

## Programme of IGES 2023

### (International Symposium on Innovations in Geotechnical Engineering towards Sustainability)

November 30 – December 4, 2023 | Hong Kong

(VERSION 2, UPDATED AT 26 NOV. 2023, MAY SUBJECT TO CHANGE)

Thursday, 30/11/2023	
13:00-21:00	Registration

  

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

<b>Friday, 01/12/2023</b> <b>Jockey Club Auditorium (JCA), PolyU</b>	
12:40-14:00	<b>Lunch</b>
14:00-15:15 (25 mins per talk)	<b>Session 3   Chair: Jun YANG</b>
	<b>Keynote:</b> The mechanics of tailings in static and cyclic loading Matthew Richard COOP, <i>University College London</i>
	<b>Keynote:</b> A new digital-based approach for geotechnical design Alvin K.M. LAM, <i>ARUP</i>
	<b>Keynote:</b> Nanoscale modeling of advanced sustainable graphene nano-coated geopolymer materials Ali ZAOUI, <i>University of Lille</i>
15:15-15:35	<b>Coffee Break</b>
15:35-16:55 (20 mins per talk)	<b>Session 4   Chair: Yinghui TIAN, Qiushi CHEN</b>
	<b>Invited Lecture:</b> Unified hardening model for clays and sands Yangping YAO, <i>Beihang University</i>
	<b>Invited Lecture:</b> Anisotropic rock mechanics and engineering application Weiya XU, <i>Hohai University</i>
	<b>Invited Lecture:</b> Downward soil arching and heave of shield tunnel underlain long-collinear deep excavation Renpeng CHEN, <i>Hunan University</i>
	<b>Invited Lecture:</b> Coupling effect of adjacent loading and unloading on tunnel structures in spatially variability soil Hongwei HUANG, <i>Tongji University</i>
16:55-17:00	<b>Break</b>
17:00-18:20 (20 mins per talk)	<b>Session 5   Chair: Erdin IBRAIM, Jeff Jianfeng WANG</b>
	<b>Invited Lecture:</b> Research progress and application of green retaining technology for excavation engineering Changjie XU, <i>East China Jiaotong University</i>
	<b>Invited Lecture:</b> On innovative thinking with applications in geotechnical engineering Shuilong SHEN, <i>Shantou University</i>
	<b>Invited Lecture:</b> Numerical modeling of drag anchor penetration and capacity Jürgen GRABE, <i>Hamburg University of Technology</i>
	<b>Invited Lecture:</b> 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	<b>Banquet   Chair: Jianhua YIN</b>

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	Coffee Break
10:40-12:20 Z Block	Parallel Session
12:20-14:00	Lunch
14:00-15:40 Z Block	Parallel Session
14:00-15:40 (20 mins per talk) CCST	<b>Session 6</b>   Chair: Zhong-qi Quentin YUE, Xianfeng LIU
	<b>Invited Lecture:</b> From rigid-soft particles to particle crushing: a leap into the void Erdir IBRAIM, <i>University of Bristol</i>
	<b>Invited Lecture:</b> Clarifying key misconceptions about creep and consolidation of clays Samson Abate DEGAGO, <i>Norwegian University of Science and Technology</i>
	<b>Invited Lecture:</b> 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>
	<b>Invited Lecture:</b> Reducing lateral earth pressure on retaining walls in expansive soils using EPS geofabric: Analysis and Application Weilie ZOU, <i>Wuhan University</i>
15:40-16:00	Coffee Break
16:00-17:40 (25 mins per talk) CCST	<b>Session 7</b>   Chair: Limin ZHANG, Shuilong SHEN
	<b>Keynote:</b> Phase field for compaction band formation: Capture of grain crushing and permeability evolution in heterogeneous media Ronaldo I. BORJA, <i>Stanford University</i>
	<b>Keynote:</b> Rapid identification of tunnel surrounding rockmass and real-time safety analysis Hehua ZHU, <i>Tongji University</i>
	<b>Keynote:</b> On bleeding of fresh concrete in deep foundations Wei WU, <i>University of Natural Resources and Life Sciences</i>
	<b>Keynote:</b> TBD Steve WaiChing SUN, <i>Columbia University</i>
17:40-18:10	<b>Closing Remark</b> Zhen-Yu YIN; Chao ZHOU; Qi ZHAO; Andy LEUNG

