

Programme of IGES 2023

(International Symposium on Innovations in Geotechnical Engineering towards Sustainability)

November 30 – December 4, 2023 | Hong Kong

Thursday, 30/11/2023	
13:00-21:00	Registration (VA Counter, PolyU)

Friday, 01/12/2023 Jockey Club Auditorium (JCA), PolyU	
08:00-18:00	Registration (JCA, PolyU)
08:30-08:50 (5 mins per talk)	Opening Ceremony Chair: Zhenyu YIN, Chao ZHOU, Qi ZHAO, Andy LEUNG Christopher CHAO, <i>Vice President of The Hong Kong Polytechnic University</i> Xiangdong LI, <i>Dean of Faculty of Construction and Environment</i> Chi Sun POON, <i>Head of Department of Civil and Environmental Engineering</i>
08:50-09:00	Photo Session
09:00-10:40 (25 mins per talk)	Session 1 Chair: Charles W.W. NG, Weiya XU
	Keynote: Sustainable development through smart geotechnical solutions – Hong Kong's experience Wai Man Raymond CHEUNG, <i>Geotechnical Engineering Office</i>
	Keynote: Accurate prediction of geohazards Manchao HE, <i>China University of Mining and Technology - Beijing</i>
	Keynote: Innovative approaches to sustainable coastal development Johnny CHEUK & Anthony WONG, <i>AECOM</i>
	Keynote: The present situation and future trends of infrastructure construction in mainland China Xiangsheng CHEN, <i>Shenzhen University</i>
10:40-11:00	Coffee Break
11:00-12:40 (25 mins per talk)	Session 2 Chair: Johnny CHEUK, Rempeng CHEN
	Keynote: Gravity driven mass transportation and transition: Hypergravity experiments Yunmin CHEN, <i>Zhejiang University</i>
	Keynote: Particle migration under dynamic loads and associated problems Daichao SHENG, <i>University of Technology Sydney</i>
	Keynote: New soil improvement methods for land reclamation using dredged clay or waste Jian CHU, <i>Nanyang Technological University</i>
	Keynote: Damage and cracking modeling in saturated and partially saturated media with material heterogeneity Jianfu SHAO, <i>University of Lille</i>

Friday, 01/12/2023 Jockey Club Auditorium (JCA), PolyU	
12:40-14:00	Lunch
14:00-15:15 (25 mins per talk)	Session 3 Chair: Jun YANG
	Keynote: The mechanics of tailings in static and cyclic loading Matthew Richard COOP, <i>University College London</i>
	Keynote: A new digital-based approach for geotechnical design Alvin K.M. LAM, <i>ARUP</i>
	Keynote: Nanoscale modeling of advanced sustainable graphene nano-coated geopolymer materials Ali ZAOULI, <i>University of Lille</i>
15:15-15:35	Coffee Break
15:35-16:55 (20 mins per talk)	Session 4 Chair: Yinghui TIAN, Qiushi CHEN
	Invited Lecture: Unified hardening model for clays and sands Yangping YAO, <i>Beihang University</i>
	Invited Lecture: Anisotropic rock mechanics and engineering application Weiya XU, <i>Hohai University</i>
	Invited Lecture: Downward soil arching and heave of shield tunnel underlain long-collinear deep excavation Renpeng CHEN, <i>Hunan University</i>
	Invited Lecture: Coupling effect of adjacent loading and unloading on tunnel structures in spatially variability soil Hongwei HUANG, <i>Tongji University</i>
16:55-17:00	Break
17:00-18:20 (20 mins per talk)	Session 5 Chair: Erdin IBRAIM, Jeff Jianfeng WANG
	Invited Lecture: Research progress and application of green retaining technology for excavation engineering Changjie XU, <i>East China Jiaotong University</i>
	Invited Lecture: On innovative thinking with applications in geotechnical engineering Shuilong SHEN, <i>Shantou University</i>
	Invited Lecture: An effective stress-based approach to modelling drying-induced soil shrinkage Changfu WEI, <i>Institute of Rock and Soil Mechanics, Chinese Academy of Sciences</i>
	Invited Lecture: Associative approximation of Galerkin and FVM for HMC fully coupled model under NMM framework Hong ZHENG, <i>Beijing University of Technology</i>
18:30-21:30	Banquet Chair: Jianhua YIN

Saturday, 02/12/2023	
Chiang Chen Studio Theatre (CCST) & Z Block, PolyU	
08:00-18:00	Registration
08:30-10:10 Z Block	Parallel Session
10:10-10:40 Z Block	Coffee Break
10:40-12:20 Z Block	Parallel Session
12:20-14:00	Lunch
14:00-15:20 Z Block	Parallel Session
14:00-15:20 (20 mins per talk) CCST	Session 6 Chair: Zhongqi Quentin YUE, Xianfeng LIU
	Invited Lecture: From rigid-soft particles to particle crushing: a leap into the void Erdin IBRAIM, <i>University of Bristol</i>
	Invited Lecture: Clarifying key misconceptions about creep and consolidation of clays Samson Abate DEGAGO, <i>Norwegian University of Science and Technology</i>
	Invited Lecture: Bio-mediated geotechnology and its application in geoengineering Chaosheng TANG, <i>Nanjing University</i>
	Invited Lecture: Reducing lateral earth pressure on retaining walls in expansive soils using EPS geofabric: Analysis and Application Weilie ZOU, <i>Wuhan University</i>
15:20-15:40 CCST	Coffee Break
15:40-17:20 (25 mins per talk) CCST	Session 7 Chair: Limin ZHANG, Shuilong SHEN
	Keynote: Phase field for compaction band formation: Capture of grain crushing and permeability evolution in heterogeneous media Ronaldo I. BORJA, <i>Stanford University</i>
	Keynote: Rapid identification of tunnel surrounding rockmass and real-time safety analysis Hehua ZHU, <i>Tongji University</i>
	Keynote: On bleeding of fresh concrete in deep foundations Wei WU, <i>University of Natural Resources and Life Sciences</i>
	Keynote: From mathematical models for soil plasticity to neural networks and back: interpretable machine learning for geomechanics Steve Waiching SUN, <i>Columbia University</i>
17:20-17:50	Closing Remark Zhenyu YIN; Chao ZHOU; Qi ZHAO; Andy LEUNG

Sunday, 03/12/2023; Monday, 04/12/2023
Self-planned field trips Hong Kong UNESCO Global Geopark and Tung Ping Chau, Easternmost Flat Island are recommended.

