

Keynote Lecture

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

v07.001

“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

EA01

“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

EA02

“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

v07.002

“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)

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)

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, estimation and application”

Dr. Leong Eng Choon (Nanyang Technology University, Singapore)

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 Lectures

Day 3 – August 25 Sunday

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

v07.012

Measurement of field-hydraulic soil properties using suction infiltrometer for soil-based pavement

T. Sugii, H. Yokawa, M. Ishii

Parallel 1-3: Volume change and desiccation cracks

Aug.23 (Fri), 10:50 - 12:10, Room 133 & 134 (3F, Bldg.1)

Chair: Prof. Yonggui CHEN

v07.013

Desiccation cracking behavior of soils

Hao Zeng, Chao-Sheng Tang, Qing Cheng, Luan Lin, Jin-Jian Xu

v07.014

Study of evolution law of cracking for swelling mudstone of Sichuan central Redbeds in hydration process

CHEN Shanxiong, ZHOU Zhe, YU Fei, DAI Zhangjun, LI Jian

EA11

Influence of crack on soil resistance and measurement of crack depth

Liang Chen, Jianjian He, Shufa Yan

EA12

Consequence of drying and wetting cycles on fracturing and electrical properties of soft soil

H. F. Zhao, Y. D. Chen

EA13

Experimental study on gas flow through a compacted cracked clay

Zhongkui. Chen, Rui. Chen, Charles W. W. Ng

EA14

Effect of biochar on desiccation cracking characteristics of a clayey soil

Kai Gu, Jinwen Li, Bingshu Zhang, Chaosheng Tang, Bin Shi

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

Ujwalkumar D. Patil, Laureano R. Hoyos, Jairo E. Yepes, Anand J. Puppala, Surya S. C. Congress

[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

Parallel 3-3: <E-3> Expansive soil (2)

Aug.23 (Fri), 16:20 - 17:40, Room 133 & 134 (3F, Bldg.1)

Chair: Prof. Liming HU

[v07.037](#)

Investigation on swelling behaviors of GMZ bentonite pellet mixtures

Z. Zhang, W.M. Ye, Q. Wang

[v07.038](#)

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

[EA22](#)

Effect of residual lateral stress on the swelling pressure of compacted bentonite/claystone mixture

Qiong Wang, Yu-jun Cui, Weimin Ye, Wei Su

[v07.039](#)

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

[v07.040](#)

Osmotic consolidation of expansive soil

S. Bulolo, E.C. Leong

[v07.041](#)

Role of cohesive energy density in swelling behavior of expansive clays – a molecular-level simulation approach

Sahel N. Abduljawwad, Habib-ur-Rehman Ahmed

Parallel Session

Day 2 – August 24 Saturday

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

EA29

Water retention curve of loess under cyclic wetting-drying

Q.Y. Mu, Y.J. Dang, C.Y. Qian, H.J. Liao

v07.054

Particle size effects on the water retention properties of colluvial sediments

Rodrigo Osses, Jubert A. Pineda, Carlos Ovalle, Sandra Linero, Stephen Fityus

v07.055

Comparison of air entry values from soil water retention and volumetric shrinkage characteristic curves

K. Tehrani, A. Scheuermann, D.J. Williams

EA30

Dependency of Poisson's ratio on water content for unsaturated soils

Y. Dong

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

v07.056

Large scale model test on a single pile in expansive soil upon infiltration

Yunlong Liu, Sai K. Vanapalli

v07.057

Incorporating suction in to the interpretation of plate load tests on unsaturated soils

Yi Tang, Thanh Vo, Hossein A. Taiebat, Adrian R. Russell

EA31

Resistivity test technology of triaxial soil sample based on vdP method

Feng Huai-ping, Ma De-liang, Wu Zhong-xue, Tian Li-da, Liu Meng-yao

EA32

A photogrammetric method for 3D displacement measurement of geogrids during the tensile test

Xiaolong Xia, Xiong Zhang, Zhaozheng Yin

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

EA33

The Salt Expansion of an unsaturated silty clay

Lihong Chen, Jiankun Liu, Xu Li

EA34

Thermal and saline effect on mineral-water interactions in compacted clays

Huihui Tian, Changfu Wei

EA35

Experimental study on the microstructure evolution of gas hydrate-bearing sediment

Peng Wu, Yongchen Song, Weiguo Liu, Yanghui Li

v07.058

Variance-based determination of dominant model parameters for sand migration in homogenous gas hydrate-bearing reservoir

Shun Uchida, Yongkoo Seol

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

Parallel 6-3: <E-1> Geo-environment (2)

Aug.24 (Sat), 15:00 - 16:20, Room 133 & 134 (3F, Bldg.1)

Chair: Dr. Giancarlo FLORES

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. Ramirez, 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-scopic investigations on wheat-induced change of soil water retention curve of a compacted loam

R. Chen, J. W. Huang, Y. Xu, Z. K. Chen, J. Liu

[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 Ghaffaripour, 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

Parallel 7-3: <D-2> Hazards

Aug.24 (Sat), 16:40 - 18:00, Room 133 & 134 (3F, Bldg.1)

Chair: Prof. Takeshi KODAKA

v07.075

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

EA50

Analysis of negative skin friction resistance characteristic influence parameter of pile foundation under flooding condition

