Day 1 – August 23 Friday

**Keynote Lecture 1**
Aug. 23 (Fri), 09:10 – 09:50, Plenary session room (4F, Bldg.1)
Chair: Prof. Y. Kohgo

“Field techniques for measuring soil hydraulic properties in unsaturated soils”
*Professor, Yuji Takeshita (Okayama University, Japan)*

**Keynote Lecture 2**
Aug. 23 (Fri), 09:50 – 10:30, Plenary session room (4F, Bldg.1)
Chair: Prof. H. Komine

“Soil-atmosphere interaction in embankments”
*Professor, Yu-Jun Cui (Ecole des Ponts ParisTech, France)*

**Keynote Lecture 3**
Aug. 23 (Fri), 13:10 – 13:50, Plenary session room (4F, Bldg.1)
Chair: Prof. T. Nishimura

“Effect of stress and suction on resilient modulus of compacted unbound materials”
*Professor, Seong-Wan Park (Dankook University, Korea)*

**Keynote Lecture 4**
Aug. 23 (Fri), 13:50 – 14:30, Plenary session room (4F, Bldg.1)
Chair: Dr. A. Russel

“Environmental degradation of clayey rocks”
*Dr. Jubert Abdres Pineda (The University of Newcastle, Australia)*
**Keynote Lectures**

**Day 2 – August 24 Saturday**

**Second Asia-Pacific Distinguished Lecture on Unsaturated Soils**
Aug.24 (Sat), 08:10 – 08:50, Plenary session room (4F, Bldg.1)
Chair: Prof. D. Toll

**EA03**

"Unusual geotechnical problems in high-speed railway embankments in cold climates"
Professor, Daichao Sheng *(The University of Newcastle, Australia)*

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**Keynote Lecture 5**
Aug.24 (Sat), 09:00 – 09:40, Plenary session room (4F, Bldg.1)
Chair: Prof. H. Rahardio

**EA04**

"Volume change behavior of highly compacted GMZ bentonite tested under chemo-hydro-mechanical conditions"
Professor, Wei-min Ye *(Tongji University, China)*

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**Keynote Lecture 6**
Aug.24 (Sat), 09:40 – 10:20, Plenary session room (4F, Bldg.1)
Chair: Prof. A. Iizuka

**v07.003**

"Soil-Water Characteristic Curves – Determination, etimation and aplication"
Dr. Leong Eng Choon *(Nanyang Technology University, Singapore)*

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**Keynote Lecture 7**
Aug.24 (Sat), 13:00 – 13:40, Plenary session room (4F, Bldg.1)
Chair: Prof. W.L. Zou

**v07.004**

"A photogrammetry-based method to measure the total and localized volume changes of unsaturated soil specimens during triaxial testing"
Dr. Xiong Zhang *(Missouri University, USA)*
Keynote Lecture 8
Aug.25 (Sun), 09:00 – 09:40, Plenary session room (4F, Bldg.1)
Chair: Prof. C.F. Wei

**EA05**

“Unsaturated soil mechanics for disaster prevention and maintenance of traffic infrastructure in snowy cold region”
Professor, Tatsuya Ishikawa (Hokkaido University, Japan)

Keynote Lecture 9
Aug.25 (Sun), 09:40 – 10:20, Plenary session room (4F, Bldg.1)
Chair: Prof. N. Yasufuku

**v07.005**

“Three-phase coupled seismic analyses of unsaturated/saturated grounds”
Professor, Ryosuke Uzuoka (Kyoto University, Japan)
**Parallel Session**

**Day 1 – August 23 Friday**

| **Parallel 1-1: <A-3> Stress-strain behavior (1)** |
| Aug.23 (Fri), 10:50 - 12:10, Plenary session room (4F, Bldg.1) |
| Chair: Prof. Zhenyu YIN |

| v07.006 |
| Effect of suction stress on strength characteristics of a compacted silty soil under low confining pressure |
| Shoji Kato, Tara Nidhi Lohani, Byeong-Su Kim, Seong-Wan Park |

| v07.007 |
| Predicting the shear strength of unsaturated soils |
| Y. Gao, D.A. Sun, A.N. Zhou, J. Li |

| v07.008 |
| An improved equation for unsaturated shear strength behavior of soils |
| Hossain Md Sayem, Ling-wei Kong, Yong Wang |

