Wed May 29 - Technical Session 1

0101: Plan the future: Innovations in advanced cementitious materials and sustainability Chairs(s): Jianqiang Wei		
Salon 1	09:00 - 09:20	EP240400 Development of 3D printable self-sensing concrete for smart precast concrete structures Author(s): Yen-Fang Su*, Khalilullah Taj
	09:20 - 09:40	EP240907 Full aggregate replacement by crushed seashell wastes in environmental-friendly concrete: A local and circular industrial case-study at the Dune of Pilat construction site in France Author(s): David Grégoire*, Tematuanui a Tehei Hantz, Benjamin Niez, Olivier Nouailletas
	09:40 - 10:00	EP241077 On the physio-chemical characterization of multi-binder eco-ultra-high-performance concrete (E-UHPC) Author(s): Bayezid Baten*, Nishant Garg
	10:00 - 10:20	EP240388 Durability performance of enzymatic self-healing concrete Author(s): Sara Heidarnezhad*, Nima Rahbar
0102: Geometries & design: Opportunities for sustainable construction Chairs(s): Ann Sychterz and Mija Hubler		
Salon 4	09:00 - 09:20	EP240253 Experimentally extending the useful strain-range of uniaxial testing of sheet metals beyond the limits of homogenous deformation Author(s): Jumari Robinson*, Adam Creuziger, Mark Iadicola
	09:20 - 09:40	EP240376 Rock aggregate pull-out test in concrete: Evaluation of bond strength and interface behavior between rock aggregates and concrete Author(s): Bola Odunaro*, Hubler Mija, Wang Yao
	09:40 - 10:00	EP240413 Non-linear modelling of multi-layered randomized architected material (MLRAM) under tensile loading for a tensegrity structure Author(s): Sagnik Paul*, Ann Sychterz
	10:00 - 10:20	EP240626 Ruppeiner geometry unveiling volumetric phase transition in gels Author(s): Asif Raza*, Debasish Roy
0106: Advances in modeling of material damage and fracture Chairs(s): Lampros Svolos		
Salon 12	09:00 - 09:20	EP241121 Remote transient electromagnetic scattering response of fractal cracks in multi-phase brittle materials Author(s): Tzuyang Yu*
	09:20 - 09:40	EP240793 The revisited phase-field approach to brittle fracture: Application to the Brazilian fracture and wing-crack problems Author(s): Aditya Kumar*, Chang Liu, Yangyuanchen Liu, John Dolbow, Oscar Lopez-Pamies
	09:40 - 10:00	EP240492 A Griffith description of fracture in brittle elastic materials under non-monotonic loading conditions with application to fatigue Author(s): Subhrangsu Saha*, Oscar Lopez-Pamies
	10:00 - 10:20	EP240107 A computational study of fracture nucleation and propagation using the revisited phase field model Author(s): Li Meng*, Hsiao Wei Lee, Alireza Ashkpour, Ahmad Najafi
0108: Using pavement mechanics to develop pavement materials with less environmental impact Chairs(s): Erdem Coleri		
Salon 7	09:00 - 09:20	EP240030 Three-dimensional pavement response modeling using graph neural network Author(s): Fangyu Liu*, Imad Al-Qadi
	09:20 - 09:40	EP240508 Understanding the coupling effect of high RAP and warm mix asphalt for producing sustainable asphalt pavements Author(s): Mayank Sukhija, Erdem Coleri*
	09:40 - 10:00	EP240841 Innovative material characterization approaches for enhanced recycling agent optimization: A comprehensive study on bio-based and petroleum-based agents in asphaltic materials Author(s): Hamzeh Haghshenas*, Adrian Andriescu, Raj Dongre, Varun Veginati, David Mensching, Jack Youtcheff
	10:00 - 10:20	EP241037 Numerical modeling of truck-electrification-induced excess fuel consumption in highway flexible pavements Author(s): Johann Jhanpiere Cardenas Huaman, Aditya Singh*, Imad Al-Qadi
0109: Modeling of materials with interfaces and scales using physics-based and machine-learning methods Chairs(s): Ravindra Duddu and Xiang Zhang		
Price Room	09:00 - 09:20	EP241186 Modeling thermoelasticity and failure of polycrystalline material using a novel nonlocal lattice particle method Author(s): Di Liu*, Hailong Chen
	09:20 - 09:40	EP240657 Crystal plasticity modeling and analysis for the transition from intergranular to transgranular failure in nickel-based alloy at elevated temperature Author(s): Jiahao Cheng*, Xiaohua Hu, Timothy Lach, Xiang Chen
	09:40 - 10:00	EP240240 Comparative analysis of formulations for periodic boundary conditions in solid mechanics Author(s): Timothy Truster*, Amirfarzad Behnam
	10:00 - 10:20	EP240338 Stress analysis of solids via a meshless method using adaptive weighted polynomially augmented radial basis interpolants Author(s): Ruturaj Chiddarwar*, Dipankar Das, Petros Sideris
0115: Molecular scale modeling and experimentation Chairs(s): Dr. Wenjie Xia and Dr. Dinesh Katti		
	09:00 - 09:20	EP240910 The dynamics of cellular proteins during cancer progression Author(s): Dinesh Katti*, Sharad Jaswandkar, Hanmant Gaikwad, Kalpana Katti

Buckingham Room	09:20 - 09:40	EP241154 Sequence-based data-constrained deep learning framework to predict spider dragline mechanical properties Author(s): Akash Pandey, Wei Chen, Sinan Keten*
	09:40 - 10:00	EP240262 Predictive Modeling of Mechanical Behavior of Crumpled Sheets Author(s): Long Chen*, Yangchao Liao, Wenjie Xia
	10:00 - 10:20	EP240199 Energy renormalization for temperature transferable coarse-graining of silicone polymer Author(s): Dawei Zhang*, Wenjie Xia, Ying Huang
0119: On the mechanics of road and paving materials in the cold, Nordic, and Arctic Regions Chairs(s): Augusto Cannone Falchetto		
Salon 2	09:00 - 09:20	EP240485 Machine learning prediction of the mechanical response from chemical characteristics of asphalt binders used in the Nordics Author(s): Fan Zhang, Augusto Cannone Falchetto*, Di Wang
	09:20 - 09:40	EP240742 Research on the deformation and damage process of crushed-rock highway embankment in permafrost areas Author(s): Runmin Zhao*, Xiaoming Huang, Tao Ma
	09:40 - 10:00	EP241097 The low-temperature performance of an asphalt binder modified by the sub-epoxidized soybean oil for cold region applications Author(s): Ataslina de Paula da Silva*, Antônia Flávia Justino Uchôa, Suelly Helena de Araújo Barroso, Ronald Christopher Williams
	10:00 - 10:20	EP240980 Multiple recycling of asphalt pavement in cold climates Author(s): Yuxuan Sun, Augusto Cannone Falchetto*, Di Wang, Fan Zhang
0120: Architected materials Chairs(s): Pablo Zavattieri and Reza Moini		
Salon 3	09:00 - 09:20	EP240865 Mechanics of metamaterials engineered with DNA Author(s): Horacio Espinosa*, Hanxun Jin
	09:20 - 09:40	EP240830 Mechanics of 3D micro-architected interpenetrating phase composites Author(s): Andrew Chen*, Carlos Portela
	09:40 - 10:00	EP241057 Two-phase gyroid-like shell-based architectures with improved energy absorption capacity Author(s): Mehran Rakhshan*, Alfa Heryudono, Lorenzo Valdevit, Mazdak Tootkaboni
	10:00 - 10:20	EP240148 Additive manufacturing of PDMS-blown foams with tailorable porosity Author(s): Melody Golobic*, Larry Dugan, Taylor Bryson, Todd Weisgraber, Jeremy Armas, Eric Duoss, Tom Wilson, Jeremy Lenhardt
0123: Multiscale behavior of damage and healing mechanics Chairs(s): Oliver Giraldo-Londono		
Salon 6	09:00 - 09:20	EP241120 Spress-sprain crack band model based on lagrange multiplier constraint and its verification by gap test Author(s): Zdenek Bazant*, Houlin Xu, Anh Nguyen, Karel Matouš
	09:20 - 09:40	EP240960 Experimental and computational investigation on interfacial transition zone of concrete Author(s): Kyoungsoo Park*, Minkwan Ju, Habeun Choi, Tiana Razakamandimby
	09:40 - 10:00	EP241157 A mixed-mode cohesive zone model for fracture modeling of self-healing materials Author(s): Oliver Giraldo-Londoño*, Daniel W. Spring, Glaucio Paulino
	10:00 - 10:20	EP241195 A localizing gradient damage model for the dynamic fracture of quasi-brittle materials and its simple implementation in ABAQUS Author(s): Guangyuan Yang*, Leong Hien Poh
0125: Discrete models for the simulation of infrastructure materials Chairs(s): Gianluca Cusatis and Mohammed Alnaggar		
Salon 8	09:00 - 09:20	EP240873 Comparison of Lattice Discrete Particle Modeling (LDPM) implementations: Lessons learned and future work Author(s): Gianluca Cusatis*, Erol Lale, Ke Yu, Matthew Troemner, Madura Pathirage, Yuhui Lyu, Ioannis Koutromanos, Jan Elias, Monika Stredulova, Tianju Xue, Mohammed Alnaggar
	09:20 - 09:40	EP240777 Discrete model of fresh ultra high performance concrete for the simulation of 3D printing: The effect of thixotropy Author(s): Bahar Ayhan*, Elham Ramyar, Gianluca Cusatis
	09:40 - 10:00	EP240802 Connector and Beam Lattice (CBL) Model for the simulation of wood under high strain rates Author(s): Matthew Troemner*, Susan Alexis Brown, Hao Yin, Gianluca Cusatis
0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Xiaojia Shelly Zhang		
Monroe Room	09:00 - 09:20	EP240363 Using human experience to interactively reduce support material in topology-optimized structures Author(s): Gillian Schiffer, Dat Ha, Josephine Carstensen*
	09:20 - 09:40	EP240905 Additive manufacturing of stiff and strong structures by leveraging printing-induced strength anisotropy in topology optimization Author(s): Rahul Dev Kundu*, Xiaojia Shelly Zhang
	09:40 - 10:00	EP241158 Multi-material stress-constrained topology optimization with unified yield criterion Author(s): Oliver Giraldo-Londoño, Juan Pablo Giraldo Isaza*
	10:00 - 10:20	EP240419 Machine learning model for the fexural srength of 3D-printed fiber-reinforced concrete using Mountain Gazelle Optimization algorithm Author(s): Nima Khodadadi*, Francisco Decaso, Antonio Nanni
0209: Advanced engineering concepts, designs, and technologies for aerospace and extraterrestrial applications Chairs(s): Ramesh B. Malla, Ph.D., F. ASCE, F. EMI, A.F. AIAA; University of Connecticut, Storrs, CT and Brent Knight, NASA Marshall Space Flight Center, Huntsville, AL		

LaSalle 2	09:00 - 09:20	EP240961 Lunar and martian regoliths: Characterization and suitability for construction Author(s): Nishant Garg*
	09:20 - 09:40	EP240469 Meteoroid impact-induced peak shock pressure and attenuation through the thickness of a regolith protective layer on a lunar structure Author(s): Sushrut Vaidya*, Ramesh Malla
	09:40 - 10:00	EP240934 Enforcing coupling of smart habitat subsystem models within a systems-of-systems modeling framework Author(s): Adnan Shahriar, Arsalan Majlesi, David Avila, Herta Montoya, Arturo Montoya*
	10:00 - 10:20	EP240839 Lunar habitat arch-shield optimization for complex load combinations with ML Author(s): Yang Zhao*, Christian Malaga-Chuquitaype
0211: Advances on life-cycle of structures and infrastructure systems Chairs(s): Fabio Biondini and Qindan Huang		
Salon 10	09:00 - 09:20	EP240741 A framework for risk assessment of post-tensioned concrete bridges- data-driven stochastic approach considering life cycle Author(s): Armin Mehrabi*
	09:20 - 09:40	EP241052 Toward experimental validation of life-cycle assessment methods for concrete structures under corrosion Author(s): Mattia Anghileri, Fabio Biondini*
	09:40 - 10:00	EP240766 Electrochemical-chemical-mechanical phase field model for rust precipitation-induced cracking in concrete Author(s): Airong Chen*, Xurui Fang, Zichao Pan
	10:00 - 10:20	EP240639 An analytical approach of determining life-cycle cost of deteriorating pipelines Author(s): Qindan Huang*, Kiswendsida Jules Kere
0305: Structural identification and damage detection Chairs(s): Babak Moaveni and Vasilis Dertimanis		
Wabash Room	09:00 - 09:20	EP240969 Quantifying non-uniqueness in model updating and damage detection following a Bayesian approach Author(s): Jia-Hua Yang*, Heung-Fai Lam
	09:20 - 09:40	EP240861 Bayesian model updating of Ting Kau Bridge and its verification by measured influence line Author(s): Heung-Fai Lam*, Zhengyi Fu
	09:40 - 10:00	EP240083 Identifying hysteretic models for base-isolation systems using bayesian approaches Author(s): Reza Farzad*, Patrick Brewick
	10:00 - 10:20	EP240051 Hierarchical Bayesian model updating of a 6 MW offshore wind turbine for uncertainty quantification with comparison to a frequentist approach Author(s): Bridget Moynihan*, Babak Moaveni, Eric Hines
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Francisco Pena and Travis Fillmore		
Crystal Room	09:00 - 09:20	EP240022 Optimization of automated inspection for infrastructure condition assessment based on physics-based diagnostics and prognostics Author(s): Zihan Wu, Zhen Hu*, Michael Todd
	09:20 - 09:40	EP240585 A framework for damage diagnosis for miter gates of navigation locks Author(s): Gbandi Nikabou*, Pranav Karve, Sankaran Mahadevan
	09:40 - 10:00	EP240164 Image based autonomous corrosion detection in steel structures Author(s): Sattar Dorafshan, Amrita Das*
0401: Topology optimization: From algorithmic developments to applications Chairs(s): Mazdak Tootkaboni		
Salon 5	09:00 - 09:20	EP240526 Non-stationary stochastic dynamic loads in topology optimization of structures Author(s): Sebastian Pozo*, Fernando Gómez, Mengxiao Zhang, Juan Carrión, Billie Spencer
	09:20 - 09:40	EP240740 Topology optimization of low-carbon hybrid mesh structures using mixed-integer programming Author(s): Zane Schemmer*, Josephine Carstensen
	09:40 - 10:00	EP241000 Novel method for topology optimization of eigenfrequencies of structures with single/repeated eigenvalues Author(s): Shiyao Sun*, Kapil Khandelwal
	10:00 - 10:20	EP241074 Simultaneous topology optimization of materials and structures Author(s): James Guest*, Yakov Zelickman
0502: Advances in geomechanics and geophysics for modern sub-surface technology and natural hazard Chairs(s): John Rudnicki		
Water Tower Parlor	09:00 - 09:20	EP240128 Finite element modeling of creep-induced subsidence along coastal Louisiana with GPS measurements Author(s): George Z. Voyiadjis, Yaneng Zhou*, Ahmed Abdalla
	09:20 - 09:40	EP240105 A rigorous semi-analytical graphical solution for undrained wellbore stability problem in elastoplastic hoek-brown rock under non-hydrostatic in situ stresses Author(s): Hadeel Abu Dayyeh*, Sheng-Li Chen
	09:40 - 10:00	EP240888 Error-in-constitutive relation (ECR) framework for the wave-based characterization of linear viscoelastic solids Author(s): Marc Bonnet, Prasanna Salasiya*, Bojan Guzina
	10:00 - 10:20	EP241095 Predicting earthquake fault dynamics and parametric identification through Physics-Informed Neural Networks Author(s): Napat Tainpakdipat*, Ahmed Elbanna