Ye Shuai-hua

v07.076

Analysis of soil subsidence due to change in groundwater level in unsaturated soils

S. M. Reza Imam, Reza Mohammadi, Danial Ghafarian

v07.077

Erosion resistance test of soil cement application for surface erosion protection

Sokline Pheng, Kinuko Hibi, Toshikazu Hori, Yuji Kohgo

v07.078

Conditions of the cavity formation and sinkholes in the practical ground

Mari Sato, Yoshinori Uno, Ryota Ito

v07.079

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

[v07.080](#)

Numerical simulation of undrained cyclic behavior for desaturated silica sands

Kengo Kato, Koichi Nagao, Naoaki Suemasa

[v07.081](#)

Drained shear behavior of an unsaturated soil during cyclic triaxial loadings

Tun Tun Win, Tomotaka Sato, Yuji Kohgo

[v07.082](#)

Response of shallow foundation under coupled cyclic loading for unsaturated sand at large number of cycles

Binod K., Frank W.

[v07.083](#)

Dynamic centrifuge model tests on embankment with different upstream conditions

Gautham Adapa, Yuki Takada, Kyohei Ueda, Ryosuke Uzuoka

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

[v07.084](#)

A fully coupled flow-deformation model for cyclic elasto-plastic analysis of multiphase porous media

B. Shahbodagh, G.A. Esgandani, N. Khalili

[v07.085](#)

Unsaturated behavior of an earthfill dam during coupled initial impoundment and a prolonged rainfall

Vilayvong K., Kazunori Fujisawa, Akira Murakami

[v07.086](#)

Rainfall-induced failure on unsaturated fill and highly weathered schist slopes

Phichet Morya, Supavat Kongpanickul, Kuo Chieh Chao, Rustam Ishenaliev

[v07.087](#)

Numerical analysis on the stability of highway embankment reinforced with spiral bladed drain pipe reinforcements

Kiyonobu Kasama, Yasutaka Ito, Zentaro Furukawa, Tomohiro Hamasaki, Kenji Matsuka

[v07.088](#)

Influences of rainfall infiltration and hysteresis SWCC of unsaturated soil on settlement of shallow foundations

Sangseom Jeong, Yongmin Kim, Hyundo Park

[EA51](#)

Large deformation analysis of soil slope with anti-slide piles base on a three dimensional and parallelized soil-structure-coupled SPH model

Weijie Zhang, Zhanbin Wang

Parallel 8-3: <E-2> Frozen soil

Aug.25 (Sun), 10:40 - 12:00, Room 133 & 134 (3F, Bldg.1)

Chair: Prof. Sheng ZHANG

v07.089

Testing method for resilient properties of unsaturated unbound granular materials subjected to freeze-thaw action

Tianshu Lin, Tatsuya Ishikawa, Tetsuya Tokoro

EA52

The frozen behavior of an unsaturated silty clay

Xu Li, Jiankun Liu, Zhenya Liu

EA53

Effect of confining pressure path on strength and deformation of frozen silty sand

Shujuan Zhang, Zhizhong Sun, Zhi Wen

v07.090

Measurement of unfrozen water in unsaturated soil with pulse NMR

T.Tokoro, T. Ishikawa

EA54

An interpretation of soil freezing characteristic curve of unsaturated freezing soils

Jidong Teng, Yu Zhong, Sheng Zhang, Daichao Sheng

EA55

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

v07.091

A fully coupled flow-deformation model for time-dependent analysis of unsaturated soils

Thi Ngoc Mac, Babak Shahbodagh, Nasser Khalili

EA56

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

EA57

Discrete element modeling for shear behaviour of a compacted silty soil at low stress states

Hyunbin Kim, Hyunsu Park, Seong-Wan Park

EA58

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

EA59

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)

Aug.25 (Sun), 13:00 - 14:20, Room 133 & 134 (3F, Bldg.1)

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

Parallel 10-2: <C-2> Numerical modelling and analysis (4)

Aug.25 (Sun), 16:20 - 17:40, Room 131 & 132 (3F, Bldg.1)

Chair: Dr. Yosuke HIGO

v07.097

Numerical modeling the uplift bearing capacity of transmission line tower foundation on expansive soil

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

Numerical analysis of in-situ water content and temperature variations due to effects of grass

Binh T. Nguyen, Tatsuya Ishikawa, Takumi Murakami

Parallel 10-3: <A-1> Microstructure (2)

Aug.25 (Sun), 16:20 - 17:40, Room 133 & 134 (3F, Bldg.1)

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

Molecular dynamics simulation of water molecules absorption by different cations based Montmorillonite

Honghua Zhao, Cong Liu, Shuqi Jiang, Yuanyuan Ge

v07.104

Influence of pore water salinity on the compressibility of Maryland clay

Shengyang Yuan, Xianfeng Liu, Olivier Buzzi

v07.105

Macroscopic and microscopic study of unsaturated shear strength behaviour of type-F fly ash

Naman Kantesaria, Kanika Gupta, Ajanta Sachan

EA63

Aggregate size effect on the mineralogical composition and microstructure of lime-treated soil

Yejiao Wang, Myriam Duc, Yujun Cui, Anh Minh Tang, Nadia Benahmed