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## Conference Organization

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## Conference at a glance

### (The 17th International Conference of the International Association for Computer Methods and Advances in Geomechanics)

*December 18 - 21, 2025 | Hong Kong*

Date	Time	Contents	Location
<b>18/12/2025 (Thursday)</b>	14:00-21:00	<b>Registration, welcome snack, and invited dinner</b>	2 <sup>nd</sup> Floor, Block Z
<b>19/12/2025 (Friday)</b>	08:30-09:00	<b>Opening Ceremony</b>	Z207
	09:00-10:30	<b>Keynote Session</b>	Z207
	10:30-10:50	<b>Poster Session &amp; Coffee Break</b>	Outside Room Z207
	10:50-12:20	<b>Keynote Session</b>	Z207
	12:20-14:30	<b>Lunch</b>	Ju Yin House Seafood Restaurant
	13:15-14:30	<b>IACMAG Board Meeting</b>	Z414
	13:30-14:30	<b>Editorial Board Meeting of Computers and Geotechnics</b>	Z412
	13:30-14:00	<b>Consortium meeting of EU MSCA projects LOC3G and MONUGEO</b>	Z211
	14:30-17:50	<b>Keynote Session</b>	Z207
18:00-21:30	<b>Banquet</b>	Ju Yin House Seafood Restaurant	
<b>20/12/2025 (Saturday)</b>	08:30-12:10	<b>Parallel Session (MS-01 ~ MS-05)</b>	Z205, Z207, Z211, Z412, Z413, Z414
	12:10-14:00	<b>Lunch</b>	Ju Yin House Seafood Restaurant
	13:00-14:00	<b>Editorial Board Meeting of International Journal of Geomechanics</b>	Z414
	14:00-18:05	<b>State-of-The-Art (SOTA) Session</b>	Z207
	18:10-21:30	<b>Dinner</b>	Ju Yin House Seafood Restaurant
<b>21/12/2025 (Sunday)</b>	08:30-11:40	<b>Parallel Session (MS-06 ~ MS-09)</b>	Z205, Z207, Z211, Z412, Z413, Z414
	11:40-12:00	<b>Closing Remark</b>	Z211
	12:00-14:30	<b>Lunch</b>	Ju Yin House Seafood Restaurant

# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

## Programme of IACMAG 2025

### (The 17th International Conference of the International Association for Computer Methods and Advances in Geomechanics)

December 18 - 21, 2025 | Hong Kong

Venue Address: Block Z, The Hong Kong Polytechnic University, 11 Yuk Choi Road, Kowloon, Hong Kong.

Thursday, 18/12/2025	
14:00-21:00	Registration (2 <sup>nd</sup> Floor, Block Z, PolyU)

Friday, 19/12/2025	
Venue: Room Z207, Block Z, PolyU	
08:00-18:00	Registration (2 <sup>nd</sup> Floor, Block Z)
08:30-08:45	<b>Opening Ceremony:</b>   Chair: Zhen-Yu YIN Jin-Guang TENG, <i>President of The Hong Kong Polytechnic University</i> John CARTER, <i>President of IACMAG</i>
08:45-08:55	<b>Desai Tribute:</b> Musharraf ZAMAN, <i>Executive Vice President of IACMAG</i>
08:55-09:00	<b>Photo Session</b>
09:00-10:30 (30 mins per talk)	<b>Session 1</b>   Chairs: Limin ZHANG, Jun YANG
	<b>Keynote:</b> Reflections on elastoplastic constitutive modelling John CARTER, <i>University of Newcastle</i>
	<b>Keynote:</b> Multiplicative elastoplasticity for transversely isotropic solids in the finite deformation range Ronaldo I. BORJA, <i>Stanford University</i>
	<b>Keynote:</b> Frost heave in dry clean sand – Challenge to cold region geotechnical design Daichao SHENG, <i>University of Technology Sydney</i>
10:30-10:50	<b>Coffee Break</b>
10:50-12:20 (30 mins per talk)	<b>Session 2</b>   Chairs: Charles W.W. NG, Zhongqi YUE
	<b>Keynote:</b> Where geodata meets machine learning Kok-Kwang PHOON, <i>Singapore University of Technology and Design</i>
	<b>Keynote:</b> The case for reliability-based design of MSE walls Richard J. BATHURST, <i>Royal Military College of Canada</i>
	<b>Keynote:</b> Vision-informed phase-field analysis (VIPFA) for resilience safety evaluation of tunnel concrete lining Hongwei HUANG, <i>Tongji University</i>

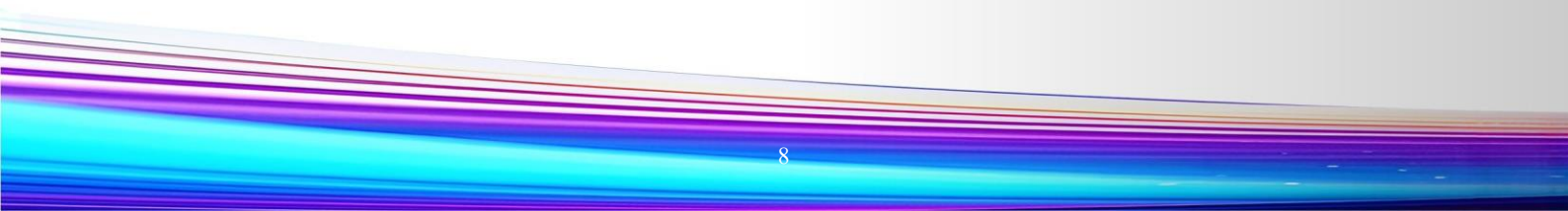
<b>Friday, 19/12/2025</b>	
<b>Venue: Room Z207, Block Z, PolyU</b>	
12:20-14:30	<b>Lunch (Ju Yin House Seafood Restaurant)</b>
13:15-14:30	<b>IACMAG Board Meeting (Z414, Block Z)</b>
13:30-14:30	<b>Editorial Board Meeting of Computers and Geotechnics (Z412, Block Z)</b>
13:30-14:00	<b>Consortium meeting of EU MSCA projects LOC3G and MONUGEO (Z211, Block Z)</b>
14:30-16:00 (30 mins per talk)	<b>Session 3   Chairs: Jidong ZHAO, Nasser KHALILI</b>
	<b>Keynote:</b> Recent advances in modelling dense granular flow Wei WU, <i>University of Natural Resources and Life Sciences (BOKU)</i>
	<b>Keynote:</b> Computational poromechanics for frozen soils Steve Waiching SUN, <i>Columbia University</i>
	<b>Keynote:</b> Numerical modelling approach for thermo-active structures Lidija ZDRAVKOVIC, <i>Imperial College London</i>
16:00-16:20	<b>Coffee Break</b>
16:20-17:50 (30 mins per talk)	<b>Session 4   Chairs: Yu WANG, Louis N.Y. WONG</b>
	<b>Keynote:</b> Multiscale poromechanics of clay rocks in the framework of geological disposal of nuclear waste Jianfu SHAO, <i>University of Lille</i>
	<b>Keynote:</b> AI in shield tunnelling via both data-driven and physical-informed modelling Shuilong SHEN, <i>Shantou University</i>
18:00-21:30	<b>Banquet (Ju Yin House Seafood Restaurant)   Chair: Jian-Hua YIN</b>

