September 30th (Mon)

Keynote 1 (10:30 – 11:15 @ Convention C)
Assessing Vehicle Stability on Sea-Crossing Bridges During Strong Winds: Risk Mitigation Strategies
by Prof. Ho-Kyung Kim (Seoul National University)
Session Chair: Prof. Junho Song (Seoul National University)

Keynote 2 (11:15 – 12:00 @ Convention C)
Intelligent Health Monitoring & Damage Detection for Long-span Bridges
by Prof. Hui Li (Harbin Institute of Technology)
Session Chair: Prof. Sung-Han Sim (Sungkyunkwan University)

M1-1 (13:30 – 15:30 @ Room 101)	**M1-2 (13:30 – 15:30 @ Room 102)**	**M1-3 (13:30 – 15:30 @ Room 103)**
OS07: Fire, Explosion, and Earthquake Risk Assessment for Process-Plants **Session Chair: Dr. Se-Hyeok Lee (Korea Institute of Civil Engineering and Building Technology)**	**OS01: Artificial Intelligence (AI)-based Safety Assessment of Civil Infrastructure Systems** **Session Chair: Dr. Jaebeom Lee (Korea Research Institute of Standards and Science)**	**OS09: Data-driven Smart Construction** **Session Chair: Prof. Junhwa Lee (Pukyong National University)**

M1-1 (13:30 – 15:30 @ Room 101)
OS07: Fire, Explosion, and Earthquake Risk Assessment for Process-Plants
Session Chair: Dr. Se-Hyeok Lee (Korea Institute of Civil Engineering and Building Technology)

1. Probabilistic safety assessment for earthquake-induced fire and explosion hazard using Bayesian network (Se-Hyeok Lee, Uichan Seok, Junho Song, Sangki Park & Jeong-Rae Cho, #047)
2. Process equipment risk measures considering plant shutdown due to seismic hazards (Youngjun Kwon & Junho Song, #041)
3. Assembly-based seismic consequence models for Turkish industrial facilities (Mahmut Kerem Sarıkaya & Derya Deniz, #026)
4. A study on automatic fire extinguishing in a petrochemical plant using FDS (Han-bit Choi & Doo-chan Choi, #049)
5. A probabilistic approach to design blast load model for performance-based blast resistant design of plant facilities (Han Soo Kim, Seung Hoon Lee & Tae Hun Lim, #051)
6. Fragility curve considering structural safety and transportation function of pipe rack-pipe system in industrial facilities (Juram Kim & Kee-Jeung Hong, #056)
7. Pressure fragility analysis of APR-1400 nuclear containment structures considering various material uncertainties (Chanyoung Kim, Hoang Dac Nguyen & Myoungsu Shin, #094)

M1-2 (13:30 – 15:30 @ Room 102)
OS01: Artificial Intelligence (AI)-based Safety Assessment of Civil Infrastructure Systems
Session Chair: Dr. Jaebeom Lee (Korea Research Institute of Standards and Science)

1. Rapid wildfire spread prediction using conditional GAN model (Taehoon Kang & Taeyong Kim, #006)
2. Prediction of long-term behavior of prestressed girder considering uncertainty quantification using Bayesian physics informed neural network (Gitae Roh, Donghyun Kang & Chang-Su Shim, #014)
3. Enhancing performance of probabilistic structural condition monitoring through transfer learning (Jaebeom Lee, Youjin Park & Seoyoung Kim, #005)
4. Time history prediction of structural responses under seismic loads using 1D-CNN with physics-encoded kernels (Dongjin Kim & Junho Song, #015)
5. Functionality assessment of network links and its application in seismic performance of transportation system (Yasir Siraj & Jiang Huanjun, #028)
6. Uncertainty quantification of deep learning hysteresis models using Bayesian neural network with concrete dropout (Jaehwan Jeon, Oh-Sung Kwon & Junho Song, #039)
7. Assessing wind-induced damage to metal roofs and power grids in coastal urban areas (Yu-Kai Chuang & Chi-Ying Lin, #077)
8. Bayesian analysis to quantify the uncertainty of flow volume through NPP concrete wall cracks (Md Samdani Azad, Donghwi Eum, Se-Yun Kim & Tong-Seok Han, #100)

