ACEM22/Structures22 Program at a Glance

*Time is based on KST / GMT+9

AUGUST 17 WEDNESDAY	AUGUST 18 THURSDAY	AUGUST 19 FRIDAY
11:00-13:00 Registration 13:00 - 13:10 Opening Ceremony W0A: Opening Remarks (Thomas Kang)	09:00 - 10:00 ICGE22 Session T0A: Advancements in Geomechanics and Engineering (4 th US-Korea Geotechnical Workshop) I	
13:10 - 13:40 Keynote Lectures I	10:00 - 10:30 Keynote Lectures Ⅲ	10:00 - 10:30 Keynote Lectures V
 W1A: Applications of Remote & Real-Time Sensing, Artificial Intelligence, and Edge Computing in Structural/Wind Engineering (Thomas Kang, Korea) W1B: Design of Water Biofilm by Regulation Quorum Sensiong (Ji-Hyang Kweon, Korea) [Video] W1C: Large-Scale Wind Testing to Advance Climate Responsive Infrastructure (Aly Mousaad Aly, USA) 	T1A: ICGE22 Keynote Lecture (Gye-Chun Cho, Korea) T1B: Fluid-Structure Interactions of Elastic Sheets for Energy Harvesting (Dae Gyoum Kim, Korea)	F1A: Physics Guided Machine Learning: System Identification (Satish Nagarajaiah, USA) F1B: Deep Materials Modeling and Design (David Chen, Taiwan) F1C: Does Structural Performance against Non-synoptic Wind Loads Matter? Recent Experiences in Life-cycle Cost Analysis against Wind Hazards (Luca Caracoglia, USA) [Video]
13:40 - 14:10 Keynote Lectures Ⅱ	10:30 - 11:00 Keynote Lectures IV	10:30 - 11:00 Keynote Lectures VI
W2A: BIM-based modelling for constructibility assessment (Walid Tizani, Uk) [Video] W2B: Fracture, Stochastic Upscaling and Size & Scale Effects (Adnan Ibrahimbegovic, France)	T2B: Spurious Modal Identification by Comparing the Monitoring Data in Different Time (Ting-Hua Yi, China) [Video] T2C: Al-Empowered Performance-Based Wind Engineering (Teng Wu, USA)	F2A: Collapse Performance Assessment of Buildings under Extreme Loads (Halil Sezen, USA) F2C: Testing and Analysis of Wind Turbines under Tornadoes
W2C: Advances in Modelling the Wind-Induced Response of Long-Span Bridges (Claudio Mannini, Italy)	10:30 - 11:20 ICGE22 Session T2A: Advancements in Geomechanics and Engineering (4 th US-Korea Geotechnical Workshop) Ⅱ	and Downbursts (Ashraf El Damatty, Canada)
14:10 - 14:30 Break Time	11:00 - 11:20 Break Time	11:00 - 11:20 Break Time
14:30 - 16:00 Session W3	11:30 - 13:00 Session T3	11:30 - 13:00 Session F3
 W3A: Computational Design and Experimental Method in Prestressed Concrete and Other Structures W3B: Innovative structural design and analysis for buildings and infrastructures W3C: Computational Methods and Structural Mechanics W3D: Performance Evaluation of Infrastructures under Extreme Wind Loadings and Multiple Disasters 	 T3A: Advancements in Geomechanics and Engineering (4th US-Korea Geotechnical Workshop) III T3B: Composite Materials and Structures Subject to Dynamic and Other Loads T3C: Coupled Mechanics between Fluid Flow and Deformable Structure I T3D: Multi-Hazard Study of Wind Turbine Towers 	F3A-1: Forensic Structural & Geotechnical Engineering F3A-2: Forensic Water Resource & Environmental Engineering F3B: Computational Design and Experimental Method in Reinforced Concrete F3C: Structural Safety Evaluation and Health Monitoring (The 1st CSUST-CBNU Joint Seminar)

ACEM22/Structures22 Program at a Glance

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AUGUST 17 WEDNESDAY	AUGUST 18 THURSDAY	AUGUST 19 FRIDAY
16:00 - 16:10 Break Time	13:00 - 14:00 Lunch	Lunch
	14:00 - 15:30 Session T4	
16:10 - 18:30 Session W4	T4A : Advancements in Geomechanics and Engineering (4 th US-Korea Geotechnical Workshop) IV	
W4C: Wind-Induced Structural Performance and Criteria	T4B: Smart Sensing and MonitoringT4C Coupled Mechanics between Fluid Flow and Deformable Structure Ⅱ	
	T4D: Safety and Stability of Urban Power Grid under Extreme Weather Hazards	
	15:30 – 15:40 Break Time	
	15:40 - 17:10 Session T5	
	T5A : Advancements in Geomechanics and Engineering (4 th US-Korea Geotechnical Workshop) V	
	T5B: Structural Health Monitoring Techniques	

Video/Poster Sessions		
Video Sessions	All pre-recorded video presentations and posters will be available on ACEM22/Structures22 Proceedings throughout the conference period (8/16 - 8/19).	

ACEM22/Structures22 Program at a Glance

Participation in live Zoom sessions

- 1) All on-site and on-line participants may access live sessions through Zoom.
- 2) Please indicate your name and paper ID to participate. [Ex. WS1234_1234 (name*)]
- 3) Presenters will be given the co-host authority during their presentation.

Zoom IDs & Passwords		
Session A (Tue-Fri) #515	ID: 821 217 3937 PW: 000222	
Session B (Tue-Fri) #519	ID: 606 231 7007 PW: 000111	
Session C (Tue-Fri) #522	ID: 392 999 5345 PW: 000444	
Session D (Tue-Fri)	ID: 891 921 3469 PW: 000333	

All Poster/Video presentations will be uploaded to the online proceeding of ACEM22/Structures22.

ACEM22 Online Proceedings: http://www.i-asem.org/acem22 publication.html
Structures22 Online Proceedings: http://www.i-asem.org/structures22 publication.html

* All participants may access live sessions through Zoom. Please indicate your name and paper ID to participate.