<b>Saturday, 20/12/2025</b>	
<b>Venue: Room Z205, Z207, Z211, Z412, Z413, Z414, Block Z, PolyU</b>	
08:00-18:00	Registration (2 <sup>nd</sup> Floor, Block Z, PolyU)
08:30-10:10	<b>Parallel Session (MS-01 ~ MS-05)</b>
10:10-10:30	<b>Coffee Break</b>
10:30-12:10	<b>Parallel Session (MS-01 ~ MS-05)</b>
12:10-14:00	<b>Lunch (Ju Yin House Seafood Restaurant)</b>
13:00-14:00	<b>Editorial board meeting of International Journal of Geomechanics (Z414, Block Z)</b>

# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

<b>Saturday, 20/12/2025</b> <b>Venue: Room Z207, Block Z, PolyU</b>	
14:00-15:40 (25 mins per talk)	<b>Session 5   Chairs: Dong WANG, Annan ZHOU</b>
	<b>SOTA:</b> Assessment of pavement conditions using laboratory and field testing and AI-based modeling Musharraf ZAMAN, <i>University of Oklahoma</i>
	<b>SOTA:</b> Multi-scale interfacial mechanical mechanisms and engineering Characteristics of Heavy Metal-Contaminated Soils Qiang XUE, <i>Institute of Rock and Soil Mechanics, Chinese Academy of Sciences</i>
	<b>SOTA:</b> The optimal control problem for stability analysis of general slopes Hong ZHENG, <i>Beijing University of Technology</i>
	<b>SOTA:</b> Recent advances in multiphysics modelling of coupled flow-deformation and large-deformation processes in geomaterials Ha H. BUI, <i>Monash University</i>
15:40-16:00	<b>Coffee Break</b>
16:00-18:05 (25 mins per talk)	<b>Session 6   Chairs: Zhongxuan YANG, Gang WANG</b>
	<b>SOTA:</b> Digital twins for time-dependent landslides-infrastructure interaction Marco BARLA, <i>Politecnico di Torino</i>
	<b>SOTA:</b> The Breakup of Earth: from rock fracture modeling to a new hypothesis of Earth evolution Chun'an TANG, <i>Dalian University of Technology</i>
	<b>SOTA:</b> Numerical modelling of continuous and discontinuous deformation in geotechnical engineering Shanyong WANG, <i>University of Newcastle</i>
	<b>SOTA:</b> Development of CASRock for modeling of multiple fractures interaction in rocks Pengzhi PAN, <i>Institute of Rock and Soil Mechanics, Chinese Academy of Sciences</i>
	<b>SOTA:</b> NetZero: Odyssey from philosophy to practice Devendra Narain SINGH, <i>Indian Institute of Technology Bombay</i>
18:10-21:00	<b>Dinner (Ju Yin House Seafood Restaurant)  </b> <b>Chairs: Jidong ZHAO, Wan-Huan ZHOU</b>

<b>Sunday, 21/12/2025</b>	
<b>Venue: Room Z205, Z207, Z211, Z412, Z413, Z414, Block Z, PolyU</b>	
08:00-12:00	Registration (2 <sup>nd</sup> Floor, Block Z, PolyU)
08:30-10:10	<b>Parallel Session (MS-06 ~ MS-09)</b>
10:10-10:30	<b>Coffee Break</b>
10:30-11:40	<b>Parallel Session (MS-06 ~ MS-09)</b>
11:40-12:00	<b>Closing Remark (Z211, Block Z)</b> <b>Zhen-Yu YIN</b>
12:00-14:30	<b>Lunch (Ju Yin House Seafood Restaurant)</b>



## Parallel Session MS-01 ~ MS-05

### MS-01 Computational Particle Methods and Engineering Applications

**Chairs: Mingliang ZHOU, Kaihui LI**

**Time: 8:30-12:10, 20 December**

**Venue: Z205, Block Z**

08:30-12:10	<p><b>Chair: Mingliang ZHOU, Tongji University</b>  <b>Chair: Kaihui LI, Central South University</b></p>
08:30-08:55	<p><b>(Invited)</b> Vision-informed MPM simulation for hydro-mechanical failure assessment in subsea tunnel excavation  Mingliang ZHOU, <i>Tongji University</i></p>
08:55-09:10	<p>Fracture and post-fracture modeling of compacted clay soils based on coupled peridynamics-DEM  Yutaka FUKUMOTO, <i>Okayama University</i></p>
09:10-09:25	<p>Effect of vertical wall on the passive resistance of buried pipe with DEM  Yoko OHTA, <i>Yamaguchi University</i></p>
09:25-09:40	<p>Three-dimensional discrete element simulation of shale with nonlinear crack-closure behavior  Kaihui LI, <i>Central South University</i></p>
09:40-09:55	<p>Study of particle breakage of highly decomposed granite particles under a one-dimensional compression test  Zhiren ZHU, <i>City University of Hong Kong</i></p>
09:55-10:10	<p>Shear band characteristics of dry silicious sand in ring shear and direct shear tests - a DEM study  Congyang YU, <i>The University of Western Australia</i></p>
10:10-10:30	<b>Coffee Break</b>
10:30-10:55	<p><b>(Invited)</b> Method for determining the M-value using iteration based on horizontal static load test and its application  Xiangping HUANG, <i>Zhuhai Institute of Urban Planning and Design</i></p>
10:55-11:10	<p>A numerical study for assessing tunnelling-induced distortions of masonry structures  Yalin YU, <i>Qilu Institute of Technology</i></p>
11:10-11:25	<p>Simulation methods and applications of micro-mesoscopic interactions among clay particles  Hemei SUN, <i>Shenzhen University</i></p>
11:25-11:40	<p>Comparative evaluation of constitutive models for predicting strain amplitude generated by machine foundations  Viktor KRAUSE, <i>Ruhr Universität Bochum Germany</i></p>
11:40-11:55	<p>Estimation of residual porewater pressure in PVD-assisted soft soil foundations at the Port of Brisbane  Lami KARAGOZ, <i>University of Technology Sydney</i></p>
11:55-12:10	<p>Effects of wire diameter for 3D filter on its functions using dem analysis  Mitsuki YODEN, <i>Yamaguchi University</i></p>

# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

**Chairs: Yukio NAKATA, Pei WANG**

**Time: 8:30-12:10, 20 December**

**Venue: Z207, Block Z**

08:30-12:10	<b>Chair: Yukio NAKATA, Yamaguchi University</b> <b>Chair: Pei WANG, East China Jiaotong University</b>
08:30-08:55	<b>(Invited)</b> Effect of geogrid reinforcement on the seismic slope stability of railway embankment Bal Krishna MAHESHWARI, <i>Indian Institute of Technology Roorkee</i>
08:55-09:10	Microscale investigation of geomembrane-sand interface cyclic shear behavior using DEM Jian WU, <i>Tongji University</i>
09:10-09:25	Study on horizontal loading response of rectangular barrettes in sandy soil based on p-y method Zhitong ZHANG, <i>Hebei University of Architecture</i>
09:25-09:40	Stability analysis of the subwater tunnel working face considering the influence of joints Lingshuai TONG, <i>Tongji University</i>
09:40-09:55	A pre-processing scheme for fast convolution-based peridynamics and its application in geotechnical engineering Xingchuan LIAO, <i>Zhejiang University</i>
09:55-10:10	Numerical simulation of CPTu: Ballina clay case study Andreas Erdian WIJAYA, <i>Graz University of Technology</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:55	<b>(Invited)</b> A multi-scale modeling framework with the material point method Shabnam SEMNANI, <i>University of California, San Diego</i>
10:55-11:10	A grain-scale insight into the role of fines in cyclic response of binary mixtures Kangle ZUO, <i>The University of Hong Kong</i>
11:10-11:25	Investigating the impact of anisotropic consolidation on the undrained cyclic true triaxial behavior of granular soils Mohammad SALIMI, <i>Ruhr University Bochum</i>
11:25-11:40	Analytical expressions of contact probability and contact force ratio for binary mixture of granular materials Haoran WANG, <i>Zhejiang University</i>
11:40-11:55	Effect of helix pitch and advancement ratio on helical anchor installation and pullout in uniform clay Meili ZHANG, <i>The University of Western Australia</i>
11:55-12:10	Interparticle responses of soil simulated by SJKR and liquid-bridge cohesive contact models in DEM drawdown tests Quoc Thien HUYNH, <i>University of Technology Sydney</i>



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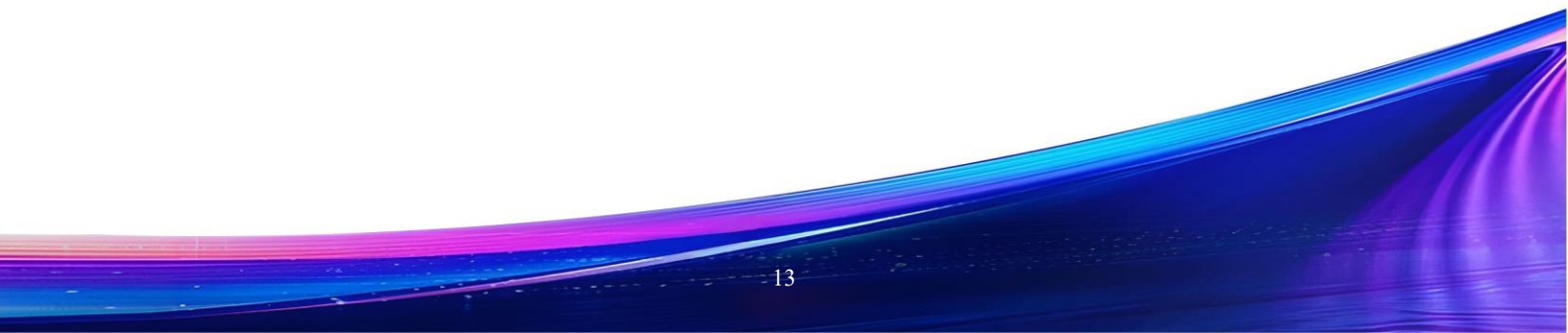
## *MS-02 Multiscale Modelling of Geomaterials*

**Chairs: Lalit BORANA, Aoxi ZHANG**

**Time: 8:30-12:15, 20 December**

**Venue: Z211, Block Z**

08:30-12:00	<b>Chair: Lalit BORANA, <i>Indian Institute of Technology Indore</i></b> <b>Chair: Aoxi ZHANG, <i>Delft University of Technology; Zhejiang University</i></b>
08:30-08:55	<b>(Invited)</b> Microscale investigation of capillary stress in unsaturated granular materials using DEM-LBM Olivier MILLET, <i>La Rochelle University</i>
08:55-09:10	Modelling frictional behaviour of expansive clay: insights into microscopic mechanics of montmorillonite Jiappei DU, <i>Royal Melbourne Institute of Technology</i>
09:10-09:25	Modelling energy dissipation of clays during cyclic loading Francesca PALMIERI, <i>Imperial College London</i>
09:25-09:40	Simulation of lunar extreme environments and mechanical characteristics of lunar regolith Qiyin ZHU, <i>China University of Mining and Technology</i>
09:40-09:55	A thermodynamics-based constitutive model for clays accounting for double porosity Fabio ROLLO, <i>Sapienza University of Rome</i>
09:55-10:10	Nanoscale shear behavior of mixed-layer clays: molecular dynamics simulations Wenbo NIU, <i>Zhejiang University</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:45	Dynamic bounding surface viscoplasticity for soil Jian LI, <i>Beijing Jiaotong University</i>
10:45-11:00	An effective coordination number describing microstructures of bio-cemented soils accounting for different distribution patterns of cement agents Aoxi ZHANG, <i>Delft University of Technology; Zhejiang University</i>
11:00-11:15	A two-scale numerical modelling of time-dependent mechanical behaviour of viscous clay rocks Benoît PARDOEN, <i>University of Lyon</i>
11:15-11:30	Hysteresis at low relative humidity on vapor sorption isotherm of montmorillonite: insights from molecular simulations Yijie WANG, <i>The Hong Kong Polytechnic University</i>
11:30-11:45	An anisotropic micromechanical model for granular materials Hailin WANG, <i>Tongji University</i>
11:45-12:00	Strength enhancement of montmorillonitic clay with metakaolin-OPC composites Ankit Kumar KUMAWAT, <i>Indian Institute of Technology Indore</i>
12:00-12:15	Performance and mechanisms of foam-dispersant composite conditioners for clay: macroscopic, mesoscopic, and microscopic scales Jialong LI, <i>Northeastern University</i>



# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

**Chairs: Chaofa ZHAO, Zheng HU**

**Time: 8:30-10:10, 20 December**

**Venue: Z412, Block Z**

08:30-10:10	<b>Chair: Chaofa ZHAO, Zhejiang University</b> <b>Chair: Zheng HU, Sun Yat-sen University</b>
08:30-08:55	<b>(Invited)</b> Localised failure and meso scale behaviour of geomaterials Giang D. NGUYEN, <i>University of Adelaide</i>
08:55-09:10	Implementation and use of a non-local method in coupled Eulerian-Lagrangian analyses Yumeng QI, <i>University of Western Australia</i>
09:10-09:25	An analytical expression for averaging interparticle forces at similarly oriented contacts in granular materials Ge DUAN, <i>Zhejiang University</i>
09:25-09:40	Numerical simulation of grain-scale failure modes of MIPC cemented particles Yupeng JIANG, <i>Leibniz University Hannover</i>
09:40-09:55	3D hydromechanical modelling of tunnelling-induced ground settlement: a case study of the West Link project, Sweden Hadi KARIMZADEH, <i>Uppsala University</i>
09:55-10:10	Molecular insights into the adsorption behavior of PFAS on montmorillonite, polyethylene, and polypropylene: a molecular dynamics study Rui XU, <i>Hefei University of Technology</i>



# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

## *MS-03 Modeling of Erosion of Soil and Rock*

**Chairs: Jie YANG, Farid LAOUAFA**

**Time: 10:30-12:25, 20 December**

**Venue: Z412, Block Z**

10:30-12:10	<b>Chair: Jie YANG, Shenzhen University</b> <b>Chair: Farid LAOUAFA, National Institute for Industrial Environment and Risks (INERIS)</b>
10:30-10:55	<b>(Invited)</b> CFD-DEM modelling of internal sand erosion based on Micro-CT investigation Jianfeng WANG, <i>City University of Hong Kong</i>
10:55-11:10	Internal stability analysis of construction and demolition waste particles under seepage erosion Qian-Feng GAO, <i>Changsha University of Science &amp; Technology</i>
11:10-11:25	Modelling rock dissolution with diffuse interface methods: strengths and challenges in the context of geomechanics Farid LAOUAFA, <i>National Institute for Industrial Environment and Risks</i>
11:25-11:40	Modeling granular flow considering phase transition from solid-like to fluid-like states via material point method Hang FENG, <i>The Hong Kong Polytechnic University</i>
11:40-11:55	Simulation of suffusion around shield tunnels under train vibration Sirui CHEN, <i>Tongji University</i>
11:55-12:10	Quick clay landslide simulation with NGI-ADP-Soft model using the material point method Enok CHEON, <i>Norwegian Geotechnical Institute</i>
12:10-12:25	The coupling FEM-DEM-CFD method for micro- and macro-response analysis of granular materials Xiang HE, <i>Zhejiang University</i>



# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

## MS-04 Intelligent Computational Geomechanics and Geoengineering

**Chairs: Pin ZHANG, Xi WANG**

**Time: 8:30-12:10, 20 December**

**Venue: Z413, Block Z**

08:30-12:10	<b>Chair: Pin ZHANG, <i>National University of Singapore</i></b> <b>Chair: Xi WANG, <i>The Hong Kong Polytechnic University</i></b>
08:30-08:55	<b>(Invited)</b> Future perspective of AI in computational geomechanics Pijush SAMUI, <i>National Institute of Technology Patna</i>
08:55-09:10	t-PiNet: A Thermodynamics-informed hierarchical learning for discovering constitutive relations of geomaterials Pin ZHANG, <i>National University of Singapore</i>
09:10-09:25	Semi-supervised learning for rock mass classification with limited labeled data in TBM tunnelling Feng SHAN, <i>Central South University</i>
09:25-09:40	HydraxMPM: A JAX-based, high-performance simulation environment for granular flow simulations Hongyang CHENG, <i>University of Twente</i>
09:40-09:55	Effect of fault zone width on fault rupture propagation through uniform soil Abhiparna DASGUPTA, <i>Indian Institute of Technology Mandi</i>
09:55-10:10	CFD-driven design of two-stage grouting for karst sealing Piao MIAO, <i>Hefei University of Technology</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:55	<b>(Invited)</b> Efficient three-dimensional slope stability analysis using mathematical programming finite element method Xi CHEN, <i>Beijing Jiaotong University</i>
10:55-11:10	Physics-encoded numerical network for multidimensional heterogeneous forward and inverse analysis Xi WANG, <i>The Hong Kong Polytechnic University</i>
11:10-11:25	Mechanical behavior and failure mechanisms of bell-and-spigot jointed PCCP under internal water pressure and overburden load Wenda WANG, <i>Tongji University</i>
11:25-11:40	Predicting the shaft capacity of monopiles in soft clay using the Press-Replace finite element method Aflizal ARAFIANTO, <i>University of Western Australia</i>
11:40-11:55	Response of a sloped ground subjected to sequence of seismic events Jayasri NAVULURI, <i>Indian Institute of Technology Mandi</i>
11:55-12:10	Numerical investigation of stone column supported embankment with emphasis on critical height Nulu Varun KRISHNA, <i>Indian Institute of Technology Kharagpur</i>