M1-3 (13:30 – 15:30 @ Room 103)
OS09: Data-driven Smart Construction
Session Chair: Prof. Junhwa Lee (Pukyong National University)

1. Advanced construction scheduling through BIM-powered structural modularization (Siripong Petpradit & Junhwa Lee, #050)
2. Semi-supervised crack segmentation using consistency regularization and weak-to-strong perturbation (Muhammad Tanveer & Soojin Cho, #053)
3. A GAN-based image-to-image translation model for generating structural damage data (Gi-Hun Gwon, In-Ho Kim & Hyung-Jo Jung, #052)
4. Data anomaly detection using rule-based and deep-learning based classification methods for long-term vibration measurement of bridge (Imdad Ullah Khan & Sung-Han Sim, #054)
5. Modal property-based data anomaly detection method for autonomous stay-cable monitoring system in cable-stayed bridges (Seunghoo Jeong, Seung-Seop Jin & Sung-Han Sim, #055)
6. Probabilistic prediction method on multiple cable responses of cable-stayed bridges using measurement data (Minsun Kim, Jaebeom Lee & Young-Joo Lee, #020)
7. How to consider material recycling in life cycle evaluation of steel bridges (Sanghyeon Lee, Lee-Sak An & Ho-Kyung Kim, #105)
8. Bayesian approach for addressing epistemic and aleatory uncertainty in the optimal fatigue design (Nophi Ian Biton, #018)

September 30th (Mon)

M2-1 (16:00 – 18:00 @ Room 101)	M2-2 (16:00 – 18:00 @ Room 102)	M2-3 (16:00 – 18:00 @ Room 103)
GS01: Structural Dynamics, Advanced Materials, and Risk Assessment for Robust Infrastructure **Session Chair: Prof. Derya Deniz (Özyeğin University)**	**OS11: Ultrasound for Civil Infrastructure** **Session Chair: Prof. Gun Kim (Ulsan National Institute of Science and Technology)**	**OS09: Data-driven Smart Construction** **Session Chair: Prof. Sung-Han Sim (Sungkyunkwan University)**

M2-1 (16:00 – 18:00 @ Room 101)

GS01: Structural Dynamics, Advanced Materials, and Risk Assessment for Robust Infrastructure

Session Chair: Prof. Derya Deniz (Özyeğin University)

1. A spatial distribution model of Fourier spectrum of seismic waves on engineering bedrock (Yuna Tanaka, Michiyo Sugai & Yasuhiro Mori, #010)
2. Wind vibration control of a bridge cable with a viscous inertial mass damper using a generalized state-space formulation (Nan Deng, Y. F. Duan, Y. X. Rao, S. H. Dong & Chung-Bang Yun, #011)
3. Multi-natural hazard risk assessment of super typhoons on nuclear power plants using Bayesian network (Minkyu Kim, Changuk Mun, Junho Song & Daegi Hahm, #007)
4. RC beams strengthened by fiber-reinforced geopolymer composites: Effect of the repair thickness (Ernesto J. Guades, #046)
5. Seismic risk assessment of chemical plants using artificial neural network and ALOHA automation platform (Hyeonsung Song, Seungjun Lee & Young-Joo Lee, #021)
6. Predicting compressive strength of eco-friendly concrete using fine-tuned neural networks (Gholamreza Pazouki, Zhong Tao, Nariman Saeed & Won-Hee Kang, #062)
7. Characterizing deep shear wave velocity profiles by invasive and noninvasive methods at a rock site (Seongnoh Ahn, Youngkyu Cho, Dongyoup Kwak, Kiseog Kim & Byungmin Kim, #099)
8. Network reliability analysis using traffic simulation (Wonho Suh, #076)

M2-2 (16:00 – 18:00 @ Room 102)

OS11: Ultrasound for Civil Infrastructure

Session Chair: Prof. Gun Kim (Ulsan National Institute of Science and Technology)

