

# Southeast Symposium of Recent Developments in Geotechnics

 $7^{th} - 10^{th}$  July 2018

Southeast University, Nanjing, P.R. China

## Organised and sponsored by:

School of Civil Engineering, Southeast University 东南大学土木工程学院 Institute of Future Underground Space, Southeast University 东南大学未来地下空间研究院 Jiangsu Society for Geotechnical Mechanics and Engineering 江苏省岩土力学与工程学会

## Welcome:

We cordially invite you to the **2018 Southeast Symposium of Recent Developments in Geotechnics**, which will be held on  $7^{th} - 10^{th}$  July **2018** at **Southeast University**, **Nanjing**, **Jiangsu**, **P.R.China**. This is the second in the series, which was launched in 2017 and attracted over 80 researchers from USA, Norway, UK, France, Austria, Japan, Australia, Singapore, India, HKSAR, and the top universities in P.R. China.

It aims at providing a supportive platform to exchange the latest progress in fundamental and applied geotechnical research, to explore new scientific frontiers and new ideas, and to develop strategic plan to tackle real world challenges in energy, environment and sustainability. We welcome contributions from all areas of geo-mechanics and geotechnical engineering. Each speaker will have sufficient to present their work in one of the following sessions: "Geotechnical Frontiers", "Multi-scale and Multi-physics" and "Cross-disciplinary geo-engineering", to promote focused discussions and scholarly debates. We also hope to bridge the gap between fundamental research and geotechnical applications by bringing researchers and practitioners in one room.

The symposium is part of the initiatives of Southeast University to raise research profile at the national and international level. A number of travel grants is available for international travellers. The event also supports our international recruitment of competent academic staff to strengthen existing capacities as well as to catalyse new developments. Potential applicants are highly encouraged to join the event.

This event will be organised in conjunction with the National Postgraduate Summer School in Civil Engineering  $(1^{st} - 7^{th} \text{ July})$ , which has been successfully organised and hosted by Southeast University in the past 8 years. The summer school accommodated around 300 students (selected over 1000 applicants) last year, and 60 of them were in the class of geotechnical engineering. Opportunities to interact with summer school students will be available.

Look forward to welcoming you in Nanjing.

Prof. Xia Li

Professor in Geotechnical Engineering School of Civil Engineering, Southeast University

On behalf of symposium organisers

## **International advisory committee:**

Prof. Yu-Jun Cui, Ecole des Pants ParisTech, France

Prof. Yannis Dafalias, UC Davis, USA

Prof. Andrew Dawson, University of Nottingham, UK

Prof. Yun-Tian Feng, Swansea University, UK

Prof. Jie Han, Kansas University, USA

Prof. Pierre-Yves Hicher, Ecole Centrale de Nantes, France

Prof. Amir M Kaynia, Norwegian Geotechnical Institute, Norway

Prof. Xiang-Song Li, Hong Kong University of Science and Technology, HKSAR, China

Prof. Francois Nicot, IRSTEA Grenoble, France

Prof. Mark Randolph, University of Western Australia, Australia

Prof. Kenichi Soga, UC Berkeley, USA

Prof. Wei Wu, University of Natural Resources and Life Sciences, Austria

Prof. Jian Zhao, Monash University, Australia

## **Symposium organisers**:

Yong-Feng Deng, Professor, Southeast University

Yan-Jun Du, Professor, Southeast University

Lei He, Professor, Southeast University

Xia Li (Chair), Professor, Southeast University

Long-Gang Tian, Lecturer, Southeast University

Fei Wang, Associate Professor, Southeast University

Xue-Liang Zhao, Associate Professor, Southeast University

## **Secretary General:**

Xia Li, Professor, Southeast University

### **Event Venue:**

Jiulonghu Campus, Southeast University, Nanjing, P.R. China



#### **Contact us:**

For any inquiries or information, please email to geo@pub.seu.edu.cn.

## **Instruction to local transportation:**

The symposium will mainly take place at the Zhiyou Room, Jiulonghu Hotel at the northwest corner of the Jiulonghu Campus, Southeast University. However, please note that the welcome and opening sesson on 8<sup>th</sup> July is scheduled at Round Auditorium (圆形报告厅) on the eastern side of the campus, as seen in the following maps.