### *MS-05 Computational Multiphysics for Porous Media*

**Chairs: Jinhyun CHOO, Yunteng WANG, Qi ZHANG**

**Time: 8:30-12:10, 20 December**

**Venue: Z414, Block Z**

08:30-10:10	<b>Chair: Yunteng WANG, <i>The University of Natural Resources and Life Sciences</i></b> <b>Chair: Qi ZHANG, <i>University of Macau</i></b>
08:30-08:55	<b>(Invited)</b> An image-based framework for modeling the freezing process in water-saturated porous media Jinhyun CHOO, <i>Seoul National University</i>
08:55-09:10	Prediction of dynamic characteristics of debris flows on the northeast margin of the Tibetan Plateau based on the HEC-RAS Model Weimin YANG, <i>Institute of Geomechanics, Chinese Academy of Geological Sciences</i>
09:10-09:25	Slurry penetration characteristics of novel oscillatory grouting technology Lubo TANG, <i>Central South University</i>
09:25-09:40	Peridynamic modeling of hydraulic fracture in poroelastic media with leak-off Zirui LU, <i>Kyoto University</i>
09:40-09:55	Determining geothermal potential of the porous sedimentary oil reservoir in Upper Assam Shelf, India Faakirah RASHID, <i>Indian Institute of Technology Bombay</i>
09:55-10:10	Verification of modelling wave propagation in an unbounded domain by perfectly matched layers Lexin LI, <i>Delft University of Technology</i>
10:10-10:30	<b>Coffee Break</b>
10:30-12:10	<b>Chair: Yunteng WANG, <i>The University of Natural Resources and Life Sciences</i></b> <b>Chair: Jinhyun CHOO, <i>Seoul National University</i></b>
10:30-10:55	<b>(Invited)</b> Numerical modeling of pumping-induced earth fissures and its application Yun ZHANG, <i>Nanjing University</i>
10:55-11:10	Radial consolidation of multilayered soil under time-dependent loading and varied drainage boundaries based on the spectral method Binhua XU, <i>University of Technology Sydney</i>
11:10-11:25	Phase-field model for viscous dominated hydraulic fracturing Tao YOU, <i>Montanuniversität Leoben</i>
11:25-11:40	A FEM-MPM-FVM sequentially coupled method for simulating large deformations in saturated soil Yunyi LI, <i>Tsinghua University</i>
11:40-11:55	Characterising the seabed by monitoring pore pressure dissipation after insertion of free-fall penetrometers: FE analysis Zahra Bashir MALIK, <i>University of Western Australia</i>
11:55-12:10	A spectral Feynman-Kac framework for consolidation analysis of soft soil incorporating random coefficient of consolidation Naina DEB, <i>Indian Institute of Technology Guwahati</i>



## Parallel Session MS-06 ~ MS-09

### *MS-06 Digital Twin in Civil Engineering: Bridging Data Sensing and Numerical Modeling*

**Chairs: Wan-Huan ZHOU, Linchong HUANG**

**Time: 8:30-11:30, 21 December**

**Venue: Z205, Block Z**

08:30-11:30	<b>Chair: Wan-Huan ZHOU, University of Macau</b> <b>Chair: Linchong HUANG, Sun Yat-sen University</b>
08:30-08:55	<b>(Invited)</b> Performance analysis and optimized design of vertical cut-off walls Haijian XIE, <i>Zhejiang University</i>
08:55-09:10	Reliability-based design of laterally loaded tapered offshore piles in spatially variable clay Jianhong WAN, <i>Nanchang University</i>
09:10-09:25	Time-dependent numerical modelling of the effectiveness of a drainage intervention on a large landslide Francesco CAMPANA, <i>Politecnico di Torino</i>
09:25-09:40	An efficient bayesian updating method for predicting excavation displacement in rock slope: case of Baihetan hydropower station Hongpeng HU, <i>Nanchang University</i>
09:40-09:55	Multi-source sensing monitoring and risk control for large-diameter slurry shield tunnelling beneath structures Junhao JING, <i>University of Macau</i>
09:55-10:10	Parameter identification of constitutive soil models by means of optimization and supervised machine learning algorithms Haris FELIĆ, <i>Graz University of Technology</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:45	Prediction of ballast deformation and degradation under train loading using multilaminate framework Rakesh Sai MALISETTY, <i>University of Technology Sydney</i>
10:45-11:00	Generating borehole description using advanced prompt engineering, few-shot learning, and retrieval-augmented generation with large language models Shaoze SU, <i>University of Macau</i>
11:00-11:15	Landfill barrier leakage detection based on tracer experiments and analytical models Yanghui SHI, <i>Zhejiang University</i>
11:15-11:30	Finite element modeling of the dynamic roller-soil interaction during vibratory compaction Wenjun HUA, <i>KTH Royal Institute of Technology</i>



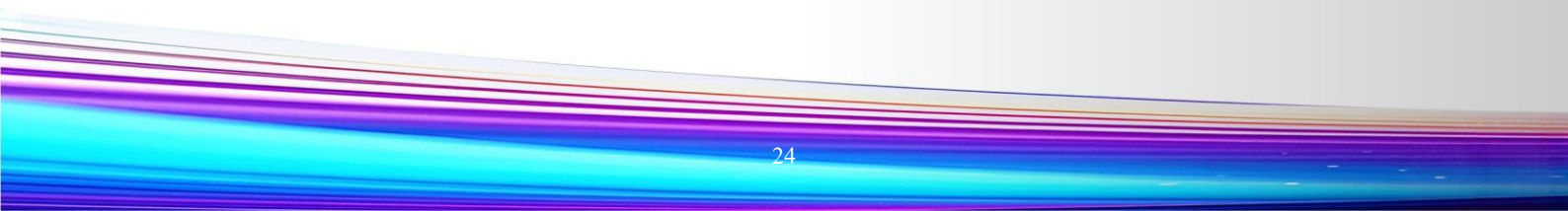
**MS-07 Geomechanics of Waste Materials for infrastructure - Constitutive Relations, Design and Applications**

**Chairs: Buddhima INDRARATNA, Yujie QI**

**Time: 8:30-11:30, 21 December**

**Venue: Z207, Block Z**

08:30-11:40	<b>Chair: Buddhima INDRARATNA, <i>University of Technology Sydney</i></b> <b>Chair: Yujie QI, <i>University of Technology Sydney</i></b>
08:30-08:55	<b>(Invited)</b> Investigation and mitigation of premature rutting in flexible pavements: a case study on Oklahoma state highway 7 Musharraf ZAMAN, <i>University of Oklahoma</i>
08:55-09:10	A comparative study of geosynthetic stiffness characterization approaches on the deformations of GRS abutments Yewei ZHENG, <i>Wuhan University</i>
09:10-09:25	Utilization of waste rubber and waste plastics from landfills for sustainable infrastructure development Prithvendra SINGH, <i>Indian Institute of Technology Bomba</i>
09:25-09:40	The modified critical-state framework of a waste mixture concerning the addition of rubber Yujie QI, <i>University of Technology Sydney</i>
09:40-09:55	Understanding the efficacy of a climate adaptive barrier through physical and numerical modelling Piyush VERMA, <i>Indian Institute of Technology Mandi</i>
09:55-10:10	An enhanced data-driven constitutive model for argillaceous rocks Moyuan PENG, <i>Tongji University</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:45	Microscopic origins of the compressibility and strength of clay: DEM insights into the role of physicochemical forces Bo LIU, <i>The Hong Kong Polytechnic University</i>
10:45-11:00	Effect of strain formulation on the load-displacement response of shallow foundation Yuepeng DONG, <i>Technical University of Denmark</i>
11:00-11:15	An advanced constitutive model for capturing brittle-to-ductile transitions and strength degradation in quasi-brittle rocks Vahid AZAMIPOUR, <i>Monash University</i>
11:15-11:30	Early-age prediction of compressibility in cement-stabilized clays using critical state framework Balaji Sai Kumar BANDARU, <i>IIT Madras</i>



