

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

“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

“To be decided”

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

“Volume change behavior of highly compacted GMZ bentonite under chemo-hydro-mechanical conditions”

Professor, Weimin Ye (Tongji University, China)

Keynote Lecture 6

Aug.24 (Sat), 09:40 – 10:20, Plenary session room (4F, Bldg.1)

Chair: Prof. A. Iizuka

“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

“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

“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

“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

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. (Japan)

Predicting the shear strength of unsaturated soils

Y. Gao, D.A. Sun, A.N. Zhou, J. Li. (China)

An improved equation for unsaturated shear strength behavior of soils

Hossain Md Sayem, Ling-wei Kong, Yong Wang. (Bangladesh)

Peak and Critical State Conditions for Unsaturated Sand

Bestun J. Shwan. (Iraq)

Experimental investigation on two stress variables proposed by Fredlund from deformation, strength and moisture change under triaxial state of stress

Long Zhang, Zhenghan Chen. (China)

Effect of drying and wetting processes on the shear strength behavior of unsaturated clayey soil

Pan Chen, Changfu Wei, Haifeng Lu, Jie Liu. (China)

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

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. (UK)

Experimental verification of the continuous pressurization method on SWCC

Hyun Su Park, Byeong-Su Kim, Shoji Kato, Seong-Wan Park. (Korea)

Evaluation of capillary barrier system under lateral non-flow condition of sand layer

Byeong-Su Kim, Yuji Takeshita, Seong-Wan Park, Shoji Kato. (Japan)

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. (China)

An experimental investigation of internal erosion around defective pipe in saturated-unsaturated soil

Dongmei Zhang. (China)

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

T. Sugii, H. Yokawa, M. Ishii. (Japan)

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

Desiccation cracking behavior of soils

Hao Zeng, Chao-Sheng Tang, Qing Cheng, Luan Lin, Jin-Jian Xu. (China)

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

CHEN Shanxiang, ZHOU Zhe, YU Fei, DAI Zhangjun, LI Jian. (China)

Influence of crack on soil resistance and measurement of crack depth

Liang Chen. (China)

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

H. F. Zhao. (China)

Experimental study on gas flow through a compacted cracked clay

Zhongkui. Chen, Rui. Chen, Charles W. W. Ng. (China)

Effect of biochar on desiccation cracking characteristics of a clayey soil

Kai Gu, Jinwen Li, Bingshu Zhang, Chaosheng Tang, Bin Shi. (China)

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

Effects of inherent anisotropy on G₀ of unsaturated sand

B. N. Le, H. Toyota, S. Takada. (Japan)

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. (USA)

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. (India)

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. (India)

Study on Unsaturated Mechanical Properties of Lignin-Lime Improved Silt

Zhang Yanmei, Liu Jincheng, Zhang Xiaofeng, Cheng Feifei. (China)

Role of hydromechanical properties of plant roots on unsaturated soil shear strength

Anthony K. Leung, David Boldrin, Ali A. Karimzadeh, Anthony G. Bengough. (Hong Kong)

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

Infinite unsaturated soil slopes stability with tensile strength cut-off

LI Meng-zi. (China)

Incorporating suction in to stability charts for unsaturated soil slopes

Thanh Vo, Adrian R. Russell. (Australia)

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. (China)

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. (China)

Strength characteristics test of expansive soil with interlayer and slope stability analysis

Zhangjun DAI, Shanxiong CHEN, Jian LI, Hongming LUO. (China)

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. (China)

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

SWCC of crushed bentonite under high suction ranges

Seiichi Narushima, Yasunori Arai, Yuki Sakoda, Tomoyoshi Nishimura. (Japan)

Investigation of experimental methods to derive soil water characteristic curve for the compacted bentonite buffer

Seok Yoon, Jae Owan Lee, Geon Young Kim. (Korea)

Chemical influence on water retention behaviour of compacted bentonite

Bing Qin, Yang Lu, Zheng-han Chen. (China)

Application of the Kita-Sako model to soil-water characteristic curves of bentonite/sand mixture

Kazunari Sako, Shin Sato, Motoki Moriiwa, Masaaki Fukaya, Syuichi Yamamoto, Shinichi Ito, Ryosuke Kitamura. (Japan)

Laboratory investigation on gas permeability of compacted GMZ bentonite under coupled effects of confining pressure and water content

Jiang F. Liu. (China)