Accommodation for oversea participants has been booked at the Jiulonghu (九龙湖) Hotel inside the Jiulonghu Campus, Southeast University; for domestic attendees, reservations have been made at the Golden Eagle Summit Hotel (金鹰尚美酒店), Jiangning District, Nanjing, China (http://nanjinggoldeneagle.31td.com).

Buses are arranged to bring our delegates from the hotels to the event avenue. Please find detailed and time schedule at the registration desk. In particular, there will be buses arranged after the photo-taking session on 8<sup>th</sup> July to take you from the Round Auditorium to Jiulonghu Hotel. Please don't miss it.





## To Jiulonghu Hotel at Southeast University (东南大学九龙湖宾馆):

## From Nanjing Train Station (南京站):

- Take the metro line No 3 (地铁三号线) towards Mozhoudonglu (秣周东路) station, and get off at Southeast University, Jiulonghu Campus (东大九龙湖) station
- Or by taxi: around 37min, RMB 76

## From Nanjingnan Train Station(南京南站):

- Take the metro line No 3 (地铁三号线) towards Mozhoudonglu(秣周东路) station, and get off at Southeast University, Jiulonghu Campus(东大九龙湖) station
- Or by taxi: around 26min and RMB 35

## From Nanjing Lukou Airport(南京禄口机场):

- Take the metro line S1 (地铁 S1 线) towards Jiyin Avenue(吉印大道) station, then walk to Jiyin Avenue North Bus Station(吉印大道北站), and take the 711 bus to arrive at the west entrance of Jiulonghu campus(Chukoujiagongqu bus station 出口加工区公交站)
- Take the metro line S1 (地铁 S1 线) to Nanjingnan station (南京南站), then transfer tometro line No 3 (地铁 3 号线) to Southeast University, Jiulonghu Campus (东大九龙湖) station
- Or by taxi: around 25min and RMB 71

## From Golden Eagle Summit Hotel (金鹰尚美酒店):

- Take the metro line No 1 (地铁一号线) towards Nanjingnan station (南京南站), then change for Metro Line No 3 (地铁三号线) towards Mozhoudonglu (秣周东路) station, and get off at Southeast University, Jiulonghu Campus (东大九龙湖) station
- Or by taxi: around 16min, RMB 21

## To Golden Eagle Summit Hotel (金鹰尚美酒店):

#### From Nanjing Train Station (南京站):

- Take the metro line No 1 (地铁一号线) towards Zhongguoyaokedaxue (中国药科大学) station, and get off at Baijiahu (百家湖) station
- Or by taxi: around 29min, RMB 52

#### From Nanjingnan Train Station (南京南站):

• By taxi: around 13min and RMB 21

#### From Nanjing Lukou Airport(南京禄口机场):

- Take the metro line S1 (地铁 S1 线) towards Nanjingnan Train Station(南京南站) station, then transfer the metro line No 1 (地铁一号线) to Baijiahu (百家湖) station
- Or by taxi: around 27min and RMB 84

#### From Jiulonghu Hotel (九龙湖宾馆):

• By taxi: around 13min, RMB 19

## **Technical Programme:**

Location: Jiulonghu Campus, Southeast University (东南大学九龙湖校区)