REGISTRATION 11:00 - 13:00 GECE Fover 5th Floor

OPENING CEREMONY

(W0 13:00 - 13:10)

8/17 Wed

Opening Remarks Room A, #515

(Zoom ID: 821 217 3937 PW: 000222)

Thomas Kang, Co-Chairman, ACEM22/Structures22

KEYNOTE LECTURES (I & II)

 $(W1\ 13:10-13:40)$ (W2 13:40 - 14:10) 8/17 Wed

SESSION W1A 13:10-13:40

Chairman: Hyeongyeop Shin

Room A, #515 (Zoom ID: 821 217 3937 PW: 000222)

Applications of Remote & Real-Time Sensing, Artificial Intelligence, and Edge Computing in

Structural/Wind Engineering; Thomas Kang (Korea)

SESSION W1B 13:10-13:40 Room B, #519

Chairman: Han Suk Sung (Zoom ID: 606 231 7007 PW: 000111)

Design of Water Biofilm by Regulation Quorum Sensiong; Ji-Hyang Kweon (Korea) [Video]

SESSION W1C Room C, #522 13:10-13:40

(Zoom ID: 392 999 5345 PW: 000444) Chairman: Hamidreza Alinejad

Large-Scale Wind Testing to Advance Climate Responsive Infrastructure; Aly Mousaad Aly (USA)

SESSION W2A 13:40-14:10 Room A, #515

Chairman: Hyeongyeop Shin (Zoom ID: 821 217 3937 PW: 000222)

BIM-based modelling for constructibility assessment; Walid Tizani (UK) [Video]

SESSION W2B Room B, #519 13:40-14:10

Chairman: Han Suk Sung (Zoom ID: 606 231 7007 PW: 000111)

Fracture, Stochastic Upscaling and Size & Scale Effects; Adnan Ibrahimbegovic (France)

SESSION W2C Room C, #522 13:40-14:10

(Zoom ID: 392 999 5345 PW: 000444) Chairman: Hamidreza Alinejad

Advances in Modelling the Wind-Induced Response of Long-Span Bridges; Claudio Mannini (Italy)

KEYNOTE LECTURES (III & IV)

 $(T1\ 10:00-10:30)$ $(T2\ 10:30-11:00)$ 8/18 Thur

SESSION T1A 10:00-10:30 Room A, #515

Chairman: Ilhan Chang (Zoom ID: 821 217 3937 PW: 000222)

ICGE22 Keynote Lecture; Gye-Chun Cho (Korea)

Room B, #519 **SESSION T1B** 10:00-10:30

(Zoom ID: 606 231 7007 PW: 000111) Chairman: Hyun Duk Seo

Fluid-Structure Interactions of Elastic Sheets for Energy Harvesting; Dae Gyoum Kim (Korea)

SESSION T2B 10:30-11:00 Room B. #519

Chairman: Hyun Duk Seo (Zoom ID: 606 231 7007 PW: 000111)

Spurious Modal Identification by Comparing the Monitoring Data in Different Time; Ting-Hua Yi

(China) [Video]

SESSION T2C 10:30-11:00 Room C, #522

Chairman: Thomas Kang (Zoom ID: 392 999 5345 PW: 000444)

AI-Empowered Performance-Based Wind Engineering; Teng Wu (USA)

KEYNOTE LECTURES (V & VI)

 $(F1\ 10:00-10:30)$ $(F2\ 10:30-11:00)$ 8/19 Fri

SESSION F1A 10:00-10:30

Room A, #515

Chairman: Hajin Choi (Zoom ID: 821 217 3937 PW: 000222)

Physics Guided Machine Learning: System Identification; Satish Nagarajaiah (USA)

SESSION F1B Room B, #519 10:00-10:30

Chairman: Deuckhang Lee (Zoom ID: 606 231 7007 PW: 000111)

Deep Materials Modeling and Design; C.S. David Chen (Taiwan)

SESSION F1C 10:00-10:30 Room C, #522

Chairman: Thomas Kang (Zoom ID: 392 999 5345 PW: 000444)

Does Structural Performance against Non-synoptic Wind Loads Matter? Recent Experiences in Life-cycle Cost Analysis against Wind Hazards; Luca Caracoglia (USA) [Video]

SESSION F2A 10:30-11:00 Room A. #515

Chairman: Seong Ryong Ahn (Zoom ID: 821 217 3937 PW: 000222)

Collapse Performance Assessment of Buildings under Extreme Loads; Halil Sezen (USA)

SESSION F2C 10:30-11:00 Room C, #522

Chairman: Thomas Kana (Zoom ID: 392 999 5345 PW: 000444)

Testing and Analysis of Wind Turbines under Tornadoes and Downbursts; Ashraf El Damatty (Canada)

Wind and Structures

Session W3D Session Title: Performance Evaluation of Infrastructures under Extreme Wind Loadings and Multip Disasters [Mini Symposium] Chairmen: Xing Fu, Zhi-Qian Dong Zoom ID: 891 921 3469 PW: 000333	ple
Global displacement reconstruction of transmission tower structure under wind-induced	Zoom
disaster; Qing Zhang*, Liang Ren (WS2124_7198)	
A theoretical framework for modifying the equivalent static wind load of transmission lines considering the location updating effect; Xing Fu*, Wen-Long Du (WS2124_7235)	Zoom
Wind-induced response analysis of transmission tower-line system considering joint effect; JiaXiang Li*, Chao Zhang (WS2124_7236)	Zoom
Inexact Newton Woodbury Method for Efficient Structural Nonlinear Analysis; Shuo Jia*, Ding-Hao Yu, Gang Li (WS2124_7241)	Video
Structure-soil-structure interaction between multi-tower structures and large underground structures; Han Zhang*, Rui Wang, Zhi-Qian Dong, Gang Li (WS2124_7250)	Zoom
Seismic behavior analysis of Rocking Self-Centering bridge pier considering the influence of chloride ion on the erosion of prestressed reinforcement; Lihua Zhu, Zhengjun Chen* (WS2124_7254)	Zoom
Simplified Mechanical Model for Regional Seismic Collapse Performance Prediction of RC Frame and URM Structures; Li-Ling Yu*, Zhi-Qian Dong, Gang Li (WS2124_7285)	Zoom
Damage index-based restoring force model for seismic damage compression-bending RC members; Pengjie LU*, Guoxin WANG (WS2124_7401)	Zoom
Damage index-based restoring force model for seismic damaged compression-bending RC members; Pengjie LU*, Guoxin Wang	Zoom