Sunday, 03/12/2023; Monday, 04/12/2023
<b>Self-planned field trips</b> 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: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> On progressive failure of sand considering fabric evolution with micropole hypoplastic model	<b>Xuefeng LI</b> , Weinan LU, Yuqi HE
2.	<b>(Invited)</b> Dynamics and micromechanics of recycled concrete aggregate	<b>Huan HE</b> , Kostas SENETAKIS, Songyu LIU, Dingwen ZHANG
3.	<b>(Invited)</b> Discrete element analysis of geogrid–aggregate interface shear behaviour under dynamic loading conditions	Shi-Jin FENG, Ya-Qiong WANG, <b>Qi-Teng ZHENG</b>
4.	Complete particle size distribution of CDG soil with extended wet sieving method	Shengnan MA, Yi SONG, Jiawei LIU, Xingyu KANG, Zhongqi Quentin YUE
5.	Laboratory investigation of CDG sand for fine aggregates in portland cement concrete	<b>Yi SONG</b> , Shengnan MA, Jiawei LIU, Xingyu KANG, Zhongqi Quentin YUE
6.	Effect factors and mechanisms of carbonating magnesium oxide for recycle concrete aggregate cementation	<b>Zhexun LIU</b> , Man LI, Huan HE
7.	Exploring the use of polymeric binders for soil stabilisation in the construction of sports infrastructures to replace concrete	<b>Mariam DARESTANI</b> , Bijan P. MARKHALI
8.	Anomalous dielectric behavior in Na-montmorillonite interlayer: a molecular dynamics study	<b>Wen-jie DAI</b> , Yonggui CHEN
9.	The volume change behavior of compacted bentonite under the combined effect of suction cycle and temperature	<b>Dongyue PAN</b> , Qiong WANG, Wei SU, Weimin YE, Yonggui CHEN
10.	A study on the water-rock coupling characteristics in deep in-situ environment of JINPING marble	<b>Chendi LOU</b> , Ru ZHANG, Zetian ZHANG, Li REN, Jing XIE, Hai REN, Kun XIAO, Anlin ZHANG
11.	Deformation characteristics and gas permeability of low-permeability sandstone and anisotropic phyllite under triaxial cyclic loading stress path	<b>Xuele DUAN</b> , Wei WANG, Yajun CAO, Chao CHEN, Rubin WANG, Qizhi ZHU
12.	Evolution law of particle breakage during one-dimensional compression of calcareous sand	<b>Yongqiang CUI</b> , Teng WANG, Hengyu SU, Ning JIA
13.	Dissolution characteristics of coral reef limestone under different saturated CO <sub>2</sub> conditions	Shanshan ZHANG, Dongsheng XU, Yue QIN, Weiqiang FENG
14.	Influence of particle size and fine content on the thermal conductivity of carbonate sand	<b>Yong HE</b> , Huan HE, Guojun CAI
15.	Desiccation cracking of expansive soil subjected to different temperature conditions	<b>Nan WANG</b> , Qiong WANG, Long XU, Wei SU
16.	Dynamic characteristics and damage mechanisms of expansive soil – rubber mixture under coupling effect of freeze-thaw cycles and external load	<b>Zhaochi LU</b> , Huan HE

17.	Deep insight into mechanical behavior and microstructure mechanism of serpentine-magnesium oxide carbon sequestration foamed lightweight soil	<b>Xiang ZHANG</b> , Songyu LIU, Zhenyang YUAN
18.	Identification of representative elementary volume in inhomogeneous geotechnical material based on microstructure parameters	<b>Qing KANG</b> , Manman LIU, Yong LIU