MS-01 Properties of sustainable construction materials

Chairs: Yonggui CHEN, Sérgio D.N. LOURENÇO

Venue: Z409, Z Block, PolyU

Time: 08:30-12:20, 2 December

Time	Title	Authors
08:30-08:45	(Invited) On progressive failure of sand considering fabric evolution with micropole hypoplastic model	Xuefeng LI, Weinan LU, Yuqi HE
08:45-09:00	(Invited) Dynamics and micromechanics of recycled concrete aggregate	Huan HE, Kostas SENETAKIS, Songyu LIU, Dingwen ZHANG
09:00-09:15	(Invited) Discrete element analysis of geogrid–aggregate interface shear behaviour under dynamic loading conditions	Shijin FENG, Yaqiong WANG, Qiteng ZHENG
09:15-09:25	Complete particle size distribution of CDG soil with extended wet sieving method	Shengnan MA, Yi SONG, Jiawei LIU, Xingyu KANG, Zhongqi Quentin YUE
09:25-09:35	Laboratory investigation of CDG sand for fine aggregates in portland cement concrete	Yi SONG, Shengnan MA, Jiawei LIU, Xingyu KANG, Zhongqi Quentin YUE
09:35-09:45	Effect factors and mechanisms of carbonating magnesium oxide for recycle concrete aggregate cementation	Zhexun LIU, Man LI, Huan HE
09:45-09:55	Exploring the use of polymeric binders for soil stabilisation in the construction of sports infrastructures to replace concrete	Mariam DARESTANI, Bijan P. MARKHALI
09:55-10:05	Anomalous dielectric behavior in Na-montmorillonite interlayer: a molecular dynamics study	Wenjie DAI, Yonggui CHEN
10:40-10:50	The volume change behavior of compacted bentonite under the combined effect of suction cycle and temperature	Dongyue PAN, Qiong WANG, Wei SU, Weimin YE, Yonggui CHEN
10:50-11:00	A study on the water-rock coupling characteristics in deep in-situ environment of JINPING marble	Chendi LOU, Ru ZHANG, Zetian ZHANG, Li REN, Jing XIE, Hai REN, Kun XIAO, Anlin ZHANG
11:00-11:10	Deformation characteristics and gas permeability of low-permeability sandstone and anisotropic phyllite under triaxial cyclic loading stress path	Xuele DUAN, Wei WANG, Yajun CAO, Chao CHEN, Rubin WANG, Qizhi ZHU
11:10-11:20	Evolution law of particle breakage during one-dimensional compression of calcareous sand	Yongqiang CUI, Teng WANG, Hengyu SU, Ning JIA
11:20-11:30	Dissolution characteristics of coral reef limestone under different saturated CO ₂ conditions	Shanshan ZHANG, Dongsheng XU, Yue QIN, Weiqiang FENG
11:30-11:40	Influence of particle size and fine content on the thermal conductivity of carbonate sand	Yong HE, Huan HE, Guojun CAI
11:40-11:50	Desiccation cracking of expansive soil subjected to different temperature conditions	Nan WANG, Qiong WANG, Long XU, Wei SU
11:50-12:00	Dynamic characteristics and damage mechanisms of expansive soil – rubber mixture under coupling effect of freeze-thaw cycles and external load	Zhaochi LU, Huan HE
12:00-12:10	Deep insight into mechanical behavior and microstructure mechanism of serpentine-magnesium oxide carbon sequestration foamed lightweight soil	Xiang ZHANG, Songyu LIU, Zhenyang YUAN
12:10-12:20	Identification of representative elementary volume in inhomogeneous geotechnical material based on microstructure parameters	Qing KANG, Manman LIU, Yong LIU

MS-02 Constitutive modelling of geomaterials

Chair: Zhongxuan YANG, Fiona C.Y. KWOK

Venue: Z410, Z Block, PolyU

Time: 08:30-14:50, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Water-retention and shear-strength behaviors of unsaturated soils with dual-porosity	Gaoyun ZHOU, Zhenhao SHI, Jiangu QIAN
08:45-09:00	(Invited) Constitutive modeling of solid- and fluid-like transitional behavior of sand	Zhenhao SHI , Senjie TONG, Maosong HUANG
09:00-09:15	(Invited) A stiffness degradation method for modelling long-term ratcheting response of wind turbine foundations in sand	Zhiwei GAO , Scott WHYTE
09:15-09:30	(Invited) A unified soil freezing-thawing theory based on thermodynamics	Xu LI , Xiaokang LI
09:30-09:40	Influence of particle shape on the mechanical properties of sand under true triaxial shearing	Yang WU , Haojun RONG, Neng LI, Jie CUI
09:40-09:50	Micromechanics-based constitutive modelling of granular materials accounting for fabric evolution	Chaofa ZHAO
09:50-10:00	Risk analysis of Dahua landslide based on reliability theory	Yongcheng GUO , Jia KONG, Jianlin LI, Xingxia WANG, Yong LEI
10:00-10:10	A hydrodynamic model of chemical dissolution of poroelastic materials	Yanni CHEN , François GUILLARD, Itai EINAV
10:40-10:50	Elastoplastic constitutive model for overconsolidated clays with an advanced dilatancy relation	Kehao CHEN , Rui PANG, Bin XU, Xingliang WANG
10:50-11:00	A laboratory scaled integrated analysis of shear strength parameters of dump materials	Shubham SHRIVASTAVA , Debasis DEB
11:00-11:10	Development of the time-dependent constitutive model of soils and the new simplified B method	Weiqiang FENG
11:10-11:20	Stress-induced anisotropic super-subloading surface model for structural clay based on uniform yield criterion	Zhichao WANG, Yanghao LIN , Yun QIN, Yinghui TIAN, Chunhui ZHANG
11:20-11:30	Description of non-coaxiality of sand incorporating material property-dependent potential theory	Xuefeng LI , Kuangfei LI, Liang KONG, Maosong HUANG
11:30-11:40	Long-term mechanical characteristics and creep damage model of JINPING marble at different depths considering excavation disturbance	Kun XIAO , Ru ZHANG, Zetian ZHANG, Ersheng ZHA, Li REN
11:40-11:50	Undrained cyclic resistance and stiffness of anisotropically consolidated calcareous sand	Baojian LI , Kun PAN, Zhongxuan YANG
11:50-12:00	Modeling the temperature-dependent behavior of Hong Kong marine deposits	Zejian CHEN , Jian-hua YIN
14:00-14:10	A CWFS bounding surface model for rocks considering a modified Rowe's stress-dilatancy and finite strain concept	Jiguan LIANG , Linchong HUANG, Jianjun MA
14:10-14:20	Modeling of monotonic and cyclic behaviors of sand under small and normal confining stresses	Wenxuan ZHU , Guanlin YE, Linlin GU, Feng ZHANG
14:20-14:30	Anisotropic elasto-plastic coupling model considering fabric evolution	Yang YU , Zhongxuan YANG
14:30-14:40	Methane hydrate-bearing sediments: from DEM simulation to constitutive modelling	An ZHANG , Mingjing JIANG, Dong WANG
14:40-14:50	Compression behavior of clayey soils with initial high water contents	Penglin LI , Zhenyu YIN, Dingbao SONG, Jianhua YIN

