

Conference Agenda

W E D N E S D A Y , N O V E M B E R 1 3

7:30 - 8:00

Sheraton Hotel Main Lobby

Check-in For Eisenhower Tunnel Tour

8:00 - 2:00

Depart Sheraton Hotel Main Lobby

Eisenhower Tunnel and Loveland Pass Field Trip

8:00 - 3:00

Wednesday: Hotel Main Lobby; Thursday: Grand Ballrooms Lobby (2nd floor)

Conference Check-In

2:30 - 3:00

Gather at Hotel Lobby to depart to MINES at 3:00

Gather for Tour of MINES Earth Mechanics Laboratory and Geology Museum Reception

3:00 - 6:00

Depart Sheraton Hotel Main Lobby

Tour of MINES Earth Mechanics Laboratory

6:00 - 8:00

MINES Geology Museum

Welcome Reception MINES Geology Museum

T H U R S D A Y , N O V E M B E R 1 4

8:30 - 9:00

Morrison/Golden Ballroom

Opening and Welcome Address: Jamal Rostami, Conference Organizing Committee Chair and Jian Zhao, International Scientific Committee Chair

9:00 - 10:00

Morrison/Golden Ballroom

Keynote Session I

Moderator: Anna Crockford (USA), Robert Galler (Austria)

9:00	H Einstein	United States	Risk in tunnel construction and operation: assessment, decision, management
9:30	W Dujuan	China	New innovations at CREG in the TBMs for Shenzhen Metro

10:00 - 10:30**City Lights Ballroom****Break****10:30 - 12:10****Morrison/Golden Ballroom****Technical Session I: Mixed Ground I****Moderator: Brian Fulcher (USA), Dae Yong Kim (Korea)**

10:30	D Del Nero	United States	Abasivity and other keys to successful TBM tunneling in cobbles and boulders
10:50	K Baeppler	Germany	Variable density TBM – latest state of technology
11:10	C Gonzalez	Canada	Challenge in determining natural stress in hard soil soft rock (HSSR): an example in the project of extension subway tunnels in Toronto
11:30	B Nilsen*	Norway	Significance of mixed face conditions in hard rock TBM-tunneling (*presented by B. Nilsen and P. Jakobsen)
11:50	J Cui	China	Field performance and numerical simulation of SPB TBM tunnelling in sandy cobble soils

10:30 - 12:10**Bergen Park Ballroom****Technical Session II: New Technology****Moderator: Herve Goujon (France), Gabriel Walton (USA)**

10:30	S Nix	United States	Magnetic seal for high angle conveyor belting
10:50	G Bianchi	Italy	Assessing rock mass conditions by mean of TBM excavation parameters: two case studies
11:10	K Kawano	Japan	Jamming mechanism on shield tunnel boring machine
11:30	S Butt	Germany	Computational analysis of cutting-disc-rock interaction in heterogeneous ground conditions
11:50	X Li	China	Dynamic TBM performance prediction method based on machine learning and advance geological evaluation

12:10 - 1:30**City Lights Ballroom****Lunch and Poster Session I****1:30 - 2:30****Morrison/Golden Ballroom****Keynote Session II****Moderator: Don Del Nero (USA)**

1:30	U Maidl	Germany	Digital data management in tunneling, on the advantages of big data, IoT, and cloud computing for today's megaprojects
2:00	B Fulcher	United States	Challenging TBM project, a global perspective from ITA_WG-14 on mechanical tunneling

2:30 - 3:00**City Lights Ballroom****Break**

3:00 - 5:00**Morrison/Golden Ballroom****Technical Session III: Mixed Ground II****Moderator: Bjorn Nilsen (Norway), Jean-Paul Pelissou (UK)**

3:00	R Duhme	Singapore	Lessons learned from TBM tunneling in Singapore tropical weathered rock formations
3:20	H Jeong	South Korea	Linear cutting tests for assessment of cutting performance of a disc cutter in gravel ground conditions
3:40	Y Firouzei	Iran	Tunneling with a soft rock EPB machine in hard rock conditions, the experience of Tehran metro line 6 southern expansion sector
4:00	H Yang	China	Experimental investigation on temperature effects of disc cutters during the rock-cutter interaction

3:00 - 5:00**Bergen Park Ballroom****Technical Session IV: New Technology and Extreme Tunneling****Moderator: Benno Ring (Germany), Hoyoung Jeong (Korea)**

3:00	M Greger	United States	Effective design and assembly of a large diameter slurry TBM in hard rock conditions
3:20	M Sugimoto	Japan	Preliminary study on shield steering along a sharp "s" curve
3:40	A Khetwal	United States	Sensitivity analysis of effect of tunneling activities on TBM utilization factor using discrete simulation approach
4:00	T Ko	South Korea	Characteristics of TBM utilization factor and its estimation
4:20	Y Lei	China	Application of shield tunneling method for cross passage of urban subway tunnels

5:30 - 6:00**City Lights Ballroom****Cash Bar****6:00 - 8:00****City Lights Ballroom****Banquet and Presentation**

6:00	C Dreyer	United States	Prospects and challenges for development of a lunar TBM
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Posters for Thursday, November 14 (Posters available during lunch in City Lights Ballroom)**Poster Session I**