## MS-02 Constitutive modelling of geomaterials

Chair: Zhongxuan YANG, Fiona C.Y. KWOK

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> Water-retention and shear-strength behaviors of unsaturated soils with dual-porosity	Gaoyun ZHOU, Zhenhao SHI, <b>Jiangu QIAN</b>
2.	<b>(Invited)</b> Constitutive modeling of solid- and fluid-like transitional behavior of sand	<b>Zhenhao SHI</b> , Senjie TONG, Maosong HUANG
3.	<b>(Invited)</b> A stiffness degradation method for modelling long-term ratcheting response of wind turbine foundations in sand	<b>Zhiwei GAO</b> , Scott WHYTE
4.	<b>(Invited)</b> A unified soil freezing-thawing theory based on thermodynamics	<b>Xu LI</b> , Xiao-Kang LI
5.	Influence of particle shape on the mechanical properties of sand under true triaxial shearing	<b>Yang WU</b> , Haojun RONG, Neng LI, Jie CUI
6.	Micromechanics-based constitutive modelling of granular materials accounting for fabric evolution	<b>Chaofa ZHAO</b>
7.	Risk analysis of Dahua landslide based on reliability theory	<b>Yongcheng GUO</b> , Jia KONG, JianLin LI, Xingxia WANG, Yong LEI
8.	A hydrodynamic model of chemical dissolution of poroelastic materials	<b>Yanni CHEN</b> , François GUILLARD, Itai EINAV
9.	Elastoplastic constitutive model for overconsolidated clays with an advanced dilatancy relation	<b>Kehao CHEN</b> , Rui PANG, Bin XU, Xingliang WANG
10.	A laboratory scaled integrated analysis of shear strength parameters of dump materials	<b>Shubham SHRIVASTAVA</b> , Debasis DEB
11.	Development of the time-dependent constitutive model of soils and the new simplified B method	<b>Weiqliang FENG</b>
12.	Stress-induced anisotropic super-subloading surface model for structural clay based on uniform yield criterion	Zhichao WANG, <b>Yanghao LIN</b> , Yun QIN, Yinghui TIAN, Chunhui ZHANG
13.	Description of non-coaxiality of sand incorporating material property-dependent potential theory	<b>Xuefeng LI</b> , Kuangfei LI, Liang KONG, Maosong HUANG
14.	Long-term mechanical characteristics and creep damage model of JINPING marble at different depths considering excavation disturbance	<b>Kun XIAO</b> , Ru ZHANG, Ze-Tian ZHANG, Er-Sheng ZHA, Li REN
15.	Undrained cyclic resistance and stiffness of anisotropically consolidated calcareous sand	<b>Baojian LI</b> , Kun PAN, Zhongxuan YANG
16.	Modeling the temperature-dependent behavior of Hong Kong marine deposits	<b>Zejian CHEN</b> , Jian-hua YIN
17.	A CWFS bounding surface model for rocks considering a modified Rowe's stress-dilatancy and finite strain concept	<b>Jiguan LIANG</b> , Linchong HUANG, Jianjun MA

18.	Modeling of monotonic and cyclic behaviors of sand under small and normal confining stresses	<b>Wenxuan ZHU</b> , Guanlin YE, Linlin GU, Feng ZHANG
19.	Anisotropic elasto-plastic coupling model considering fabric evolution	<b>Yang YU</b> , Zhongxuan YANG
20.	Methane hydrate-bearing sediments: from DEM simulation to constitutive modelling	<b>An ZHANG</b> , Mingjing JIANG, Dong WANG
21.	Compression behavior of clayey soils with initial high water contents	<b>Penglin LI</b> , Zhenyu YIN, Dingbao SONG, Jianhua YIN