MS-03 Advanced numerical approaches

Chairs: Pengzhi PAN, Jidong ZHAO

Venue: Z411, Z Block, PolyU

Time: 08:30-14:40, 2 December

Time	Title	Authors
08:30-08:45	(Invited) A set of hysteretic nonlinear contact models for DEM: Theory, formulation, and application for deformable granular particle flow	Qiushi CHEN
08:45-09:00	(Invited) Investigation on the propagation of complex multiple fractures in rocks	Pengzhi PAN , Zhaofeng WANG, Wenbo HOU
09:00-09:10	Coupled peridynamic modeling of hydraulic fracturing in solids	Fan ZHU , Changyi YANG, Jidong ZHAO
09:10-09:20	Grain-scale modelling of sandstone failure using realistic microstructures from CT-scan data	Bin CHEN , Jiansheng XIANG, John Paul LATHAM, Yuan WANG
09:20-09:30	Numerical study for strain localization and crack propagation of geomaterials based on IGA	Hongxiang TANG , Feng ZHU
09:30-09:40	Ray tracing discrete element method	Shiwei ZHAO , Jidong ZHAO
09:40-09:50	The development of JC-JHB-DLSM model and its application in high-velocity penetration of geomaterials	Jianjun MA , Jinxin ZHAO, Jianying CHEN, Yuexiang LIN, Wanxiang CHEN, Linchong HUANG
09:50-10:00	Lagrangian continuum mechanics-based simulation for particle size segregation in granular flow	Chengwei ZHU , Chong PENG, Wei WU, Xiao WANG
10:00-10:10	Three-dimensional face stability analysis of circular tunnels	Yidan ZHAO , Xiaowei YE, Can WANG, Yunmin CHEN
10:40-10:50	From sedimentation to consolidation of kaolinite: a molecular dynamic study	Ming LU, Yuanyuan ZHENG , Zhenyu YIN
10:50-11:00	Development of Johnson-Holmquist-Beissel model in discontinuous deformation analysis and its application in projectile penetration	Chenghao LI , Rui LI, Junjie CHEN, Jianjun MA, Linchong HUANG
11:00-11:10	A computational fluid dynamics-based investigation of synchronous grouting performance in shield tunneling	Zhengshou LAI , Linchong HUANG, Yu LIANG
11:10-11:20	Analysis of soil spatial variation based on coupled Markov chain and general regression neural network	Linshuang ZHAO , Shuilong SHEN
11:20-11:30	A semi-implicit material point method for coupled thermo-hydro-mechanical simulation of saturated porous media	Jidu YU , Weijian LIANG, Shiwei ZHAO, Jidong ZHAO
11:30-11:40	Suffusion characteristics of gap-graded granular materials: effects of particle size ratio and fines content	Yi ZHAO , Qixin WU, Yewei ZHENG
11:40-11:50	The continuous to discontinuous simulation of rock failure by the 2D adaptive RDFA approach	Bin GONG , Tao ZHAO
11:50-12:00	An efficient material point method framework based on the affine matrix	Kaiyuan HE , Yinfu JIN
14:00-14:10	A 2D unified distance potential field based contact interaction algorithm for combined finite-discrete element method (FDEM)	Weibing CAI, Ke GAO
14:10-14:20	The law of infiltration of rheological bentonite slurry through sands	Shanlin XU , Zhaohui YE, Honglei SUN, and Jingling LU
14:20-14:30	Study on initiation process of moraine soil with different particle morphology using CFD-DEM	Zuyan WANG, Chuang ZHOU , Jiangu QIAN
14:30-14:40	A modified hydro-thermal coupling method considering unfrozen water content in artificial ground freezing	Qimin CHEN , Bibek GHIMIRE, Yong LIU

MS-04 Smart geotechnical monitoring

Chairs: Honghu ZHU, Wanhuan ZHOU, Behzad FATAHI

Venue: Z412, Z Block, PolyU

Time: 08:30-11:40, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Granular soil modulus extraction for intelligent compaction using machine learning with soil-structure interaction considerations	Zhengheng XU, Hadi KHABBAZ, Wu DI, Behzad FATAHI
08:45-09:00	(Invited) Development of landslide deep deformation monitoring system based on fiber optical sensing technology	Na YOU, Huafu PEI , Feng ZHANG
09:00-09:15	(Invited) Detecting ground thermal conductivity via a novel thermal response test	Kai GU , Bo ZHANG, Bin SHI
09:15-09:25	A new method for extracting assembly information of shield tunnel using terrestrial laser scanning data	Yulin CHEN , Shuilong SHEN
09:25-09:35	Optimal sensor placement for wireless sensing of shield tunnel deformation in the longitudinal direction	Jingkang SHI , Hongwei HUANG, Dongming ZHANG
09:35-09:45	Time series method for profiling of London clay with MWD data	Siyuan WU , Zhongqi Quentin YUE
09:45-09:55	Hyperspectral imaging features for concrete classification and early-age compressive strength assessment	Changsong WANG , Hongwei HUANG, Mingliang ZHOU
09:55-10:05	Advanced marine pressure sensor design with elastic diaphragm and femtosecond fiber grating for high-precision pressure monitoring	Junhao JING , Wanhuan ZHOU
10:40-10:50	Association rule mining and deformation prediction of reservoir landslide	Honghu ZHU, Jia WANG
10:50-11:00	Smart monitoring and forecasting of confining pressure on shield tunnel segments during the construction period	Yujun WEI , Xiaowei YE, Yunmin CHEN
11:00-11:10	Vibration monitoring and reinforcement effect evaluation of vibro-replacement stone columns on the deep dam foundation: a case study	Pengfei YAO , Duanyang ZHUANG, Yanguo ZHOU, Yunmin CHEN, Dongchao ZHANG, Chun WANG
11:10-11:20	A feasibility study of cross-borehole passive-seismic waveform tomography	Yao WANG , Hai LIU, Liu LIU
11:20-11:30	Feasibility of bare FBG sensing technology in the measurement of inner wall axial stress along open-ended pipe pile in sand	Hailei KOU , Hao JING, Nan ZHOU, Qi CHEN, Wang LI
11:30-11:40	Study on mechanical performance monitoring of prefabricated subway stations using distributed fiber optic sensors	Chengyu HONG, Wei RAO , Weibin CHEN