1. Multi-functional ultrasound phased array imaging for improving structural reliability (Choon-Su Park, Jerome Laurent & Pierre Calmon, #088)
2. Quantitative ultrasound imaging (QUS) for monitoring the internal structure of reinforced concrete (Seungo Baek, Hyoeun Kim & Gun Kim, #085)
3. Ultrasonic assessment of internal curing in slag-based cementless composites incorporating cellulose microfibers (Geetanjali Chandam, Oinam Yanchen, Sukhoon Pyo & Myoungsu Shin, #080)
4. Design of multichannel mechanochromic sensor for force visualization (Jeong Hoon Rhee, Seungo Baek & Gun Kim, #083)
5. Ultra-polymerization: New concept for super-entangle polymer synthesis (Cindy Escalona, Hyoeun Kim, Seungo Baek, Jeong Hoon Rhee & Gun Kim, #086)
6. Quantify the averaging domain of surface wave testing (Yen-Hsiang Chang & Jianye Ching, #106)
7. Ultrasound: Beyond possibility (Gun Kim, #084)

M2-3 (16:00 – 18:00 @ Room 103)

OS09: Data-driven Smart Construction

Session Chair: Prof. Sung-Han Sim (Sungkyunkwan University)

1. A data-driven technique to predict the compressive strength of sugarcane bagasse ash concrete (Gholamreza Pazouki, Zhong Tao, Won-Hee Kang & Nariman Saeed, #061)
2. UAV pose estimation through optimal deployment of lasers (Junhwa Lee, Hajin Ye & Sung-Han Sim, #060)
3. Long-term displacement measurement system for bridge bearing capable of camera reposition (Jonghwa Hong, Hajin Ye, Ali Turab Asad & Sung-Han Sim, #063)
4. Automated building tilt measurement using point cloud data (Dayoung Yu, Chaeeun Lee & Sung-Han Sim, #064)
5. Advanced computational forensics for structural material identification of reinforced concrete beams (Tabish Ali & Robin Eunju Kim, #067)
6. Improved vibration-based damage detection: integrating deep SVDD with convolutional autoencoder (Sunjoong Kim & Soyeon Park, #079)
7. Seismic response prediction of nuclear power plants considering uncertainty of structural properties and ground motions (Jingoo Lee & Young-Joo Lee, #023)
8. Study on importance factors in seismic design of an RC bridge pier under mainshock–aftershock sequences (ChienKuo Chiu & Lorddy Zefanya Nugroho, #111)

October 1st (Tue)

T1-1 (10:00 – 12:00 @ Room 101)	T1-2 (10:00 – 12:00 @ Room 102)	T1-3 (10:00 – 12:00 @ Room 103)
OS10: Human Resource Development Project in Disaster Management – Resilience and Risk Management against Natural Disasters	**OS08: Regional Risk Assessment Technology for Seismic Hazard**	**OS02: Advancements in Reliability-Based Design Optimization of Complex Engineering Structures and Systems**
Session Chair: Gi-Hyoug Cho (Ulsan National Institute of Science and Technology)	**Session Chair: Do-Soo Moon (University of Hawaii, Manoa)**	**Session Chair: Junho Chun (Syracuse University)**

T1-1 (10:00 – 12:00 @ Room 101)

1. Collapse risk assessment for masonry buildings under flow hazards (Yasamin Moaiyedfar & Derya Deniz, #101)
2. Safety behaviors and risks between pedestrians and micro-mobilities in multi-user virtual reality environments (Jae-Woong Sim & Gi-Hyoug Cho, #082)
3. Assessment of empirical damage fragility models for precast industrial buildings affected by the 2023 Turkiye earthquakes (Gulsah Sagbas, Ramin Sheikhi Garjan, Nisa Seyra Ayhan, Mahmut Kerem Sarıkaya & Derya Deniz, #104)
4. Resilience analysis of commercial districts during the COVID-19 pandemic: Focusing on the impact of city size (Jiwoong Jeong & Jeongseob Kim, #102)
5. Recovery assessment models for industrial buildings after the February 6, 2023, Turkiye Earthquakes (Nisa Seyra Ayhan, Gulsah Sagbas, Ramin Sheikhi Garjan, Mahmut Kerem Sarikaya & Derya Deniz, #027)
6. Pedestrian-driver risk perception at unsignalized crosswalks using virtual reality environments (JinHo Won, HyunJoo Eum & Gi Hyoug Cho, #087)
7. A case study of the urban seismic risk assessment using recent earthquake event in Korea (Si Young Kim, Young Jun Byun & Jung Han Kim, #058)
8. Numerical simulations for the building settlements caused by the 2017 M5.5 Pohang earthquake (Juseung Ryu, Hwanwoo Seo & Byungmin Kim, #098)

