lauri Uotinen</i>
11:20 - 11:40	221. Quantifying anisotropies in geotechnical parameters from pressuremeter testing in soft rocks <i>Lang Liu</i>		234. Integrating non-contact surveys to characterize rock masses: the URLA case study <i>Mateusz Janiszewski</i>	161. Hydrogeological investigations in slow-moving landslides <i>Roberta Narcisi</i>	110. Towards developing a large-scale 3D in-situ stress model <i>Sanyam Ghimire</i>
11:40 - 12:00	Coffe break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
	Session 32	Session 33	Session 34	Session 35	Session 36
	Theme 06: Ground Investigations	Theme 07: Laboratory Testing of Rock	Theme 03: Rock Mass Characterization	Theme 10: Geohazards	Theme 11: 3D Modeling and Visualization
Chair	Roger Olsson	Pål D. Jakobsen	Krishna Panthi	Seokwon Jeon	Jonny Sjöberg
Co-Chair	Thomas Mathiesen	Henki Ødegaard	Jorge Terrón	Mari Lie Arntsen	NN
12:00 - 12:20	256. Investigating Roof Bolt Efficacy in Blast-Induced Damage Zone Around the Footwall Drive of an Underground Copper Mine <i>Satyam Choudhury</i>	292. Anisotropic Behavior of Schists Under Brazilian Test Conditions <i>Abhilash Mishra</i>	77. Unexposed rock joint identification based on point cloud analysis <i>Chia-Chi Chiu</i>	213. Effect of coal seam gradient on the stability of internal dump in opencast coal mines <i>Debasis Deb</i>	116. Measuring physical aperture of a fracture affected by dislocation using photogrammetry <i>Masoud Torkan</i>
12:20 - 12:40	260. Practical experience during rock stress measurements by using HF and HTPF methods at Reldal HPP <i>Nghia Trinh</i>	294. Enhancing Chalk Formation Integrity by Diammonium Phosphate Treatment: A Study on Downhole Cores <i>Mahmoud Desouky</i>	126. Application of Qslope classification in seismic prone regions <i>Milorad Jovanovski</i>	183. Factor of safety analysis in fractured multi-layered slopes <i>Kévin Elkharat</i>	177. Research on the structure optimization of gravity-type foundation for onshore wind turbines <i>Jianqiang Deng</i>
12:40 - 13:00	280. Engineering geology in bridge design: Tower foundation stability - New Sotra Bridge <i>Stian Femanager Mathiassen</i>	299. Study the Impact of Fluid Formulations on Sandstone Rocks Through Core Flooding Experiments and Uniaxial Compressive Strength Tests <i>Raghavendra Maddirala</i>	52. A novel data-driven criterion to predict peak shear strength of rock fractures between different rock types <i>Jiffan Chen</i>		164. Discontinuum Response of Jointed Rock Tunnels under Impact Loads <i>Balakrishna K</i>
13:00 - 14:00	Lunch				
14:00 - 14:40	Keynote 7 - Charlie Li "A study of the arching effect, bond strength and rock mass failure around rock anchors"				
14:40 - 14:50	Short break				
Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
		Session 37	Session 38	Session 39	Session 40
		Theme 07: Laboratory Testing of Rock	Theme 03: Rock Mass Characterization	Theme 10: Geohazards	Theme 11: 3D Modeling and Visualization
Chair		Lars Jacobsson	Charlie Li	NN	Alexandre Lavrov
Co-Chair		NN	Jorge Terrón	Runa B. Frengen	NN
14:50 - 15:10		309. Determining Elastic Constants of Transversely Isotropic Rock Using Digital Image Correlation and Strain Inversion from a Single Core <i>Ki-Rok Min</i>	169. Proposals for development of protocols for in-situ stress characterization <i>Asieh Hamidi</i>	28. Monitoring Bonnard rock glacier under the effect of climate change <i>Coralie Vicari</i>	147. Numerical assessment on the influence of faults in in-situ stress state distribution <i>Bikash Chaudhary</i>
15:10 - 15:30		312. Mechanical behaviour of granite with naturally occurring open-joints under compression <i>Susmita Chaudhury</i>	49. Numerical Modelling of Uniaxial Compressive Tests on Sille Bimrock <i>Nazlı Tunar Özcan</i>	238. Are fault-slip rockbursts triggered by static or dynamic effects? <i>Qinghua Lei</i>	105. Transberg Method. Utilising Drone Photogrammetry to create real time hazard maps and optimise slope monitoring. <i>Glen Guy</i>
15:30 - 15:50		313. Evaluation of strength and deformation characteristics of quartzite-schist composite specimens under uniaxial compression <i>Manali Sarkar</i>	218. Detailed rock mass characterization along a highway cross Chuhuangkeng Anticline <i>Yachu Chiu</i>	282. Evaluation and mitigation of rockfalls in the slope of El Tormillo, Spain <i>Juan Manuel P. Sanjurjo</i>	211. A Novel Implementation of a New Cloud Framework for High Performance Computing (HPC) in Geomechanical Applications <i>Ali Bonakdar</i>
15:50 - 16:10	Coffe break				

Hall	Cosmos 1 & 2	Cosmos 3A	Cosmos 3B	Cosmos 3C	Cosmos 3D
		Session 41	Session 42	Session 43	Session 44
		Theme 07: Laboratory Testing of Rock	Theme 03: Rock Mass Characterization	Theme 10: Geohazards	Theme 11: 3D Modeling and Visualization
Chair		Lars Jacobsson	Charlie Li	John Harrison	Alexandre Lavrov
Co-Chair		NN	Jorge Terrón	Runa B. Frengen	NN
16:10 - 16:30		314. Influence of temperature on physico-mechanical properties of granite with reference to microcrack analysis <i>Rishimon Munshi</i>	232. A simple kriging technique for characterising geotechnical zones of a Zimbabwean Great Dyke deposit <i>Tawanda Zvarivadza, Hendrik Grobler, Moshood Onifade</i>	285. Impact of Joint Orientation on Rock Mass Erosion: Insights from Physical Spillway Model Testing <i>Marco Quirion</i>	257. Integrating Ground Investigations and 3D Modeling to Assess the Dynamic Response of Low-Rise Residential Buildings to Blast-Induced Vibrations <i>Monika Tewari</i>
16:30 - 16:50		565. Experimental Study of Thermal-Hydro-Mechanical Behavior of Gneiss Under True Triaxial Compression <i>Zaobao Liu</i>	242. An experimental investigation of fault gouge material under confined conditions <i>Algerim Sekerbayeva</i>	308. Quantification of rockfall breakage in underground mines and rock engineering <i>Alvaro Vergara Barria</i>	258. Are We Being Deceived by Visually Appealing Models? <i>Emilie Kolsta Strømøy, Marcus Lawton</i>
16:50 - 17:10				37. Solutions for draining the Åknes rockslide, Norway <i>Nicole Ragvin</i>	306. Digital solutions for rock cuts – Experiences from the Være rock cut, E6 <i>Ranheim – Værnes</i> <i>Sander Zakariassen</i>
	Cosmos 1 & 2				
17:15 - 18:15	Closing Ceremoney				