Session W4C Session Title: Wind-Induced Structural Performance and Criteria [Mini Symposium] Chairmen: Thomas Kang, Seung Yong Jeong Zoom ID: 392 999 5345 PW: 000444	
Large eddy simulation of high-rise building under interference effect; Han-Sol Lee*, Thomas Kang (WS2125_7209)	Onsite
Generation of correlated time history wind loads for performance-based wind design; Seung Jeong*, Thomas Kang (WS2125_7210)	Onsite
Wind resistance performance of tall RC buildings with corner modification; Byeonguk Ahn*, Hamidreza Alinejad, Thomas Kang (WS2125_7212)	Onsite
Instability effects due to wind and snow combinations on transmission line systems; Luca Pescarin*, Valentina Salomoni (WS1110_7224)	Zoom
Effects of Inlet Placement on the Computation of Vortex Shedding from Square-Sectioned Cylinders; Yanwei Niuc, Bassam A. Younis* (WS1102_7529)	Onsite
Wind and Collison Resistance Performance of PC Column-Foundation Connection Using Clamped Headed Bolt; Han Suk Sung*, Seong Ryong Ahn, Thomas Kang (WS2126_7208)	Onsite
Efficiency of bilinear and self-centering systems under along-wind load; Hamidreza Alinejad*, Thomas Kang (WS2126_7213)	Onsite
Design of Mechanical Recti-converter for Wind Energy Harvesting; Aref Afsharfard*, and Kyung Chun Kim	Onsite
Cyclic wind and seismic loading tests of reinforced concrete coupling beams with different amount of transverse reinforcements; Tse-An Chou*, Seung Lee, Thomas Kang (WS2126_7216)	Onsite
Validation of mechanical admittance functions of high-rise buildings; Min Kyu Kim*, Thomas Kang (WS2125_7531)	Onsite

Session T3D 11:30 - 13:00 Zoom Session Session Title: Multi-Hazard Study of Wind Turbine Towers Chairman: Kaoshan Dai Zoom ID: 891 921 3469 PW: 000333	
Dynamic response of monopile supported wind turbines considering soil liquefaction; Song-Ye Zhu, Jian Zhang* (WS2127_7287)	Zoom
Ultimate and fatigue strength analysis of a steel-UHPFRC hybrid support structure for offshore wind turbines; Chao Chen*, Xiujiang Shen, Xugang Hua, Xudong Shao (WS2127_7311)	Zoom
Response control of wind turbines with ungrounded tuned mass inerter system (TMIS) under wind and seismic loads; Kaoshan Dai*, Ruifu Zhang, Yanru Cao (WS2127_7427)	Zoom
A new fatigue assessment method for wind turbine structures considering load sequence; Chuannan Xiong*, Yuxiao Luo, Hang Du, Kaoshan Dai (WS2127_7429)	Zoom
Analysis of Wind Turbine Farms under Thunderstorm Downbursts; Mostafa Ramadan Ahmed*, Ashraf El Damatty, Kaoshan Dai, Wensheng Lu (WS2127_7528)	Zoom
Design of Prestressed Concrete-filled Double-skin Steel Tubular Lattice Wind Turbine Tower; Chao Hu*, Yuhang Wang, Kang Wang, Qiqi Li, Yang Zhou, Yongsen Lan (WS2127_7309)	Video

Session T4D 14:00 - 15:30 Zoom Session Session Title: Safety and Stability of Urban Power Grid under Extreme Weather Hazards Chairmen: Dahai Wang, Ashraf El Damatty Zoom ID: 891 921 3469 PW: 000333	
Bearing capacity of transmission poles under combined wind and rain excitations based on the deep learning method; $X = 1000$ Xing Fu*, $X = 10000$ Xing Fu*, $X = 100000$ Xing Fu*, $X = 100000$ Xing Fu*, $X = 1000000$ Xing Fu*, $X = 10000$	Zoom
Field measurements of thunderstorm winds and wind-induced response of a 356m high guyed mast; Muguang Liu*, Yuanpeng Pan, Jiakai Hu, Zhuangning Xie (WS2128_7243)	Zoom
An improved aerodynamic damping ratio identification method used for the transmission tower with lines; Jie Song*, Feng Li, Lianghao Zou, Shuguo Liang (WS2128_7253)	Zoom
Study on equivalent damping ratio of wind-induced vibration for transmission towers considering tower-line coupling effect; Shuang Zhao*, Zhitao Yan (WS2128_7273)	Zoom
Assessment of dynamic behavior of ice-shedding jump of conductor with numerical analysis; Daihai Wang*, Zhanhao Deng (WS2128_7348)	Zoom
Stability analysis of a transmission tower-line system subjected to the sudden cable rupture; Da-Hai Wang, Bin Wu, Hua-Dong Zheng* (WS1112_7426)	Zoom
Comparison Between High Intensity and Synoptic Wind for Lattice Transmission Towers; Ahmed Shehata, Abdelrahman Ahmed*, Ashraf El Damatty (WS2128_7527)	Zoom

Wind and Structures (Pre-recorded session)	
,	
A six-ways coupled numerical model for wind-sand-structure interactions problem; Dongmei	Video
Zhang*, Lei Han, Zhong-Kai Huang (WS1106_7402)	
The new flutter derivatives extraction system for considering the coupled flutter phenomenon;	Video
Youchan Hwang (WS1103_7405)	video
Optimization of Wind Farm Regular Layout Based on Grid Coordinate Genetic Algorithm; Sai	\ r \ I
Zhang(WS1117_7516)	Video
A framework for wind-induced vulnerability assessment of low-rise light steel buildings; Haojie	\
Zhou*, Fengbo Wuc, Guoqing Huang (WS1114_7512)	Video
Comparison of wind-induced responses of transmission tower by using time domain and	
frequency domain methods; guohui shen, hangcong yu*, yingneng zhao, liang yu, buhui li (WS1115_7260)	Video