T1-2 (10:00 – 12:00 @ Room 102)

1. Predicting AFRP retrofitted RC column seismic performance with machine learning-based fast running models (Quoc Bao To, Jiuk Shin, Hyerim Jo & Kihak Lee, #068)
2. Numerical analysis and evaluation of fresh concrete pouring lateral pressure on formwork (Ya Jin, Hyerim Cho & Kihak Lee, #071)
4. Thermal bridge design for wall-parapet connections in residential buildings: A numerical and experimental investigation (Huu Cuong Nguyen, Van Han Tran, KimJae Young & Kihak Lee, #069)
5. Pull-out and shear strength of embedded anchor in thin UHPC panel (Hung Cuong Tran, Hyoseo An & Kihak Lee, #072)
6. Impact of vertical frame stiffness variation on the seismic performance of irregular structures (Mostafa Abdelhafeez, Mohamed Sherif, Do-Soo Moon & Young-Joo Lee, #037)
7. Seismic fragility analysis of the brick cathedral under the coupled horizontal - vertical ground excitations (Sanh Tra, Yunseong Shin & Kihak Lee, #096)
8. Development of a preliminary evaluation methodology for fire following earthquake risk assessment reflecting regional characteristics (Dong-Gyu Kim, Jaedo Kang & Jiuk Shin, #107)
9. Development of rapid fire-following earthquake risk assessment methodology using public building database (Taewook Kang, Jaedo Kang & Jiuk Shin, #112)

T1-3 (10:00 – 12:00 @ Room 103)

1. Optimizing reservoir tainter gate maintenance strategies via Genetic Algorithms: Exploring reliability threshold effects using Semi-Markov models (Cheng-Hsun Wu, Ying-Jung Chen, Pei-Yi Wu, John Thedy & Kuo-Wei Liao, #012)
2. Metamodel-assisted reliability-based topology optimization of continuum structures (Junho Chun, #057)
3. Reliability assessment of girder bridges considering overturning instability (Zuqian Jiang, Dongli Zhuang, Chaolin Song & Rucheng Xiao, #059)
4. Optimization of floating wind turbine sites under marine environmental uncertainties using Gaussian process (Junseob Shin, Seonghyun Lim & Junho Song, #044)
5. A framework for estimating conditional probabilities in discrete Bayesian networks from computational simulations (Changuk Mun & Junho Song, #036)
6. Predicting the performance curve of corroded PSC beams using a probabilistic approach (Seungjun Lee, Jeabeom Lee, Chi-Ho Jeon & Young-Joo Lee, #019)
7. Estimation of probabilistic fatigue parameters in crack growth models using only S-N data (Lee-Sak An, Sangmok Lee & Young Joo Lee, #097)
8. Optimization of reliability-based load-resistance factors for the wind-wave loads-governed limit states in floating structures (Jeong-Gon Kim, Hae Sung Lee & Ho-Kyung Kim, #109)

October 1st (Tue)

T2-1 (13:30 – 15:30 @ Room 101)	T2-2 (13:30 – 15:30 @ Room 102)	T2-3 (13:30 – 15:30 @ Room 103)
OS04: UNIST Artificial Intelligence-Cultivating Team for Civil Engineering Elites **Session Chair: Prof. Sukhoon Pyo (Ulsan National Institute of Science and Technology)**	**GS02: Advances in Structural Dynamics and Numerical Simulation** **Session Chair: Prof. Junhwa Lee (Pukyong National University)**	**OS03: Enhancing (Wildfire) Hazard Resilience by Smart Construction Technologies** **Session Chairs: Prof. Won-Hee Kang & Prof. Nariman Saeed (Western Sydney University)**