| v07.009 |
| Peak and Critical State Conditions for Unsaturated Sand |
| Bestun J. Shwan |

| v07.010 |
| Experimental investigation on two stress variables proposed by Fredlund from deformation, strength and moisture change under triaxial state of stress |
| Long Zhang, Zhenghan Chen |

| EA06 |
| Effect of drying and wetting processes on the shear strength behavior of unsaturated clayey soil |
| Pan Chen, Changfu Wei, Haifeng Lu, Jie Liu |

| **Parallel 1-2: <B-2> Laboratory and field measurements** |
| Aug.23 (Fri), 10:50 - 12:10, Room 131 & 132 (3F, Bldg.1) |
| Chair: Prof. Hirofumi TOYOTA |

| v07.011 |
| Experimental study of moisture evaporation process with different soil characteristics |
| Ni An, Chao-Sheng Tang, Shi-Kang Xu, Xue-Peng Gong, Bin Shi, Hilary I. Inyang |

| EA07 |
| Experimental verification of the continuous pressurization method on SWCC |
| Hyun Su Park, Byeong-Su Kim, Shoji Kato, Seong-Wan Park |

| EA08 |
| Evaluation of capillary barrier system under lateral non-flow condition of sand layer |
| Byeong-Su Kim, Yuji Takeshita, Seong-Wan Park, Shoji Kato |

| EA09 |
| Swelling-shrinkage deformation of an expansive soil foundation under high speed railway embankment loads: a case study |
| Gaofeng Pan, Xianfeng Liu, Guanlu Jiang, Danxi Sun, Chala Ayele Tesema, Yan Feng |

| EA10 |
| An experimental investigation of internal erosion around defective pipe in saturated-unsaturated soil |
| Dongmei Zhang, Weiwei Du, Chengpeng Gao |

<p>| v07.012 |
| Measurement of field-hydraulic soil properties using suction infiltrometer for soil-based pavement |
| T. Sugii, H. Yokawa, M. Ishii |</p>
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<td>EA11</td>
<td>Desiccation cracking behavior of soils</td>
<td>Hao Zeng, Chao-Sheng Tang, Qing Cheng, Luan Lin, Jin-Jian Xu</td>
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<td>EA12</td>
<td>Study of evolution law of cracking for swelling mudstone of Sichuan central Redbeds in hydration process</td>
<td>CHEN Shanxiong, ZHOU Zhe, YU Fei, DAI Zhangjun, LI Jian</td>
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<td>EA13</td>
<td>Influence of crack on soil resistance and measurement of crack depth</td>
<td>Liang Chen, Jianjian He, Shufa Yan</td>
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<td>EA14</td>
<td>Consequence of drying and wetting cycles on fracturing and electrical properties of soft soil</td>
<td>H. F. Zhao, Y. D. Chen</td>
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<td>Experimental study on gas flow through a compacted cracked clay</td>
<td>Zhongkui. Chen, Rui. Chen, Charles W. W. Ng</td>
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<td>Effect of biochar on desiccation cracking characteristics of a clayey soil</td>
<td>Kai Gu, Jinwen Li, Bingshu Zhang, Chaosheng Tang, Bin Shi</td>
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**Parallel 2-1: <A-3> Stress-strain behavior (2)**

Aug.23 (Fri), 14:40 - 16:00, Plenary session room (4F, Bldg.1)
Chair: Dr. Annan ZHOU

**v07.015**

**Effects of inherent anisotropy on G0 of unsaturated sand**  
B. N. Le, H. Toyota, S. Takada

**v07.016**

**Suction stress via thermo-servo/constant-water content ring shear testing**  

**v07.017**

**Influence of degree of saturation on strength and consolidation properties of unsaturated soil and its centrifuge modelling**  
Bhavita S. Dave, Chandresh H. Solanki, Atul K. Desai

**v07.018**

**Effects of plastic reinforcement on unsaturated soil and its centrifuge modeling for an embankment**  
Bhavita S. Dave, Mihretab Madamo Lafebo, Chandresh H. Solanki, Atul K. Desai

**v07.019**

**Study on Unsaturated Mechanical Properties of Lignin-Lime Improved Silt**  
Zhang Yanmei, Liu Jincheng, Zhang Xiaofeng, Cheng Feifei