Geomechanics and Engineering

Geo	mechanics and Engineering	
Session T0A	09:00 - 10:00 Room A: #51	.5
	n Geomechanics and Engineering (4th US-Korea Geotechnical Wo	rkshop) I
Chairman: Jongwan Eun Zoom ID: 821 217 3937 PW: 000222		
Subsurface Anomaly Detectior Hee/Sonny Kim, Ahmad Abdelmaw	Utilizing Synthetic GPR Images and Deep Learning Model ; Sung- vla* (GE2177_7296)	Zoom
Effect of rainfall characteristic Il Song (GE2177_7292)	s on slope stability; Jeong-Yeon Yu*, Jong-Won Woo, Kyung-Nam Kang	, Ki- Onsite
	A Model Earth Dam Based on A Distributed Temperature Sensing Intelligence; Binyam M. Bekele, Chung R. Song*, Jongwan Eun, Seungh	
	d clastic fine-grained sediments in response to pore water salinity ajati Kusuma Marjadi, Willam F. Waite (GE2177_7339)	O nsite
Hydraulic Properties of Unsatu (GE2177_7377)	urated Clay Shale; Ana Lanza Hernandez, Soonkie Nam*, Xiaoming Yang	Zoom
Numerical study on stability a Hyunsung Lim*, Jongjeon Park, Ju	nd deformation of retaining wall with groundwater drawdown; inyoung Ko (GE2177_7443)	Zoom
Thermal-Hydraulic-Mechanica Mousavi, Jongwan Eun*, Boo-Hyu	I-Biochemical Processes in Municipal Solid Waste Landfills; M. Sinan (GE2177_7386)	Zoom
Session T2A	10:30 - 11:20 Room A: #51	.5
Session Title: Advancements in Chairman: Soonkie Nam Zoom ID: 821 217 3937 PW: 000222	n Geomechanics and Engineering (4th US-Korea Geotechnical Wo	rkshop) II
Use of accelerated calcite pred Boohyun Nam* (GE2177_7374)	cipitation to investigate a clogging potential of RCA; Jinwoo An,	Zoom
Investigation of Sand-Biochar Joon Soo Park*, Hai Lin (GE2177_	Mixtures as a Potential Roadway Fill Material; Katia / Lélé Lagmago 7345)	' Zoom
Theoretic Evaluation of Develo Kim* (GE2177_7447)	ppment of Soil Plug in Driving Open-Ended-Pile; Young U Kim, Kab B	Onsite
	and mechanical effects of paper sludge ash as a replacement of with seasonal variability; Jinwoo An*, Kyungwon Park, Boo Hyun Nam	Zoom
Application of UAV images for Junyoung Ko, Jaehong Kim* (GE2)	rainfall-induced slope stability analysis in urban areas; Dohyun Kin 177 7359)	n, Zoom

Deeply embedded ring anchor for floating offshore wind turbines and corresponding mooring systems; Junho Lee*, Krishnaveni Balakrishnan, Charles Aubeny, Sanjay Arwade, Don DeGroot, Alejandro

Zoom

Junyoung Ko, Jaehong Kim* (GE2177_7359)

Martinez, Ryan Beemer (GE2177_7342)

Room A: #515

11:30 - 13:00

Session T3A

Session 13A 11.30 - 13.00 Room A. #313	
Session Title: Advancements in Geomechanics and Engineering (4th US-Korea Geotechnical Worksho Chairman: Ilhan Chang Zoom ID: 821 217 3937 PW: 000222	op) II
Unconfined Compression Strength of Soil using Gene Expression Programming; Muhammad Naqeeb Nawaz*, Song-Hun Chong, Muhammad Muneeb Nawaz, Safeer Haider, Waqas Hassan (GE2177_7291)	Zoom
New energy partitioning method in essential work of fracture (EWF) concept for 3-D printed high density polyethylene blends; Ahmet Oruc, Claire Fulks, Travis Adams, Dal Hyung Kim, Sungmin Youn, Sukjoon Na* (GE2177_7320)	Zoom
Efficiency of Urea Hydrolysis by Ureolytic Bacteria under Different Solvent Conditions; Sojeong Kim*, Jinung Do (GE2177_7310)	Onsite
Prediction of karst subsidence and sinkhole collapse using machine learning methods; Yong Je Kim*, Boo Hyun Nam (GE2177_7376)	Zoom
A geospatial liquefaction probability models for the 2017 M5.4 Pohang, South Korea, earthquake; Hwanwoo Seo, Han-Saem Kim, Byungmin Kim* (GE2177_7396)	Onsite
Estimation of elastic modulus and liquid limit of cohesive soil using vision-based vibrometry; Matthew Sands, Soonkie Nam, Xiaoming Yang, Jinki Kim* (GE2177_7379)	Zoom
Stability analysis of infinite slopes in rock with strength governed by the Hoek-Brown failure criterion; Dowon Park* (GE2177_7361)	Onsite
Effects of activated carbon on the compressive strength and air content of Portland cement concrete; Andrew Ball, Sungmin Youn, Sukjoon Na* (GE2177_7422)	Zoom
Effect of anionic xanthan gum on the sedimentation of kaolinite; Yeong-Man Kwon*, Gye-Chun Cho, Ilhan Chang (GE2177_7354)	Onsite
Eccentric undrained load capacity of a deeply embedded ring anchor in clay; Junho Lee*, Charles Aubeny (GE2177_7341)	Zoom
Behavioral studies on inclined or rounded tip piles using 3D printed samples and FE analysis; Jaehong Kim, Junyoung Ko, Dohyun Kim* (GE2177_7358)	Onsite
Session T4A 14:00 - 15:30 Room A: #515	
Session Title: Advancements in Geomechanics and Engineering (4th US-Korea Geotechnical Worksho Chairman: Ilhan Chang Zoom ID: 821 217 3937 PW: 000222	op) IV
Surface erosion behavior of MICP-treated sands: Experimental study and numerical modeling; Soo-Min Ham*, Min-Kyung Jeon, Tae-Hyuk Kwon (GE2177_7448)	Onsite
Prediction of CBR for coarse- and fine-grained soils using the GMDH model; Mintae Kim, Osman Okuyucu*, Ertugrul Ordu, Seyma Ordu, Ozkan Arslan, Junyoung Ko (GE2177_7360)	Zoom
Cation-crosslinked biopolymer soil treatment and field implementation for slope surface protection; Minhyeong Lee*, Ilhan Chang, Gye-Chun Cho (GE2177_7366)	Onsite
Utilization of carrageenan as alternative eco-biopolymer for improving the strength of liquefiable soil; Regina Aprilia Zulfikar*, Hideaki Yasuhara, Naoki Kinoshita, Heriansyah Putra (GE1169_7399)	Zoom
Machine learning for geotechnical properties and soil type mapping; Hyeong-Joo Kim, Kevin Bagas Arifki Mawuntu*, Hyeong-Soo Kim, Tae-Woong Park, James Vincent Reyes, Jun-Young Park, Yeong-Seong Jeong (GE1167_7264)	Onsite
Fixation of soybean extract method for biocatalyst in calcite precipitation method; Heriansyah Putra*, Baiq Heny Sulistiawati, Hideaki Yasuhara, Minson Simatupang, Dede Heri Yuli Yanto (GE1150_7300)	Onsite
Dynamic behavior of shore connection of submerged floating tunnel under dynamic load; Seok-Jun Kang*, Gye-Chun Cho (GE1162_7275)	Zoom
Triaxial Test Behavior of CSA-treated Sand with High Confining Pressur; James Innocent Ocheme*, Ruslan Khamitov, Alfrendo Satyanaga, Jong Kim, Sung-Woo Moon (GE1169_7274)	Zoom