## MS-03 Advanced numerical approaches

Chairs: Pengzhi PAN, Jidong ZHAO

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> A set of hysteretic nonlinear contact models for DEM: Theory, formulation, and application for deformable granular particle flow	<b>Qiushi CHEN</b>
2.	<b>(Invited)</b> Investigation on the propagation of complex multiple fractures in rocks	<b>Peng-Zhi PAN</b> , Zhaofeng WANG, Wenbo HOU
3.	Coupled peridynamic modeling of hydraulic fracturing in solids	<b>Fan ZHU</b> , Changyi YANG, Jidong ZHAO
4.	Grain-scale modelling of sandstone failure using realistic microstructures from CT-scan data	<b>Bin CHEN</b> , Jiansheng XIANG, John-Paul LATHAM, Yuan WANG
5.	Numerical study for strain localization and crack propagation of geomaterials based on IGA	<b>Hongxiang TANG</b> , Feng ZHU
6.	Ray tracing discrete element method	<b>Shiwei ZHAO</b> , Jidong ZHAO
7.	The development of JC-JHB-DLSM model and its application in high-velocity penetration of geomaterials	<b>Jianjun MA</b> , Jinxin ZHAO, Jianying CHEN, Yuexiang LIN, Wanxiang CHEN, Linchong HUANG
8.	Lagrangian continuum mechanics-based simulation for particle size segregation in granular flow	<b>Chengwei ZHU</b> , Chong PENG, Wei WU, Xiao WANG
9.	Three-dimensional face stability analysis of circular tunnels	<b>Yi-Dan ZHAO</b> , Xiao-Wei YE, Can WANG, Yun-Min CHEN
10.	From sedimentation to consolidation of kaolinite: a molecular dynamic study	Ming LU, <b>Yuan-Yuan ZHENG</b> , Zhen-Yu YIN
11.	Development of Johnson-Holmquist-Beissel model in discontinuous deformation analysis and its application in projectile penetration	<b>Chenghao LI</b> , Rui LI, Junjie CHEN, Jianjun MA, Linchong HUANG
12.	A computational fluid dynamics-based investigation of synchronous grouting performance in shield tunneling	<b>Zhengshou LAI</b> , Linchong HUANG, Yu LIANG
13.	Analysis of soil spatial variation based on coupled Markov chain and general regression neural network	<b>Linshuang ZHAO</b> , Shuilong SHEN
14.	A semi-implicit material point method for coupled thermo-hydro-mechanical simulation of saturated porous media	<b>Jidu YU</b> , Weijian LIANG, Shiwei ZHAO, Jidong ZHAO
15.	Suffusion characteristics of gap-graded granular materials: effects of particle size ratio and fines content	<b>Yi ZHAO</b> , Qixin WU, Yewei ZHENG
16.	The continuous to discontinuous simulation of rock failure by the 2D adaptive RDFA approach	<b>Bin GONG</b> , Tao ZHAO
17.	An efficient material point method framework based on the affine matrix	<b>Kaiyuan HE</b> , Yinfu JIN



18.	A 2D unified distance potential field based contact interaction algorithm for combined finite-discrete element method (FDEM)	Weibing CAI, Ke GAO
19.	The law of infiltration of rheological bentonite slurry through sands	<b>Shanlin XU</b> , Zhaohui YE, Honglei SUN, and Jingling LU
20.	Study on initiation process of moraine soil with different particle morphology using CFD-DEM	Zuyan WANG, <b>Chuang ZHOU</b> , Jiangu QIAN
21.	A modified hydro-thermal coupling method considering unfrozen water content in artificial ground freezing	<b>Qimin CHEN</b> , Bibek GHIMIRE, Yong LIU

## MS-04 Smart geotechnical monitoring

Chairs: Honghu ZHU, Wanhuan ZHOU, Behzad FATAHI

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

## MS-05 Big data and artificial intelligence in geotechnics

Chairs: Pin ZHANG, Xu LI

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

18.	Intelligent identification and classification of granite residual soil based on CNN	<b>Yuhao TIAN</b> , Bo ZHOU, Zhuoxun FENG, Huabing WANG
19.	TCN and LSTM neural network for predicting path-dependent constitutive behaviours of idealized granular soils	<b>Xintong LI</b> , Mengmeng WU, Jianfeng WANG