**v07.020**

**Role of hydromechanical properties of plant roots on unsaturated soil shear strength**  
Anthony K. Leung, David Boldrin, Ali A. Karimzadeh, Anthony G. Bengough

**Parallel 2-2: <D-1> Slope stability (1)**

Aug.23 (Fri), 14:40 - 16:00, Room 131 & 132 (3F, Bldg.1)
Chair: Prof. Xianfeng LIU

**EA15**

**Infinite unsaturated soil slopes stability with tensile strength cut-off**  
Li Meng-zi, CAI Guo-qing, ZHAO Cheng-gang, YANG Bei-bei

**v07.021**

**Incorporating suction in to stability charts for unsaturated soil slopes**  
Thanh Vo, Adrian R. Russell

**v07.022**

**The role of wetting-induced expansion of unsaturated soils in potential shallow landslides**  
Shun-chao Qi, Jia-wen Zhou, Xing-Guo Yang, Gang Fan, Gongda Lu, Sai Vanapalli

**v07.023**

**The effect of slope orientation on the stability of cut slopes in swelling rocks and soils: case studies from Nanyang and Yanbian, China**  
Zhixiong Zeng, Lingwei Kong, Xianwei Zhang, Cheng Chen

**EA16**

**Strength characteristics test of expansive soil with interlayer and slope stability analysis**  
Zhangjun DAI, Shanxiong CHEN, Jian LI, Guofang Xu

**v07.024**

**Study on the mechanism of loess landslide induced by chlorine salt in Heifangtai terran**  
Juan Wang, Wei Liu, Wenwu Chen, Peng Liu, Bobo Jia, He Xu
Parallel 2-3: <E-3> Expansive soil (1)
Aug.23 (Fri), 14:40 - 16:00, Room 133 & 134 (3F, Bldg.1)
Chair: Prof. Toshio SUGII

v07.025

SWCC of crushed bentonite under high suction ranges
Seiichi Narushima, Yasunori Arai, Yuki Sakoda, Tomoyoshi Nishimura

EA17

Investigation of experimental methods to derive soil water characteristic curve for the compacted bentonite buffer
Seok Yoon, Jae Owan Lee, Geon Young Kim

v07.026

Chemical influence on water retention behaviour of compacted bentonite
Bing Qin, Yang Lu, Zheng-han Chen

v07.027

Application of the Kita-Sako model to soil-water characteristic curves of bentonite/sand mixture
Kazunari Sako, Shin Sato, Motoki Moriwa, Masaaki Fukaya, Syuichi Yamamoto, Shinichi Ito, Ryosuke Kitamura

EA18

Laboratory investigation on gas permeability of compacted GMZ bentonite under coupled effects of confining pressure and water content
Jiang F. Liu, Hong Y. Ni, Xu. Chen, Yang G. Wang, Jian, Liu

v07.028

Quick identification of expansive soil in the field based on PIV technique
Yu-Zhou Hou, Guo-Wei Li, Jian-Tao Wu, Wei Chen
Parallel 3-1: <A-3> Stress-strain behavior (3)
Aug.23 (Fri), 16:20 - 17:40, Plenary session room (4F, Bldg.1)
Chair: Prof. Yi DONG

v07.029
Determination of resistance parameters of compacted tropical soils in the state of Rio de Janeiro
Ramos, V. L. F. S., Mahler, C. F., Mainier, F. B., Januzzi, G. M. F.

v07.030
Laboratory tensile strength testing of clay soils using direct measurement
Wilson Pembele, Yilin Gui, Ross Stirling

v07.031
Change of pore-water pressure on creep behavior of an unsaturated silty soil
Tomoyoshi Nishimura, Nanako Tamura

v07.032
Collapse behaviour of compacted loess: role of the stress level on soil microstructure
Miaomiao Ge, Jubert A. Pineda, Daichao Sheng, Glen Burton, Ning Li

v07.033
Prediction of shrinkage behavior of soft soil using ramp loading consolidation theory
Yuan Zhang, Katayoon Tehrani, Alexander Scheuermann, Ling Li

EA19
Analysis of compressibility of red clay considering structural strength
Gu Jianxiao, Wang Yong, Liu Fabiao, Lyu Haibo