Stability analysis of the final slope for Highwall mining by empirical and numerical modeling; Zulfahmi Zulfahmi*, Mas Agus Azizi (GE1160_7340)	Onsite
Modelling temperature & relative humidity effects in construction project duration in Muscat; Maryam Al-Ajmi, Mubarak Al Alawi*, Issa Al-Harthy, Khalifa Al-Jabri (GE1167_7263)	Zoom
Experimental study on cyclic shear behavior of biopolymer treated soils; Dong-Yeup Park*, Ilhan Chang, Gye-Chun Cho (GE2177_7451)	Onsite

Session T5A 15:40 - 17:10 Roc Session Title: Advancements in Geomechanics and Engineering (4th US-Korea Geotechnical Wor	om A: #515 kshop) V
Chairman: Yeong-Man Kwon Zoom ID: 821 217 3937 PW: 000222	• • •
Experimental study on the BPST effect on penetration resistance and load of pile foundations; Mintae Kim*, Suhyuk Park, Ilhan Chang (GE2177_7388)	Onsite
Characterizing the Lateral Behavior of Helical Piles from Correlated CPT Results Using Modified Springs and Strain Gauge Instrumentation; Hyeong-Joo Kim, James Vincent Reyes*c, Hyeong-Soo Kim, Peter Rey Dinoy, Yeong-Seong Jeong, Jun-Yong Park, Kevin Bagas Arifki Mawuntu (GE1160_7258)	
Harsh stress level design for accelerated life test of HLW repository monitoring sensor; Changhee Park*, Hyun-Joong Hwang, Chang-Ho Hong, Gye-Chun Cho (GE1158_7482)	Onsite
Effect of Particle Shape Factor on Abrasive Kinetic Energy; Hyun-Joong Hwang*, Yohan Cha, Tae-Min Oh, Gye-Chun Cho (GE1172_7459)	Onsite
Numerical Evaluation of Segmental Lining System with Compressible Layer in Deep Soft Rock; Joohyun Park*, Seok-Jun Kang, Jun-Beom An, Gye-Chun Cho (GE2177_7381)	Zoom
Numerical evaluation of ground settlements induced by groundwater inflow to the tunnel; Jun-Beom An*, Joohyun Park, Hyun-Joong Hwang, Gye-Chun Cho (GE2177_7457)	Onsite
Crack Quantification Method for Concrete Tunnels with RGB-D; Jin Kim*, Seungbo Shim, Gye-Chun (GE2177_7439)	Cho Onsite
Analysis of Axially Loaded Large Capacity Helical Piles using the Load Transfer Method; Hyeong-J Kim, Peter Rey Dinoy*, Hyeong-Soo Kim, James Vincent Reyes, Tae-Woong Park, Yeong-Seong Jeong, Jun-Young Kim (GE1164_7298)	Poster

Geomechanics and Engineering (Pre-recorded session)

Case Studies on Numerical Analysis of Slope Stability of National Expressway in Northern Taiwan; Video Shong-Long Chen*, Yi-Hao Tsai, Xiao-ling Zhang, Shen-Chung Lee, Chih-Yu Chu (GE1168_7369)

Environmental Science and Technology (Pre-recorded session)	
Effect of Illumination on Productivity, Safety, and Health of Mine Operators; Aditya Prakash, Hrushikesh Naik (ES1304_7220)	Video
Development of statistical model and parameter analysis for optimal water loss control target; DOOIL KIM*, Sang-hyuk Han, In-hwan Hyun (ES1309_7492)	Video

Membrane and Water Treatment (Pre-recorded session)	
Addition of acyl-homoserine lactones and vanillin to regulate biofilm characteristics and its implication on membrane biofouling; Wonjung Song*, Chehyeun Kim, Jiwon Han, Jihoon Lee, Jiang Zikang, Jihyang Kweon (MW2265_7428)	Video
Electrodialysis with a channeled stack for high strength cadmium removal from wastewater; Kyung Jin Min*, Hyo Jin An, Hyen-Gon Shin, Ki Young Park (MW2265_7435)	Video
Effect of microplastics on the ecotoxicity of Pb; Ruri Lee, Eun Hea Jho* (MW2265_7441)	Poster
Characteristic and evaluation of alumina-based microfiltration ceramic membrane; Kanghee cho*, Hyunsoo Kim, Oyunbileg Purev, Eunji Myung, Nagchoul Choi (MW2265_7442)	Video
Removal of hexavalent chromium by alkaline pretreated natural zeolite-based nZVI material; Sungjun Bae, Minhee Choi (MW2265_7471)	Video
Removal of phosphorus by Fe leaching solution from various Fe containing minerals; Sungjun Bae, Jueun Jung* (MW2265_7472)	Video
Preparation of low-cost functional ceramic membrane using waste cast iron and application to remove selenium from aqueous solution; Chang-Gu Lee*, Kang-hee Cho, Seong-Jik Park, Nag-choul Choi (MW2265_7486)	Video
Evaluation of the reduction effect of NPS under SSP climate change scenarios using SWAT in Doam dam; Sayed Shah Jan Sadiqi*, Eun-Mi Hong, Won-Ho Nam (MW2265_7479)	Video
Application of thermally-activated Mactra veneriformis shells for removing phosphate from wastewater; Yeon-Jin Lee*, Jae-In Lee, Chang-Gu Lee, Seong-Jik Park (MW2265_7490)	Video