0704: Advances in modeling wind and its effects on the built environment Chairs(s): Marco Giometto and Teng Wu and Catherine Gorle		
Wilson Room	09:00 - 09:20	EP240173 Nowcasting thunderstorm wind speeds by integrating multi-source datasets to enhance safety of solar trackers Author(s): Mahmoud Elnahla*, Yanlin Guo, Teng Wu
	09:20 - 09:40	EP240331 Implementation of a hybrid active-passive multi-stage flow control system in a large boundary layer wind tunnel for the physical simulation of near-surface extreme wind phenomena Author(s): Ryan Catarelli*, Yutiwadee Pinyochotiwong, Forrest Masters, Brian Phillips, Tai-An Chen, Jennifer Bridge, Kurtis Gurley
	09:40 - 10:00	EP240547 Modeling of vortices in straight-line wind simulators Author(s): Faiaz Khaled*, Franklin T. Lombardo
	10:00 - 10:20	EP240938 Application of an Immersed Boundary Method to generate boundary layer turbulence and non-uniform wind fields Author(s): Jianyu Wang*, Catherine Gorlé
0901: Computational methods for stochastic engineering dynamics Chairs(s): Antonina Pirrota		
Salon 9	09:00 - 09:20	EP240578 Eigenvalue problems in stochastic mechanics: A quantum computing solution treatment Author(s): Ilias Mavromatis*, Ioannis Kougioumtzoglou
	09:20 - 09:40	EP240629 Singular value decomposition problems in structural dynamics: A quantum computing solution treatment Author(s): Leonidas Taliadouros*, Ioannis Kougioumtzoglou
	09:40 - 10:00	EP240095 A reduced-order formulation of the Wiener path integral technique for efficient stochastic response determination of nonlinear systems with singular diffusion matrices Author(s): Ketson Roberto Maximiano dos Santos*, Ioannis Kougioumtzoglou
	10:00 - 10:20	EP240302 Efficient stochastic response determination of nonlinear structural systems: An extrapolation approach within the Wiener path integral technique Author(s): Ilias Mavromatis, Ioannis Kougioumtzoglou*
1004: Multi-fidelity methods and machine learning for uncertainty propagation, inference, and optimization Chairs(s): Negin Alemazkoor and Ruda Zhang		
LaSalle 1	09:00 - 09:20	EP240390 Multi-fidelity modelling for digital twins of fast manufacturing processes under uncertainty Author(s): Miriam B. Dodt*, Stefano Marelli, Augustin Persoons, Matthias G. R. Faes, Bruno Sudret, David Moens
	09:20 - 09:40	EP240746 Enhancing data efficiency and accuracy in finite element analysis using multi-fidelity graph neural networks Author(s): Mehdi Taghizadeh*, Negin Alemazkoor
	09:40 - 10:00	EP240923 Multi-fidelity Bayesian optimization in engineering design Author(s): Bach Do, Ruda Zhang*
	10:00 - 10:20	EP240738 Multi-fidelity subset simulation for rare event simulation Author(s): Leila Naderi*, Gaofeng Jia
1006: Uncertainty quantification and machine learning for design, optimization, and inference in multiscale systems Chairs(s): Zhiheng Wang and Lizhi Sun and Jiun-Shyan (J.S.) Chen and Roger Ghanem		
LaSalle 3	09:00 - 09:20	EP241137 The physics-informed compositional operator network Author(s): Weiheng Zhong*, Hadi Meidani
	09:20 - 09:40	EP240433 Machine learning for statistical modeling of fiber-reinforced composites delamination Author(s): Zhengtao Yao*, Philippe Hawi, Venkat Aitharaju, Jay Mahishi, Roger Ghanem
	09:40 - 10:00	EP240562 Feature encoded and multi-resolution physics-informed machine learning approaches for musculoskeletal digital twin applications. Author(s): Karan Taneja*, Xiaolong He, QiZhi He, Jiun-Shyan Chen
	10:00 - 10:20	EP240546 Fully parametric estimation method for the hybrid switching diffusion model Author(s): Zheming Gou*, Roger Ghanem, Sergey Lototsky
1011: Probabilistic assessment, data-driven inference and optimization for decision-making under uncertainty Chairs(s): Kostas Papakonstantinou		
Adams Room	09:00 - 09:20	EP241176 Understanding multi-agent cooperation in deep reinforcement learning for inspection and maintenance planning Author(s): Prateek Bhustali, Charalampos Andriotis, Pablo G. Morato*, Kostas Papakonstantinou
	09:20 - 09:40	EP240286 Investigating graph based deep reinforcement learning for inspection and maintenance optimization Author(s): Daniel Hettegger*, Lisa Roßgoderer, Daniel Koutas, Alois C. Knoll, Daniel Straub
	09:40 - 10:00	EP240992 Multi-objective multi-agent Deep Reinforcement Learning for life-cycle management of deteriorating systems Author(s): Ashmita Bhattacharya*, Kostas Papakonstantinou
	10:00 - 10:20	EP241184 Subsidy for repair in component maintenance games Author(s): Maria-Florina Balcan, Matteo Pozzi, Dravyansh Sharma*
1104: Resilience of coastal structures, systems, and community subjected to hazards Chairs(s): Jamie Padgett and William Hughes		
Grant Park Parlor	09:00 - 09:20	EP240565 Innovative computational strategies for coastal resilience: Tackling hurricane-induced debris challenges Author(s): Kooshan Amini*, Yuhao Liu, Jamie Padgett, Ashok Veeraraghavan, Guha Balakrishnan
	09:20 - 09:40	EP240728 An optimization model for wind retrofits to inform alternatives for resilient communities Author(s): William Hughes*, Tasnim Ibn Faiz, Kenneth Harrison

	09:40 - 10:00	EP240718 A probabilistic flood risk assessment framework for road networks Author(s): Pranavesh Panakkal*, Jamie Padgett
1105: Civil infrastructure in a changing climate: From nonstationary risk assessment to developing adaptation strategies Chairs(s): Eun Cha and Abdollah Shafieezadeh and Michele Barbato and Alex Taflanidis		
Hancock Parlor	09:00 - 09:20	EP240294 Nonstationary stochastic models for structural reliability analysis in the changing climate Author(s): Mahesh Pandey*, Sophie Mercier
	09:20 - 09:40	EP241135 A numerical comparison of different methods for estimating non-stationary failure probabilities of aging structures subject to hurricane hazards under changing climate conditions Author(s): Michele Barbato*, Lei Zhou
	09:40 - 10:00	EP240183 Economic loss estimation due to hazards driven by climate change using non-stationary models Author(s): Rituraj Bhadra*, Mahesh Pandey
1106: Objective resilience: Multi-scale resilience measures for electric power networks in climatic hazards Chairs(s): Alice Alipour and Abdollah Shafieezadeh and Paolo Bocchini		
Spire Parlor	09:00 - 09:20	EP240082 A generalized model for predicting power outages in Texas during extreme weather events: Integrating lagged information, geographical, climatic, and socio-demographic data Author(s): Jangjae Lee*, Stephanie Paal
	09:20 - 09:40	EP240512 Enhancing electricity resilience through rooftop panels and behind-the-meter batteries for communities exposed to hurricanes Author(s): Luis Ceferino*, Ning Lin, Prateek Arora
	09:40 - 10:00	EP240919 Flood resilience in pole-mounted substations: Structural fragility assessment Author(s): Wenzhu Li*, Lee S. Cunningham, David M. Schultz, Sarah Mander, Chin Kim Gan, Mathaios Panteli
	10:00 - 10:20	EP241016 Multi-dimensional reliability assessment and resilience-based analysis of electric power networks Author(s): Muneer Qudaisat*, Alice Alipour
1113: AI-enhanced probabilistic reliability assessment Chairs(s): Hrishikesh Sharma		
Chicago Room	09:00 - 09:20	EP241035 Exploring the microtexture-effective property relationship via a machine-learning assisted data-driven approach Author(s): Xuejing Wang*, Arghavan Louhghalam, Mazdak Tootkanoni
	09:20 - 09:40	EP240496 A novel machine learning framework for improved predictions of peak response to dynamic loads Author(s): Sushreyo Misra*, Paolo Bocchini
	09:40 - 10:00	EP240094 Prior model updating with uncertainty quantification through variational Bayesian inference Author(s): Xuechun Li*, Susu Xu
Wed May 29 - Technical Session 2		
0101: Plan the future: Innovations in advanced cementitious materials and sustainability Chairs(s): Jianqiang Wei		
Salon 1	10:50 - 11:10	EP240411 A framework for sustainable building materials using lignin biopolymer bound soil composites Author(s): Barney Miao*, Robert Headrick, Zhiye Li, David Loftus, Michael Lepech
	11:10 - 11:30	EP240776 Towards development of low-carbon concrete via high-volume cement replacement with recycled ground glass pozzolan Author(s): Arkabrata Sinha*, Dayou Luo, Jianqiang Wei
0102: Geometries & design: Opportunities for sustainable construction Chairs(s): Ann Sychterz		
Salon 4	10:50 - 11:10	EP240315 Inclusions govern the mechanical development of cementitious materials Author(s): Yao Wang*, Bola Odunaro, Boning Wang, Mija Hubler
	11:10 - 11:30	EP240092 Adaptive camber precast concrete girder for deflection mitigation Author(s): Ann Sychterz*
	11:30 - 11:50	EP240412 Optimizing sensor placement for characterization and control of a meter-scale origami pill-bug structure Author(s): Angshuman C Baruah*, Ann Sychterz
	11:50 - 12:10	EP240586 Reconfigurable partition system for adaptive modular construction Author(s): Jacob Pavelka*, Evgueni Filipov, Sherif El-Tawil
0106: Advances in modeling of material damage and fracture Chairs(s): Ravindra Duddu		
Salon 12	10:50 - 11:10	EP240275 Upgrade of fracture mechanics by spress-sprain relations: Limiting damage field curvature Author(s): Houlin Xu*, Anh Nguyen, A. Abdullah Donmez, Zdenek Bazant
	11:10 - 11:30	EP240292 Strong form meshless gradient nonlocal damage formulation via high order constrained polynomial differential operators Author(s): Nikhil Potnuru*, Sumedh Sharma, Petros Sideris
	11:30 - 11:50	EP240424 XFEM-based multilevel simulation strategy on hysteric performance and fracture behavior of semi-rigid PC connections Author(s): Dianyou Yu, Zheng He*
	11:50 - 12:10	EP240506 Viscous regularization in dynamical problems does not stop strain localization on a mathematical plane and mesh dependency Author(s): Alexandros Stathas*, Ioannis Stefanou