## MS-06 Soil-structure interaction

Chairs: Fuping GAO, Qiyin ZHU

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

## MS-07 Geo-environmental engineering

Chairs: Yanjun DU, Manman HU

Venue: V311, V Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> Tension-healing mechanism of desiccation cracks in a clayey soil	<b>Qing CHENG</b> , Chao-Sheng TANG
2.	<b>(Invited)</b> Evaluation of rainfall water retention in vegetation plate slots for vegetation restoration on rocky desertification slope	<b>Cheng ZHOU</b> , Qi-ming ZHONG, Li-juan FAN, Qi LUO, Ning HE
3.	<b>(Invited)</b> Enhancing CO <sub>2</sub> sequestration in phosphogypsum-based cementitious materials with silica-rich solid waste	<b>Wenjing SUN</b> , Yu XIAO
4.	Preparation of geopolymer brick with copper mine tailings under low-temperature conditions	<b>Quanbin JIN</b> , Zhibin LIU
5.	Influence of organic matters content on the specific gravity of Shanghai soils	<b>Jiawei LIU</b> , Zhongqi Quentin YUE
6.	Reactive chemo-hydro-mechanics for modelling aggressive fluid pressurization	<b>Xiaojie TANG</b> , Manman HU
7.	Spatial and temporal transport laws of light nonaqueous phase liquids in low-permeability soils	<b>Yin-He GUO</b> , Ding-wen ZHANG, Yan-min QI, Wen-li LIN
8.	Investigation and performance evaluation of biopolymer amended clay as cover barrier material in industrial contaminated sites	<b>Ying-Zhen LI</b> , Jia-lei WAN, Yan-jun DU
9.	Exploration of pollutant adsorption and anti-seepage by multi-scale and multi-method	<b>Wei YANG</b> , Xueying LIU, Rempeng CHEN
10.	Emission of volatile organic compounds from the intermediate cover at a large-scale municipal solid waste landfill in Hangzhou, China	<b>Xiting GU</b> , Haijian XIE, Huaxiang YAN, Xinru ZUO
11.	Influence of extraction and injection conditions on performance of thermal enhanced soil vapour extraction	<b>Chun-Bai-Xue YANG</b> , Shi-Jin FENG, Qi-Teng ZHENG
12.	An indirect method of carbonating magnesia for soil stabilization and CO <sub>2</sub> capture	<b>Wentao LI</b> , Jiawei WU, Jinghao WANG, Henglin XIAO, Lihua LI
13.	Phenol containment by novel vertical cutoff wall backfill: coupled hydraulic conductivity, diffusion behavior and microstructure characteristics	<b>Hao NI</b> , Ri-Dong FAN, Yan-Jun DU
14.	Silica fume and gypsum coupled action in the cement-stabilized contaminated clay under saline and alkaline environments	<b>Tingting DENG</b> , Yongfeng DENG, Hang LIU
15.	Modelling of removal of copper and lead metals in loess under the effects of solid-phase adsorption and desorption	<b>Lin WANG</b> , Wen-Chieh CHENG, Zhong-Fei XUE
16.	Generalized effective stress of dual-porosity geomaterials considering the thermochemical effect and its verification	<b>Gailei TIAN</b> , Zhihong ZHANG, Zhaoyang SONG
17.	Experimental study of alkali activated slag enhanced compacted clay covering barrier layer	Chi CHE, Min WANG, <b>Ying-zhen LI</b> , Zhe-yuan JIANG, Yan-Jun DU