Concrete Construction

Coordon T2D 11.20 12.00 Doom D. #E10	
Session T3B 11:30 — 13:00 Room B: #519 Session Title: Composite Materials and Structures Subject to Dynamic and Other Loads Chairman: Seong Ryong Ahn Zoom ID: 606 231 7007 PW: 000111	
Recent advances in data-driven multiscale analysis methods of complex reinforced concrete structures; In Ho Cho*, Mohammed Bazroun, Yicheng Yang (CC1507_7505)	Onsite
Numerical investigation of the infill-induced short column effect in reinforced concrete frames ; Garret Wilkenson Sia*c+, Andres Winston Oreta, Rodolfo Jr. Mendoza (CC1506_7378)	Onsite
Mechanics of hyperelastic composites reinforced with fibers resistance to extension and flexure; CHUN IL KIM*, Suprabha Islam, Seyed Ehsan Bolouri (MR1353_7196)	Onsite
Effect of High Strain Rate on Tensile Strength of SHCCs in Comparison to that of FRHSCs; Shasha Wang*, Hoang Thanh Nam Le (CC1502_7301)	Zoom
Taguchi Method Experimental Design Against Self Healing Concrete Parameters; Dzulfiqar Abdurrahman*+, Heriansyah Putrac (CC1508_7319)	Onsite
Numerical Study on Free Vibration Analysis of Detailed and Homogenized Models for FG-CNTRC Beam; Hyeong-Jin Kim*, Jin-Rae Cho (MR1353_7197)	Zoom
Optimization of mineral admixtures and water-reducing and retarding admixture for high- performance concrete; Chao-Wei Tang* (CC1502_7218)	Video
Behavior of Large Precast Box Culverts with Prestressing in Longitudinal Slope; Shinya SUKEGAWA* Yuki SAKOI, Takuma GOTO (CC1504_7438)	Video
ML modelling on strength reduction of fire-damaged RC column via numerical data; HyunKyoung Kimc, HyoGyoung Kwak*, JuYoung Hwang (CC1506_7363)	Video

Structural Monitoring and Maintenance

Session T4B Session Title: Smart Sensing and Monitoring	14:00 – 15:30 g	Room B: #519	
Chairmen: Hoon Sohn, Soojin Cho Zoom ID: 606 231 7007 PW: 000111			
Structural displacement estimation using a radar and accelerometer; Zhanxiong Ma*, Jae			Onsite
Continuous structural displacement estimate cameras; Jaemook Choi*, Zhanxiong Ma, Hoon S	_	ometer, vision and infrared	Onsite
Capsule-Like Smart Aggregate for Portable Quang Pham*, Quoc-Bao Ta, Ngoc-Loi Dang, Jeo	-	, , , ,	Onsite
Leveraging image processing for very thin of Byunghyun Kim, Soojin Cho* (SM2571_7430)	crack detection using d	eep learning; Suk-Kyoung Bae,	Onsite
Characterization of Freeze-Thaw Damage in Homin Song*, Sangmin Lee, Yu Song, John S. Po	_	ctless Ultrasonic Measurements;	Onsite
Road Roughness Assessment Using Synthet Network; YoungJae Lee*, Robin Eunju Kim (SM:		eep Convolutional Neural	Onsite
Physics-informed neural network for dynam Jaehwan Jeon*, Junho Song (SM2571_7497)	•	ures based on monitoring data;	Onsite

Session T5B 15:40 – 17:10 Room B: #519 Session Title: Structural Health Monitoring Techniques Chairmen: Sung-Han Sim, Jong-Woong Park Zoom ID: 606 231 7007 PW: 000111	
Pointwise vibration classification of long-span bridges using a sequence-to-sequence model; Sunjoong Kim*, Sun-Ho Lee (SM2572_7395)	Onsite
In-situ Layout Optimization of Prefabricated Structural Members in Offsite Construction; Junhwa Lee*, Sung-Han Sim (SM2572_7400)	Onsite
Strand Breakage Monitoring in Prestressed Concrete Anchorage using Raspberry Pi-Platformed	
Impedance Measurement System; Quoc-Bao Ta*, Quang-Quang Pham, Jae-Hyung Park, Jeong-Tae Kim (SM2572_7417)	Onsite
3D Pose Measurement of Bridge Bearings Based on Computer Vision; Jonghwa Hong*, Junhwa Lee,	Onsite
Sung-Han Sim (SM2572_7423)	
Automated Damage Detection for Building Elements of Temporary Structures using Laser Profile ; Jonghwa Hong, Sung-Han Sim* (SM2572_7452)	Onsite
Robust vision-based displacement measurement and acceleration estimation using Kalman filter; Jongbin Won*, Minhyuk Song, Gunhee Kim, Jong-Woong Park (SM2572_7455)	Onsite
Collision risk detection system between equipment and workers using CCTV on construction site; Jaehwan Seong*, Hyung-Soo Kim, Hyung-Jo Jung (SM1568_7489)	Onsite
Hyperbox modeling of retrofitted RC structures; Alvin Chua*, Kathleen Aviso, Jason Maximino Ongpeng (SM1552_7302)	Onsite
Bridge component recognition using unmanned aerial vehicle; Hyunjun Kim*, Yasutaka Narazaki, Billie F. Spencer (SM2572_7515)	Onsite
Strand Breakage Identification in Prestressed Anchorage Structures Using Stress Variation-Based	
Artificial Neural Networks ; Ngoc-Loi Dang*, Ngoc-Tuong-Vy Phan, Quoc-Bao Ta, Quang-Quang Pham, Jeong-Tae Kim (SM2572_7418)	Video

Structural Monitoring and Maintenance (Pre-recorded session)	
Analyzing C-SPSWs with outriggers for tall buildings under lateral loads; Cigdem Avci-Karatas (SM1559_7192)	Video

Ocean Systems Engineering	
(Pre-recorded session)	
Static stability of a submerged floating tunnel module in wet tow; Ikjae Lee*, Chungkuk Jin, Moohyun Kim (OS2621_7420)	Video
An overview of theoretical approaches to characterize the self-healing behavior of microcapsule- embedded polymeric composites; Dongwoo Jin*, Taegeon Kil, Haengki Lee (OS2621_7507)	Video
Impact Load Identification Method based on Artificial Neural Network for Submerged Floating Tunnel Under Collision; SeungMin Baek*, JaeChan Park, Hyung-Jo Jung (OS2621_7501)	Video
Characterization of Single and Dual Section SFTs through 2-D Wave Flume Experiment; Gyu-Jin Kim*, Hyo-Gyoung Kwak (OS2621_7511)	Video
Damage detection for real operating bridge using nonlinear ultrasonic characteristics; Jinho Jang*, Hoon Sohn (OS2621_7520)	Video