0109: Modeling of materials with interfaces and scales using physics-based and machine-learning methods Chairs(s): Timothy Truster		
Price Room	10:50 - 11:10	EP241067 Physics-constrained data-driven variational method for discrepancy modeling Author(s): Arif Masud*, Shoaib Goraya
	11:10 - 11:30	EP240168 CNN-based surrogate for the phase field fracture model and its application in inverse design of composite materials Author(s): Yuxiang Gao*, Soheil Kolouri, Ravindra Duddu
	11:30 - 11:50	EP240600 Data-driven Gurson-Tvergaard-Needleman model for ductile fracture Author(s): Dharanidharan Arumugam*, Ravi Yellavajjala
	11:50 - 12:10	EP240831 Quantification of elastic incompatibilities at triple junctions via a physics-based surrogate model Author(s): Aaditya Rau*, Raul Radovitzky
0111: Cementitious materials: Experiments and modeling across the scales Chairs(s): Bernhard Pichler		
Salon 7	10:50 - 11:10	EP240154 On the role of the horizon in modelling failure with peridynamics Author(s): Gilles Pijaudier-Cabot*, Dono Toussaint, Madura Pathirage, Gianluca Cusatis
	11:10 - 11:30	EP240720 Characterization of fatigue damage in concrete: An experimental study on mechanisms and parameters influencing fatigue life Author(s): Srinithya A, Yogesh R, Chandra Kishen*
	11:30 - 11:50	EP240730 An experimental study for estimation of residual strength in concrete beams under fatigue loading Author(s): Yogesh R*, Srinithya A, Goutham H M, Chandra Kishen
	11:50 - 12:10	EP240339 A novel method to evaluate the fracture behavior of the shotcrete-concrete interface Author(s): Ayumi Manawadu*, Pizhong Qiao
0115: Molecular scale modeling and experimentation Chairs(s): Dr. Dinesh Katti and Dr. Wenjie Xia		
Buckingham Room	10:50 - 11:10	EP240260 Insights into thermomechanical properties of crosslinked polymer network assisted by machine learning Author(s): Lan Xu*, Sara Tolba, Wenjie Xia
	11:10 - 11:30	EP240955 Oxidation levels and configurations in graphene oxide influence the mechanical and viscoelastic properties of PMMA nanocomposites Author(s): Yitong Chen*, Linjiale Dai, Zhaoxu Meng
	11:30 - 11:50	EP240283 Towards data-driven inverse design for interatomic potentials Author(s): Benjamin Jasperson*, Harley Johnson
	11:50 - 12:10	EP241013 A dynamic formulation for potential of mean force based Lattice Element Method Author(s): Soolmaz Khoshkalam*, Shayan Razi, Mazdak Tootkaboni, Arghavan Louhghalam
0117: Mechanics and physics of granular materials Chairs(s): Alessandro F. Rotta Loria and Ryan Hurley and Marcial Gonzalez		
Salon 2	10:50 - 11:10	EP240066 Density relaxation in tapped granular systems: Recurrent neural network model Author(s): Anthony Rosato*, Vish Ratnaswamy, Youngjin Chung, David Horntrop
	11:10 - 11:30	EP240068 Derivation of wave speed for dry and saturated nonlinearly elastic models Author(s): David Riley*, Itai Einav, François Guillard
	11:30 - 11:50	EP240112 Thermo-mechanics of granular materials: Experiments and simulations Author(s): Alessandro Rotta Loria*, Yize Pan, Jibril Coulibaly
	11:50 - 12:10	EP240121 Generalized Granular Micromechanics Approach to obtain injective mapping between material state variables and the stress tensor Author(s): Abhinav Ramkumar*, Marcial Gonzalez
0120: Architected materials Chairs(s): Nilesh Mankame and David Restrepo		
Salon 3	10:50 - 11:10	EP240086 A novel computational approach for predicting micro-buckling sensitivities in architected materials Author(s): David Restrepo*, David Risk, Mauricio Aristizabal, Harry Millwater
	11:10 - 11:30	EP240619 Harnessing instabilities in bio-inspired hierarchical tape springs Author(s): Phani Saketh Dasika*, Adwait Trikanad, Kristiaan Hector, Pablo Zavattieri
	11:30 - 11:50	EP240171 Arbitrary curvature programming of thermo-active liquid crystal elastomer via topology optimization Author(s): Weichen Li*, Xiaojia Shelly Zhang
	11:50 - 12:10	EP240157 Algorithmic designs of architected materials with complex microstructures Author(s): Tian Chen*
0123: Multiscale behavior of damage and healing mechanics Chairs(s): Kyoungsoo Park		
Salon 6	10:50 - 11:10	EP240140 Exploring fabric tensors in damage and healing mechanics of materials Author(s): George Z. Voyiadjis*, Peter I. Kattan
	11:10 - 11:30	EP240468 Machine learning-augmented parametrically upscaled damage model for microstructural damage sensing in piezoelectric composites Author(s): Somnath Ghosh*, Preetam Tarafder, Saikat Dan

Salon 6	11:30 - 11:50	EP240577 A phase-field formulation for fracture modeling of rate- and temperature-dependent materials Author(s): Rogelio Muñeton-Lopez*, Oliver Giraldo-Londoño
	11:50 - 12:10	EP240817 A multiscale phase field formulation for capturing the fracture behavior of rubber-like materials Author(s): Prajwal Kammardi Arunachala*, Christian Linder
0125: Discrete models for the simulation of infrastructure materials Chairs(s): Gianluca Cusatis and Mohammed Alnaggar		
Salon 8	10:50 - 11:10	EP241046 Discrete modeling of the concrete bioshield long-term performance in Light Water Reactors Author(s): Mohammed Alnaggar*, Yann Le Pape, Yong-Joon Choi
	11:10 - 11:30	EP240760 Multi-Physics Lattice Discrete Particle Model (M-LDPM) for the coupling of diffusion processes and fracture Author(s): Hao Yin*, Mohammed Alnaggar, Giovanni Di Luzio, Weixin Li, Madura Pathirage, Lei Shen, Matthew Treomner, Lifu Yang, Gianluca Cusatis
	11:30 - 11:50	EP240948 A dual random lattice model for the simulation of the time evolution of backward erosion piping Author(s): Zhijie Wang*, Caglar Oskay, Alessandro Fascetti
	11:50 - 12:10	EP240155 What can be expected from lattice modelling of quasi-brittle materials? Author(s): Julien Khoury*, Gilles Pijaudier-Cabot
0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Reza Moini and Xiaojia Shelly Zhang		
Monroe Room	10:50 - 11:10	EP240942 Multi-physics modeling for metal additive manufacturing: Melt pool dynamics, defects, and powder spatters Author(s): Jinhui Yan*
	11:10 - 11:30	EP241005 Thermo-chemo-rheological modeling of direct ink writing based on frontal polymerization Author(s): Michael Zakoworotny*, Javier Balta, Gavin DeBrun, Aditya Kumar, Sameh Tawfick, Nancy Sottos, Philippe Geubelle
	11:30 - 11:50	EP240031 Reduced-order phase-field modeling for controlled microstructure in additive manufacturing Author(s): Zhengtao Gan*
	11:50 - 12:10	EP240340 Numerical simulation of the lateral behavior of 3D-printed hempcrete (3DPH) walls Author(s): Mohammad Syed*, Sumedh Sharma, Tal Mizrachi, Mohammad Aghajani Delavar, Maria Koliou, Petros Sideris
0209: Advanced engineering concepts, designs, and technologies for aerospace and extraterrestrial applications Chairs(s): Arturo Montoya, Ph.D., University of Texas, San Antonio, TX and Sushrut Vaidya, Ph.D., University of Connecticut, Storrs, CT		
LaSalle 2	10:50 - 11:10	EP241096 Revolutionary expandable rotating shielded space habitat: Pioneering sustainable life beyond earth Author(s): Anthony Longman, Muhao Chen*
	11:10 - 11:30	EP241185 Conservatism in the Structural Design Process Associated With Assuming Dynamic Loads are Static Author(s): J. Brent Knight*
	11:30 - 11:50	EP240936 Development of an Artificial Neural Network model for predicting damage of shielded lunar habitats Author(s): Arsalan Majlesi*, Amir Behjat, Adnan Shahriar, David Avila, Arturo Montoya
	11:50 - 12:10	EP240343 Bio-synthetic hydrogel-based concrete (bio-HBC) for construction on Mars Author(s): Ning Liu*, Wenwei Huang, Shing Chi Lam, Qikun Yi, Fei Sun, Jishen Qiu
0211: Advances on life-cycle of structures and infrastructure systems Chairs(s): Fabio Biondini and Armin Mehrabi		
Salon 10	10:50 - 11:10	EP240765 Bayesian networks driven life-cycle seismic resilience of highway bridges Author(s): Hongyuan Guo*, Ruiwei Feng, You Dong
	11:10 - 11:30	EP241114 Mooring fatigue reliability of Floating Offshore Wind Turbine Author(s): J M Raisul Islam Shohag, Do-Eun Choe*
0305: Structural identification and damage detection Chairs(s): Wenjun Cao and Vasilis Dertimanis		
Wabash Room	10:50 - 11:10	EP240060 Unsupervised structural damage assessment using improved deep one-class anomaly detection Author(s): Soyeon Park*, Sunjoong Kim
	11:10 - 11:30	EP240213 Detection and localization of internal damage in sealed spent nuclear fuel canisters using a multi-task convolutional neural network (CNN) Author(s): Anna Arcaro*, Bozhou Zhuang, Bora Gencturk, Roger Ghanem
	11:30 - 11:50	EP240542 Damage identification for train wheels using real time data Author(s): Wenjun Cao*, Chan Ghee Koh, Ian F. C. Smith
	11:50 - 12:10	EP240588 Integrating acceleration and strain measurements for structural damage detection Author(s): Dhiraj Ghosh*, Suparno Mukhopadhyay
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Francisco Pena		
Crystal Room	10:50 - 11:10	EP240165 Progressing stereophotogrammetry for expedited inspection of large-scale structures Author(s): Fabio Bottalico, Alessandro Sabato*
	11:10 - 11:30	EP240223 Experimental characterization and computer vision-based detection of pitting corrosion on stainless steel Author(s): Long Wang*, Luke Yium, Duncan Fure, Christopher Chau, Jessica Luu

Crystal Room	11:30 - 11:50	EP240426 The relative benefits of vision and strain gage-based SHM of miter gates Author(s): Travis Fillmore*, Shuo Wang, Brian Eick, Billie Spencer
	11:50 - 12:10	EP240675 Digital twins and civil engineering phases: Reorienting adoption strategies Author(s): Taiwo Adebiyi*, Nafeezat Ajenifuja, Ruda Zhang
0401: Topology optimization: From algorithmic developments to applications Chairs(s): Mazdak Tootkaboni		
Salon 5	10:50 - 11:10	EP240172 Inverse design of magneto-active metasurfaces and robots: Theory, computation, and experimental validation Author(s): Chao Wang*, Zhi Zhao, Xiaojia Shelly Zhang
	11:10 - 11:30	EP240291 Topology optimization of structures made of printing-driven anisotropic material response considering strength and serviceability requirements Author(s): Sri Keerthana Chakravarthula*, Dipankar Das, Petros Sideris
	11:30 - 11:50	EP240396 Topology optimization of beams' cross-sectional properties considering torsional and warping behavior Author(s): Christos Kostopoulos*, Ameer Marzok, Haim Waisman
	11:50 - 12:10	EP240618 Topology optimization of liquid crystal elastomer materials with a nonuniform director field Author(s): Tingting Xu*, Thao (Vicky) Nguyen, James Guest
0502: Advances in geomechanics and geophysics for modern sub-surface technology and natural hazard Chairs(s): Giuseppe Buscarnera		
Water Tower Parlor	10:50 - 11:10	EP240277 Effect of osmotic pressure gradients on water diffusion and hydraulic fracturing of mafic rocks aimed at sustainable deep sequestration of CO2 Author(s): Anh Nguyen*, Pouyan Asem, Joseph Labuz, Zdenek Bazant
	11:10 - 11:30	EP240226 Poromechanical behavior of unsaturated shales Author(s): Roman Makhnenko*, Hyunbin Kim
	11:30 - 11:50	EP240714 Origins of the poroelastic Noordbergum effect Author(s): Ehsan Tavakol*, Amin Mehrabian
	11:50 - 12:10	EP240038 Active seismic monitoring of dry and saturated rock fractures Author(s): Kyungsoo Han*, Laura Pyrak-Nolte, Antonio Bobet
0602: Computational fluid dynamics (CFD) and fluid-structure interaction (FSI): Method development and applications Chairs(s): Jinhui Yan		
Chicago Room	10:50 - 11:10	EP241034 System identification of response of oscillating surge wave energy converter using physics-informed neural network Author(s): Mahmoud Ayyad*, Lisheng Yang, Muhammad Hajj, Ahmed Shalaby, Alaa Ahmed, Jianuo Huang, Raju Datla, Lei Zuo
	11:10 - 11:30	EP240098 Addressing geometric and material nonlinearities in FSI simulations with the ALE-SSM framework Author(s): Dimitrios Kalliontzis*
	11:30 - 11:50	EP241080 Challenges in hydro-real-time hybrid simulation to examine the response of floating offshore wind turbines Author(s): Akiri Seki*, Yun Ni, Bret Bosma, Barbara Simpson, Bryson Robertson, Ted Brekken, Andreas Schellenberg, Pedro Lomonaco
	11:50 - 12:10	EP240852 A cross-scale neural network assisted powder dynamics model for additive manufacturing processes Author(s): Shashwot Paudel*, Jinhui Yan
0704: Advances in modeling wind and its effects on the built environment Chairs(s): Teng Wu and Marco Giometto and Catherine Gorle		
Wilson Room	10:50 - 11:10	EP240493 Characterizing urban flow disturbances for safe UAM operations using high resolution large-eddy simulation Author(s): Emmanuel Akinlabi*, Dan Li
	11:10 - 11:30	EP240950 Impact of geometrical uncertainties in the prediction of pressure loads on a low-rise building using LES Author(s): Themistoklis Vargiemezis*, Catherine Gorlé
	11:30 - 11:50	EP240574 Aerodynamical cluster effect of arrays of infinite- and finite-height square cylinders in turbulent flow Author(s): Zheng-Tong Xie, Saad Inam*, Abhishek Mishra, Marco Placidi, Davide Lasagna, Alan Robins
	11:50 - 12:10	EP240993 Simulating the urban canopy's impact on natural cooling Author(s): Nicholas Bachand*, Catherine Gorlé
0901: Computational methods for stochastic engineering dynamics Chairs(s): Ketson dos Santos		
Salon 9	10:50 - 11:10	EP240945 On the existence, uniqueness and efficient calculation of Wiener path integral most probable paths for a class of nonlinear stochastic differential equations Author(s): Asela Nawagamuwage*, Ioannis Kougioumtzoglou, Athanasios Pantelous
	11:10 - 11:30	EP240344 Statistical linearization solution treatment of stochastically excited nonlinear systems: An alternative perspective based on computational algebraic geometry Author(s): Ioannis Kougioumtzoglou, Vasileios Fragkoulis*, Ioannis Petromichelakis
	11:30 - 11:50	EP240280 Closed-form solutions for the stochastic response of wind-excited structural systems based on integer- and non-integer-order filter approximations Author(s): Luca Roncallo*, Ilias Mavromatis, Ioannis Kougioumtzoglou, Federica Tubino
	11:50 - 12:10	EP240582 Stochastic response analysis of nonlinear structural systems subject to non-white and non-Gaussian excitations described by probability density functionals Author(s): Zifeng Huang*, Ioannis A. Kougioumtzoglou, Athanasios Pantelous, Michael Beer
1006: Uncertainty quantification and machine learning for design, optimization, and inference in multiscale systems Chairs(s): Zhiheng Wang and Lizhi Sun and Jiun-Shyan (J.S.) Chen and Roger Ghanem		