Quick identification of expansive soil in the field based on PIV technique

Yu-Zhou Hou, Guo-Wei Li, Jian-Tao Wu, Wei Chen. (China)

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

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.. (Brazil)

Laboratory tensile strength testing of clay soils using direct measurement

Wilson Pembele, Yilin Gui, Ross Stirling. (UK)

Change of pore-water pressure on creep behavior of an unsaturated silty soil

Tomoyoshi Nishimura, Nanako Tamura. (Japan)

Collapse behaviour of compacted loess: role of the stress level on soil microstructure

Miaomiao Ge, Jubert A. Pineda, Daichao Sheng, Glen Burton, Ning Li. (Australia)

Prediction of shrinkage behavior of soft soil using ramp loading consolidation theory

Yuan Zhang, Katayoon Tehrani, Alexander Scheuermann, Ling Li. (Australia)

Analysis of compressibility of red clay considering structural strength

Gu Jianxiao. (China)

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

The mechanism of long-time displacement in a colluvium slope underlain by mudstone

Chia-Cheng Fan, Jun-Bin Luo, Ruey-Zen Chang. (Taiwan)

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. (Japan)

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. (Japan)

A study of critical rainfall and landslide occurrence

Saurabh Gupta, Eng-Choon Leong. (India)

Models for estimating earthquake-induced sliding displacement of slopes considering pulse-like ground motions

Yingbin Zhang. (China)

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

Investigation on swelling behaviors of GMZ bentonite pellet mixtures

Z. ZHANG, W.M. YE, Q. WANG. (China)

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. (China)

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

Qiong Wang, Yu-jun Cui, Weimin Ye, Wei Su. (China)

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. (Thailand)

Osmotic consolidation of expansive soil

S. Bulolo, E.C. Leong. (Singapore)

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

Sahel N. Abduljawwad, Habib-ur-Rehman Ahmed. (Saudi Arabia)

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

A simple device to measure soil water retention curve

Lin Li. (China)

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. (Japan)

A new logarithmic dielectric constant model of soils

Hongjian Liao, Huan Dong, Chunming Ning, Junyu Sun. (China)

A simple method of estimating soil-water characteristic curve using point pedotransfer functions

L. Zou, E.C. Leong. (Singapore)

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. (China)

Difference of SWRC and SWRC from MIP test of silty soil

Wen-Jing SUN, Yu-Jun CUI, De-an SUN. (China)

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

Matric suction and Stiffness measurement on fine content soils at low stress state

Laxmi Prasad Suwal, Reiko Kuwano. (Australia)

Study on relationship between dielectric constant and water content of lateritic clays and mixing models

Yunshan XU. (China)

Developing a flow pump apparatus for soil-water characteristics curve measurement

Louis Ge. (Taiwan)

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. (Japan)

Measurement and modelling triaxial stress-dependent water permeability of collapse loess

D. F. Zhang, C. L. Chen, H. Chen. (China)

Pore structure changes in water-saturated sandstone during freezing and thawing by NMR

Jiuhui Cheng, Linlin Wang. (China)

Parallel 4-3: TC215 Special Session

Aug.24 (Sat), 10:40 - 12:00, Room 133 & 134 (3F, Bldg.1)

Chair: Prof. A. (Malek) BOUAZZA

Understanding water migration behavior of unsaturated bentonites for HLW-disposal project

Hideo Komine. (Japan)

Experimental study of the effect on one-dimension erosion of compacted bentonite

Li Xiao-yue. (China)

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. (China)

Simulation of swelling pressure evolution during infiltration in a bentonite block-pellet laboratory scale test

Ayman A. Abed, Wojciech T. Sołowski. (Finland)

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. (Japan)

Geomechanical studies in urban solid waste

Mahler, C. F., Ramos, V. L. F. S., Mainier, F. B.. (Brazil)

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

Water retention curve of loess under cyclic wetting-drying

Q.Y. Mu, Y.J. Dang, C.Y. Qian, H.J. Liao (China)

Particle size effects on the water retention properties of colluvial sediments

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

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

K. Tehrani, A. Scheuermann, D.J. Williams. (Australia)

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

Y. Dong. (China)

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: **To be determined**

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

Yunlong Liu, Sai K. Vanapalli. (Canada)

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

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

Resistivity distribution 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. (China)

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

Xiaolong Xia, Xiong Zhang, Zhaozheng Yin. (USA)

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

The Salt Expansion of an unsaturated silty clay

Lihong Chen. (China)