MS-05 Big data and artificial intelligence in geotechnics

Chairs: Pin ZHANG, Xu LI

Venue: Z413, Z Block, PolyU

Time: 08:30-12:20, 2 December

Time	Title	Authors
08:30-08:45	(Invited) A flexible and generalizable method for predicting subsea immersed tunnel settlement	Shuyu HE, Wanhuan ZHOU , Cong TANG
08:45-09:00	(Invited) Data-driven multiscale modelling of granular materials via transfer learning	Tongming QU , Jidong ZHAO, Yuntian FENG
09:00-09:10	Efficient machine learning method for evaluating compressive strength of cement stabilized soft soil	Chen ZHANG , Zhiduo ZHU, Yun WAN, Wangwen HUO, Liu YANG
09:10-09:20	Static state analysis of earth-rockfill dams considering spatial variability based on random forest filter	Yichuan LI , Bin XU, Rui PANG
09:20-09:30	Evaluation of the collapse susceptibility of loess using machine learning	Qingyi MU , Tianqi SONG, Hongjian LIAO
09:30-09:40	Novel model for risk assessment of shield tunnelling in soil-rock mixed strata	Xinhui ZHOU , Shuilong SHEN
09:40-09:50	A quality index for construction big data in EPB shield tunnelling	Yuhao REN , Chao ZHANG
09:50-10:00	Data-driven and physics-informed bayesian learning of sparse site investigation and settlement monitoring data	Huaming TIAN , Yu WANG
10:00-10:10	Physics-guided neural network for detecting the nature of concrete materials	Khalid ELBAZ , Wafaa SHABAN, Shuilong SHEN
10:40-10:50	Operation optimization for aquifer thermal energy storage system based on a surrogate model-assisted method	Yang WANG , Fengshou ZHANG
10:50-11:00	Data-driven constitutive modelling of granular soils considering multiscale particle morphology	Wei XIONG , Jianfeng WANG, Mengmeng WU
11:00-11:10	Real-time prediction of slurry balanced shield machine attitude based on LSTM neural network	Jiayou TANG , Shuilong SHEN
11:10-11:20	Intelligent identification of stratum characteristics during shield tunnelling based on PCA-GMM model	Weiwei ZHAO , Shuilong SHEN
11:20-11:30	Mapping urban subsurface for sustainable growth: a machine learning approach	Zezhou WANG, Yue HU, Xiangfeng GUO
11:30-11:40	Using the acoustic emission system to predict the severe failure of rock based on empirical statistics and machine learning methods	Shuaida ZHU , Changsong WANG, Hongwei HUANG, Dongming ZHANG
11:40-11:50	Data assimilation methods for high-dimensional creep parameter related to heterogeneous rock mass in LCGX hydropower project	Changhao LYU , Yaolai LIU, Hongjie CHEN, Long YAN, Haijiang WANG, Weiya XU
11:50-12:00	Reliability of data-centric approach in ground improvement design: evidence from jet grouted columns diameter estimation	Pierre Guy Atangana NJOCK , Zhenyu YIN, Shuilong SHEN
12:00-12:10	Intelligent identification and classification of granite residual soil based on CNN	Yuhao TIAN , Bo ZHOU, Zhuoxun FENG, Huabing WANG
12:10-12:20	TCN and LSTM neural network for predicting path-dependent constitutive behaviours of idealized granular soils	Xintong LI , Mengmeng WU, Jianfeng WANG

MS-06 Soil-structure interaction

Chairs: Fuping GAO, Qiyin ZHU

Venue: Z414, Z Block, PolyU

Time: 09:00-11:40, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Analysis of the impact of quasi-rectangular jacking pipe successively side crossing viaduct piles	Mengxi ZHANG, Yichen YAN, Weiqiang PAN, Kangming LU, Mengjia CAO
09:15-09:30	(Invited) Research on the density of underwater sand and gravel fillings based on geotechnical centrifugal tests	Bo LI, Lei CHEN, Liqun SHEN
09:30-09:45	(Invited) Seabed liquefaction under diversiform waves: from regular, random, to breaking wave	Fuping GAO
09:45-09:55	An analytical model for the changeable TBM disc cutter force induced by cutting the soil-rock interface	Mengbo LIU, Shaoming LIAO, Junhua XIAO, Jiacheng SUN
09:55-10:05	A case study on vibration impact assessment of shield tunnelling in soil-rock strata	Xinhao MIN, Han CHEN, Shuilong SHEN, Yanning WANG
10:40-10:50	Experimental study on temperature effect on the consolidation of seabed and penetration resistance of subsea pipeline into seabed clay	Yuxiao LI, Mingjun HU, Weiqiang FENG
10:50-11:00	Estimating locations of soil–rock interfaces based on vibration data during shield tunnelling	Tao YAN, Shuilong SHEN, Annan ZHOU
11:00-11:10	Experimental study on bearing capacity of the consolidated under-reamed pile	Shuyang LUAN, Junwei LIU, Xiaofeng PEI, Bo ZHU
11:10-11:20	Evaluation of soldier pile tieback wall based on p-y curve method	Ruipeng LI
11:20-11:30	Experimental study on the role of interfacial suction in uplifting a buried pipe from clayey soils	Yumin SHI, Fuping GAO, Ning WANG
11:30-11:40	Slip-line field solution for the bearing capacity of a pipeline on clayey soils: from hill to Prandtl mechanism	Ning WANG, Fuping GAO, Yumin SHI, Wengang QI