Parallel 3-2: <D-1> Slope stability (2)
Aug.23 (Fri), 16:20 - 17:40, Room 131 & 132 (3F, Bldg.1)
Chair: Prof. Yanjun DU

v07.034
The mechanism of long-time displacement in a colluvium slope underlain by mudstone
Chia-Cheng Fan, Jun-Bin Luo, Ruey-Zen Chang

v07.035
Performance of filter gabion with pipe as a simple countermeasure against slope failures due to torrential rainfalls
May Than Thar Cho, Anusron Chueasamat, Hirotaka Saito, Yuji Kohgo

EA20
Investigation on unsaturated slope stability influenced by rainfall and fluctuation of reservoir water level with varied rainfall infiltration rates
X. Xiong, Z.M. Shi, Y.L. Xiong, F. Zhang

v07.036
A study of critical rainfall and landslide occurrence
Saurabh Gupta, Eng-Choon Leong

EA21
Models for estimating earthquake-induced sliding displacement of slopes considering pulse-like ground motions
Yingbin Zhang, Jing Liu
Investigation on swelling behaviors of GMZ bentonite pellet mixtures
Z. Zhang, W.M. Ye, Q. Wang

Volume change behavior of saturated compacted GMZ bentonite and slurry during cyclic loading-unloading processes
Wang Yang, Ye Wei-Min, Wang Qiong, Chen Bao, Chen Yong-Gui

Effect of residual lateral stress on the swelling pressure of compacted bentonite/claystone mixture
Qiong Wang, Yu-jun Cui, Weimin Ye, Wei Su

Evaluation of the relationship between swelling pressures determined by consolidation-swell test and constant volume test
Zin Moe Htut, Mohammed Azhar M.M, Kuo Chieh Chao

Osmotic consolidation of expansive soil
S. Bulolo, E.C. Leong

Role of cohesive energy density in swelling behavior of expansive clays – a molecular-level simulation approach
Sahel N. Abduljauwad, Habib-ur-Rehman Ahmed
Day 2 – August 24 Saturday

Parallel Session

Parallel 4-1: <A-2> Water-retention and hydraulic behavior (1)
Aug.24 (Sat), 10:40 - 12:00, Plenary session room (4F, Bldg.1)
Chair: Dr. Takaki MATSUMARU

v07.042
A simple device to measure soil water retention curve
Lin Li

v07.043
Pore water pressure profile development through soil water characteristics curve determination utilizing the continuous pressurization method
M. Hatakeyama, S. Kyono, N. Yasufuku, R. Ishikura, A. Alowaisy

v07.044
A new logarithmic dielectric constant model of soils
Hongjian Liao, Huan Dong, Chunming Ning, Junyu Sun

v07.045
A simple method of estimating soil-water characteristic curve using point pedotransfer functions
L. Zou, E.C. Leong

v07.046
A simple and practical method for predicting soil water characteristic curve based on grading parameters
ZHANG ran Jun, WANG cui Xin, LIN hui Ye, JIANG Tong

EA23
Difference of SWRC and SWRC from MIP test of silty soil
Wen-Jing Sun, Yu-Jun Cui, De-an Sun

Parallel 4-2: <B-1> Advanced and new testing equipment (1)
Aug.24 (Sat), 10:40 - 12:00, Room 131 & 132 (3F, Bldg.1)
Chair: Prof. Guanlin YE

v07.047
Matric suction and Stiffness measurement on fine content soils at low stress state
Laxmi Prasad Suwal, Reiko Kuwano

EA24
Study on relationship between dielectric constant and water content of lateritic clays and mixing models
Yunshan XU, Haibo LU, Zhaotian ZENG, De’an Sun

EA25
Developing a flow pump apparatus for soil-water characteristics curve measurement
Louis Ge, Wen-Chieh Cheng, Chih-Wei Lu

v07.048
A system to measure permeability of unsaturated soils using local pin-type sensors in triaxial apparatus
Jaylord U. Tan Tian, Junichi Koseki, Hailong Wang, Hiroyuki Kyokawa, Takeshi Sato

EA26
Measurement and modelling triaxial stress-dependent water permeability of collapse loess
D. F. Zhang, C. L. Chen, H. Chen