	T -	6 <sup>th</sup> July 2018			
18:00-22:00	•	Study abroad fair with summer school and Southeast students			
	Location: Room 201, Teaching Block 2 (教二 201)				
		7 <sup>th</sup> July 2018			
14:00-20:00	Registration				
	Location: Jiulonghu ho	tel and Golden Eagle Summit Hotel			
		8 <sup>th</sup> July 2018			
9:00-9:30	Welcome and opening				
9:30-9:50	Photo-taking	Photo-taking			
	Location: Round Audito	prium (圆形报告厅)			
9:50-10:10	Bus to Jiulonghu Hotel				
10:10-10:30		chnical Engineering at Southeast University			
	Prof. Guo-Liang Dai &				
	<u> </u>	, Jiulonghu Hotel (九龙湖宾馆至友厅)			
	echnical Frontiers				
	ui & Jianfu Shao				
Organiser: Xia L					
-	u Room, Jiulonghu Hotel (				
10:20-10:38	Amir M. Kaynia (NGI)	Macro-element models for integrated SSI analyses in offshore wind turbines			
10:38-10:56	Weimin Ye (Tongji)	A new approach for determination of gas breakthrough in saturated materials with low permeability			
		· · · · · ·			
10:56-11:14	Changfu Wei (CAS)	Pressures and potentials for soil: reconceptualization and formulation			
11:14-11:32	Qi-Zhi Zhu (Hohai)	Bond-based nonlocal peridynamics theory with PD-FEM hybrid implementation			
11:32-11:50	Tengyuan Zhao (CityU)	Interpretation and simulation of soil properties from spatially varying but sparsely measured data			
11:50-12:08	Hongwei Yang (HKU)	From calibration chamber studies to field conditions - Insights			
		from cavity expansion analysis of finite radial extent			
12:08-12:26	Guojun Cai (SEU)	Practice of full flow penetration testing in offshore engineering			
12:26-12:40	Discussion				
	·	Lunch			
Session 2: Cross	s-disciplinary Geotechnics	3			
	Du & Ningjun Jiang				
Organisers: Yan	-Jun Du & Ningjun Jiang				
Location: Zhiyo	u Room, Jiulonghu Hotel (	九龙湖宾馆至友厅)			
13:40-13:58	Shijin Feng (Tongji)	Slope stability of landfills considering leachate recirculation			
		using vertical wells			
13:58-14:16	Chaosheng Tang	Effect of wetting-drying cycles on soil desiccation cracking			
	(NJU)	behavior			
14:16-14:34	Ningjun Jiang (UHM)	Microbial induced calcite precipitation for internal erosion			
		control			
14:34-14:52	Yangyang Li (NTU)	Effect of climate on tree stability			
14:52-15:10	Gangqiang Kong (Hohai)	Case study on bridge deck de-icing through energy piles			
15:10-15:28	Yan-Jun Du (SEU)	Solidification/stabilization-based treatment of contaminated soils: lab-scale testing and field practice			
15:28-15:40	Discussion				

Multi-scale and Multiphysics Workshop 1: Fundamentals

Chair: Ali Daoua	Chair: Ali Daouadji & Zhenyu Yin				
Organisers: Pierr	Organisers: Pierre-Yves Hicher & Xia Li				
Location: Zhiyou	Room, Jiulonghu Hotel (	九龙湖宾馆至友厅)			
16:00-16:18	Ali Daouadji (Lyon)	Instabilities in loose and dense granular materials			
16:18-16:36	Zhongxuan Yang	An anisotropic hypoplastic model for granular soils			
	(ZJU)				
16:36-16:54	Jiangu Qian (Tongji)	Micromechanics-based constitutive modeling and DEM			
		simulation of localized failure in geomaterials			
16:54-17:12	Zhenyu Yin (Nantes)	Unified mechanical modelling of sand-silt mixtures			
17:12-17:30	Kun Zhang (WSU)	Numerical analysis at the particulate scale of sand erosion			
		under impinging jet			
17:30-17:48	Huan He (CityU)	Dynamics and micro-mechanics of soils			
17:48-18:00	Discussion				

#### **Symposium Banquet**

## 9<sup>th</sup> July 2018

Multi-scale and Multiphysics Workshop II: Coarse granular materials

Chair: Pierre-Yves Hicher & Xia Li
Organisers: Pierre-Yves Hicher & Xia Li

Location: Zhiyou Room, Jiulonghu Hotel (九龙湖宾馆至友厅)

8:30-8:48	Pierre-Yves Hicher	Modeling the effect of wetting on the mechanical behaviour
	(Nantes)	of crushable granular materials
8:48-9:06	Sihong Liu (Hohai)	Field testing and microscopic interpretation on shear
		strengths of coarse granular materials
9:06-9:24	Zhongzhi Fu (NHRI)	On the wetting-induced deformation of rockfill materials
9:24-9:42	Hua-Bei Liu (HUST) Particle crushing of calcareous sand and its relationship with	
		input energy
9:42-10:00	Chunshun Zhang	Grain crushing in geotechnical engineering: a continuum
	(Monash)	approach based on breakage mechanics
10:00-10:10	Discussion	