MS-07 Geo-environmental engineering

Chairs: Manman HU, Liming HU

Venue: Z503, Z Block, PolyU

Time: 08:30-12:00, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Tension-healing mechanism of desiccation cracks in a clayey soil	Qing CHENG, Chaosheng TANG
08:45-09:00	(Invited) Enhancing CO ₂ sequestration in phosphogypsum-based cementitious materials with silica-rich solid waste	Wenjing SUN, Yu XIAO
09:00-09:15	Preparation of geopolymers brick with copper mine tailings under low-temperature conditions	Quanbin JIN, Zhibin LIU
09:15-09:25	Influence of organic matters content on the specific gravity of Shanghai soils	Jiawei LIU, Zhongqi Quentin YUE
09:25-09:35	Reactive chemo-hydro-mechanics for modelling aggressive fluid pressurization	Xiaojie TANG, Manman HU
09:35-09:45	Spatial and temporal transport laws of light nonaqueous phase liquids in low-permeability soils	Yinhe GUO, Dingwen ZHANG, Yanmin QI, Wenli LIN
09:45-09:55	Investigation and performance evaluation of biopolymer amended clay as cover barrier material in industrial contaminated sites	Yingzhen LI, Jialei WAN, Yanjun DU
09:55-10:05	Exploration of pollutant adsorption and anti-seepage by multi-scale and multi-method	Wei YANG, Xueying LIU, Renpeng CHEN
10:40-10:50	Emission of volatile organic compounds from the intermediate cover at a large-scale municipal solid waste landfill in Hangzhou, China	Xiting GU, Haijian XIE, Huaxiang YAN, Xinru ZUO
10:50-11:00	Influence of extraction and injection conditions on performance of thermal enhanced soil vapour extraction	Chunbaixue YANG, Shijin FENG, Qiteng ZHENG
11:00-11:10	An indirect method of carbonating magnesia for soil stabilization and CO ₂ capture	Wentao LI, Jiawei WU, Jinghao WANG, Henglin XIAO, Lihua LI
11:10-11:20	Phenol containment by novel vertical cutoff wall backfill: coupled hydraulic conductivity, diffusion behavior and microstructure characteristics	Hao NI, Ridong FAN, Yanjun DU
11:20-11:30	Silica fume and gypsum coupled action in the cement-stabilized contaminated clay under saline and alkaline environments	Tingting DENG, Yongfeng DENG, Hang LIU
11:30-11:40	Modelling of removal of copper and lead metals in loess under the effects of solid-phase adsorption and desorption	Lin WANG, Wen-Chieh CHENG, Zhongfei XUE
11:40-11:50	Generalized effective stress of dual-porosity geomaterials considering the thermochemical effect and its verification	Gailei TIAN, Zhihong ZHANG, Zhaoyang SONG
11:50-12:00	Experimental study of alkali activated slag enhanced compacted clay covering barrier layer	Chi CHE, Min WANG, Yingzhen LI, Zheyuan JIANG, Yanjun DU

MS-08 Geo-hazard assessment and mitigation

Charis: Daoyuan TAN, Xingyue LI

Venue: Z504, Z Block, PolyU

Time: 08:30-11:50, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Waves and their transitions in snow avalanches on real terrain	Xingyue LI
08:45-09:00	(Invited) Modeling of pumping-induced tensile earth fissures by coupled quasi-static material point method	Yun ZHANG, Zhengyang SHENG
09:00-09:15	(Invited) Research on rock dynamic characteristic of landslide dam and evolution of deposit movement	Huanling WANG, Shiqi LIU, Yu CHEN, Wenxiu WANG, Yuxuan LIU
09:15-09:25	Coupled thermal-hydraulic-mechanical-chemical model in natural gas hydrate reservoirs	Haoze WU, Chungfai CHIU, Shuilong SHEN
09:25-09:35	A hybrid deep learning network for landslide susceptibility assessment	Shaoqiang MENG, Zhenming SHI, Ming PENG
09:35-09:45	Experimental study of landslides in stable gentle soil slopes triggered by pressurized pore-gas	Xingyu KANG, Zhongqi Quentin YUE
09:45-09:55	Transitions in impact and response modes for geophysical flow mitigations	Yong KONG, Daoyuan TAN, Jianghua YIN
09:55-10:05	Assessing the risk of land subsidence hazard on gas and oil pipelines in Iran	Ali Golaghaei DARZI, Hamed SADEGHI
10:40-10:50	Risk assessment model of adjacent buildings in slurry shield construction	Yajie WANG, Shuilong SHEN
10:50-11:00	Mitigation measure of tire-derived aggregate for jointed rigid pipes under differential ground movements	Qiwu XIE, Pengpeng NI, Xiaogang QIN
11:00-11:10	Dynamic process of Baige landslide blocking river event based on the FDEM-SPH coupling method	Yiding BAO, Lijun SU
11:10-11:20	Research on indoor experimental study of three-dimensional cracks development in stepped soil sites	Qingqing XIANG, Xiaowu TANG, Guoping SUN, Keyi LI, Tianqi WANG
11:20-11:30	Effects of the burn temperature and combustion of organics on post-wildfire debris flow mobility	Feihong GAO, Clarence E. CHOI
11:30-11:40	Mesoscopic interpretation of fines clogging-induced permeability changes of completely decomposed granite	Zhiyuan LUO, Rui CHEN, Anthony Kwan LEUNG, Liangliang ZHANG
11:40-11:50	Effects of geometry configuration and material properties on entrainment rate and deposit morphology: an experimental study	Teng WANG, Lu JING, Shuocheng YANG, Gengchao YANG, Yuri Dumaesq SOBRAL, Fiona KWOK