EA27
Pore structure changes in water-saturated sandstone during freezing and thawing by NMR
Jiuhui Cheng, Linlin Wang
Parallel 4-3: TC215 Special Session
Aug.24 (Sat), 10:40 - 12:00, Room 133 & 134 (3F, Bldg.1)
Chair: Prof. A. (Malek) BOUAZZA

**v07.049**
**Understanding water migration behavior of unsaturated bentonites for HLW-disposal project**
*Hideo Komine*

**v07.050**
**Experimental study of the effect on one-dimension erosion of compacted bentonite**
*Li Xiao-yue*

**v07.051**
**Gas breakthrough tests on saturated GMZ01 bentonite using RCP technique with consideration of dry density effect**
*Lin-Yong Cui, Wei-Min Ye, Qiong Wang, Yong-Gui Chen, Bao Chen*

**v07.052**
**Simulation of swelling pressure evolution during infiltration in a bentonite block-pellet laboratory scale test**
*Ayman A. Abed, Wojciech T. Sołowski*

**EA28**
**Effects of repeated drainage and imbibition on the contamination behavior of a LNAPL and on its S-p relation**
*Giancarlo Flores, Yutaro Matsuda, Yoshiyuki Yamanaka, Atsushi Takai, Takeshi Katsumi*

**v07.053**
**Geomechanical studies in urban solid waste**
*Mahler, C. F., Ramos, V. L. F. S., Mainier, F. B.*
### Parallel 5-1: <A-2> Water-retention and hydraulic behavior (2)
Aug.24 (Sat), 13:50 - 14:50, Plenary session room (4F, Bldg.1)
Chair: Prof. Chaosheng TANG

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<td><strong>EA29</strong></td>
<td>Water retention curve of loess under cyclic wetting-drying</td>
<td>Q.Y. Mu, Y.J. Dang, C.Y. Qian, H.J. Liao</td>
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<td><strong>v07.054</strong></td>
<td>Particle size effects on the water retention properties of colluvial sediments</td>
<td>Rodrigo Osses, Jubert A. Pineda, Carlos Ovalle, Sandra Linero, Stephen Fityus</td>
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<td><strong>v07.055</strong></td>
<td>Comparison of air entry values from soil water retention and volumetric shrinkage characteristic curves</td>
<td>K. Tehrani, A. Scheuermann, D.J. Williams</td>
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### Parallel 5-2: <B-1> Advanced and new testing equipment (2)
Aug.24 (Sat), 13:50 - 14:50, Room 131 & 132 (3F, Bldg.1)
Chair: Prof. Maosong HUANG

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<td><strong>v07.056</strong></td>
<td>Large scale model test on a single pile in expansive soil upon infiltration</td>
<td>Yunlong Liu, Sai K. Vanapalli</td>
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<td><strong>v07.057</strong></td>
<td>Incorporating suction in to the interpretation of plate load tests on unsaturated soils</td>
<td>Yi Tang, Thanh Vo, Hossein A. Taiebat, Adrian R. Russell</td>
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<td><strong>EA31</strong></td>
<td>Resistivity test technology of triaxial soil sample based on vP method</td>
<td>Feng Huai-ping, Ma De-liang, Wu Zhong-xue, Tian Li-da, Liu Meng-yao</td>
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<td><strong>EA32</strong></td>
<td>A photogrammetric method for 3D displacement measurement of geogrids during the tensile test</td>
<td>Xiaolong Xia, Xiong Zhang, Zhaozheng Yin</td>
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### Parallel 5-3: <E-1> Geo-environment (1)
Aug.24 (Sat), 13:50 - 14:50, Room 133 & 134 (3F, Bldg.1)
Chair: Dr. Kazunori FUJISAWA

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<td><strong>EA33</strong></td>
<td>The Salt Expansion of an unsaturated silty clay</td>
<td>Lihong Chen, Jiankun Liu, Xu Li</td>
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<td><strong>EA34</strong></td>
<td>Thermal and saline effect on mineral-water interactions in compacted clays</td>
<td>Huihui Tian, Changfu Wei</td>
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<td><strong>EA35</strong></td>
<td>Experimental study on the microstructure evolution of gas hydrate-bearing sediment</td>
<td>Peng Wu, Yongchen Song, Weiguo Liu, Yanghui Li</td>
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<td><strong>v07.058</strong></td>
<td>Variance-based determination of dominant model parameters for sand migration in homogenous gas hydrate-bearing reservoir</td>
<td>Shun Uchida, Yongkoo Seol</td>
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**Parallel 6-1: <A-2> Water-retention and hydraulic behavior (3)**
Aug.24 (Sat), 15:00 - 16:20, Plenary session room (4F, Bldg.1)
Chair: Dr. Tomohiro MORI