#### Tea break

## Multi-scale and Multiphysics Workshop III: Clay and other fine granular materials

Chair: Yonggui Chen & Lingling Zeng

Organiser: Yong-Feng Deng

Location: Zhiyou Room, Jiulonghu Hotel (九龙湖宾馆至友厅)

10:30-10:48	Yujun Cui	Hydromechanical behaviour of bentonite pellet/powder
	(ParisTech)	mixture
10:48-11:06	Guoping Zhang (UMA)	Cross-scale characterization of shales by big data & large volume-based nano-indentation
11:06-11:24	Xianfeng Liu (SWJU)	Multi-scale characterization of hydro-mechanical behavior of compacted Maryland clay
11:24-11:42	Guanlin Ye (SHJTU)	A unified constitutive model for unsaturated soil for monotonic and cyclic loading
11:42-12:00	Qian Zhai (SEU)	The role of pore-size distribution function on the engineering properties of soil
12:00-12:18	Fei Wang (SEU)	Initial Investigation into the effect of temperature on the solidified/stabilized contaminated soil
12:18-12:30	Discussion	

#### Lunch

Multi-scale and Multiphysics Workshop IV: Rock and cement-based granular materials

Chair: Qi-Zhi Zhu & Yong-Feng Deng

Organiser: Yong-Feng Deng

Location: Zhiyo	u Room, Jiulonghu Hotel ()	九龙湖宾馆至友厅)	
13:30-13:48	Jianfu Shao (Lilli)	Micro-macro modelling of plastic deformation and damage in clayey rocks	
13:48-14:06	Wanqing Shen (Lilli)	Effective strength of saturated double porous media with a Drucker-Prager solid phase	
14:06-14:24	Yi-Feng Chen(WHU)	Pattern formation and energy conversion for multiphase flow in geomaterials	
14:24-14:42	Ehsan Seyedi Hosseininia (Ferdowsi)	Analysis of reinforced soil walls using two-phase approach	
14:42-15:00	Wenni Deng (SEU)	Coral sand solidification by microbially induced carbonate precipitation	
15:00-15:10	Discussion		
		Tea break	
Session 3: Offsl	nore Geotechnics		
Chair: Dong Wa	ang & Xue-Liang Zhao		
Organiser: Wei	min Gong & Xue-Liang Zha	30	
Location: Zhiyo	u Room, Jiulonghu Hotel (	九龙湖宾馆至友厅)	
15:30-15:45	Amir M. Kaynia (NGI)	Introduction to NGI and their research in offshore geotechnics	
15:45-16:00	Dong Wang (OUC)	Interaction between the spudcan and footprint	
16:00-16:15	Mingyuan Wang (Hua	adong) 海洋勘察及软基处理研究进展	
16:15-16:30	Xianhui You (Yongfu)	海上风电嵌岩桩的思考	
16:30-16:45	Junbo Jia (Aker)	Fatigue assessment of offshore jacket structures using nonlinear time domain dynamic analysis	
16:45-17:00	Xue-Liang Zhao (SEU)	Horizontal bearing capacity of offshore rock-socketed pile foundation with large diameter	
17:00-17:20	17:00-17:20 <b>Discussion</b>		
17:20-17:30	Closing ceremony		

## **Symposium delegates:**

	Surname	First name	Affiliation	Country
1	Bulolo	Sam	Student, Nanyang Technological University	Singapore
2	Cai	Guojun	Professor, Southeast University	China
3	Chen	Yi-Feng	Professor, Wuhan University	China
4	Chen	Yonggui	Professor, Tongji University	China
5	Cheng	Zhanbo	PhD candidate, Warwick University	UK
6	Cui	Yujun	Professor, Ecole des Pants, Paris-Tech	France
7	Dai	Guo-Liang	Professor, Southeast University	China
8	Daouadji	Ali	Professor, Institut National des Science Appliquees de Lyon	France
9	Deng	Wenni	Lecturer, Southeast University	China
10	Deng	Yongfeng	Professor, Southeast University	China
11	Du	Yan-Jun	Professor, Southeast University	China
12	Feng	Shijin	Professor, Tongji University	China
13	Fu	Zhongzhi	Professor Senior Engineer, Nanjing Hydraulic Research Institute	China
14	Geng	Xueyu	Assistant Professor, Warwick University	UK
15	Gong	Weimin	Professor, Southeast University	China