MS-09 Sustainability and resilience of infrastructures

Chairs: Dongming ZHANG, Yu WANG

Venue: Z505, Z Block, PolyU

Time: 09:00-11:50, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Quantifying the impact of climate change on risks of rainfall-induced landslides	Xin LIU, Yu WANG
09:15-09:25	Optimization study of chimney parameters for coal mine dump gravity heat pipe	Bailin ZHANG, Shuhua FANG
09:25-09:35	Enhancing metro network flood resilience through genetic algorithm optimization: a case study on flood barrier height design for metro network	Hao BAI, Yanan DONG, Dongming ZHANG, Huichao SUN
09:35-09:45	A full scale model with Cauchy-type boundary conditions for simulating near surface effects on energy piles	Kewei GUO, Linfeng ZHANG
09:45-09:55	Sustainability and resilience assessment of a reinforced concrete bridge subjected to liquefaction-induced lateral spreading	Zhijian QIU, Yewei ZHENG
09:55-10:05	An introduction to Smart Construction and Sustainable Cities	Pierre Guy Atangana NJOCK, Shuilong SHEN
10:40-10:50	New collaborative technology systems for mountain disaster prevention based on NBS concept	Songtang HE, Xiaoqing CHEN, Daojie WANG, Yuchao QI, Yong LI, Zengli PEI, Peng ZHAO
10:50-11:00	Enhanced real-time evaluation of track irregularities using vehicle body acceleration	Xiaohui WANG, Hai LIU, Jianwei YANG
11:00-11:10	Field test on the low-carbon construction and the response improvement of bored piles based on combined grouting	Tao HU, Guoliang DAI, Bowen FANG, Cheng ZHANG, Zhihui WAN
11:10-11:20	Numerical analysis on seismic response of monopile-supported OWTs and modal parameter identification methods	Yang YANG, Fayun LIANG
11:20-11:30	A comprehensive resilience evaluation method of shield tunnel structures under disaster disturbance	Binlin GAN, Dongmei ZHANG, Zhongkai HUANG
11:30-11:40	Experimental text for repairing rough cracks using the microbially induced carbonate precipitation (MICP)	Zihui SHANG, Enhui XI, Simiao ZHANG, Shuhong WANG
11:40-11:50	Seismic fragility curve development for segmental tunnels via optimal IM and EDP pair	Jiaying ZHOU, Chao ZHANG, Zhixiong LANG

MS-10 Unsaturated soil mechanics

Chairs: Annan ZHOU, Chaofa ZHAO

Venue: Z506, Z Block, PolyU

Time: 09:00-11:30, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Basic theoretical research and application of seepage evolution of low permeability medium	Jiangfeng LIU, Hongyang NI, Zhipeng WANG
09:15-09:25	Numerical implementation of elastic viscoplastic constitutive model based on overstress theory	Jian LI, Zhicun HAN, Guoqing CAI, Chenggang ZHAO, Xinzhe LI
09:25-09:35	Study on the structural parameter of loess: mapping energy	Longlong LV, Hongjian LIAO
09:35-09:45	Modelling time-dependent behaviour of unsaturated soils	Runkang ZHAO, Annan ZHOU, Yangping YAO
09:45-09:55	The competing effects of wetting and volume change on G_0 in compacted Loess	Miaomiao GE, Jubert PINEDA, Daichao SHENG
09:55-10:05	Hydro-mechanical behaviour of compacted expansive stiff clay subjected to wetting and drying cycles	Yihe XU, Qiong WANG, Wei SU
10:40-10:50	A thermodynamic formulation of water potential in soil	Lingyun GUO, Shaojie HU, Chao ZHANG, Ning LU
10:50-11:00	Reducing lateral earth pressure on retaining walls in expansive soils using eps geofoam	Zhong HAN, Weilie ZOU, Xiqun WANG
11:00-11:10	Numerical modelling of rainfall-induced internal erosion process within vegetated deposited slopes	Xiaoqin LEI, Weiyu ZHANG, Xiaoqing CHEN
11:10-11:20	Numerical simulation of rainfall-induced deformations of embankments considering the hydro-mechanical coupled behavior of unsaturated soils	Hao WU, Xiaohan LUAN, Yewei ZHENG
11:20-11:30	Study of structural characteristics and deformation patterns of compacted Gaomiaozi bentonite during dry-wet cycles at micro-CT scale	Wei WANG, Weizhong CHEN, Diansen YANG, Xianjun TAN, Xing WANG

MS-11 Tunnelling and underground space technology

Chairs: Louis N.Y. WONG, Chao-Sheng TANG

Venue: Z509, Z Block, PolyU

Time: 09:00-12:10, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Comparison of high-frequency components in acoustic emissions from rock fracture under mode I and mode II dominated loading	Hua LI, Jianhui DENG, Fei WANG
09:15-09:25	Real-time settlement field reconstruction using deep operator networks	Chen XU, Ba-Trung CAO, Günther MESCHKE
09:25-09:35	Numerical investigation of end reinforcement technology for super-large diameter shield tunnels and online prediction using machine learning	Chenyang ZHAO, Haoshen HE, Le CHEN, Jianrui LI, Beibing DAI
09:35-09:45	Intelligent model to predict disc cutter wear in real-time	Nan ZHANG, Shuilong SHEN, Annan ZHOU
09:45-09:55	Sustainability of deep engineering surrounding rock stability affected by engineering disturbances: a case study of CJPL	Zeqian YANG, Ting AI, Ru ZHANG
09:55-10:05	Study on coupled temperature and pressure conduction mechanism and sensor validation in in-situ deep environment simulation experiments of rock	Yihang LI, Heping XIE, Ru ZHANG, Zetian ZHANG
10:40-10:50	Confined aquifer dewatering optimization with a modified simulation-optimization method considering the length and depth of well screen	Yanxiao SUN, Songyu LIU, Liyuan TONG
10:50-11:00	Deep-Learning based tunnel surrogate model and model uncertainty evaluation	Jinzhang ZHANG, Hongwei HUANG, Dongming ZHANG
11:00-11:10	Application of novel polymer heat-shrinkable material in laboratory calibration test on deep rock in-situ condition preserved coring	Heng GAO, Heping XIE, Ru ZHANG, Zetian ZHANG, Hongxin XIE, Yihang LI
11:10-11:20	Cross-scale characterization of mudstone deterioration after water immersion based on nanoindentation technology and simulation	Qingsong ZHANG, Zhibin LIU
11:20-11:30	Mechanical response and strength criterion constructing of granite subjected to thermal-hydraulic-mechanical coupling	Qijun HAO, Ru ZHANG, Mingzhong GAO, Jing XIE, Li REN, Anlin ZHANG, Zetian ZHANG
11:30-11:45	A new viscoelastic-plastic solution of soft rock deformation in deep-buried tunnel considering	Yu PAN, Pengfei CHEN, Zhenyu YIN
11:45-12:00	A numerical study on the tunnelling-induced ground deformation considering the compressed properties of tail grouting materials	Jiaxin LIANG, Wei LIU, Xiaowu TANG
12:00-12:10	Large deformation modelling on tunnel face instability during EPB shield tunnelling considering dynamic excavation process	Xuejian CHEN, Tianqi MENG, Yong LIU