## MS-08 Geo-hazard assessment and mitigation

Charis: Daoyuan TAN, Xingyue LI

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

## MS-09 Sustainability and resilience of infrastructures

Chairs: Dongming ZHANG, Yu WANG

Venue: V313, V Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> Quantifying the impact of climate change on risks of rainfall-induced landslides	<b>Xin LIU</b> , Yu WANG
2.	Optimization study of chimney parameters for coal mine dump gravity heat pipe	<b>Bailin ZHANG</b> , Shuhua FANG
3.	Enhancing metro network flood resilience through genetic algorithm optimization: a case study on flood barrier height design for metro network	<b>Hao BAI</b> , Yanan DONG, Dongming ZHANG, Huichao SUN
4.	A full scale model with Cauchy-type boundary conditions for simulating near surface effects on energy piles	<b>Kewei GUO</b> , Linfeng ZHANG
5.	Sustainability and resilience assessment of a reinforced concrete bridge subjected to liquefaction-induced lateral spreading	Zhijian QIU, <b>Yewei ZHENG</b>
6.	New collaborative technology systems for mountain disaster prevention based on NBS concept	<b>Songtang HE</b> , Xiaoqing CHEN, Daojie WANG, Yuchao QI, Yong LI, Zengli PEI, Peng ZHAO
7.	Enhanced real-time evaluation of track irregularities using vehicle body acceleration	<b>Xiaohui WANG</b> , Hai LIU, Jianwei YANG
8.	Field test on the low-carbon construction and the response improvement of bored piles based on combined grouting	<b>Tao HU</b> , Guoliang DAI, Bowen FANG, Cheng ZHANG, Zhihui WAN
9.	Numerical analysis on seismic response of monopile-supported OWTs and modal parameter identification methods	<b>Yang YANG</b> , Fayun LIANG
10.	A comprehensive resilience evaluation method of shield tunnel structures under disaster disturbance	<b>Bin-Lin GAN</b> , Dong-Mei ZHANG, Zhong-Kai HUANG
11.	Experimental test for repairing rough cracks using the microbially induced carbonate precipitation (MICP)	<b>Zihui SHANG</b> , Enhui XI, Simiao ZHANG, Shuhong WANG
12.	Seismic fragility curve development for segmental tunnels via optimal IM and EDP pair	<b>Jiaxing ZHOU</b> , Chao ZHANG, Zhixiong LANG



## MS-10 Unsaturated soil mechanics

Chairs: Annan ZHOU, Chaofa ZHAO

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> Basic theoretical research and application of seepage evolution of low permeability medium	<b>Jiangfeng LIU</b> , Hongyang NI, Zhipeng WANG
2.	Numerical implementation of elastic viscoplastic constitutive model based on overstress theory	<b>Jian LI</b> , Zhicun HAN, Guoqing CAI, Chenggang ZHAO, Xinzhe LI
3.	Study on the structural parameter of loess: mapping energy	Longlong LV, Hongjian LIAO
4.	Modelling time-dependent behaviour of unsaturated soils	<b>Runkang ZHAO</b> , Annan ZHOU, Yang-Ping YAO
5.	The competing effects of wetting and volume change on $G_0$ in compacted Loess	<b>Miaomiao GE</b> , Jubert PINEDA, Daichao SHENG
6.	Hydro-mechanical behaviour of compacted expansive stiff clay subjected to wetting and drying cycles	<b>Yihe XU</b> , Qiong WANG, Wei SU
7.	A thermodynamic formulation of water potential in soil	Lingyun GUO, Shaojie HU, Chao ZHANG, Ning LU
8.	Reducing lateral earth pressure on retaining walls in expansive soils using eps geofoam	<b>Zhong HAN</b> , Wei-Lie ZOU, Xie-Qun WANG
9.	Numerical simulation of rainfall-induced deformations of embankments considering the hydro-mechanical coupled behavior of unsaturated soils	<b>Hao WU</b> , Xiaohan LUAN, Yewei ZHENG
10.	Study of structural characteristics and deformation patterns of compacted Gaomiaozi bentonite during dry-wet cycles at micro-CT scale	<b>Wei WANG</b> , Wei-Zhong CHEN, Dian-Sen YANG, Xian-Jun TAN, Xing WANG