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

Huihui Tian, Changfu Wei. (China)

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

Peng Wu. (China)

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

Shun Uchida, Yongkoo Seol. (USA)

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

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. (Japan)

Effect of grain-size distribution on hydraulic anisotropy of unsaturated soils

H. Rahardjo, A. Satyanaga. (Singapore)

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. (China)

Relative hydraulic conductivity inferred from pore size distribution of unsaturated soils

Y. F. Xu. (China)

Hydraulic conductivity functions of quasi-saturated fine-grained soils

K. V. Bicalho, D. Znidarcic, H-Y. Ko. (Brazil)

Permeability of saturated and unsaturated iron ore fines

H. Wang, J. Koseki, T. Nishimura. (Japan)

Parallel 6-2: <C-1> Constitutive modelling

Aug.24 (Sat), 15:00 - 16:20, Room 131 & 132 (3F, Bldg.1)

Chair: Prof. Huaiping FENG

Bounding surface model for unsaturated soil coupling hydraulic hysteresis and mechanical loading

Ran Yuan, Yi He, Nian Hu. (China)

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. (Japan)

Constitutive modelling hydro-mechanical behavior of unsaturated loess with a loss of structure

Qiuyu Wang, Jiangu Qian, Shiyuan Li. (China)

A constitutive model of unsaturated soils with considering the effect of intergranular physicochemical forces

T.T. Ma, C.F. Wei, C.Q. Yao. (China)

An anisotropic critical state constitutive model for turbidite hydrate-bearing sediments

M.Zhou, K.Soga, K.Yamamoto, H.Huang. (China)

Effect of occluded gas on the constitutive modeling of unsaturated soils

Yan Liu, Li Zhang. (China)

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

Gas permeability of landfill soil cover modified by biochar

Abraham C.F. Chiu, H.X. Guo. (China)

Distinct stress-dilatancy behaviour of fine-grained sediment containing large bio-gas bubbles

Jianfeng Zhang, Yi Hong, Lizhong Wang, Zhuanzhuan Zhang (China)

Investigation into mechanical behaviour of loess-wheat straw mixtures

Wen-Chieh Cheng, Xin Jin, Arul Arulrajah, Annan Zhou. (China)

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.. (Brazil)

Study of the gravimetric characterisation and heating value of urban solid waste

Mahler, C. F., Ramos, V. L. F. S., Mainier, F. B.. (Brazil)

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. (China)

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

Water retention characteristics of granular and powder bentonites

W.Y. Tong, M. Wijaya, E.C. Leong. (Singapore)

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. (Colombia)

Some laboratory scale tests on an australian coal tailings sample

Sihe Liao, Partha Narayan Mishra, Alexander Scheuermann. (Australia)

Adsorbed water density in unsaturated clays

Y. Dong . (China)

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. (China)

Soil-water retention behavior and microstructure evolution of red clay in full suction range

Guoqing Cai. (China)

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

Nonlinear analysis of unsaturated soils using a meshfree method

Omid Ghaffarpour, Golnaz A. Esgandani, Arman Khoshghalb. (Australia)

Simple model for predicting the volumetric compression of unsaturated compacted clays

Zhong Han, Wei-lie Zou, Xie-qun Wang. (China)

A new explicit analytical solution to axisymmetric consolidation of vertical drain in unsaturated soils

Aifang Qin, Tianyi Li, De'an Sun. (China)

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. (China)

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. (China)

A Mathematical Model for Tortuosity of Soil with Considering Particles Arrangement

Han Yan, Jidong Teng, Sheng Zhang, Daichao Sheng. (China)

Parallel 7-3: <D-2> Hazards

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

Chair: Prof. Takeshi KODAKA

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. (Canada)

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

YE Shuai-hua. (China)

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

S. M. Reza Imam, Reza Mohammadi, Danial Ghafarian. (Iran)

Erosion resistance test of soil cement application for surface erosion protection

Sokline Pheng, Kinuko Hibi, Toshikazu Hori, Yuji Kohgo. (Japan)

Conditions of the cavity formation and sinkholes in the practical ground

Mari SATO, Yoshinori UNO, Ryota ITO. (Japan)

Field measurement about water content in embankment covered by slope protection work

T. Matsumaru, T. Sato. (Japan)

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

Numerical simulation of undrained cyclic behavior for desaturated silica sands

Kengo Kato, Koichi Nagao, Naoaki Suemasa. (Japan)