MS-12 Bio-geotechnical engineering

Chairs: Ningjun JIANG, Anthony Kwan LEUNG

Venue: Z510, Z Block, PolyU

Time: 08:30-15:15, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Multiscale experiments and DEM modeling of biotreated sand	Huanran WU, Jiang YAN, Yang XIAO, Hanlong LIU
08:45-09:00	(Invited) Role of biochar in improving biostimulated MICP: shear strength enhancement and ammonium removal	Yijie WANG, Wenbo CHEN, Ningjun JIANG
09:00-09:15	(Invited) Optimization of bio-cement and its application for soil erosion control	Jia HE, Siyuan QU, Jiafeng JI, Anguo HUANG, Changhang FANG, Xin HUANG
09:15-09:25	Effect of construction technology on microbial induced calcium carbonate precipitation (MICP) for silt improvement	Bo KANG, Fusheng ZHA, Hao WANG, Lin QIN, Yinbin SHEN, Shan WU
09:25-09:35	Research on erosion mitigation for sand foreshore slopes based on microbiota and enzyme mix-induced carbonate precipitation	Xiaohao SUN, Linchang MIAO, Hengxing WANG, Junjie WANG, Wenbo SHI, Linyu WU
09:35-09:45	Effects of diatom microfossils inclusion on compression behaviors of soft clay	Shenghua XU, Yongfeng DENG, Qi FENG
09:45-09:55	Considerations for implementing microbially induced calcium carbonate precipitation (MICP) in practical applications	Yuze WANG, Sikai TANG, Muhammad Tahir FAZAL, Qian SONG, Hongyu CHEN, Junhao WANG
09:55-10:05	Developing a reactive-transport model of microbially induced carbonate precipitation (MICP) applied to heavy metal-contaminated site remediation	Zhongfei XUE, Wen-Chieh CHENG, Lin WANG
10:40-10:50	Remediation of naphthalene-contaminated sites using PAHs-degrading bacteria	Yixin XIE, Wen-Chieh CHENG, Zhongfei XUE
10:50-11:00	Experimental study on enhancement of thermal conductivity of EICP-treated calcareous sand	Shuang LI, Ming HUANG, Mingjuan CUI, Guixiao JIN, Kai XU
11:00-11:10	The physical and hydraulic performance of soil modified by different guar gum and xanthan gum combinations	Fan WU, Rui CHEN, Chao ZHOU, Zhaofeng LI
11:10-11:20	A simple model for predicting hydraulic conductivity of MICP-treated sand to prevent pollution dispersion	Yanning WANG, Longjian HUANG, Chandra BOGIREDDY, Ankit GARG
11:20-11:30	Small strain stiffness of lightly biocemented sands: the roles of particle morphology, gradation, and particle size	Jinquan SHI, Haoyu LI, Yang XIAO, Hanlong LIU
11:30-11:45	(Invited) Water-gas flow in unsaturated vegetated soils	Junjun NI, Haowen GUO, Qi ZHANG
11:45-12:00	(Invited) An investigation of microscopic interaction between tall festuca root growth and sand by using X-ray microtomography	Jipeng WANG, Junfeng SHA, Xuguang GAO

12:00-12:15	(Invited) The role of bio-geotechnics to reach net zero commitment in slope engineering	Hamed SADEGHI , Farshad YAZDANI, Pouya ALIPANAHI
14:00-14:15	(Invited) Natural symbiotic fungi strengthen plant roots	Xunwen CHEN , Viroon KAMCHOOM, Jiaqi WU, Guodong SUN, Qiang ZHANG, Huishan LI, Minghung WONG, Hui LI, Junjian WANG
14:15-14:25	Herbaceous species and mycorrhizal fungi interaction on soil aggregate stabilization and disintegration in compacted soil	Minghui LI , Anthony Kwan LEUNG
14:25-14:35	Pore-based modelling of relative hydraulic conductivity function of unsaturated rooted soils	Hao WANG , Rui CHEN, Anthony Kwan LEUNG, Ankit GARG, Zhenliang JIANG
14:35-14:45	Anisotropic behaviour of overconsolidated rooted soils	Ali Akbar KARIMZADEH , Anthony Kwan LEUNG
14:45-14:55	Roles of grass roots in crack mitigation and strength improvement of lateritic soil	Qianfeng GAO , Han YU, Ling ZENG, Huicong YU
14:55-15:05	Preliminary observations of fine root effects on soil hydraulic properties	Zhenliang JIANG , Anthony Kwan LEUNG, Jianbin LIU
15:05-15:15	Investigation on canopy interception performance of typical slope protection grasses	Xuguang GAO , Jipeng WANG