## MS-11 Tunnelling and underground space technology

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

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	Real-time settlement field reconstruction using deep operator networks	Chen XU, <b>Ba-Trung CAO</b> , Günther MESCHKE
2.	Numerical investigation of end reinforcement technology for super-large diameter shield tunnels and online prediction using machine learning	<b>Chenyang ZHAO</b> , Haoshen HE, Le CHEN, Jianrui LI, Beibing DAI
3.	Intelligent model to predict disc cutter wear in real-time	<b>Nan ZHANG</b> , Shui-Long SHEN, Annan ZHOU
4.	Sustainability of deep engineering surrounding rock stability affected by engineering disturbances: a case study of CJPL	Zeqian YANG, Ting AI, Ru ZHANG
5.	Study on coupled temperature and pressure conduction mechanism and sensor validation in in-situ deep environment simulation experiments of rock	<b>Yihang LI</b> , Heping XIE, Ru ZHANG, Zetian ZHANG
6.	Confined aquifer dewatering optimization with a modified simulation-optimization method considering the length and depth of well screen	<b>Yanxiao SUN</b> , Songyu LIU, Liyuan TONG
7.	Deep-Learning based tunnel surrogate model and model uncertainty evaluation	<b>Jinzhang ZHANG</b> , Hongwei HUANG, Dongming ZHANG
8.	Application of novel polymer heat-shrinkable material in laboratory calibration test on deep rock in-situ condition preserved coring	<b>Heng GAO</b> , Heping XIE, Ru ZHANG, Zetian ZHANG, Hongxin XIE, Yihang LI
9.	Cross-scale characterization of mudstone deterioration after water immersion based on nanoindentation technology and simulation	<b>Qingsong ZHANG</b> , Zhibin LIU
10.	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.	A new viscoelastic-plastic solution of soft rock deformation in deep-buried tunnel considering	<b>Yu PAN</b> , Peng-Fei CHEN, Zhen-Yu YIN
12.	A numerical study on the tunnelling-induced ground deformation considering the compressed properties of tail grouting materials	<b>Jiaxin LIANG</b> , Wei LIU, Xiaowu TANG
13.	Large deformation modelling on tunnel face instability during EPB shield tunnelling considering dynamic excavation process	<b>Xuejian CHEN</b> , Tianqi MENG, Yong LIU
14.	Comparison of high-frequency components in acoustic emissions from rock fracture under mode I and mode II dominated loading	<b>Hua LI</b> , Jianhui DENG, Fei WANG

## MS-12 Bio-geotechnical engineering

Chairs: Ningjun JIANG, Anthony Kwan LEUNG

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

Index	Title	Author
1.	<b>(Invited)</b> Bio-mediated geotechnology and its application in geoen지니어ing	<b>Chao-Sheng TANG</b> , Zhi-Hao DONG, Xiao-Hua PAN, Cheng ZHU, Chao LV, Dian-Long WANG
2.	<b>(Invited)</b> Multiscale experiments and DEM modeling of biotreated sand	<b>Huanran WU</b> , Jiang YAN, Yang XIAO, Hanlong LIU
3.	<b>(Invited)</b> Role of biochar in improving biostimulated MICP: shear strength enhancement and ammonium removal	<b>Yijie WANG</b> , Wenbo CHEN, Ningjun JIANG
4.	<b>(Invited)</b> Optimization of bio-cement and its application for soil erosion control	<b>Jia HE</b> , Si-yuan Qu, Jia-feng JI, An-guo HUANG, Chang-hang FANG, Xin HUANG
5.	Effect of construction technology on microbial induced calcium carbonate precipitation (MICP) for silt improvement	Bo KANG, Fusheng ZHA, Hao WANG, Lin QIN, Yinbin SHEN, <b>Shan WU</b>
6.	Research on erosion mitigation for sand foreshore slopes based on microbiota and enzyme mix-induced carbonate precipitation	<b>Xiaohao SUN</b> , Linchang MIAO, Hengxing WANG, Junjie WANG, Wenbo SHI, Linyu WU
7.	Effects of diatom microfossils inclusion on compression behaviors of soft clay	Shenghua XU, Yongfeng DENG, Qi FENG
8.	Considerations for implementing microbially induced calcium carbonate precipitation (MICP) in practical applications	<b>Yuze WANG</b> , Sikai TANG, Muhammad Tahir FAZAL, Qian SONG, Hongyu CHEN, Junhao WANG
9.	Developing a reactive-transport model of microbially induced carbonate precipitation (MICP) applied to heavy metal-contaminated site remediation	<b>Zhong-Fei XUE</b> , Wen-Chieh CHENG, Lin WANG
10.	Remediation of naphthalene-contaminated sites using PAHs-degrading bacteria	<b>Yi-Xin XIE</b> , Wen-Chieh CHENG, Zhong-Fei XUE
11.	Experimental study on enhancement of thermal conductivity of EICP-treated calcareous sand	<b>Shuang LI</b> , Ming HUANG, Mingjuan CUI, Guixiao JIN, Kai XU
12.	The physical and hydraulic performance of soil modified by different guar gum and xanthan gum combinations	<b>Fan Wu</b> , Rui Chen, Chao Zhou, Zhao-Feng Li
13.	A simple model for predicting hydraulic conductivity of MICP-treated sand to prevent pollution dispersion	Yan-Ning WANG, <b>Long-Jian HUANG</b> , Chandra BOGIREDDY, Ankit GARG
14.	Small strain stiffness of lightly biocemented sands: the roles of particle morphology, gradation, and particle size	Jinquan SHI, Haoyu LI, Yang XIAO, Hanlong LIU
15.	<b>(Invited)</b> Water-gas flow in unsaturated vegetated soils	<b>Junjun NI</b> , Haowen GUO, Qi ZHANG
16.	<b>(Invited)</b> An investigation of microscopic interaction between tall festuca root growth and sand by using X-ray microtomography	<b>Ji-Peng WANG</b> , Jun-Feng SHA, Xu-Guang GAO