T2-1

1. Applications of convolutional neural network for classifying soil type using non-destructive testing signals (Jongmuk Won, Jungmin Yun, Hae Gyun Lim & Yong-Hoon Byun, #066)
2. Development of meta concrete using metamaterials and microparticles (Kebede Alemayehu & Sukhoon Pyo, #074)
3. The effect of the silica fume on mechanical and hydration properties of lime-activated waste concrete powder (WCP) (Aidarus Yonis, Yanchen Oinam, Prabhat Vashistha & Sukhoon Pyo, #075)
4. Progress in lunar construction: Development of geopolymer using lunar simulant (Yanchen Oinam, Geun U Ryu, Hee Jeong Kim & Sukhoon Pyo, #078)
5. Simulation-based development of metaconcrete and metamaterials for enhanced sound absorption coefficient (Nazhiefah Dalila, Kebede Alemayehu Moges & Sukhoon Pyo, #081)
6. A comparative study on the use of centrality- and capacity-based indices in network performance evaluation (Dongwoo Kim & Young-Joo Lee, #022)
7. A simplified regression model for deep shear wave velocities in rock sites of South Korea (Jieun Kim, Youngkyu Cho & Byungmin Kim, #093)
8. Influence of hydrous $Al_2(SO_4)_3$ on AFt/m precipitation and setting behavior in a cementless CaO-activated fly ash system (Hyun Ji Lyu, Juan Yu, Dongho Jeon & Jae Eun Oh, #103)

T2-2

1. System identification for performance assessment of structures considering uncertainties and inter-parameter correlations (Sangwon Lee, Taro Yaoyama & Tatsuya Itoi, #009)
2. Full waveform inversion in frequency domain by a Bayesian approach using augmented formulation (Hieu Van Nguyen & Jin-Ho Lee, #034)
3. Hysteretic state-space model for joint input-state estimation of nonlinear structures (Taeha Kim & Junho Song, #042)
4. Serviceability criteria-based reliability assessment of modular floating structures (Wangyu Choi, Seonghyun Lim & Junho Song, #043)
5. Application of seismic metamaterial to reduce ground vibrations (Mau Nhat An Nguyen & Jin Ho Lee, #048)
6. Experimental investigation on the dynamic response of non-structural piping system by alternating position of transverse diagonal braces (Jebran Saleem, Chengyu Yang & Faran Yousf, #065)
7. Design of minimum phase digital FIR notch filter for real-time hybrid simulations (Minyeop Kim & Yunbyeong Chae, #070)
8. Enhancing system identification and finite element model updating via sensor fusion (Wonhui Goh & Yunbyeong Chae, #092)

T2-3

1. Seismic vulnerability analysis of continuous beam bridges based on multivariate copula function (Xiao Zhang, HuanJun Jiang & MinLong Zhou, #030)
2. Updating ROS adjustment factors and wildfire spread prediction results using geostationary satellite observation data (Seungmin Yoo & Junho Song, #035)
3. Comprehensive fragility analysis and resilience index assessment of structures with strength irregularities (Mohamed Sherif, #038)
4. Resilience-based design of protective Dolphin systems for cable-stayed bridges against ship collision (Seonghyun Lim, Hyunjoong Kim & Junho Song, #040)
5. Seismic reliability analysis of a base-isolated structure with friction pendulum bearings and verification through real-time hybrid simulation (Chunghyun Lee & Yunbyeong Chae, #091)
6. The effect of typhoon on extreme value analysis (Chul-Hwan Yoo & Ho-Kyung Kim, #089)
7. Probabilistic assessment of hurricane-induced damage in residential communities using AI-enhanced 3D modeling and stratified sampling (Sejin Kim, Fei Ding & Seymour M.J. Spence, #110)
8. Boundary detection of ship hull plates using deep neural network (Jinho Song & Sungsik Yoon, #090)

Keynote 3 (16:00 – 16:45 @ Convention A)
Integrating Machine Learning with Earthquake Engineering: For Innovations in Risk-Informed Performance-Based Approaches
by Prof. Tatsuya Itoi (The University of Tokyo)
Session Chair: Prof. Derya Deniz (Ozyegin University)

Keynote 4 (16:45 – 17:30 @ Convention A)
Integrating Reliability Analysis into Comprehensive Risk Assessment Frameworks
by Prof. Kuo-Wei Liao (National Taiwan University)
Session Chair: Prof. Junho Chun (Syracuse University)