LaSalle 3	10:50 - 11:10	EP240901 A stochastic hierarchical multiscale modeling framework for heterogeneous materials Author(s): Cornelius Otchere*, Kenneth Leiter, Jaroslaw Knap, Michael Shields
	11:10 - 11:30	EP240705 Operators learning for multiscale modeling: An example of elastic-viscoplastic structural material Author(s): Yupeng Zhang*, Kaushik Bhattacharya
	11:30 - 11:50	EP240668 Both specimen size and sample size matter for material certification Author(s): Philippe Hawi*, Venkat Aitharaju, Jay Mahishi, Roger Ghanem
	11:50 - 12:10	EP240743 Data-driven process uncertainty analysis of stochastic lack-of-fusion in laser powder bed fusion Author(s): Vamsi Subraveti*, Caglar Oskay
1007: Integration of physics-based models with data for identification, monitoring, estimation, and uncertainty quantification Chairs(s): Hamed Ebrahimian and Babak Moaveni		
LaSalle 1	10:50 - 11:10	EP240556 A new framework for model updating considering inherent discrepancy between numerical models and real structures Author(s): Chao-Sheng Hung*, Rih-Teng Wu
	11:10 - 11:30	EP240904 Learning modeling errors via a machine-infused Bayesian model updating approach Author(s): Mohammad Valikhani*, Kasra Shamsaei, Hamed Ebrahimian
	11:30 - 11:50	EP241143 Bayesian updating of hierarchical models applied to calibration and uncertainty quantification of constitutive material models Author(s): Maitreya Manoj Kurumbhati, Aakash Bangalore Satish*, Joel Pascal Conte
1011: Probabilistic assessment, data-driven inference and optimization for decision-making under uncertainty Chairs(s): Kostas Papakonstantinou and Pablo Morato		
Adams Room	10:50 - 11:10	EP240354 Belief Deep Markov Models for POMDP inference and solutions Author(s): Giacomo Arcieri*, Antonios Kamariotis, Kostas Papakonstantinou, Daniel Straub, Eleni Chatzi
	11:10 - 11:30	EP240476 An investigation into the robustness of inspection and maintenance strategies to model errors Author(s): Carmen Buliga*, Daniel Straub
	11:30 - 11:50	EP241177 Investigating convexity-enforced deep reinforcement learning algorithms for POMDPs Author(s): Daniel Koutas*, Daniel Hettegger, Daniel Straub
	11:50 - 12:10	EP240144 Enhancing the resilience of large-scale infrastructure networks using GNN-enhanced deep reinforcement learning Author(s): Jinzhu Yu*, Xudong Fan
1104: Resilience of coastal structures, systems, and community subjected to hazards Chairs(s): Jamie Padgett and Katerina Kyprioti		
Grant Park Parlor	10:50 - 11:10	EP240800 Experimental study of broken wave attenuation and load mitigation by mangrove forests of varying configuration and density Author(s): Vasileios Kotzamanis*, Dimitrios Kalliontzis
	11:10 - 11:30	EP240200 Effects of wall inclination on elevated structures subject to breaking waves: A multiphase SPH numerical exploration Author(s): Krisna Pawitan, Maria Garlock, Shengzhe Wang*
	11:30 - 11:50	EP240203 Enhancing the resilience of coastal bridges: The influence of box girder geometry on wave forces via SPH simulations Author(s): Gaoyuan Wu*, Maria Garlock
	11:50 - 12:10	EP240851 Risk assessment of seawall overtopping considering uncertainties under climate change Author(s): Xukai Zhang*, Arash Noshadravan
1105: Civil infrastructure in a changing climate: From nonstationary risk assessment to developing adaptation strategies Chairs(s): Eun Cha and Abdollah Shafieezadeh and Michele Barbato and Alex Taflanidis		
Hancock Parlor	10:50 - 11:10	EP240079 Balancing coastal resilience through the combined use of engineered and natural infrastructure for SLR protection Author(s): Mohamed Abdelhafez*, Hussam Mahmoud, Bruce Ellingwood
	11:10 - 11:30	EP240957 Optimal life-cycle adaptation under climate change Author(s): Ashmita Bhattacharya, Kostas Papakonstantinou*, Gordon Warn, Lauren McPhillips, Melissa Bilec, Chris Forest, Rahaf Hasan, Digant Chavda
	11:30 - 11:50	EP240130 Climate adaptive design for community resilience assessment: A temporal retrofit methodology for a changing climate Author(s): Jiate Li*, John van de Lindt
	11:50 - 12:10	EP240365 Towards climate resilience: Evaluating the mitigative impact of strengthening residential buildings on hurricane risks Author(s): Bowei Song, Yihan Jiang, Eun Jeong Cha*
1106: Objective resilience: Multi-scale resilience measures for electric power networks in climatic hazards Chairs(s): Alice Alipour and Abdollah Shafieezadeh and Poalo Bocchini		
Spire Parlor	10:50 - 11:10	EP240058 Class fragility models of transmission towers for regional analysis of transmission systems under hurricanes Author(s): Xinyue Wang*, Paolo Bocchini
	11:10 - 11:30	EP240573 Dynamic behavior of transmission line systems prone to non-uniform downburst wind loading Author(s): Mohamed Eissa*, Amal Elawady
	11:30 - 11:50	EP240055 Risk assessment and reliability modeling of transmission line systems under severe weather conditions Author(s): Pooria Mazaheri*, Alice Alipour
	11:50 - 12:10	EP240230 System-reliability-based disaster resilience analysis for power grids considering causality effects of cascading line outages Author(s): Youngjun Kwon*, Junho Song

Wed May 29 - Technical Session 3		
0101: Plan the future: Innovations in advanced cementitious materials and sustainability Chairs(s): Jianqiang Wei		
Salon 1	14:20 - 14:40	EP240187 Engineered biomolecules for self-healing resilient infrastructure materials Author(s): Elvis Baffoe, Ali Ghahremaninezhad*
	14:40 - 15:00	EP240706 Self-sensing cementitious composite using carbon nanotubes Author(s): Yu-Jin Jung*, Hye-Kyoung Jeon, Ga-Hyeon Eom, Sung-Hwan Jang
	15:00 - 15:20	EP240707 Assessing the integrity and gas permeability of polyvinyl alcohol (PVA) fiber reinforced mortar for oil and gas well decommissioning Author(s): Xiaoying Pan*, Bora Gencturk
	15:20 - 15:40	EP240471 Hydration mechanism of cement pastes with the addition of dry ice through electrochemical impedance spectroscopy Author(s): Peyman Harirchi, Mijia Yang*
0104: Mechanics of wood and wood-based materials Chairs(s): Markus Lukacevic		
Salon 4	14:20 - 14:40	EP240287 Phase field method-base modeling of wood fracture Author(s): Sebastian Pech*, Markus Lukacevic, Josef Füssl
	14:40 - 15:00	EP240480 Development and implementation of an anisotropic constitutive model for wood in ANSYS: Application in predicting the mechanical behavior of a hybrid connection for cross-laminated timber panels Author(s): Bleriot Vincent Feujofack Kemda*, Cristiano Loss
	15:00 - 15:20	EP240580 A probabilistic model for spatially varying tensile strength: Strength ratios Author(s): Fiona O'Donnell*, Kevin Murillo
	15:20 - 15:40	EP240284 Size effect of glued laminated timber beams based on the finite weakest-link theory Author(s): Christoffer Vida*, Markus Lukacevic, Sebastian Pech, Josef Füssl
0106: Advances in modeling of material damage and fracture Chairs(s): Lampros Svolos		
Salon 12	14:20 - 14:40	EP240239 Finite element based cohesive zone models for hydraulic fracture propagation in glaciers and ice shelves Author(s): Yuxiang Gao, Tim Hageman, Ravindra Duddu*, Emilio Martinez-Paneda
	14:40 - 15:00	EP240221 Stress-based phase-field fracture model for ice and rock fracture simulation Author(s): Duc Tien Nguyen*, Abhinav Gupta, Darshan Chinnadupargi Rajashekar, Chandrasekhar Annavarapu, Ravindra Duddu
	15:00 - 15:20	EP240268 Dynamic crack propagation in functionally graded materials under thermal shock: A novel phase field approach Author(s): Mohammad Naqib Rahimi*, Georgios Moutsanidis, Lampros Svolos
	15:20 - 15:40	EP240941 On the convexity of phase-field fracture formulations: Analytical study and comparison of various degradation functions Author(s): Lampros Svolos*, JeeYeon Plohr, Gianmarco Manzini, Hashem Mourad
0109: Modeling of materials with interfaces and scales using physics-based and machine-learning methods Chairs(s): Xiang Zhang		
Price Room	14:20 - 14:40	EP240333 Pre-trained transformer model as a surrogate in multiscale computational homogenization framework for elastoplastic composites Author(s): Zhongbo Yuan, Leong Hien Poh*
	14:40 - 15:00	EP240670 Crystal plasticity and surrogate modeling of deformation and martensite transformation of high-strength quenching and partitioning steels Author(s): Jiahao Cheng*, Xiaohua Hu, Brain Lin, Narayan Pottore, Andrew Chuang, Zhu Hong, Sriram Sadagopan
	15:00 - 15:20	EP240952 A machine learning framework for predicting concrete properties Author(s): Sama Taha*, Oral Buyukozturk
	15:20 - 15:40	EP241093 A physics-informed probabilistic machine learning approach for high-compactability asphalt mix design Author(s): Tianhao Yan*, Yuxiang Wan, Mugurel Turos, Qizhi He, Jia-Liang Le, Mihai Marasteanu
0111: Cementitious materials: Experiments and modeling across the scales Chairs(s): Bernhard Pichler		
Salon 7	14:20 - 14:40	EP240984 The precipitation degree: A new hydration variable describing universal hydration properties of white cement pastes Author(s): Nabor Jiménez Segura, Bernhard Pichler*, Christian Hellmich
	14:40 - 15:00	EP241053 Phase quantification of anhydrous CSA cements: A combined x-ray diffraction and Raman Imaging Approach Author(s): Chirayu Kothari*, Nishant Garg
	15:00 - 15:20	EP240516 Nonlinear basic creep of concrete: Interplay of viscoelasticity and cracking-induced damage Author(s): Rodrigo Díaz Flores*, Christian Hellmich, Bernhard Pichler
0115: Molecular scale modeling and experimentation Chairs(s): Dr. Sinan Keten and Dr. Kalpana Katti		
Buckingham Room	14:20 - 14:40	EP240219 Brucite carbonation: Molecular insights and sustainable carbon capture Author(s): Mehrdad Youzi*, Mohammad Javad Abdolhosseini Qomi
	14:40 - 15:00	EP240403 Dislocation distribution in medium entropy alloy CrCoNi using micropillar compression tests and molecular dynamics simulations Author(s): Mobin Vandadi*, Nima Rahbar

	15:00 - 15:20	EP240775 Potential development, molecular dynamics, and multiscale modeling of TiB and Ti/TiB composites Author(s): Shaoping Xiao*, Siamak Attarian, Akram Ghaffarigharehbagh, Yingbin Chen
0117: Mechanics and physics of granular materials Chairs(s): Alessandro F. Rotta Loria and Ryan Hurley and Marcial Gonzalez		
Salon 2	14:20 - 14:40	EP240827 Droplet impact on granular material modelled by coupled LBM-DEM Author(s): Linlin Fei, Dominique Derome, Jan Carmeliet*
	14:40 - 15:00	EP240874 New method for three-dimensional pore network identification of clays using FIB-SEM imaging Author(s): Yanzheng Ding, Fares Bennai, Mohamad Jrad, Julien Guyon, Mahdia Hattab*
	15:00 - 15:20	EP240323 Experimental evaluation of Cosserat model derived from granular micromechanics approach Author(s): Anil Misra*
	15:20 - 15:40	EP240792 Discrete computational modeling of thermo-hydro mechanical behavior frozen soils subjected to long-term freezing and thawing cycling Author(s): Danyang Tong*, Giuseppe Buscarnera, Alessandro F. Rotta Loria, David Grégoire, Gilles Pijaudier-Cabot, Gianluca Cusatis
0120: Architected materials Chairs(s): Josephine V. Carstensen and Pablo D. Zavattieri		
Salon 3	14:20 - 14:40	EP240063 Enhancing the confinement of structural members with auxetic architected truss lattice materials for civil infrastructure Author(s): Thomas Vitalis*, Andrew Gross, Georgios Tzortzinis, Brian Schagen, Simos Gerasimidis
	14:40 - 15:00	EP240146 Cortical bone-inspired tough tubular architected cementitious materials Author(s): Shashank Gupta*, Reza Moini
	15:00 - 15:20	EP240180 Sinusoidal helicoidal architecture with nonplanar layering of filaments in additively manufactured cementitious materials Author(s): Yu Wang*, Ala Douba, Jan Olek, Jeffrey Youngblood, Pablo Zavattier
	15:20 - 15:40	EP240406 Enhancing mechanical properties of cementitious materials through auxetic materials Author(s): Mobin Vandadi, Sara Heidarnezhad, Pardis Pourhaji*, Nima Rahbar
0122: Modeling and characterization of brittle and quasibrittle fracture Chairs(s): Wen Luo		
Salon 10	14:20 - 14:40	EP240274 Asymptotically matched extrapolation of fishnet failure probability to continuum scale Author(s): Houlin Xu*, Joshua Vievering, Hoang Nguyen, Yupeng Zhang, Jia-Liang Le, Zdenek Bazant
	14:40 - 15:00	EP240737 Size effect on strength statistics of notched quasibrittle structures Author(s): Jia-Liang Le*, Jan Elias
	15:00 - 15:20	EP241002 Process modeling and characterization of a quasibrittle carbon fiber using molecular dynamics Author(s): Md Fazlay Alam*, Armanj Hasanyan
	15:20 - 15:40	EP240170 Mode I fracture load prediction of components weakened by symmetrical and asymmetrical V-notches using the phase-field method Author(s): Alireza Ashkpour*, Jamal Bidadi, Hamed Saeidi Googarchin, Hsiao Wei Lee, Li Meng, Ahmad Najafi
0123: Multiscale behavior of damage and healing mechanics Chairs(s): Poh Leong Hien		
Salon 6	14:20 - 14:40	EP240247 Multiscale numerical modeling of microstructural damage and tensile strength of UHPC Author(s): Yanmo Weng, Lizhi Sun*
	14:40 - 15:00	EP241201 Exploring mechanical battery safety in lithium-ion cells under various mechanical loading conditions Author(s): Edris Akbari*, George Z. Voyiadjis
	15:00 - 15:20	EP240125 Prediction of microbial-induced calcium carbonate precipitation and its application in self-healing cementitious material Author(s): Hsiao Wei Lee*, Li Meng, Ali Rahmaninezhad, Christopher Sales, Yaghoob Amir Farnam, Ahmad Najafi
	15:20 - 15:40	EP240607 A family of frame elements with damage evolution for steel structures Author(s): Jade Cohen*, Filip Filippou
0125: Discrete models for the simulation of infrastructure materials Chairs(s): Gianluca Cusatis and Mohammed Alnaggar		
Salon 8	14:20 - 14:40	EP240693 Coarse-grained lattice discrete particle modeling of ultra-high-performance concrete Author(s): Tathagata Bhaduri*, Mohammed Abdellatef, Mohammed Alnaggar
	14:40 - 15:00	EP240756 Numerical simulation of hardened 3D-printed ultra high performance concrete using the Lattice Discrete Particle Model Author(s): Erol Lale*, Ke Yu, Matthew Troemner, Gianluca Cusatis
	15:00 - 15:20	EP240814 An energy regularization scheme for the Multiscale Lattice Discrete Particle Model Author(s): Yingbo Zhu*, Alessandro Fascetti
	15:20 - 15:40	EP240778 Dissipation mechanisms of crack-parallel stress effects on fracture process zone in concrete Author(s): Zdenek Bazant, Yuhui Lyu, Madura Pathirage, Hoang Nguyen, Gianluca Cusatis*
0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Reza Moini and Xiaojia Shelly Zhang		
	14:20 - 14:40	EP240759 Assessment of the printability of ultra-high-performance concrete for different printing systems Author(s): Shady Gomaa*, Ayesha Ahmed, Elmer Irizarry, Raul Marrero Rosa, Gianluca Cusatis