- **v07.059**
  Rapid concurrent measurement of the soil water characteristics curve and the hydraulic conductivity function utilizing the continuous pressurization method
  Adel M. Alowaisy, Noriyuki Yasufuku, Ryohei Ishikura, Masanori. Hatakeyama, Shuu. Kyono

- **v07.060**
  Effect of grain-size distribution on hydraulic anisotropy of unsaturated soils
  H. Rahardjo, A. Satyanaga

- **v07.061**
  The role of pore-size distribution function on the estimation of engineering properties of unsaturated soil
  Q. Zhai, H. Rahardjo, A. Satyanaga, GL Dai, XL Zhao

- **v07.062**
  Relative hydraulic conductivity inferred from pore size distribution of unsaturated soils
  Y. F. Xu

- **v07.063**
  Hydraulic conductivity functions of quasi-saturated fine-grained soils
  K. V. Bicalho, D. Znidarcic, H-Y. Ko

- **v07.064**
  Permeability of saturated and unsaturated iron ore fines
  H. Wang, J. Koseki, T. Nishimura

**Parallel 6-2: <C-1> Constitutive modelling**
Aug.24 (Sat), 15:00 - 16:20, Room 131 & 132 (3F, Bldg.1)
Chair: Prof. Huaiping FENG

- **EA36**
  Bounding surface model for unsaturated soil coupling hydraulic hysteresis and mechanical loading
  Ran Yuan, Yi He, Nian Hu

- **EA37**
  Modelling of unsaturated decomposed granite subjected to finite deformation
  X. Xiong, Y.L. Xiong, T. Tsunemoto, S. Okino, X.Y. Qiu, Y. Kurimoto, F. Zhang

- **v07.065**
  Constitutive modelling hydro-mechanical behavior of unsaturated loess with a loss of structure
  Qiuyu Wang, Jiangu Qian, Shiyuan Li

- **EA38**
  A constitutive model of unsaturated soils with considering the effect of intergranular physicochemical forces
  T.T. Ma, C.F. Wei, C.Q. Yao

- **EA39**
  An anisotropic critical state constitutive model for turbidite hydrate-bearing sediments
  M.Zhou, K.Soga, K.Yamamoto, H.Huang

- **EA40**
  Effect of occluded gas on the constitutive modeling of unsaturated soils
  Yan Liu, Li Zhang
**EA41**

Gas permeability of landfill soil cover modified by biochar  
*Abraham C.F. Chiu, H.X. Guo*

**EA42**

Distinct stress-dilatancy behaviour of fine-grained sediment containing large bio-gas bubbles  
*Jianfeng Zhang, Yi Hong, Lizhong Wang, Zhuanzhuan Zhang*

**v07.066**

Investigation into mechanical behaviour of loess-wheat straw mixtures  
*Wen-Chieh Cheng, Xin Jin, Arul Arulrajah, Annan Zhou*

**v07.067**

Determination of resistance parameters of contaminated tropical soils in the state of Rio de Janeiro  
*Ramos, V. L. F. S., Mahler, C. F., Mainier, F. B., Januzzi, G. M. F.*

**v07.068**

Study of the gravimetric characterisation and heating value of urban solid waste  
*Mahler, C. F., Ramos, V. L. F. S., Mainier, F. B.*

**EA43**

Time-dependent performance of new hydroxyapatite-based binder stabilized contaminated soil: preliminary field test site assessment  
*Yan-Jun Du, Ya-Song Feng, Wei-Yi Xia, Shi-Ji Zhou, Zhi-Bin Liu*
Parallel 7-1: <A-2> Water-retention and hydraulic behavior (4)
Aug.24 (Sat), 16:40 - 18:00, Plenary session room (4F, Bldg.1)
Chair: Prof. Guoqing CAI

v07.069
Water retention characteristics of granular and powder bentonites
W.Y. Tong, M. Wijaya, E.C. Leong

v07.070
Influence of the organic matter content on the soil water retention characteristics of a reconstituted kaolinitic clay
Carlos R. Reina-Leal, Cesar S. Ramírez, Julio E. Colmenares

v07.071
Some laboratory scale tests on an australian coal tailings sample
Sihe Liao, Partha Narayan Mishra, Alexander Scheuermann