Computational Design 14:30 - 16:00

Room A: #515

Session W3A

Choi*, Phill-Seung Lee (CD2667_7382)

Session W3A Session Title: Computational Design and Experimental Method in Prestressed Concrete and Other Structures Chairmen: Thomas Kang, Seung Yong Jeong Zoom ID: 821 217 3937 PW: 000222	r
Assessment of PCCV axial and flexural load capacity using UHPC design methodology; Seung Heon Lee*, Thomas Kang (CD2665_7211)	Onsite
Shear strength prediction of prestressed concrete based on machine learning; Sang Min Lee*, Thomas Kang (CD2665_7214)	Onsite
An enhanced cooperation between multi-search strategy and parallel differential evolution for optimal design problems; Tan-Tien Nguyen*, The-Viet Ha, Quoc-Hung Nguyen (CD1655_7387)	Onsite
Numerical analysis on projectile collision to PSC panels; Seong Ryong Ahn*, Thomas Kang (CD2665_7215)	Onsite
A numerical study on local web buckling behaviour of coped beams under combined axial and bending loads; Michael C.H. Yam*, Mingyuan Zhang, Ke Kec, Xue-Mei Lin, Kwok-Fai Chung (CD1659_7433)	Zoom
Prediction of long-term deflection for post-tensioned slabs affected by construction load; Suhyun Park*, Thomas Kang (CD2665_7225)	Onsite
Solution of hyperbolic bioheat models by a fully-adaptive truly-explicit time-marching method; Delfim Soares*, Lucas Ruffo Pinto, Webe Joao Mansur (CD1654_7201)	Onsite
Reliability-based bi-directional evolutionary topology optimization of thermoelastic structure; Muayad Habashneh, Majid Movahedi Rad* (CD1655_7230)	Onsite
Session Title: Innovative structural design and analysis for buildings and infrastructures Chairmen: Hyeon-Jong Hwang, Jang-Woon Baek Zoom ID: 606 231 7007 PW: 000111 Seismic Performance of Short Coupling Beams with Various Reinforcement Layouts; Soo-Hyun King Livery Jone Livery (CD2666, 7357)	Onsite
Kim*, Hyeon-Jong Hwang (CD2666_7353) Prediction of anchorage performance of headed bars using artificial neural networks; Jang-Woon Baek*, Hyeon-Jong Hwang (CD2666_7375)	Onsite
Static load test on progressive collapse resistance of precast concrete structure in Korea; Sung Hyun Kim*, Su-Min Kang, Hyeon-Jong Hwang, Ha-Jin Choi, Hee-Do Kim CD2666_7384)	Onsite
Review of timber construction manuals in designing traditional building; Hafshah Salamah*, Thomas Kang (CD2666_7217)	Onsite
Bond Behavior of GFRP and Steel Bars in Grouted Spiral Connections; Seyed Jamal Aldin Hosseini*, Ahmad Baharuddin Abd. Rahman, Hyeon-Jong Hwangc, Seyed Kamal Aldin Hosseini, Su-Min Kang (CD2666_7525)	Zoom
Interfacial shear strength of steel angle anchors welded to U-shaped steel section; Hyeongyeop Shin*, Thomas Kang (CD2666_7207)	Onsite
Session W3C Session Title: Computational Methods and Structural Mechanics Chairmen: Hyun-Duk Seo, Dong-Hwa Lee/Phill-Seung Lee Zoom ID: 392 999 5345 PW: 000444	
Fluid-structure interaction analysis using a coupled SPH-FEM model for free surface flows; Hyun-Duk Seo*, Hyung-Jun Park, Moonsu Park, Phill-Seung Lee (CD2667_7328)	Onsite
Enhanced composite time integration schemes for conservative nonlinear systems; Wooram Kim* (CD2667_7333)	Onsite
The MITC4+ shell finite element with a simplified assumed membrane strain field; Hyung-Gyu Choi*, Phill-Seung Lee (CD2667_7382)	Onsite

Explicit time-domain analyses considering adaptive formulations with sub-cycling decomposition; Lucas Ruffo Pinto*, Delfim Soares, Webe Joao Mansur (CS1201_7200)	Onsite
Design loads on floating solar photovoltaic system based on ASCE and DNV standards ; Gihwan Kim*, Dong-Hwa Lee, Phill-Seung Lee, Kiwook Ahn, Jinho Byun, Jaejeong Lee (CD2667_7329)	Video

Room C: #522

11:30 - 13:00

Session F3C

Session Title: Structural Safety Evaluation and Health Monitoring (The 1st CSUST-CBNU Joint Se Chairmen: Lei Wang, Deuckhang Lee Zoom ID: 392 999 5345 PW: 000444	eminar)
Evaluation of Residual Fatigue Strength of Concrete Based on Machine Learning Approaches; Wei Zhang*, Deuckhang Lee, Won-Jun Lee (CD2668_7449)	Onsite
Acoustic Emission based Crack Localization using Convolutional Neural Network; Van Vy*, Hyungchul Yoon (CD2668_7504)	Onsite
Crack propagation analysis of cement based materials correlated with microstructure; Ji-Su Kim* (CD2668_7524)	Onsite
Seismic performance evaluation of post fire affected unconfined and confined Reinforced Concrete – SMRF Structures; Pooja L*, Cinitha Appu, Manu K (CD1659_7256)	Zoom
Study on Flexural Performance of One-Way RC slab strengthened by FRCM; Yujae Seo, Hyunjin Ju* (CD2668_7476)	Video
Experimental study on compression behaviors of Fe-SMA confined concrete; Saebyeok Jeong*, Donghyuk Jung (CD2668_7508)	Video
Online Sensor Fault Diagnosis for Structural Health Monitoring Based on Meta-learning; Lei Wang, Dukang Huang*, Ke Huang (CD2668_7519)	Video
Evaluation of edge line estimation algorithms for accurate dimensional quality assessment of PC slabs; Fangxin Li*, Julian Pratama Thedja, Minkoo Kimc, Sung-Han Sim (CD2668_7533)	Video