Monroe Room	14:40 - 15:00	EP240179 Upscaling architected metamaterials for applications in civil infrastructure using robotics Author(s): Brian Schagen*, Andreas Thoma, Matteo Pacher, Tanaya Bhave, Daniel Blank, Simos Gerasimidis
	15:00 - 15:20	EP240327 Thixotropy and rheological characterization of 3D-printable ultra-high-performance concrete Author(s): Ayesha Ahmed*, Raul Marrero Rosa, Shady Gomaa, Elmer Irizarry, Gianluca Cusatis
	15:20 - 15:40	EP240575 Bending performance of 3D steel auxetic lattice reinforced concrete Author(s): Neeraj Sharma*, Thomas Vitalis, Simos Gerasimidis, Kshitij Kumar Yadav
0305: Structural identification and damage detection Chairs(s): Dimitrios Anastasopoulos and Manolis Chatzis		
Wabash Room	14:20 - 14:40	EP240785 Detecting criticality in fibre reinforced cementitious composites using natural time analysis of acoustic emission under flexural loading Author(s): Kashif Naukhez*, R Vidya Sagar, Chandra Kishen
	14:40 - 15:00	EP240846 Data-driven ultrasonic imaging of delamination cavities in an anisotropic composite structure using convolutional neural network and level-set spectral element method Author(s): Boyoung Kim*, Shashwat Maharjan, Fazle Pranto, Bruno Guidio, Chanseok Jeong
	15:00 - 15:20	EP240862 Bayesian modal analysis based on spurious mode identification and Bayes-Mode-ID Author(s): Zhengyi Fu*, Heung Fai Lam
	15:20 - 15:40	EP240033 Strain-based OMA and quasi-static response monitoring of a Vierendeel truss railway bridge Author(s): Dimitrios Anastasopoulos*, Kristof Maes, Geert Lombaert, Edwin Reynders
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Francisco Pena and Anita Brown		
Crystal Room	14:20 - 14:40	EP240360 Finite element model updating of miter gates with nonlinear boundary conditions using static strain measurements Author(s): Trent Schreiber*, Yang Wang
	14:40 - 15:00	EP240394 Two-stage optimization approach for automated UAS structural visual inspection mission planning Author(s): Yuxiang Zhao, Benhao Lu, Mohamad Alipour*
	15:00 - 15:20	EP240389 Monitoring of long-term prestress losses in prefabricated prestressed slabs with complex cross sections using long-gauge sensors Author(s): Yitian Liang*, Branko Glisic
	15:20 - 15:40	EP241125 Real-life application and challenges of modern techniques and technologies towards a supervised automation of condition assessments Author(s): Francisco Pena*
0401: Topology optimization: From algorithmic developments to applications Chairs(s): James Guest		
Salon 5	14:20 - 14:40	EP240753 Proper Generalized Decomposition for topology optimization of problems with separable geometry for minimal elastic or thermal compliance Author(s): Tomas Pauwels, Geert Degrande, Mattias Schevenels*
	14:40 - 15:00	EP240898 Discrete topology and sizing optimization solved with hierarchical-inspired deep reinforcement learning Author(s): Gordon Warn*, Maximilian Ororbia
	15:00 - 15:20	EP241003 Using machine learning to improve the quality of gradient-based topology-optimized designs Author(s): Dat Ha*, Josephine Carstensen
	15:20 - 15:40	EP241098 A novel approach to overhang constraints in topology optimization Author(s): Ardalan Nejat*, James Guest
0402: Emerging topology and shape optimization techniques in computational design of materials and structures Chairs(s): Nolan Black and Jonathan Gorman		
Spire Parlor	14:20 - 14:40	EP241198 A graph-based adjoint design sensitivity analysis approach for transient systems with history dependent material response Author(s): Brandon Talamini, Daniel A. Tortorelli*
	14:40 - 15:00	EP240101 Stress-constrained design of hierarchical structures using second-order homogenization and machine learning Author(s): Ahmad Najafi*, Nolan Black
	15:00 - 15:20	EP241133 Transient modeling and design optimization of biodegradable magnesium alloy fixation devices Author(s): Justin Unger*, Timothy P. Weihs, James Guest
	15:20 - 15:40	EP240100 Multiscale structural optimization for applications in thermal stability and actuation Author(s): Isabella Snyder*, Nolan Black, Ahmad Najafi
0502: Advances in geomechanics and geophysics for modern sub-surface technology and natural hazard Chairs(s): Ghassan Shahin		
Water Tower Parlor	14:20 - 14:40	EP240141 Reaction-driven fracturing in carbon sequestration by mineralization Author(s): Rui Feng*, John Rudnicki
	14:40 - 15:00	EP240735 Scaling effects in reduced physical tests: Insights from a gradient-type nonlocal plasticity model Author(s): Dawei Xue*, Giuseppe Buscarnera
	15:00 - 15:20	EP240142 Interpreting chemically assisted crack growth in calcite using Surface Force-based Fracture Theory Author(s): Hooman Dadras*, Yida Zhang
0602: Computational fluid dynamics (CFD) and fluid-structure interaction (FSI): Method development and applications Chairs(s): Jinhui Yan		

Chicago Room	14:20 - 14:40	EP240808 Compressible Euler flow computations using the shifted boundary method Author(s): Xianyi Zeng*, Guglielmo Scovazzi
	14:40 - 15:00	EP241084 Examining the influence of fluid-structure interactions on dynamic stall in cross-flow turbines under high confinement Author(s): Rithwik Kandukuri*, Tony Clay, Richard Wiebe, Michael Motley, Jennifer Franck
	15:00 - 15:20	EP240812 Level-set Assisted Enriched Immersed Boundary Method for Stefan problem with applications to additive manufacturing process Author(s): Jongmin Rim*, Jinhui Yan
	15:20 - 15:40	EP241115 Effect of circadian rhythm modulated blood flow on nanoparticle based targeted drug delivery in virtual in vivo arterial geometries Author(s): Shoaib Goraya*, Shengzhe Ding, Mariam Arif, Hyunjoon Kong, Arif Masud
0704: Advances in modeling wind and its effects on the built environment Chairs(s): Catherine Gorle and Marco Giometto and Teng Wu		
Wilson Room	14:20 - 14:40	EP240185 Numerical investigation of turbulence effect on flight trajectory of spherical windborne debris: A multi-layered approach Author(s): Shaopeng Li*, Kimia Yousefi Anarak, Ryan Catarelli, Yanlin Guo, Kurtis Gurley, John van de Lindt
	14:40 - 15:00	EP240184 Experimental investigation of highly turbulent wind field effects on spherical debris flight Author(s): Shaopeng Li, Kimia Yousefi Anarak*, Ryan Catarelli, Yanlin Guo, Kurtis Gurley, John van de Lindt
	15:00 - 15:20	EP240041 CFD-based community-level hurricane wind hazard modeling using integrated BIM-GIS approach Author(s): Omar Nofal*, John van de Lindt, Ahmed Zakzouk
	15:20 - 15:40	EP240708 Large eddy simulation of wind flow over Oklahoma City using WRF-LES Author(s): Gokhan Kirkil*
0901: Computational methods for stochastic engineering dynamics Chairs(s): Athanasios Pantelous		
Salon 9	14:20 - 14:40	EP241025 A spline chaos expansion for uncertainty quantification in linear dynamical systems Author(s): Sharif Rahman*
	14:40 - 15:00	EP240612 Stochastic subspace via probabilistic principal component analysis for model-form uncertainty Author(s): Akash Yadav*, Ruda Zhang
	15:00 - 15:20	EP240912 Exact dynamic analysis of beams with distributed stochastic parameters Author(s): Sondipon Adhikari*, S Mukherjee, A Roy
	15:20 - 15:40	EP240035 Quantification of urban and community resilience to natural hazards Author(s): George Chatzikyriakidis, Gholamreza Moghimi, Nicos Makris*, Tue Vu
1007: Integration of physics-based models with data for identification, monitoring, estimation, and uncertainty quantification Chairs(s): Haeyoung Noh and Hamed Ebrahimian		
LaSalle 1	14:20 - 14:40	EP240081 Hybrid physics-data driven digital twinning of a 6 MW offshore wind turbine for estimation of aerodynamic stiffness and damping Author(s): Burak Bagirgan*, Eleonora Maria Tronci, Babak Moaveni, Eric Hines
	14:40 - 15:00	EP240432 Multi-physics model updating of a jacket offshore wind turbine using measured vibration data Author(s): Nasim Partovi Mehr*, Eric Hines, Babak Moaveni
	15:00 - 15:20	EP240439 Wind load estimation of offshore wind turbine based on KalmanNet Author(s): Azin Mehrjoo*, Mingming Song, Babak Moaveni
	15:20 - 15:40	EP240825 Digital twinning of offshore wind turbines using vibration measurements Author(s): Babak Moaveni*
1011: Probabilistic assessment, data-driven inference and optimization for decision-making under uncertainty Chairs(s): Pablo Morato		
Adams Room	14:20 - 14:40	EP240659 Evaluating actions to increase infrastructure resilience through a Bayesian system modeling framework Author(s): Cynthia Lee, Iris Tien*
	14:40 - 15:00	EP241075 Graph neural networks for power grid risk management Author(s): Yadong Zhang*, Pranav Karve, Sankaran Mahadevan
	15:00 - 15:20	EP240745 Neural networks ensembles of residuals to accelerate power grid contingency analysis Author(s): Nicholas A. G. Casaprima*, Somayajulu L. N. Dhulipala, Audrey Olivier, Ryan C. Hruska
	15:20 - 15:40	EP240877 Metamodeling from Bayesian perspective Author(s): Sin-Chi Kuok*, Ka-Veng Yuen
1101: Towards resilient coastlines: Advancements and new approaches Chairs(s): Teng Wu		
LaSalle 2	14:20 - 14:40	EP240150 Investigation of wind forcing on the energy dissipation of solitary waves in a storm surge Author(s): Hunter Boswell*, Guirong (Grace) Yan, Wouter Mostert
	14:40 - 15:00	EP240243 Assessing bridge performance and its effects on transportation network resilience under hurricane storms Author(s): Xuechen Ni*, Maria Koliou
	15:00 - 15:20	EP240245 Fragility assessment of industrial cooling towers under hurricane wind loads Author(s): Andres Calvo*, Jamie Padgett

	15:20 - 15:40	EP240386 Effect of incorporating hurricane duration on the regional loss assessment of a portfolio of wooden structures using simulation-based full track approach Author(s): Chao Sheng*, Paolo Bocchini
1104: Resilience of coastal structures, systems, and community subjected to hazards Chairs(s): William Hughes and Katerina Kyprioti		
Grant Park Parlor	14:20 - 14:40	EP240162 Equity-based retrofit decision-making for Galveston's electric distribution network Author(s): Abigail Beck*, Eun Jeong Cha, Walter Gillis Peacock
	14:40 - 15:00	EP240077 Analytical and experimental testing for increased shear plane of deployable geosystems for coastal stabilization Author(s): Elizabeth Capretta*, Khuzaima Hummad, Ann Sychertz
	15:00 - 15:20	EP240256 Role of insurance claims data from hurricanes in catastrophe modeling Author(s): Zhiming Zhang*, Jianjun Luo, Karthik Ramanathan
1105: Civil infrastructure in a changing climate: From nonstationary risk assessment to developing adaptation strategies Chairs(s): Eun Cha and Abdollah Shafieezadeh and Michele Barbato and Alex Taflanidis		
Hancock Parlor	14:20 - 14:40	EP240091 Projection of tropical cyclone activities under future climate Author(s): Grace Yan*
	14:40 - 15:00	EP240303 Resilient power systems in a changing climate: Adaptive replacement strategies for utility structures Author(s): Jaeyeong Lim*, Abdollah Shafieezadeh
	15:00 - 15:20	EP240317 A framework to mitigate wind-intensified wildfire incidents caused by failures in electric power system components Author(s): Amir Tajik*, Yousef Darestani, Payman Dehghanian
	15:20 - 15:40	EP240940 Life-cycle of structures and infrastructure systems under climate change Author(s): Fabio Biondini*, Zoubir Lounis, Michel Ghosn
1111: Reliability analysis and rare event probability estimation Chairs(s): Kostas Papakonstantinou		
LaSalle 3	14:20 - 14:40	EP240818 Importance sampling with Langevin Dynamics: Integrating optimization and geometry for enhanced reliability analysis Author(s): Armin Tabandeh, Gaofeng Jia*, Paolo Gardoni
	14:40 - 15:00	EP240780 Inverse importance sampling-based framework for reliability estimation in complex, high-dimensional spaces Author(s): Elsayed Eshra*, Kostas Papakonstantinou
	15:00 - 15:20	EP240972 Self-structured importance sampling for chance-constrained optimization Author(s): Sai Rakshith, Anand Deo*, Karthyek Murthy, Anirudh Subramanyan, Shanyin Tong
	15:20 - 15:40	EP240139 Noise-aware stopping criteria for active learning reliability with noisy limit-states Author(s): Anderson Vinha Pires*, Augustin Persoons, Maliki Moustapha, Stefano Marelli, David Moens, Bruno Sudret
Wed May 29 - Technical Session 4		
0101: Plan the future: Innovations in advanced cementitious materials and sustainability Chairs(s): Jianqiang Wei		
Salon 1	16:10 - 16:30	EP240021 Probabilistic structural vulnerability framework: Hazard intensity measure and fragility parameters concerning the reliability-based vulnerability index Author(s): Seyed Hooman Ghasemi*
	16:30 - 16:50	EP240156 Seismic fragility analysis using mNARX modelling Author(s): Styfen Schär*, Stefano Marelli, Bruno Sudret
	16:50 - 17:10	EP240525 A PINN method for registration of medical images Author(s): Amirhossein Amiri-Hezaveh*, Adrian Buganza Tepole
	17:10 - 17:30	EP240628 Finite volume based multi-contact modeling to study detailed mechanical response of an elastic material Author(s): Ranjan Dhakal*, Philip Cardiff, Stefan Radl
0104: Mechanics of wood and wood-based materials Chairs(s): Markus Lukacevic		
Salon 4	16:10 - 16:30	EP240404 Ion diffusion rate in soft wood structures: A molecular dynamics study Author(s): Sina Youssefian, Mobin Vandadi*, Joseph Jakes, Nima Rahbar
	16:30 - 16:50	EP240977 Molecular mechanisms underlying the peg-treatment of wood cell wall components Author(s): Ali Shomali*, Jan Carmeliet, Dominique Derome
	16:50 - 17:10	EP240757 Prediction of mechanosorptive creep in mass timber via microprestress theory Author(s): Susan Alexis Brown*, Giovanni Di Luzio, Gianluca Cusatis
	17:10 - 17:30	EP240466 Development of a lignin-bonded biocomposite from sawmill by-products Author(s): Markus Lukacevic*, Josef Füssl, Michael Schwaighofer, Markus Königsberger, Luis Zelaya-Lainez
	17:30 - 17:50	EP240235 Characterization of mechanical properties of five hot-pressed lignins extracted from different feedstocks by micromechanics-guided nanoindentation Author(s): Luis Zelaya-Lainez*, Michael Schwaighofer, Markus Königsberger, Markus Lukacevic, Sebastian Serna-Loaiza, Michael
0105: Mechanics of soft synthetic and biological materials: Theory, simulation, and experiment Chairs(s): Aditya Kumar, Berkin Dortdivanlioglu		