## *MS-08 Mechanics and Modeling of Granular Materials*

**Chairs: Jidong ZHAO, Ali DAOUADJI**

**Time: 8:30-11:30, 21 December**

**Venue: Z211, Block Z**

08:30-11:30	<b>Chair: Jidong ZHAO, <i>The Hong Kong University of Science and Technology</i></b> <b>Chair: Ali DAOUADJI, <i>INSA Lyon</i></b>
08:30-08:55	<b>(Invited)</b> Reducing grain breakage in granular materials during loading Ali DAOUADJI, <i>INSA Lyon</i>
08:55-09:10	Three-dimensional micromechanical expression for the average strain tensor of granular materials Chaofa ZHAO, <i>Zhejiang University</i>
09:10-09:25	Percolation of contact force network in granular materials Jiaying LIU, <i>Hangzhou City University</i>
09:25-09:40	A hyperelastic constitutive model incorporating soil anisotropy Nazanin IRANI, <i>Ruhr-university Bochum</i>
09:40-09:55	Evaluation of advanced constitutive models for sand under drained and undrained cyclic loading Hui WANG, <i>University of Oxford</i>
09:55-10:10	The effect of gradation scaling techniques on the mechanical properties of rockfill materials: A DEM study Jiuyang ZHOU, <i>Tongji University</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:45	Multiscale experiments and numerical modeling of biocementation in geotechnical engineering Huanran WU, <i>Chongqing University</i>
10:45-11:00	DEM Study of shear strength of heart-shaped root system at different depths Qixin WU, <i>Wuhan University</i>
11:00-11:15	Effect of overburden pressure on cylindrical cavity expansion using advanced constitutive models Cathryn SEBASTIAN, <i>Indian Institute of Technology Madras</i>
11:15-11:30	DEM modelling of path-dependent small strain stiffness of Fujian sand Hechen ZHOU, <i>Tongji University</i>

# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

**Chairs: Qiushi CHEN, Weijian LIANG**

**Time: 8:30-11:40, 21 December**

**Venue: Z412, Block Z**

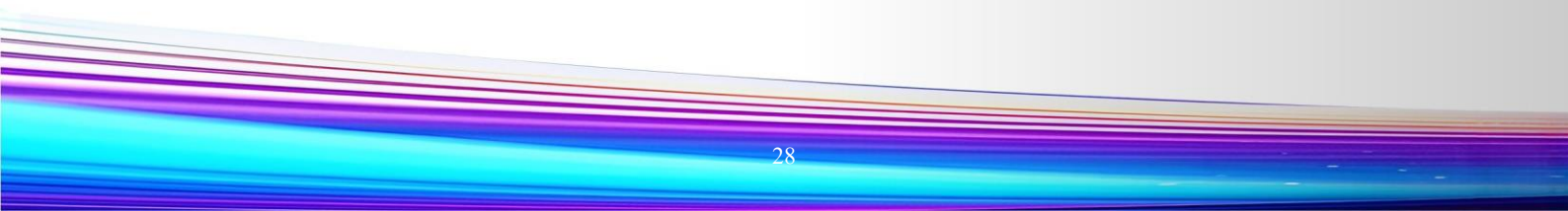
08:30-11:40	<b>Chair: Qiushi CHEN, <i>Clemson University</i></b> <b>Chair: Weijian LIANG, <i>Shenzhen University</i></b>
08:30-08:55	<b>(Invited)</b> Stress dependent hydraulic permeability of hydrate-bearing sediments Lele LIU, <i>Ocean University of China</i>
08:55-09:10	Dynamic responses of tetrapod suction bucket jacket foundations under environmental loads Shun CHEN, <i>Tongji University</i>
09:10-09:25	Numerical modeling of unbound granular pavements under moving loads Piyush PUNETHA, <i>University of Technology Sydney</i>
09:25-09:40	Simplified calibration of hypoplastic model parameters based on grain size distribution characteristics Joana BOMBE, <i>Ruhr University Bochum</i>
09:40-09:55	Internal stability analysis of geosynthetic reinforced steep soil slopes considering the effect of tension cracks Pavan MEENA, <i>Indian Institute of Technology Roorkee</i>
09:55-10:10	Understanding the effect of vertical pillar depth on cross-tunnels under dynamic loading Rishav BAISHYA, <i>Indian Institute of Technology Bombay</i>
10:10-10:30	<b>Coffee Break</b>
10:30-10:55	<b>(Invited)</b> Semi-implicit material point method for modeling saturated porous media Weijian LIANG, <i>Shenzhen University</i>
10:55-11:10	Sustainable utilization of shield waste muck for synchronous grouting: mixture ratio optimization and assessment of environmental and economic performance Dazeng SUN, <i>Northeastern University</i>
11:10-11:25	Lateral response of monopile for offshore wind turbines under static and dynamic loadings Sambit PANI, <i>Indian Institute of Technology Roorkee</i>
11:25-11:40	A simple subloading surface breakage constitutive model for crushable sands at high confinement pressures Rahul SINHA, <i>Indian Institute of Technology Kanpur</i>

**Chairs: Zhengshou LAI, Yong FU**

**Time: 8:30-11:30, 21 December**

**Venue: Z413, Block Z**

08:30-11:30	<p><b>Chair: Zhengshou LAI, Sun Yat-sen University</b></p> <p><b>Chair: Yong FU, Southern University of Science and Technology</b></p>
08:30-08:55	<p><b>(Invited)</b> Dynamic elastic energy processes within granular assemblies Yang LIU, <i>University of Science and Technology Beijing</i></p>
08:55-09:10	<p>Pile-running of large-diameter pipe piles in spatially variable clay Yong FU, <i>Southern University of Science and Technology</i></p>
09:10-09:25	<p>Numerical evaluation of caisson foundation capacity in layered soils under V-H-M loads Puran, <i>Indian Institute of Technology Roorkee</i></p>
09:25-09:40	<p>Understanding the friction behavior during normal stress perturbations: the role of contact evolution Jing LI, <i>Tongji University</i></p>
09:40-09:55	<p>GPU-accelerated semi-implicit two-phase double-layer MPM with adaptive projection-error compensation for accurate soil–water coupling Yong LIU, <i>Institute of Rock and Soil Mechanics, Chinese Academy of Sciences</i></p>
09:55-10:10	<p>A noise-based framework for generating 3D soil particles and its applications in discrete element modeling Chenxi TONG, <i>Central South University</i></p>
10:10-10:30	<b>Coffee Break</b>
10:30-10:45	<p>Time dependent effects of concrete decks on the cyclic soil-structure interaction of integral bridges Mohammed Sulaimaan KAIZER HASSAN, <i>Western Sydney University</i></p>
10:45-11:00	<p>A comparative study on estimation of soil constitutive model parameter employing sequential Monte Carlo and Markov chain Monte Carlo techniques Shraddha KUMARI, <i>Indian Institute of Technology Mandi</i></p>
11:00-11:15	<p>Simulation of soil mixing with generalized interpolation material point method Ying MA, <i>Aalto University</i></p>
11:15-11:30	<p>Numerical simulation of the pile behaviour in Unsaturated soils Shanujah MATHURANAYAGAM, <i>Western Sydney University</i></p>