Drained shear behavior of an unsaturated soil during cyclic triaxial loadings

Tun Tun Win, Tomotaka Sato, Yuji Kohgo. (Japan)

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

Binod K., FrankW.. (Germany)

Dynamic centrifuge model tests on embankment with different upstream conditions

Gautham Adapa, Yuki Takada, Kyohei Ueda, Ryosuke Uzuoka. (Japan)

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

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

B. Shahbodagh, G.A. Esgandani, N. Khalili. (Australia)

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

Vilayvong K, Fujisawa K, Murakami A. (Japan)

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

Phichet Morya, Supavat Kongpanickul, Kuo Chieh Chao, Rustam Ishenaliev. (Thailand)

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. (Japan)

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

Sangseom Jeong, Yongmin Kim, Hyundo Park. (Korea)

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. (China)

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. (Japan)

The frozen behavior of an unsaturated silty clay

Xu Li, Jiankun Liu, Zhenya Liu. (China)

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

Shujuan Zhang, Zhizhong Sun, Zhi Wen. (China)

Measurement of unfrozen water in unsaturated soil with pulse NMR

T.Tokoro, T. Ishikawa. (Japan)

An interpretation of soil freezing characteristic curve of unsaturated freezing soils

Jidong Teng, Yu Zhong, Sheng Zhang, Daichao Sheng. (China)

Thaw subsidence properties of artificial frozen ground and prevention of differential foundation settlement

Yao Zhishu, Song Haiqing, Cai Haibing, Wang Xiaojian. (China)

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

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

Thi Ngoc Mac, Babak Shahbodagh, Nasser Khalili. (Australia)

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. (Japan)

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

Hyunbin Kim, Hyunsu Park, Seong-Wan Park. (Korea)

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. (China)

An analytical study on expansion of liquefaction damage during aftershock induced by groundwater-level rise due to main shock

Toshihiro Noda, Takahiro Yoshikawa. (Japan)

Mechanism of dissipation of excess flow pressures in unsaturated granular soils subjected to seismic excitations

Javad Ghorbani, David Airey. (Australia)

Parallel 9-3: <A-1> Microstructure (1)

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

Chair: Dr. Kazunari SAKO

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. (Australia)

Study on calculation method of pore size distribution formed between soil particles under the closest packing

Tomohiro Mori, Makoto Akiyama, Toru Tsuchikura. (Japan)

Investigations on microstructure characteristics of porous pavement based on X-ray CT scanning

Tom Törzs, Jürgen Grabe, Guoyang Lu, Markus Oeser. (Germany)

Microscopic investigation of the hydro-mechanical behavior of unsaturated granular media with X-ray CT

Marius Milatz, Jürgen Grabe. (Germany)

Distribution changes of grain contacts and menisci in shear band during triaxial compression test for unsaturated sand

Ryunosuke Kido, Yosuke Higo. (Japan)

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

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

Xilin Lü, Kunye Zhou, Maosong Huang, Zheng Su. (China)

An analytical study on the boundary size effect of calibration chamber studies

Y. Cheng, H.W. Yang, D.A. Sun. (Germany)

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. (Japan)

Numerical simulation of seepage failure by upward flow considering internal erosion

S. Kimoto, T. Akaki, H. Kodama. (Japan)

A coupled thermal-hydraulic-mechanical model for frost heave

Jianhua Yin, Xiong Zhang, Ph.D., P.E., M.ASCE. (USA)

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

Binh T. Nguyen, Tatsuya Ishikawa, Takumi Murakami. (Japan)

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

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

Chair: Dr. Shoji KATO

Osmotic effects on the microstructure of Ashfield shale

Ke Ou, Jubert A. Pineda, Xianfeng Liu, Daichao Sheng, Antonio Gens. (Australia)

Two-dimensional capillary rise panel of granular media

Shaokai. Nie, Bate, Bate, Yunmin, Chen. (China)

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

Honghua Zhao, Cong Liu, Shuqi Jiang, Yuanyuan Ge. (China)

Influence of pore water salinity on the compressibility of Maryland clay

Shengyang Yuan, Xianfeng Liu, Olivier Buzzi. (Australia)

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

Naman Kantesaria, Kanika Gupta, Ajanta Sachan. (India)

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

Yejiao Wang, Myriam Duc, Yujun Cui, Anh Minh Tang, Nadia Benahmed. (China)