EA44
Adsorbed water density in unsaturated clays
Y. Dong

EA45
Micro- and macro-sopic investigations on wheat-induced change of soil water retention curve of a compacted loam

EA46
Soil-water retention behavior and microstructure evolution of red clay in full suction range
Guoqing Cai, Annan Zhou, Yi Liu, Chengang Zhao

Parallel 7-2: <C-2> Numerical modelling and analysis (1)
Aug.24 (Sat), 16:40 - 18:00, Room 131 & 132 (3F, Bldg.1)
Chair: Dr. Sayuri KIMOTO

v07.072
Nonlinear analysis of unsaturated soils using a meshfree method
Omid Ghaffari Pour, Golnaz A. Esgandani, Arman Khoshghalb

EA47
Simple model for predicting the volumetric compression of unsaturated compacted clays
Zhong Han, Wei-lie Zou, Xie-qun Wang

v07.073
A new explicit analytical solution to axisymmetric consolidation of vertical drain in unsaturated soils
Aifang Qin, Tianyi Li, De’an Sun

EA48
Semi-analytical solutions of two-dimensional plane strain consolidation in unsaturated soils considering the sand cushion
Lei Wang, Yongfu Xu, Xiaohe Xia, De’an Sun

v07.074
Modeling of the maximum and minimum void ratios for binary-sized granular materials
W. M. Ye, Z. R. Liu, Y. J. Cui, Z. Zhang, Q. Wang

EA49
A Mathematical Model for Tortuosity of Soil with Considering Particles Arrangement
Han Yan, Jidong Teng, Sheng Zhang, Daichao Sheng
Comparison of the bearing capacity of an unsaturated soil obtained from the experiments, a semi-empirical model, and numerical simulations
Won Taek Oh, Sai K. Vanapalli

Analysis of negative skin friction resistance characteristic influence parameter of pile foundation under flooding condition
Ye Shuai-hua

Analysis of soil subsidence due to change in groundwater level in unsaturated soils
S. M. Reza Imam, Reza Mohammadi, Danial Ghafarian

Erosion resistance test of soil cement application for surface erosion protection
Sokline Pheng, Kinuko Hibi, Toshikazu Hori, Yuji Kohgo

Conditions of the cavity formation and sinkholes in the practical ground
Mari Sato, Yoshinori Uno, Ryota Ito

Field measurement about water content in embankment covered by slope protection work
T. Matsumaru, T. Sato
### Parallel Session

**Day 3 – August 25 Sunday**

#### Parallel 8-1: <A-5> Cyclic/dynamic behavior

Aug.25 (Sun), 10:40 - 12:00, Plenary session room (4F, Bldg.1)
Chair: Dr. Toshiyasu UNNO

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<td>Kengo Kato, Koichi Nagao, Naoaki Suemasa</td>
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#### Parallel 8-2: <C-2> Numerical modelling and analysis (2)

Aug.25 (Sun), 10:40 - 12:00, Room 131 & 132 (3F, Bldg.1)
Chair: Dr. Kentaro NAKAI

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<td>Sangseom Jeong, Yongmin Kim, Hyundo Park</td>
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Parallel 8-3: <E-2> Frozen soil
Aug.25 (Sun), 10:40 - 12:00, Room 133 & 134 (3F, Bldg.1)
Chair: Prof. Sheng ZHANG

Testing method for resilient properties of unsaturated unbound granular materials subjected to freeze-thaw action
Tianshu Lin, Tatsuya Ishikawa, Tetsuya Tokoro

The frozen behavior of an unsaturated silty clay
Xu Li, Jiankun Liu, Zhenya Liu

Effect of confining pressure path on strength and deformation of frozen silty sand
Shujuan Zhang, Zhizhong Sun, Zhi Wen

Measurement of unfrozen water in unsaturated soil with pulse NMR
T.Tokoro, T. Ishikawa

An interpretation of soil freezing characteristic curve of unsaturated freezing soils
Jidong Teng, Yu Zhong, Sheng Zhang, Daichao Sheng