Crystal Room	16:10 - 16:30	EP240029 EcoCFTrack: Advanced diagnostic, monitoring, and tracking device for affordable cystic fibrosis care Author(s): Roshira Premadasa*, Qianyun Zhang
	16:30 - 16:50	EP240887 Curvature-matching mechanics in skin-based bioelectronics to minimize interfacial stresses Author(s): Raudel Avila*
	16:50 - 17:10	EP240519 Numerical and experimental analyses of a new tonometer based on solitary waves Author(s): Madison Hodgson*, Ali Komaie, Piervincenzo Rizzo, Samuel Dickerson
	17:10 - 17:30	EP240391 Shape morphing with swelling hydrogels and expanding foams Author(s): Abigail Plummer*, Caroline Adkins, Tom Marzin, Julien Le Dreff, Sujit Datta, P.-T. Brun, Andrej Košmrlj
	17:30 - 17:50	EP240794 Nonlinear mechanics of remodeling and growth Author(s): Aditya Kumar*, Arash Yavari
0106: Advances in modeling of material damage and fracture Chairs(s): Mostafa Mobasher		
Salon 12	16:10 - 16:30	EP240700 Effect of excessive clamping force on bolted CFRP composite plates Author(s): Alaa Elsisi*, Hani Salim
	16:30 - 16:50	EP240682 On calibration and validation of a cohesive zone model for mixed-mode delamination in Z-pinned composites Author(s): Alex Faupel*, Caglar Oskay
	16:50 - 17:10	EP240214 Phase field fracture approach to model complex crack interactions in fiber reinforced polymer composites Author(s): Akash Kumar*, Trisha Sain
	17:10 - 17:30	EP240878 Multiscale modeling of localized damage in ceramic matrix composite structures with the Generalized Finite Element Method Author(s): Bryce Mazurowski*, Patrick O'Hara, Armando Duarte
	17:30 - 17:50	EP240127 Fracture response of BioFiber-reinforced concrete (BioFRC) Author(s): Amirreza Sadighi*, Mohammad Houshmand, Ali Rahmaninezhad, Divya Kamireddi, Yaghoob Amir Farnam, Christopher Sales, Caroline Schauer, Ahmad Najafi
0109: Modeling of materials with interfaces and scales using physics-based and machine-learning methods Chairs(s): Ravindra Duddu and Reza Abedi		
Price Room	16:10 - 16:30	EP241047 Additive manufacturing process modeling with Multi-Output Gaussian Processes Author(s): Som Dhulipala*, Sudipta Biswas, Peter German
	16:30 - 16:50	EP240684 Efficient computation of reduced order basis for eigenstrain homogenization method for multiscale polycrystal plasticity simulations Author(s): Aslan Nasirov*, Caglar Oskay
	16:50 - 17:10	EP240982 A non-uniform adaptive model order reduction technique for modeling composite materials Author(s): Min Lin, David Brandyberry, Xiang Zhang*
	17:10 - 17:30	EP240522 Linking micro-morphology and macro-mechanics: Uncertainty quantified parametrically upscaled constitutive mechanics model (UQ-PUCDM) for composites through physics-based machine learning Author(s): Yanrong Xiao*, Deniz Ozturk, Xiaofan Zhang, Somnath Ghosh
0111: Cementitious materials: Experiments and modeling across the scales Chairs(s): Bernhard Pichler		
Salon 7	16:10 - 16:30	EP240909 An approach for design of multi-material wellbore plug placement processes accounting for uncertainty Author(s): Carlos Garcia Verdugo*, Eilis Rosenbaum, Matthew Grasinger, Julie Vandenbossche, John Brigham
	16:30 - 16:50	EP240822 Autogenous shrinkage and swelling of submerged or sealed specimens of ultra-high-performance cement paste Author(s): Raul Marrero Rosa*, Tapiwanashe Bhibho, Oscar Manuel Gonzalez, Zdenek Bazant, Gianluca Cusatis
	16:50 - 17:10	EP241091 Enhanced durability of concrete with during- and post-cure shrinking fibers Author(s): Mohammad Abdul Qader, Bismark Yeboah, Diarmuid Gregory, Mandar Dewoolkar, Dryver Huston*
	17:10 - 17:30	EP240567 Cemcat: Cementitious materials catalogue with their compositions, properties, synthesis and characterization methods, and applications Author(s): Mohd Zaki*, N. M. Anoop Krishnan, Jayadeva Jayadeva
	17:30 - 17:50	EP240566 Reconstruction of multi-phase cement paste virtual specimens using deep learning Author(s): Sung-Wook Hong, Se-Yun Kim, Donghwi Eum, Tong-Seok Han*
0112: Small scale phenomena in sustainable & complex materials Chairs(s): Nishant Garg		
Salon 8	16:10 - 16:30	EP241197 From small scale fracture tests to open metrology & circular economies Author(s): Christos E. Athanasiou*
	16:30 - 16:50	EP240962 Sorptivity prediction in seconds Author(s): Hossein Kabir*, Nishant Garg
	16:50 - 17:10	EP240215 Elucidating the enhancement mechanisms of carbon nanomaterials in fine recycled concrete aggregate mortars Author(s): Nathanial Buettner*, Gass Iyacu, Ange-Therese Akono
	17:10 - 17:30	EP240920 Dissolution kinetics of calcium hydroxide Author(s): Yoonjung Han*, Natasha V. D. Levy, Umme Zakira, Jonathan Lapeyre, Mine Ucak-Astarlioglu, Jedadiah F. Burroughs, Jeffrey W. Bullard
	17:30 - 17:50	EP240336 Model for simultaneous carbonation and hydration of belite clinker during carbonation curing Author(s): Julian Stapper*, Quin R.S. Miller, Mohammad Javad Abdolhosseini Qomi

0117: Mechanics and physics of granular materials Chairs(s): Alessandro F. Rotta Loria and Ryan Hurley and Marcial Gonzalez		
Salon 2	16:10 - 16:30	EP240252 Effect of the particle shape on the elastic anisotropy of granular materials Author(s): Shubjot Singh*, Giuseppe Buscarnera
	16:30 - 16:50	EP240259 Constitutive modeling of the rate-dependency of sand during flowslides Author(s): Ming Yang*, Giuseppe Buscarnera
	16:50 - 17:10	EP240271 Dynamic feeding-discharging behavior of milled corn stover in wedge-shaped hoppers Author(s): Yimin Lu*, Nicholas Deak, Hariswaran Sitaraman, Yidong Xia, Jordan Klinger
	17:10 - 17:30	EP240462 A micro-macro hopper flow design for handling granular biomass materials Author(s): Abdallah Ikbarieh*, Yumeng Zhao, Wencheng Jin
0120: Architected materials Chairs(s): David Restrepo and Tim Chen		
Salon 3	16:10 - 16:30	EP241042 Stress focusing in soft lattices undergoing extreme, topology-switching deformation Author(s): Caleb Widstrand, Joseph Labuz, Xiaoming Mao, Stefano Gonella*
	16:30 - 16:50	EP240310 Feather-inspired architected materials with shape memory Author(s): Phani Saketh Dasika, Yunlan Zhang, Pablo Zavattieri*
	16:50 - 17:10	EP241106 Design framework for microscale 3D woven architected materials Author(s): Molly Carton*, James Surjadi, Bastien Aymon, Carlos Portela
	17:10 - 17:30	EP240832 Double-network-inspired woven metamaterials Author(s): James Surjadi*, Bastien Aymon, Molly Carton, Carlos Portela
	17:30 - 17:50	EP241088 Architected foams for compact and lightweight cushioning Author(s): Abhishek Gupta*, Komal Chawla, Ramathasan Thevamaran
0121: Contributions of high-performing lightweight materials to sustainable development and infrastructure resilience of engineering systems Chairs(s): Nima Khodadadi		
Salon 6	16:10 - 16:30	EP240196 Synergistic effects of nanoparticle geometric shape and post curing on carbon-based nanoparticle reinforced epoxy nanocomposites: Characterization, microstructure and adhesion properties Author(s): Dawei Zhang*, Ying Huang, Xingyu Wang
	16:30 - 16:50	EP240415 Ensemble machine learning model to predict the compressive strength of geopolymer recycled aggregate concrete Author(s): Nima Khodadadi*, Emadaldin Mohammadi Golafshani, Tuan Ngo, Ali Behnood, Francisco Decaso, Antonio Nanni
0122: Modeling and characterization of brittle and quasibrittle fracture Chairs(s): Jia-Liang Le		
Salon 10	16:10 - 16:30	EP241063 Dynamic rupture modeling in a complex fault zone with distributed and localized damage Author(s): Chunhui Zhao*, Md Shumon Mia, Ahmed Elbanna, Yehuda Ben-Zion
	16:30 - 16:50	EP240106 Bound constrained optimization using Lagrange multiplier for a length scale insensitive phase field model Author(s): Li Meng*, Hsiao Wei Lee, Alireza Ashkpour, Ahmad Najafi
	16:50 - 17:10	EP240464 The effect of strength distribution at the microscale on macroscopic fracture strength and energy Author(s): Reza Abedi*, Giang Huynh, Erdem Caliskan, Colin Furey, Farhad Pourkamali-Anaraki, Alireza Amirkhizi, Christopher Hansen
	17:10 - 17:30	EP241150 Rare-event reliability evaluation of additively manufactured composites with high-throughput tests Author(s): Shafi Shahriar, Wen Luo*
0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Josephine Carstensen		
Monroe Room	16:10 - 16:30	EP240858 Engineering mechanics of suture interlocking mechanism in cementitious hard-soft composites by design and additive manufacturing Author(s): Dana Daneshvar, Mahsa Rabiei, Aimane Najmeddine, Reza Moini*
	16:30 - 16:50	EP241123 Algorithmic encoding of adaptive responses in temperature-sensing multi-material architectures Author(s): Xiaojia Shelly Zhang*, Weichen Li, Yue Wang, Tian Chen
	16:50 - 17:10	EP240751 Topology optimization for material-extrusion additive manufacturing with large deposition to design feature size ratios Author(s): Hajin Kim-Tackowiak*, Josephine Carstensen
	17:10 - 17:30	EP240554 Automated design-analysis-optimization workflow for aerospace structures using isogeometric Kirchhoff–Love shells Author(s): Han Zhao*, David Kamensky, John Hwang, Jiun-Shyan Chen
0212: Repair and assessment of deteriorating critical infrastructure Chairs(s): Christine Lozano and Hussam Mahmoud		
Salon 5	16:10 - 16:30	EP240688 Experimental design and deep neural networks for predicting the conditions of structurally deficient bridges Author(s): Olivia Smith, Weidong Wu*, Joseph Owino, Yu Liang, Lan Gao, Dalei Wu
	16:30 - 16:50	EP240088 Entropy based life cycle framework for inspection and management of marine structures Author(s): Akshat Chulahwat*, Hussam Mahmoud
	16:50 - 17:10	EP240197 Cyclic actuation behavior of iron-based shape memory alloys for use in self-centering columns Author(s): Huanpeng Hong*, Bora Gencturk, M Saiid Saiidi