17.	<b>(Invited)</b> The role of bio-geotechnics to reach net zero commitment in slope engineering	<b>Hamed SADEGHI</b> , Farshad YAZDANI, Pouya ALIPANAHI
18.	<b>(Invited)</b> Natural symbiotic fungi strengthen plant roots	<b>Xun-Wen Chen</b> , Viroon KAMCHOOM, Jia-Qi WU, Guo-Dong SUN, Qiang ZHANG, Hui-Shan LI, Ming-Hung WONG, Hui LI, Jun-Jian WANG
19.	Herbaceous species and mycorrhizal fungi interaction on soil aggregate stabilization and disintegration in compacted soil	<b>Minghui Li</b> , Anthony Kwan Leung
20.	Pore-based modelling of relative hydraulic conductivity function of unsaturated rooted soils	<b>Hao WANG</b> , Rui CHEN, Anthony Kwan LEUNG, Ankit GARG, Zhen-liang JIANG
21.	Anisotropic behaviour of overconsolidated rooted soils	<b>Ali Akbar KARIMZADEH</b> , Anthony Kwan LEUNG
22.	Roles of grass roots in crack mitigation and strength improvement of lateritic soil	<b>Qian-Feng GAO</b> , Han YU, Ling ZENG, Hui-Cong YU
23.	Preliminary observations of fine root effects on soil hydraulic properties	<b>Zhenliang JIANG</b> , Anthony Kwan LEUNG, Jianbin LIU
24.	Investigation on canopy interception performance of typical slope protection grasses	<b>Xu-Guang GAO</b> , Ji-Peng WANG
25.	Numerical modelling of rainfall-induced internal erosion process within vegetated deposited slopes	<b>Xiaoqin LEI</b> , Weiyu ZHANG, Xiaoqing CHEN

## MS-13 Offshore geotechnical engineering

Chairs: Yinghui TIAN, Jürgen GRABE

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

18. Behavior of FRP confined seawater sea-sand concrete piles

**Numan Malik**, Jian-hua YIN, Wenbo  
CHEN, Pei-chen WU, Zejian CHEN

## MS-14 Transportation geotechnical engineering

Chairs: Xianfeng LIU, Jeff Jianfeng WANG

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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

## MS-15 Earthquake engineering

Chairs: Rui WANG, Xiaoqiang GU, Gang WANG

Venue: Z Block, PolyU

Time: 08:30-15:40, 2 December

Noted: (15 mins per invited talk, 10 mins per regular talk)

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