## MS-09 Multiphysics Coupling in Geotechnical Engineering

**Chairs: Liming HU, Kaiqi LI, Dantong LIN**

**Time: 8:30-11:30, 21 December**

**Venue: Z414, Block Z**

08:30-10:30	<b>Chair: Liming HU, Tsinghua University</b> <b>Chair: Kaiqi LI, The Hong Kong Polytechnic University</b>
08:30-08:55	<b>(Invited)</b> Holistic simulation of energy sheet pile walls (ESPWs) for renewable energy extraction Arash LAVASAN, <i>University of Luxembourg</i>
08:55-09:10	Soil macropore structure in Loess Plateau Dantong LIN, <i>Lanzhou University</i>
09:10-09:25	Investigation of the relationship between rock joint surface roughness and shear strength considering sampling intervals of morphological Zhenning SHI, <i>Changsha University of Science &amp; Technology</i>
09:25-09:40	Poromechanical modeling of frozen soils for geothermal energy development in cold regions Biao LI, <i>Concordia University</i>
09:40-09:55	Migration behavior of organic contaminants in natural clay sites considering corrosion effect Peihao OUYANG, <i>Tongji University</i>
09:55-10:10	Discrete element modeling predicts shear strength and quantifies patchy water distribution effect in unsaturated soils under funicular regime Pengyu ZHANG, <i>Zhejiang University</i>
10:10-10:30	<b>Coffee Break</b>
10:30-11:30	<b>Chair: Liming HU, Tsinghua University</b> <b>Chair: Dantong LIN, Lanzhou University</b>
10:30-10:45	Fine particle migration and clogging in porous media: an experimental study Pengwei ZHANG, <i>Beijing Jiaotong University</i>
10:45-11:00	Water vapor circulation in soil under temperature gradients: mechanistic analysis and experimental confirmation Guochao SUN, <i>Beihang University</i>
11:00-11:15	CO <sub>2</sub> brine interactions in deep saline aquifers governing long-term storage of CO <sub>2</sub> : a review S Yogendra NARAYANAN, <i>Indian Institute of Technology Bombay</i>
11:15-11:30	Thermal performance of energy tunnels in partially saturated soils Alaaeldin MAGDY, <i>Lille University</i>

## Poster Session

Venue: Outside Room Z207, Block Z, PolyU

Time: 10:30-10:50, 19 December

Author	Title
Yaoru LIU <i>Tsinghua University</i>	Structural safety evaluation of tunnels considering material deterioration and structural damage
Nguyen THANH <i>University of Technology Sydney</i>	3D finite element modelling of PVD-soil cement columns foundation considering stiffness variation
Huihao CHEN <i>Tongji University</i>	Effect of train vibration on seepage erosion in gap-graded soils
Kentaro YAMAMOTO <i>Oita University</i>	Stability analysis of triple tunnels in cohesive-frictional soil subjected to surcharge loading
Vivek Prakash MANI <i>Indian Institute of Technology Mandi</i>	Rainfall-induced deformation in unsaturated railway embankment considering fully coupled flow deformation analysis
Qi MIN <i>Southwest Jiaotong University</i>	Data-driven identification and prediction of seismic-induced landslide disasters
Ruidong LI <i>The Hong Kong Polytechnic University</i>	Novel particle reconstruction and tracking algorithms to reveal 3D micromechanical behaviors of coral sands
Somdutt PATHAK and Puran <i>Indian Institute of Technology Roorkee</i>	Stability analysis of expanded MSW landfill for earthquake forces under over berm failure condition
Chenghuan LI <i>Nanchang University</i>	Comparison of explicit and implicit DEM for geomechanics: a computational performance study using triaxial tests
Yuhao LUO <i>Zhejiang University</i>	Modeling fracture growth in porous media considering solid dissolution with the assumed enhanced strain method

## Sites around University Campus



### Transportation

#### ❑ Taxi to Gate 4

Destination: HK PolyU Faculty of Construction and Environment (Block Z)

(**Tips:** Many taxis in Hong Kong only accept cash, while a few taxis may accept electronic payments.

We strongly suggest bringing some cash (HK dollars) with you.)