	17:10 - 17:30	EP240151 Computational analysis of repair and rehabilitation of aging underground cast-iron pipelines with cure-in-place-pipe liner Author(s): Junyi Duan*, Chengcheng Tao, Yizhou Lin, Ying Huang
	17:30 - 17:50	EP240663 Assessment of mass concrete structure joint condition by application of impact loads from a Cold Gas Thruster Author(s): Martin Butler*, Gabriel Riveros
0304: Advances in bridge health monitoring: Data-driven and machine learning methods, indirect monitoring, crowdsourced mobile sensing Chairs(s): Debarshi Sen and Shamim Pakzad		
Salon 9	16:10 - 16:30	EP240149 A differentiable material point method for inverse estimation in SHM of railway bridges Author(s): Jeffrey Cheng*, Krishna Kumar, Matthew DeJong
	16:30 - 16:50	EP240382 Bridge modal identification using time-frequency analysis of mobile sensing data Author(s): Liam Cronin, Giulia Marasco, Debarshi Sen*, Thomas Matarazzo, Shamim Pakzad
	16:50 - 17:10	EP240481 Graph Neural Networks based virtual sensing: A machine learning approach for fatigue assessment Author(s): Giulia Marasco*, Debarshi Sen, Shamim Pakzad
	17:10 - 17:30	EP240521 Failure prediction of damaged members using a deep neural network (DNN) Author(s): Richard Snyder*, Hyunjoong Kim, Joel Harkness
	17:30 - 17:50	EP240561 Sensing based simulation of force and displacement in reinforced concrete bridge columns subjected to seismic events by using plasticity and bar-slip models Author(s): Amir Iranmanesh*, Mahsa Panahi, Farhad Ansari
0305: Structural identification and damage detection Chairs(s): Vasilis Dertimanis		
Wabash Room	16:10 - 16:30	EP240630 Structural damage detection using physics-informed domain adaptation Author(s): Zixin Wang*, Ojaswi Acharya, Mohammad Jahanshahi
	16:30 - 16:50	EP240886 Identification of creep damage in structural systems using Physics-Informed Parallel Neural Networks Author(s): Rui Zhang*, Gordon Warn, Aleksandra Radlińska
	16:50 - 17:10	EP240944 Estimation of unknown parameters and hidden physics with adaptive basis function and successive convex approximation Author(s): Letian Yi*, Siyuan Yang, Ying Cui, Zhilu Lai
	17:10 - 17:30	EP241113 Identification of structural properties from LVD measurement of a steel railway bridge Author(s): Tzuyang Yu*
0309: Leveraging structural sensing and monitoring for informed decision-making, mitigation, and post-event management Chairs(s): Milad Roohi and Saeed Eftekharazam and Kalil Erazo and Doeun Choe and Eleonora Tronci		
Wilson Room	16:10 - 16:30	EP240921 A model-based framework for structural damage assessment of instrumented civil infrastructure systems Author(s): Kalil Erazo*
	16:30 - 16:50	EP240823 Convolutional neural network for identifying effective seismic force and rapid reconstruction of seismic motions in built environments and soils Author(s): Shashwat Maharjan*, Bruno Guidio, Chanseok Jeong
	16:50 - 17:10	EP240507 Sensor development and characterization for post-wildfire water recovery Author(s): Amanda McCann, Amy Metz, Erica Fischer, Lauren Linderman*
	17:10 - 17:30	EP241064 Advancements in structural system identification for floating offshore wind turbines: Model calibration Author(s): Martin Masanes Didyk*, Yashar Eftekhar Azam, Ibrahim Taze, Barbara Costa Girafa
	17:30 - 17:50	EP240953 A multi-factor decision framework to integrate safety and policy in operational and maintenance planning for offshore wind farms Author(s): Eleonora Maria Tronci*, Anna Haensch, Bridget Moynihan, Babak Moaveni, Eric Hines
0310: New trends in vibration control and energy harvesting: Modeling and analysis of innovative materials and structures at micro- and macro-scale Chairs(s): Alberto Di Matteo and Francesco Paolo Pinnola		
Buckingham Room	16:10 - 16:30	EP240549 Assessment of particle damping systems in reducing motion of floating wind turbine platforms Author(s): Ahmed Shalaby*, Muhammad Hajj, Raju Datla, Mahmoud Nassar, Sami Masri, Lei Zuo, Jia Mi
	16:30 - 16:50	EP240884 Recent advances on the evaluation of path-dependent work and internal energy change for mechanical systems with complex hysteretic behavior Author(s): Nicolò Vaiana*, Luciano Rosati
	16:50 - 17:10	EP241033 Scaling effects of a bistable piezomagnetoelastic non-linear energy harvester Author(s): Hossam Alqaleiby*, Mahmoud Ayyad, Muhammad Hajj
	17:10 - 17:30	EP240902 A viscoelastic nonlocal model for dynamic behavior of dielectric elastomer plates Author(s): Francesco Paolo Pinnola*, Alotta Gioacchino, Francesco Scudieri, Francesco Marotti de Sciarra
	17:30 - 17:50	EP240744 Novel TLCD-based wave energy converter with dielectric elastomer generator Author(s): Alberto Di Matteo*, Antonina Pirrotta
0402: Emerging topology and shape optimization techniques in computational design of materials and structures Chairs(s): Ahmad Najafi and Daniel Tortorelli		
	16:10 - 16:30	EP240019 Topology optimization of elasto-plastic structures and materials Author(s): Mathias Wallin*
	16:30 - 16:50	EP240099 Second-order homogenization for multiscale structural optimization applications Author(s): Nolan Black*, Ahmad Najafi

Spire Parlor	16:50 - 17:10	EP240381 A framework for the topology optimization of multi-physics, multi-material microstructures using neural networks Author(s): Akshay Kumar*, Krishnan Suresh
	17:10 - 17:30	EP240084 Topology optimization of structural battery composites using a virtual temperature constraint to ensure bi-continuous material distributions Author(s): Jonathan Gorman*, Reza Pejman, Ahmad Najafi
	17:30 - 17:50	EP240729 Computational design approaches for tailoring the rate-dependent response of soft metamaterials exhibiting instabilities Author(s): Ryan Alberdi*, Craig Hamel, Aabhas Singh, Adam Cook, Kevin Long
0502: Advances in geomechanics and geophysics for modern sub-surface technology and natural hazard Chairs(s): Ghassan Shahin		
Water Tower Parlor	16:10 - 16:30	EP240366 Normal stress variation and pore pressure rate effect on a rate and state frictional fault Author(s): Micaela Mercuri*, John Rudnicki
	16:30 - 16:50	EP240551 Discrete element analysis of the influence of porosity on strike-slip surface fault rupture Author(s): Fernando Garcia*
	16:50 - 17:10	EP241079 A thermo-hydro-mechanical formulation for modelling fault slip over the seismic cycle Author(s): Antoine Jacquey*, Manolis Veveakis, Robert Viesca
	17:10 - 17:30	EP240477 Conditions for steady creep, asesmic transients, and seismic slip in a single-asperity strike-slip fault Author(s): Federico Ciardo*, Robert Viesca, Dmitry Garagash
	17:30 - 17:50	EP241051 On the role of bulk strength in generating a spectrum of fault slip patterns Author(s): Md Shumon Mia, Amr Ibrahim, Mohamed Abdelmeguid, Ahmed Elbanna*
0602: Computational fluid dynamics (CFD) and fluid-structure interaction (FSI): Method development and applications Chairs(s): Dimitrios Kalliontzis		
Chicago Room	16:10 - 16:30	EP240499 Performance optimization of cross flow turbine for energy generation from moving water Author(s): Mahmoud E. Abd El-Latief*, Ahmed Shalaby, Raju Datla, Muhammad Hajj
	16:30 - 16:50	EP240876 The impact of surface roughness on the ship's resistance Author(s): Gabriella Bognar*
	16:50 - 17:10	EP240377 Effect of different tornado chambers on vortex structure and vortex parameters Author(s): Rathinam Selvam*
0701: Advanced analysis for earthquake engineering Chairs(s): Kevin Wong		
Grant Park Parlor	16:10 - 16:30	EP240988 Evaluating the influence of seismic mitigation measures on the performance of Chilean bridges Author(s): Esteban Amaya*, Alexandros Taflanidis
	16:30 - 16:50	EP240987 Fragility assessment of anticipatory automatic seismic trip systems for critical facilities Author(s): Mohammad Salehi*, Kaniel Tilow, Benjamin Kosbab
	16:50 - 17:10	EP240599 Semi-analytical and numerical analyses of tunnels subjected to arbitrarily inclined seismic waves Author(s): Swetha Veeraraghavan*
	17:10 - 17:30	EP240134 Propagation of RC beam-column joint modeling uncertainty to the seismic performance of RC buildings using incremental record-wise LHS Author(s): Medhat Elmorsy*, Michalis Vassiliou, Dimitrios Vamvatsikos
	17:30 - 17:50	EP240040 Numerical and experimental validation of an uplift friction damper for seismically resilient rocking wall seismic-force resisting systems Author(s): Daniel Dowden*
0703: Tropical cyclone induced winds, surge-wave, flooding and impacts on infrastructure systems Chairs(s): Chao Sun and Guirong Yan and Celalettin Ozdemir		
Hancock Parlor	16:10 - 16:30	EP240398 Storm surge vulnerability of idealized deltaic landscapes under future sea level rise scenarios Author(s): Sayed Omar Hofioni*, Peter Bacopoulos, Celalettin Emre Ozdemir, Matthew Hiatt
	16:30 - 16:50	EP241007 Flood performance evaluation of process pipelines using finite element analysis Author(s): Md Manik Mia*, Sabarethinam Kameshwar
	16:50 - 17:10	EP240541 Modeling business interruption loss due to hurricane wind Author(s): Changda Feng*, Tim Johnson, Karthik Ramanathan
	17:10 - 17:30	EP240118 Characterizing coupled extreme wind-wave loads on offshore wind turbines using large eddy simulations Author(s): Tianqi Ma, Chao Sun*
	17:30 - 17:50	EP240965 Validating multiphase numerical simulation of shoaling regular and irregular waves Author(s): Max Beeman*, Catherine Gorlé
1007: Integration of physics-based models with data for identification, monitoring, estimation, and uncertainty quantification Chairs(s): Babak Moaveni and Haeyoung Noh		
	16:10 - 16:30	EP240644 Uncertainty quantification of complex structural connections through Bayesian model updating using modal data Author(s): Milad Mehrkash*, Erin Bell
	16:30 - 16:50	EP240784 Operational health monitoring of bridges using multimodal data fusion and Bayesian finite element model updating techniques Author(s): Niloofar Malekghaini*, Hamed Ebrahimian, Farid Ghahari, Mathew Bowers, Ertugrul Taciroglu, Frederick Harris

LaSalle 1	16:50 - 17:10	EP240931 Real-time state estimation of nonstationary systems using topological data analysis features Author(s): Arman Razmarashooli*, Daniel Salazar, Simon Laflamme
	17:10 - 17:30	EP240946 Pairing UAV-collected imagery data and machine learning for corrosion detection in bridge inspections in areas with chaotic data Author(s): Hana Herndon*, Iris Tien
	17:30 - 17:50	EP240402 Water facility monitoring through pre-existing telecommunication optical fiber cables Author(s): Jatin Aggarwal*, Jingxiao Liu, Hae Young Noh
1011: Probabilistic assessment, data-driven inference and optimization for decision-making under uncertainty Chairs(s): Kostas Papakonstantinou and Pablo Morato and George Deodatis		
Adams Room	16:10 - 16:30	EP240658 Machine learning-based time series prediction for nodal networks under uncertainty Author(s): Yanjie Tong, Iris Tien*
	16:30 - 16:50	EP240820 Evaluating accuracy in response prediction of nonlinear systems Author(s): Sena Mursel*, Wei-Min Huang, Daniel Conus, Paolo Bocchini
	16:50 - 17:10	EP240671 Variability response functions for certain problems in classical elasticity Author(s): Manuel Miranda*
	17:10 - 17:30	EP240314 Damage localization of structures using full-field displacement and differentiable physics Author(s): Borna Rahnamay Farnod*, Wesley Reinhart, Rebecca Napolitano
	17:30 - 17:50	EP240427 Uncertainty-aware sub-surface material characterization via Bayesian radar signal processing Author(s): Ishfaq Aziz*, Mohamad Alipour
1101: Towards resilient coastlines: Advancements and new approaches Chairs(s): Aikaterini P. Kyprioti		
LaSalle 2	16:10 - 16:30	EP240220 Aerodynamic mitigation of single-axis solar trackers through machine learning-based shape optimization Author(s): Seyed Pejman Fatehi*, Yanlin Guo, Teng Wu
	16:30 - 16:50	EP240595 Life-cycle cost assessment for performance-based wind design of a tall concrete building equipped with damping systems Author(s): Teng Wu*, Baichuan Deng
	16:50 - 17:10	EP240683 Tropical cyclone scenarios for risk-informed resilience assessment of coastal communities under a changing climate Author(s): Yue Dong, Yanlin Guo*, Norberto Nadal-Caraballo, Madison Yawn, Bruce Ellingwood, Hussam Mahmoud, Luke Aucoin
	17:10 - 17:30	EP240016 AI-driven assessment and large-scale mapping of post-disaster building damage by integrating deep learning, satellite imagery, and GIS Author(s): Abdullah Braik*, Maria Koliou
	17:30 - 17:50	EP240313 A life-cycle cost analysis to determine the effectiveness of prestressed concrete poles against aging and combined wind-surge-wave induced loads Author(s): Saeed Sohrabi*, Yousef Darestani, William Pringle, Daniel Dowden, Payman Dehghanian
1111: Reliability analysis and rare event probability estimation Chairs(s): Ziqi Wang		
LaSalle 3	16:10 - 16:30	EP240279 Risk assessment for large-scale transportation infrastructure using transitional Markov Chain Monte Carlo sampling Author(s): Anteneh Deriba*, David Yang
	16:30 - 16:50	EP240241 Efficient assessment of network seismic fragility curves using subset simulation Author(s): Dongkyu Lee*, Ziqi Wang, Junho Song
	16:50 - 17:10	EP240680 Reliability and ultimate failure analysis of ship hulls under cyclic bending loads Author(s): Mohammad Ibrahim*, Aws Idris, Mohamed Soliman
	17:10 - 17:30	EP240847 A novel algorithm for probability of failure estimation in structural engineering Author(s): Roberto Forgione*, Binbin Li, Paolo Gardoni
	17:30 - 17:50	EP240207 Sensitivity analysis of the reliability of corroded ship hulls considering initial geometric imperfections and residual stresses Author(s): Aws Idris*, Mohamed Soliman
Thu May 30 - Technical Session 5		
0106: Advances in modeling of material damage and fracture Chairs(s): Lampros Svolos		
Salon 12	09:00 - 09:20	EP240804 Molecular dynamics and quasicontinuum studies to explore parallel stress effects on fracture mechanisms at the nanoscale Author(s): Yu-Chuan Hsu, Steve M. Whalen, Woo Kyun Kim, Zdeněk Bažant, Ellad B. Tadmor, Markus Buehler*
	09:20 - 09:40	EP240120 Statistical fractographic analysis of steel ductile fracture using computer vision techniques Author(s): Min-Chun Han*, Sherif El-Tawil
	09:40 - 10:00	EP240482 Accelerating the analysis of non-local gradient damage propagation with a new formulation of I-FENN based on Temporal Convolutional Networks Author(s): Panos Pantidis*, Diab Abueidda, Mostafa Mobasher
	10:00 - 10:20	EP240927 Neural network discretization for the phase field model of fracture Author(s): Conor Rowan*, Kurt Maute, Alireza Doostan
0120: Architected materials Chairs(s): Reza Moini and Shelly Zhang		