MS-13 Offshore geotechnical engineering

Chairs: Yinghui TIAN, Yong FU

Venue: Z511, Z Block, PolyU

Time: 08:30-12:20, 2 December

Time	Title	Authors
08:30-08:45	(Invited) Horizontal-torsional sliding resistance of subsea foldable mudmats	Xiaowei FENG , Xiaolong LI
08:45-09:00	(Invited) Installation disturbance of helical anchor in dense sand and the effect on uplift capacity based on discrete element method	Rong CHEN, Hu LIU, Dongxue HAO , Zhaoguo LIU
09:00-09:15	(Invited) Reliability analysis of offshore monopile foundations considering multidirectional loading and soil spatial variability	Xueyou LI
09:15-09:25	Artificial preparation of natural structured soft clay producing high liquid limit and macroporous characteristic	Zhichao WANG, Ziwei ZHOU , Yinghui TIAN, Chunhui ZHANG, Huiliang PENG
09:25-09:35	A novel gravity installed anchor with ring fins and soft shanks and its dynamic performance in water and clay	Jing SUN, Haixiao LIU
09:35-09:45	Cyclic response characteristics of rigid piles in dense sand under oblique loads	Ting HUANG , Yinghui TIAN
09:45-09:55	An extended hill solution for the undrained bearing capacity of strip foundations on soil modeled by non-stationary random field	Hongzhen CHEN, Zhichao SHEN , Xuanxuan CHU, Le WANG, Yinghui TIAN
09:55-10:05	Developing an integrated mooring system modelling program	Wenlong LIU, Yinghui TIAN , Mark J. CASSIDY
10:40-10:50	Experimental investigation of keying flap motion and embedment loss of sepla during keying in transparent soil	Chunhui ZHANG , Xiaoming ZHENG, Yinghui TIAN, Le WANG
10:50-11:00	Numerical modelling of a pile-leg mat foundation on clay seabed under combined loading	Qi ZHANG , Tianhao WANG, Wenxuan ZHU, Guanlin YE
11:00-11:10	Dynamic analysis of anchor mooring systems for deepwater seaweed farms	Yushun LIAN, Man QIN, Jinhai ZHENG, Zhenghu PAN
11:10-11:20	Numerical analysis on the embedment loss of plate anchors in double-layer clay	Yanbing ZHAO
11:20-11:30	Fin configuration effect on the penetration and pullout behaviors of deep-sea dynamically installed anchor	Yong FU , Biao ZHANG
11:30-11:40	Experimental investigation on the performance of tolerably mobile subsea foundations with varied interface conditions	Congcong HAN , Xiaohan ZHANG, Xiaowei FENG, Jun LIU
11:40-11:50	An integrated method to estimate bearing capacity for suction caisson of offshore booster stations for wind farm under random load	Wei HUANG , Cun HU
11:50-12:00	Forecasting model for recommissioning performance of offshore wind power based on physics-informed neural networks	Chen WANG , Xi CHENG, Fayun LIANG, Lin LI
12:00-12:10	Experimental analysis of static and dynamic characteristics of sand-clay mixtures for offshore floating wind turbines	Liheng TANG , Chencong LIAO, Yuanxi LI, Diyang ZHU
12:10-12:20	Behavior of FRP confined seawater sea-sand concrete piles	Numan MALIK Jianhua YIN, Wenbo CHEN, Peichen WU, Zejian CHEN

MS-14 Transportation geotechnical engineering

Chairs: Xianfeng LIU, Jeff Jianfeng WANG

Venue: Z512, Z Block, PolyU

Time: 09:00-12:10, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Geogrid-stabilized ballast for sustainable high-speed railway	Xuecheng BIAN, Chuang ZHAO, Zheng LUO, Yunmin CHEN
09:15-09:30	(Invited) Investigating particle breakage in sand under triaxial shearing: a novel approach combining x-ray tomography and particle tracking	Mengmeng WU, Jianfeng WANG
09:30-09:45	(Invited) Investigation on strength, stiffness and microstructure of a lime-treated red mudstone	Kang CHEN, Xianfeng LIU, Shengyang YUAN
09:45-10:00	(Invited) Experimental study on tunneling-induced deformation characteristics of pile-raft foundation of high-speed railway based on particle image velocimetry	Botao HU, Binglong WANG
10:00-10:10	Study on mechanical response of large-scale prefabricated structures during assembling process in underground subway stations	Chengyu HONG
10:40-10:50	Effect of water content on permanent deformation of fine/coarse soil mixtures with varying coarse grain contents and subjected to multi-stage cyclic loading	Yu SU, Yujun CUI, Jean-Claude DUPLA, Jean CANOU
10:50-11:00	Tracking unfragmented and slightly fragmented particles in a mini-triaxial sample using the neural networks	Zhiren ZHU, Haolan YU, Jianfeng WANG, Zhuang CHENG
11:00-11:10	Quantifying Geogrid-Aggregate Interface Shear Resistance Components Using 3-D Discrete Element Method	Yafei JIA, Yewei ZHENG
11:10-11:20	Performance evaluation of light-weighted cement-stabilized-clay columns for soft ground improvement using the centrifuge model test	Zhenping ZHAO, Zi YING, Wei YUAN, Yongfeng DENG, Xiaoqiang LIU, Chengfu CHU, Xingwen GU
11:20-11:30	Recycled utilization of dredged sludge as a subgrade material and field application study	Kexin GUO, Ningjun JIANG
11:30-11:40	In-situ x-ray CT investigation of internal erosion using a mini-triaxial apparatus	Zhangqi XIA, Jianfeng WANG
11:40-11:50	The reactivation mechanism of ancient landslides under the coupled effects of rainfall and train vibration	Kai HAN
11:50-12:00	A multi-scale study on the strength characteristics of the lime stabilised red mudstone fill material	Jie MA, Xianfeng LIU, Jiahang XU, Shengyang YUAN
12:00-12:10	A novel ballast roughness index and its assignment method based on roughness random field	Junhua XIAO, Kaichao WANG, Lihua XUE, Zhiyong LIU

MS-15 Earthquake engineering

Chairs: Rui WANG, Xiaoqiang GU, Gang WANG

Venue: Z513, Z Block, PolyU

Time: 09:00-11:30, 2 December

Time	Title	Authors
09:00-09:15	(Invited) Insights from numerical simulations of liquefaction behaviour within leap using the CycLiq model	Rui WANG , Jianmin ZHANG
09:15-09:30	(Invited) Evaluating liquefaction resistance of nearly saturated soils by compressional wave velocity	Kangle ZUO, Xiaoqiang GU
09:40-09:50	The liquefaction and reliquefaction behavior of sand considering reconsolidation effect under undrained cyclic simple shear by DEM	Wentian XIA, Yewei ZHENG, Qixin WU
09:50-10:00	A comprehensive assessment of major chemical accidents in China (2017-2022) and the path to sustainable solutions	Haoyuan LIANG , Shuilong SHEN
10:00-10:10	Study of the topographic effects of circular arc valley: 1-g shaking table tests	Zhikun WANG , Haitao YU
10:40-10:50	Monotonic and cyclic behavior of silty sand with a constant state parameter: a DEM investigation	Kun PAN , Peipei LI, Chen ZHU, Zhongxuan YANG
10:50-11:00	Tensile strength of remoulded clayey soil — insights from the initiation mechanism of earthquake-induced landslides	Chao YIN , Shuaixin BAI, Jian LI, Wei WANG
11:00-11:10	The liquefaction potential of silty sands evaluated using an energy-based perspective	Xiao WEI , Jun YANG
11:10-11:20	A study of the 2022 Menyuan 6.9 magnitude earthquake's dynamic rupture characteristics and the causes of significant surface faulting	Jing LI , Haitao YU
11:20-11:30	The dynamic response of a lined tunnel embedded in an inhomogeneous half-space subjected to SH waves	Shuhong WANG, Furui DONG, Zihui SHANG