#### ❑ Subway to Gate 1

Destination: MTR Hung Hom Station

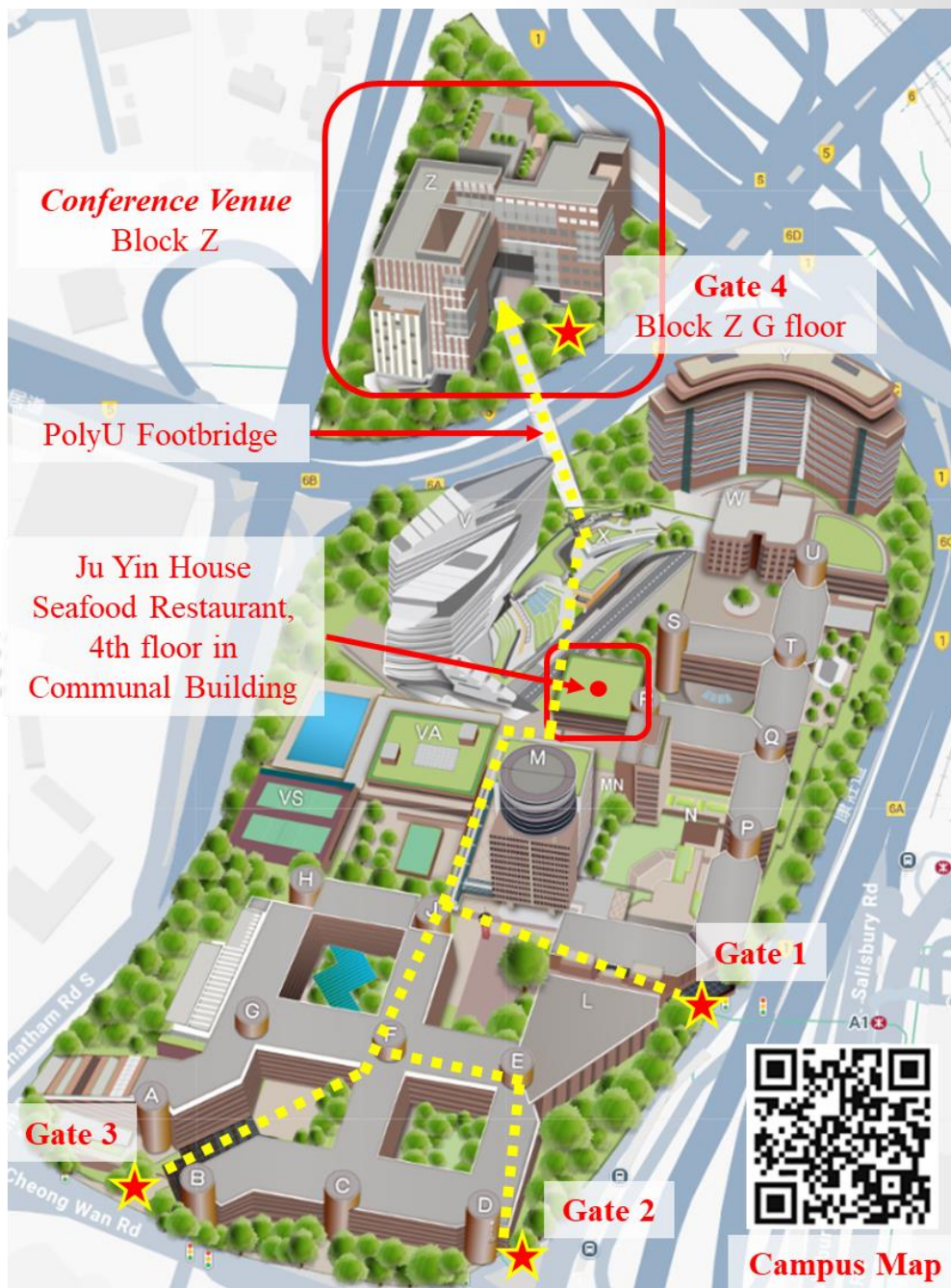
#### ❑ Bus to PolyU

By A21: Destination: Hung Hom Station (Close to Gate 1)

**Transportation payment methods: Cash, Octopus Card, Credit Cards & Mobile Payments.**

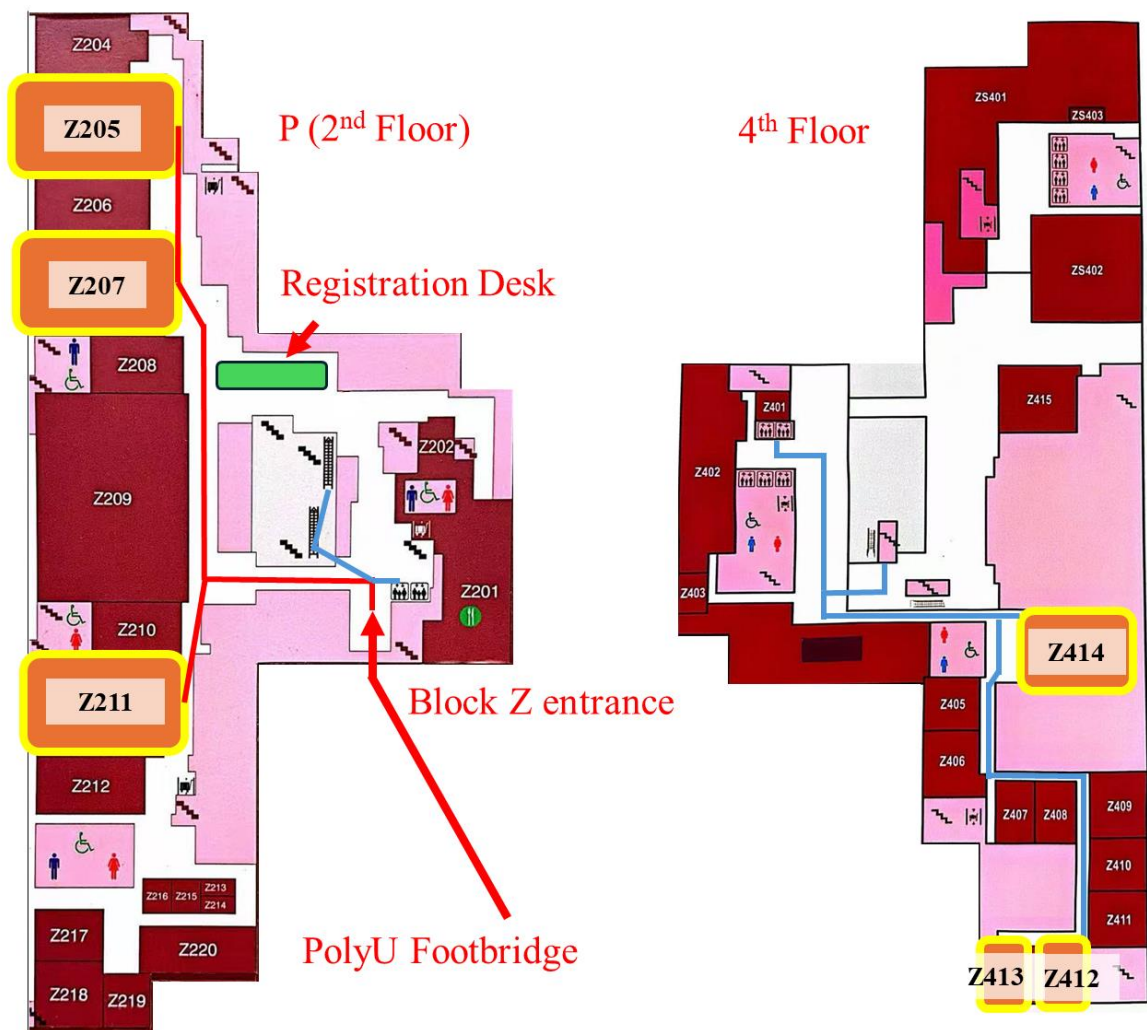
# THE 17TH INTERNATIONAL CONFERENCE OF IACMAG

## Campus Map



- Conference facilities are located at the Hung Hom Bay campus of PolyU (pedestrian access at 8 Hung Lok Road, Hung Hom). Campus Map: <https://www.polyu.edu.hk/campus-map/> or scanning the above code.
- If you have not received the QR code for entering university campus, or the QR code does not work, please contact Mr. Hang FENG: [23039257r@connect.polyu.hk](mailto:23039257r@connect.polyu.hk) and +852 5617 2852.

## Conference Venue



2<sup>nd</sup> and 4<sup>th</sup> Floor, Block Z, PolyU