	R Galler	Austria	Results of 1:1-scale experiments on segmental lining elements for long deep tunnels
	T Kang	South Korea	3D discrete element simulation of direct shear test for ground modeling
	N Li	China	Discussion on the application and design of tunnel boring machine TBM for deeply buried long-distance water conveyance tunnel in China
	B Park	South Korea	Evaluation for excavation performance of EPB shield TBM by discrete element method
	X Yadong	China	Study on vibration characteristics of TBM disc cutter based on DEM
	Y Zheng	China	Study on planetary rectangular cross-section TBM for mixed ground

FRIDAY, NOVEMBER 15

8:30 - 10:00

Morrison/Golden Ballroom

Opening and Keynote Session III

Moderator: Lars Langmaak (Germany)

8:30	W Burger	Germany	TBM - ground interaction, what makes a ground become difficult?
9:15	B Russell	United States	Seattle's SR-99 viaduct replacement project - Engineering the 2 mile long deep bored tunnel

10:00 - 10:30

City Lights Ballroom

Break

10:30 - 12:00

Morrison/Golden Ballroom

Technical Session V: Long and Squeezing Tunnels

Moderator: Brian Khalighi (USA), Xiao-Ping Zhang (China)

10:30	B Ring	Germany	Design of segmental lining in difficult rock conditions
10:50	K Arora	United States	Miniature tunnel boring machine for simulating tunnel excavation in squeezing ground conditions
11:10	J Hinton*	United States	Comparison of look-ahead probe drilling, TBM data, and probe-hole geophysics at the Rondout West-Branch Bypass Tunnel (*presented by G. Walton)
11:30	Y Qingzeng	China	Application of two types of cutter rings with different materials in Gaoligong Mountain Project
11:50	G Peach	Norway	TBM's meeting the challenge of soft ground faults and rockbursts in the Himalayas

10:30 - 12:00

Bergen Park Ballroom

Technical Session VI: Hard Rock Tunneling Challenges

Moderator: Rennie Kaunda (USA)

10:30	R Galler	Austria	Disk cutter force measurement, face monitoring and real time analysis of excavated materials in TBM tunnelling
10:50	S Smading	United States	TBM tunneling in extremely hard rock
11:10	D Kim	South Korea	Hard rock TBM cutter life and wear evaluation: experience of new abrasion test (NAT) in Juam Hydro tunnel
11:30	K Garshol	Norway	Ground water control measures in hard rock TBM-tunneling
11:50	A Salimi*	Germany	Development of a new models for prediction of TBM performance in hard rock condition based on rock type (*presented by J. Rostami)

12:00 - 1:30

City Lights Ballroom

Lunch and Poster Session II

1:30 - 3:10**Morrison/Golden Ballroom****Technical Session VII: Soft Ground Tunneling Challenges****Moderator: Daniele Martinelli (Italy), Knut Garshol (Sweden)**

1:30	X Zhang	China	Key technologies for efficient construction of Sutong GIL Yangtze River Crossing Cable Tunnel - the first underwater 1000 kV ultra-high-voltage (UHV) power transmission line in the world
1:50	R Turner	United Kingdom	Thames tideway central and west material handling systems from TBM to barge
2:10	W Hu	United States	Design of a large-scale rheometer for application in EPB TBM tunneling
2:30	H Wang	China	Fluidity characteristics of conditioned gravely sand and a new evaluation method
2:50	Y Fang	China	Study on soil conditioning for EPB shields by permeability tests

1:30 - 3:10**Bergen Park Ballroom****Technical Session VIII: TBM Tunneling, Recent Projects in North America****Moderator: Mitsutaka Sugimoto (Japan), Scott Black (Canada)**

1:30	L Bradshaw	United States	Mixed reach tunneling with small diameter TBM
1:50	E Gharabagh	United States	TBM application in north tunnel project in Toronto
2:10	G Millener	United States	Review of TBM tunneling in Roundout tunnel project in New York
2:30	L Lacerda	United States	Conditioning excavated material in difficult EPB and HR TBM mining
2:50	M Villeneuve	New Zealand	Using penetration tests to quantify TBM performance in hard rock

3:10 - 3:30**City Lights Ballroom****Break****3:30 - 5:00****Morrison/Golden Ballroom****Keynote Session IV: Closing Keynote, Remarks and Awards Ceremony; Next TBM DiGs****Moderator: Priscilla Nelson (USA)**

3:30	J Magro	Spain	Challenges of operating the largest EPB shield in the world for SR99 tunnel project
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5:30 - 6:00**City Lights Ballroom****Cash Bar****6:00 - 8:00****City Lights Ballroom****Closing Banquet and Networking****Posters for Friday, November 15 (Posters available during lunch in City Lights Ballroom)****Poster Session II**

D Brox	Canada	Overstress prediction and challenges in deep TBM tunnels
L Guang	China	Empirical formula applicability of TBM main drive torque

S Huang	China	Effect of grain gradation on the permeation safety of coarse-grained soil conditioned with foam for EPB shield tunneling (*presented by H. Wang)
K Man	China	Overview of TBM dynamic balance construction (*presented by X. Liu)
X Yadong	China	Simulation analysis of rock-breaking mechanism with disc cutters based on MPM
X Yadong	China	Prediction of TBM operational parameters based on data-driven method