Session F3B 11:30 — 13:00 Room B: #519 Session Title: Computational Design and Experimental Method in Reinforced Concrete Chairmen: Thomas Kang, Hajin Choi, Changsoo Kim Zoom ID: 606 231 7007 PW: 000111	
In situ characterization of ASR damage in concrete using contactless ultrasonic measurements; Homin Song*, Steven Feldman, John Popovics (CD2664_7446)	Onsite
Vision-based Input-Output System identification for pedestrian suspension bridges ; Jeonghyeok Lim, Hyungchul Yoon* (CD2664_7500)	Onsite
Shear strength of RC deep beam predicted by support vector regression; Gia Toai Truong*, Chang-Soo Kim (CD2663_7498)	Zoom
Development of GPR imaging algorithm for detecting void-like defects in precast concrete structure; Hajin Choi*, Taemin Lee, Sung-Hyun Kim, Su-Min Kang, Hyeon-Jong Hwang (CD2664_7503)	Onsite
Analytical study on lateral cyclic responses of RC columns retrofitted with Fe-based SMA; Saebyeok Jeong*, Donghyuk Jung (CD2664_7509)	Onsite
Bearing capacity ratio control of existing piles using external post-tensioning; Giwan Noh*, Thomas Kang (CD2663_7530)	Onsite

Session F3A-1 Session Title: Forensic Structural & Ge Chairmen: Yong-Hoon Byun, Seungjur Zoom ID: 821 217 3937 PW: 000222	 Room A: #515	
Pattern recognition-based unmeasure Seongi Min*, Ikgyeom Kim, Changhyun Hw		Onsite
Field study on smart monitoring syste integrity of bored piles; Jong-Sub Lee*, (CD2669_7470)	 	Onsite

Prediction of calcium leaching resistance of binary blended cement composites; Yujin Lee, Seunghoon Seo, Ilhwan You, Taesup Yun, Goangseup Zi* (CD2669_7475)	Onsite
Evaluation of stress-strain path for soils by learning Modified cam-clay model with recurrent neural network; Seokyong lim*, Taesup Yun (CD2669_7483)	Onsite
Seismic Performance Evaluation of Post-Tensioned RC Exterior Beam-Column Connections; Donghyuk Jung*, Sanghee Kim, Thomas Kang (CD2669_7485)	Onsite
Temperature distributions of concrete macrocracks with different crack shapes by passive method; Arum Jang*, Sanggi Jeong, Min Jae Park, Thomas Kang, Young K. Ju (CD2669_7493)	Onsite
Characterization of stacked geotextile tube structure using digital image correlation; Dong-Ju Kim*, Dong Geon Son, Jong-Sub Lee, Thomas Kang, Tae Sup Yun, Yong-Hoon Byun (CD2669_7494)	
Strength and stiffness characteristics of cement paste-slime mixtures for embedded pile; Yong-Hoon Byun*, Mi Jeong Seo, WooJin Han, Sang Yeob Kim, Jong-Sub Lee (CD2669_7495)	Onsite

Session F3A-2 Session Title: Forensic Water Resource & Envir Chairmen: Chul Sang Yoo, Donghwi Jung Zoom ID: 821 217 3937 PW: 000222	1:30 – 13:00 ronmental Engineering	Room A: #51	5
Low-energy electrochemical water treatment: deionization; Jihun Lim, Seungkwan Hong* (CD16)	-	ode capacitive	Onsite
Development of a Multiscenario approach for U Donghwi Jung (CD2670_7465)	Urban Drainage System P	lanning; Soon Ho Kwon*,	Onsite
Artificial Neural Network Metamodel for Water Sanghoon Jun, Donghwi Jung* (CD2670_7469)	r Distribution System Pre	ssure Estimation;	Onsite
Validation of an Infiltration Model Using Interpolation Jeju Island, Korea; Minseok Kang, Chulsang Yoo*		ence Data in Volcanic	Video
Investigating the Relationship between Flow I Basins; Jinwook Lee*, Chulsang Yoo, Changhyun Ju		aracteristics of the Dam	Video

Computational Design (Pre-recorded session)			
Cost improvement of 2D FRAME plastic analysis with CFT columns; Seonghun Kim*, Hyo_Gyoung Kwak (CD1651_7355)	Video		
Moment-Curvature Approach for Blast and Collapse Analysis of RC frames; SeokJun Ju*, Hyo- Gyoung Kwak (CD1659_7356)			
Free Vibration Analysis of Homogeneous Isotropic Toroidal Shells; Chih-Ping Wu*, Yi-Chen Hung (CD1659_7268)	Poster		

Coupled Systems Mechanics

Session T3C	11:30 - 13:00	Room C: #522	
Session Title: Coupled Mechanics	between Fluid Flow and Defo	rmable Structure I	
Chairmen: Wonjung Kim, Daegyor	um Kim		
Zoom ID: 392 999 5345 PW: 000444			
Experimental study on the startin Hyungmin Park (CS2216_7312)		, , ,	Onsite
Physics informed neural networks Lee* (CS2216_7314)	s for fluid-flow-induced flutte	r of a flexible cylinder; Jeongsu	Onsite
Investigation of contact line motion Wonjung Kim (CS2216_7324)	ons of EGaIn for microstructu	re fabrication; Sangyun Jung*,	Onsite
Study for regulating flow fluctuat Keunhwan Park, Sanghyup Lee*, Anna			Onsite
Three-dimensional deformation of Junkyu Ham, Daegyoum Kim (CS2216)		e by fluid flow; Minho Song*,	Onsite
Session T4C	14:00 - 15:30	Room C: #522	
Session Title: Coupled Mechanics	between Fluid Flow and Defo	rmable Structure II	
Chairmen: Wonjung Kim, Daegyot Zoom ID: 392 999 5345 PW: 000444	um Kim		
Drag optimization of a sphere usin Chae (CS2216_7351)	ng a wind-adaptive deformab	le structure; Jooha Kim*, Seokbong	Onsite
Ripples at Edge of Thin Elastic Sho Junsik Kim, Jonghyun Hwang, Anna Le		ng; Hyunsu Kwak*, Kanghyun Ki,	Onsite
	n air-water interface; Min Sik K	Kang*, Sung Goon Park	Onsite
(CS2216_7364)	Tun Water interrace, Fini Sik is		Orisite
			Onsite

GECE 5th Floor Plan