16	Не	Huan	Senior Research Assistant, City University of Hong Kong	HKSAR
17	Hicher	Pierre-Yves	Professor, Ecole Centrale Nantes	France
18	Huang	Wengui	Geotechnical Engineer, Arup Singapore Pte Ltd	Singapore
19	Jia	Junbo	PhD, Aker solution	Norway
20	Jiang	Ningjun	Assistant Professor, University of Hawaii at Manoa	USA
21	Kang	Xin	Professor, Hunan university	China
22	Kong	Gangqiang	Professor, Hohai University	China
23	Lei	Zou	PhD, Nanyang Technological University	Singapore
24	Li	Во	PhD candidate, University of Cambridge	UK
25	Li	Gang	PhD, Jinan Rail Transit Group Co., Ltd.	China
26	Li	Xia	Professor, Southeast University	China
27	Li	Yangyang	PhD candidate, Nanyang Technological University	Singapore
28	Liu	Во	Guangdong electric power design institute Co., LTD.	China
29	Liu	Hua-Bei	Professor, Huazhong University of Science and Technology	China
30	Liu	Sihong	Professor, Hohai University	China
31	Liu	Songyu	Professor, Southeast University	China
32	Liu	Xianfeng	Professor, Southwest Jiaotong University	China
33	Liu	Zhibin	Associate Professor, Southeast University	China
34	Kaynia	M. Amir	Professor, Norwegian University of Science and Technology	Norway
35	Qian	Jiangu	Professor, Tongji University	China
36	Saleh Asheghabadi	Mohsen	Assistant professor, Dolat Abad University	Iran
37	Seyedi Hosseininia	Ehsan	Assistant professor, Ferdowsi University of Mashhad (FUM)	Iran
38	Shao	Jianfu	Professor, University of Lille	France
39	Shen	Wanqing	Assistant professor, University of Lille	France
40	Shen	Zhifu	PhD, Nanjing Tech University	China
41	Sounthararajah	Arooran	PhD candidate, Monash University	Australia
42	Tang	Chaosheng	Professor, Nanjing University	China
43	Tian	Longgang	Lecturer, Southeast University	China
44	Tong	Liyuan	Professor, Southeast University	China
45	Wang	Dong	Professor, Ocean University of China	China
46	Wang	Fei	Associate Professor, Southeast University	China
47	Wang	Mingyuan	Professor Senior Engineer, Huadong Engineering Corporation Limited	China
48	Wang	Rui	Lecturer, Tsinghua University	China
49	Wei	Changfu	Professor, Institute of Geotechnical Engineering, CAS	China
50	Wei	Kai	Associate Professor, Southwest Jiaotong University	China
51	Wu	Kai	Lecturer, Southeast University	China
52	Wu	Yongxin	Associate Professor, Hohai University	China
53	Yang	Hongwei	Post-doc, The University of Hong Kong	HKSAR
54	Yang	Wei	Associate Professor, Hunan university	
55	Yang	Zhongxuan	Professor, Zhejiang University	China
56	Ye	Guanlin	Professor, Shanghai Jiaotong University	China

57	Ye	Weimin	Professor, Tongji University	China
58	Yin	Zhenyu	Associate Professor, Ecole Centrale Nantes	France
59	You	Xianhui	PhD, FujianYongfu Power Engineering Co., Ltd.	China
60	Zhai	Qian	Associate Professor, Southeast University	China
61	Zhang	Chunshun	Lecturer, Monash University	Australia
62	Zhang	Dongmei	Professor, Tongji University	China
63	Zhang	Guoping	Professor, University of Massachusetts Amherst	USA
64	Zhang	Guozhu	Associate Professor, Southeast University	China
65	Zhang	Kun	Assitant Professor, Washington State University	USA
66	Zhang	Ning	Associate Professor, Hohai University	China
67	Zhang	Qi	Lecturer, Southeast University	China
68	Zhao	Tengyuan	Postdoctoral Researcher, City University of Hong Kong	HKSAR
69	Zhao	Xue-Liang	Associate Professor, Southeast University	China
70	Zhu	Qi-Zhi	Professor, Hohai University	China
71	Zhuang	Yan	Professor, Southeast University	China

## Welcome to Nanjing!