Thaw subsidence properties of artificial frozen ground and prevention of differential foundation settlement
Yao Zhishu, Song Haiqing, Cai Haibing, Wang Xiaojian
Parallel 9-2: <C-2> Numerical modelling and analysis (3)
Aug.25 (Sun), 13:00 - 14:20, Room 131 & 132 (3F, Bldg.1)
Chair: Dr. Mamoru KIKUMOTO

**EA56**
A fully coupled flow-deformation model for time-dependent analysis of unsaturated soils
Thi Ngoc Mac, Babak Shahbodagh, Nasser Khalili

**EA57**
Soil-water-air coupled elasto-plastic finite deformation simulation of unsaturated silt triaxial test using void ratio-dependent soil water retention model
Takahiro Yoshikawa, Toshihiro Noda

**EA58**
Discrete element modeling for shear behaviour of a compacted silty soil at low stress states
Hyunbin Kim, Hyunsu Park, Seong-Wan Park

**EA59**
Numerical simulation on the hydro-mechanical response of high-speed railway embankment under rainfall based on a unified constitutive model for unsaturated soils
Yi Xie, Lulu Zhang, Yonglin Xiong, Guanlin Ye

**EA60**
An analytical study on expansion of liquefaction damage during aftershock induced by groundwater-level rise due to main shock
Toshihiro Noda, Takahiro Yoshikawa

**v07.092**
Mechanism of dissipation of excess flow pressures in unsaturated granular soils subjected to seismic excitations
Javad Ghorbani, David Airey

Parallel 9-3: <A-1> Microstructure (1)
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Chair: Dr. Kazunari SAKO

**EA60**
A revised pore morphology method for modeling the experimental observations of air-water distribution in porous media
Xin Liu, Annan Zhou, Jie Li, Shijin Feng

**v07.093**
Study on calculation method of pore size distribution formed between soil particles under the closest packing
Tomohiro Mori, Makoto Akiyama, Toru Tsuchikura

**v07.094**
Investigations on microstructure characteristics of porous pavement based on X-ray CT scanning
Tom Törzs, Jürgen Grabe, Guoyang Lu, Markus Oeser

**v07.095**
Microscopic investigation of the hydro-mechanical behavior of unsaturated granular media with X-ray CT
Marius Milatz, Jürgen Grabe

**v07.096**
Distribution changes of grain contacts and menisci in shear band during triaxial compression test for unsaturated sand
Ryunosuke Kido, Yosuke Higo
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Chair: Dr. Yosuke HIGO

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Xilin Lü, Kunye Zhou, Maosong Huang, Zheng Su

**v07.098**
An analytical study on the boundary size effect of calibration chamber studies
Y. Cheng, H.W. Yang, D.A. Sun

**v07.099**
Long- and short-term pore water pressure variations in sandy river dike interpreted with 1- and 2-phase seepage flow analysis
Sho Nishiie, Satoshi Nishimura, Nobutaka Yamazoe

**v07.100**
Numerical simulation of seepage failure by upward flow considering internal erosion
S. Kimoto, T. Akaki, H. Kodama

EA61
A coupled thermal-hydraulic-mechanical model for frost heave
Jianhua Yin, Xiong Zhang

**v07.101**
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Binh T. Nguyen, Tatsuya Ishikawa, Takumi Murakami

Parallel 10-3: <A-1> Microstructure (2)
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Chair: Dr. Shoji KATO

**v07.102**
Osmotic effects on the microstructure of Ashfield shale
Ke Ou, Jubert A. Pineda, Xianfeng Liu, Daichao Sheng, Antonio Gens

EA62
Two-dimensional capillary rise panel of granular media
Shaokai Nie, Bate, Bate, Yunmin, Chen

**v07.103**
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Honghua Zhao, Cong Liu, Shuqi Jiang, Yuanyuan Ge

**v07.104**
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Shengyang Yuan, Xianfeng Liu, Olivier Buzzi

**v07.105**
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Naman Kantesaria, Kanika Gupta, Ajanta Sachan

EA63
Aggregate size effect on the mineralogical composition and microstructure of lime-treated soil
Yejiawo Wang, Myriam Duc, Yujun Cui, Anh Minh Tang, Nadia Benahmed