Salon 3	09:00 - 09:20	EP240174 Multiphysics topology optimization of architected magnetic soft materials with continuous magnetization orientations Author(s): Zhi Zhao*, Chao Wang, Xiaojia Shelly Zhang
	09:20 - 09:40	EP240176 Topology optimization of irregular architected materials with tunable responses using a virtual growth rule Author(s): Yingqi Jia*, Ke Liu, Xiaojia Shelly Zhang
	09:40 - 10:00	EP240939 Experiment-informed finite-strain inverse design of spinodal metamaterials Author(s): Michael Espinal*, Prakash Thakolkaran, Siddhant Kumar, Somayajulu Dhulipala, Carlos Portela
	10:00 - 10:20	EP240602 Machine learning assisted design of architected materials for enhanced energy absorption and failure strength Author(s): Bhargav Reddy Isanaka*, Tanmoy Mukhopadhyay, Rajendra Kumar Varma, Vinod Kushvaha
0125: Discrete models for the simulation of infrastructure materials Chairs(s): Gianluca Cusatis and Mohammed Alnaggar		
Salon 8	09:00 - 09:20	EP240727 An efficient static solver for the Lattice Discrete Particle Model (LDPM) Author(s): Dongge Jia, John Brigham, Alessandro Fascetti*
	09:20 - 09:40	EP240375 Modeling of triaxial stresses and steel reinforcement-induced transverse confinement in concrete damaged by alkali-silica reaction Author(s): Madura Pathirage*, Tianjiao Gai, Bogin Zhang, Gianluca Cusatis
	09:40 - 10:00	EP240783 Numerical simulation of flow, setting, and hardening of 3D printed concrete Author(s): Ke Yu*, Bahar Ayhan, Erol Lale, Matthew Treomner, Gianluca Cusatis
	10:00 - 10:20	EP240763 Poly-Material Lattice Discrete Particle Model (P-LDPM) for the numerical simulation of scratch testing Author(s): Dono Toussaint*, Matthew Troemner, Gilles Pijaudier-Cabot, Gianluca Cusatis
0201: Failure and function in structural stability applications Chairs(s): Hayder Rasheed and Stelios Yiatros		
Salon 7	09:00 - 09:20	EP240265 Progressive wrinkling and collapse of lined pipe due to repeated winding/unwinding on reel Author(s): Emile Naous*, Stelios Kyriakides
	09:20 - 09:40	EP241112 Modeling of thin cylindrical shells with geometric imperfections under combined bending and torsion Author(s): Victoria Ding*, Shahab Torabian, Sandor Adany, Ben Schafer
	09:40 - 10:00	EP241203 The effects of boundary conditions on the axial compressive response of thin-walled circular cylindrical shells Author(s): Anindya Karmakar*, Veera Sundararaghavan Sundararaghavan, Anthony M. Waas
	10:00 - 10:20	EP240194 Experimental lateral torsional buckling of simply supported anisotropic laminated web beams subjected to a single mid-span loading Author(s): Mohammad Bani Hani*, Hayder Rasheed
0202: New challenges in instabilities of shell structures Chairs(s): Frederic Bumbieler		
Salon 1	09:00 - 09:20	EP240346 Experimental characterization of the mechanical behavior of a steel liner subjected to high confinement based on in-situ measurements Author(s): Frederic Bumbieler*, Norman Mathieu, Mohamad Jrad, Gilles Armand
	09:20 - 09:40	EP240790 Instability of a confined steel shell subjected to a solid/solid external loading – Effect of interface mechanical properties. Author(s): Sajid Zemam, Mohamad Jrad*, Norman Mathieu, Frederic Bumbieler, Mahdia Hattab
	09:40 - 10:00	EP240725 A new XFEM approach for the analysis of thin-walled structures Author(s): Ameer Marzok, Tejav DeGanyar, Haim Waisman*
	10:00 - 10:20	EP240037 Probabilistic buckling of imperfect shells: Multi-defect interactions and statistical insights Author(s): Fani Derveni*, Pedro M. Reis
0206: Biological and biologically inspired materials and structures Chairs(s): Dr. Christian Hellmich and Dr. Dinesh Katti		
LaSalle 3	09:00 - 09:20	EP240917 Computationally driven materials design of tissue engineering scaffolds for biomechanical tuning of for bone regeneration and testbeds of cancer bone metastasis Author(s): Kalpana Katti*, Dinesh Katti, Krishna Kundu, Hanmant Gaikwad, Sharad Jaswandkar, Parth Vyas
	09:20 - 09:40	EP240594 Hierarchical elastoplasticity of cortical bone: Observations, mathematical modeling, validation Author(s): Valentina Kumbolder, Claire Morin, Stefan Scheiner, Christian Hellmich*
	09:40 - 10:00	EP240749 Estimation of the mechanical properties of in vivo cervical spine intervertebral discs Author(s): Soumaya Ouhsousou, William J. Anderst, Clarissa M. LeVasseur, Jeremy D. Shaw, John C. Brigham*
	10:00 - 10:20	EP240509 The effects of age, sex, and the materials of hip implants on the microstructures and mechanical properties of hip capsule scar tissues Author(s): Angelina Avgeri, Samantha Sanders, Bertrand Cinquin, Christophe Sandt, Laurent Sedel, Pascal Bizot, Elisa Budyn*
0208: Meshfree, peridynamic, and particle methods: Advancements and applications Chairs(s): JS Chen and Sheng-Wei Chi		
Adams Room	09:00 - 09:20	EP240498 Unified analysis of meshfree methods: Comparisons and results Author(s): Michael Hillman*, Joseph Magallanes, Dominic Wilmes
	09:20 - 09:40	EP241068 Stabilized extended B-spline material point method for multi-field soft materials with nitsche imposition of boundary conditions Author(s): Ashkan Ali Madadi*, Berkin Dortivanlioglu
	09:40 - 10:00	EP241083 An assessment of the applicability of modern RKPM methods towards a concrete simulation under extreme events Author(s): Dominic Wilmes*, Michael Hillman, Joseph Magallanes

	10:00 - 10:20	EP240614 High-order implicit-explicit scalar auxiliary variable (SAV) time integration schemes for structural dynamics Author(s): Sun-Beom Kwon*, Arun Prakash
0210: Assessing human-infrastructure interactions and their performance Chairs(s): Rodrigo Sarlo		
Grant Park Parlor	09:00 - 09:20	EP241126 Low-cost efficient intelligent wireless sensors increasing human-data interfaces with their environment Author(s): Fernando Moreu, Mahsa Sanei*, Morgan Merrill, Ali Khorasani, Kaveh Malek, Gavin De Berry
	09:20 - 09:40	EP240605 Personalized emotion recognition using footstep-induced floor vibrations Author(s): Yuyan Wu*, Yiwen Dong, Sumer Vaid, Gabriella Harari, Hae Young Noh
	09:40 - 10:00	EP240631 Hierarchical data-driven modeling of human interactions within social infrastructure systems Author(s): Maral Doctorarastoo*, Katherine Flanigan, Mario Bergés
	10:00 - 10:20	EP241156 QR SENSOR: A citizen-assisted, QR-based sensory data acquisition and cloud computing approach for Structural Health Monitoring Author(s): Jongwoong Park*, Junyoung Park, Chaemin Kim
0301: Smart IoT sensors and artificial intelligence for civil infrastructure monitoring Chairs(s): Fu Yuguang and Li Jian		
Salon 2	09:00 - 09:20	EP240548 Unsupervised anomaly detection for indirect structural health monitoring under dynamic environmental and operating conditions Author(s): Jeremy Yin, Sizhe Ma*, Katherine Flanigan, Mario Bergés
	09:20 - 09:40	EP240689 Reinforcement learning for adaptive battery management of Structural Health Monitoring IoT sensor network Author(s): Tahsin Afroz Hoque Nishat*, Jong-Hyun Jeong, Hongki Jo, Jian Liu
	09:40 - 10:00	EP240097 A hybrid deep learning framework enabling edge intelligence for data anomaly detection in smart structural health monitoring systems Author(s): Shuaiwen Cui, Hao Fu, Xiao Yu, Yuguang Fu*
0302: Analysis of heritage structures: Tools and methods for assessing unknowns in historic monuments and structures Chairs(s): Rebecca Napolitano and Linda Seymour and Branko Glisic		
Price Room	09:00 - 09:20	EP240073 Parametric analysis of archaic steel columns Author(s): Donald Friedman*
	09:20 - 09:40	EP240297 Impact analysis of masonry towers: A comparative study Author(s): Lauren Goyette*, Branko Glisic
	09:40 - 10:00	EP240181 Post-disaster dimensionality reduction for vulnerability assessment of unreinforced masonry buildings Author(s): Joe Kallas*, Rebecca Napolitano
	10:00 - 10:20	EP240634 Structural investigation of the conical domes of Armenia's historic churches Author(s): Araxi Malazian*, Branko Glisic
0303: Innovations and advances in passive, active, and semi-active structural control Chairs(s): Nicholas Wierschem and Scott Harvey		
Monroe Room	09:00 - 09:20	EP240025 Preliminary study of isolation bearings with discontinuous inerters for seismic protection of essential equipment and components Author(s): Chia-Ming Chang*, Wei-Kai Chen
	09:20 - 09:40	EP240981 Characterization and hybrid testing of a rolling isolation system with response-based adaptive behavior Author(s): Miguel Payan, Menziwokuhle Thwala, Esteban Villalobos Vega, P. Scott Harvey*
	09:40 - 10:00	EP240494 Real time hybrid simulation (RTHS) of a 2-story reinforced concrete building equipped with a novel self-centering base isolation system Author(s): Liang Cao*, Faisal Nissar Malik, James Ricles, Thomas Marullo, Chinmoy Kolay, Austin Downey, Simon Laflamme
	10:00 - 10:20	EP240116 Experimental validation of real-time, weighted control algorithm on civil infrastructure Author(s): Courtney Peckens*
0305: Structural identification and damage detection Chairs(s): Babak Moaveni		
Wabash Room	09:00 - 09:20	EP241162 Acceleration and strain data fusion technique for displacement estimation of dynamic system Author(s): Aniruddha Das*, Ashish Pal, M. Mohamed Sajeer, Satish Nagarajaiah, Suparno Mukhopadhyay
	09:20 - 09:40	EP241166 Identification of vertical dynamic parameters from earthquake data recorded in a high-rise Author(s): Viviana Vela, Monica D. Kohler*, German Prieto, Farid Ghahari
	09:40 - 10:00	EP240136 Fatigue life estimation of CVOW Offshore Wind Turbines using strain measurements Author(s): Sophia Lauterbach*, Bridget Moynihan, John DeFrancisci, Eleonora Maria Tronci, Babak Moaveni, Eric Hines
	10:00 - 10:20	EP240304 Pattern recognition in offshore wind turbine dynamics: Unveiling fatigue and damage signatures Author(s): Sina Shid-Moosavi*, Nasim Partovi Mehr, Eleonora Maria Tronci, Babak Moaveni, Eric Hines
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Qipei (Gavin) Mei and Francisco Pena		
Crystal Room	09:00 - 09:20	EP240490 Buckling identification of a profiled steel deck through strain measurements using Distributed Fiber Optic Sensing Author(s): Gowshikan Arulananthan*, Nate Opperman, Hyeyoung Koh, Jesse Hampton, Hannah Blum
	09:20 - 09:40	EP240023 A recursive likelihood-free inference method for model-based diagnostics and prognostics of miter gates using video monitoring data Author(s): Jice Zeng, Michael Todd, Zhen Hu*

Crystal Room	09:40 - 10:00	EP240361 Monitoring to localize excessive vibrations in hydraulic structures Author(s): Anita Brown*
	10:00 - 10:20	EP240540 A roughness-free continuous condition monitoring framework for bridge structures through a sparse network of connected smart vehicles Author(s): Mohammad Talebi-Kalaleh, Qipei Mei*, Mustafa Gul
0313: Complex dynamics and vibration control of infrastructure exposed to single/multiple hazards Chairs(s): Chao Sun and Mariantonieta Soto and Lin Chen		
Buckingham Room	09:00 - 09:20	EP241110 Adaptive tracking control for multi-axial real-time hybrid simulation of civil structures subject to earthquake loading Author(s): Andrew Aguila*, Mariantonieta Gutierrez Soto, Alejandro Betancur Palacio, Kamal Ahmed, Hongliang Li, Ilya Kovalenko
	09:20 - 09:40	EP241008 A practical piecewise linearization approach to estimating the nonlinear hydrodynamics for floating wind turbines undergoing large platform motions Author(s): Jiayao Meng*, Wouter Mostert, Manolis Chatzis
	09:40 - 10:00	EP240119 Complex nonlinear system response modeling and parameter identification via a real-time updating physics-informed neural network Author(s): Huaguan Li*, Chao Sun
0401: Topology optimization: From algorithmic developments to applications Chairs(s): Josephine Carstensen		
Salon 5	09:00 - 09:20	EP240266 Hybrid mesh topology optimization of reinforced concrete structures with moving truss nodes Author(s): Jackson Jewett*, Josephine Carstensen
	09:20 - 09:40	EP240326 Neural networks with kernel-weighted corrective residuals for inverse design Author(s): Amin Yousefpour*, Carlos Mora, Ramin Bostanabad
	09:40 - 10:00	EP240440 Topology optimization of extruded thin-walled beams Author(s): Ameer Marzok*, Haim Waisman
	10:00 - 10:20	EP241041 Optimization of voided post tensioned slabs Author(s): Yakov Zelickman*, James Guest
0501: Computational geomechanics Chairs(s): Qiushi Chen		
Salon 4	09:00 - 09:20	EP240261 Conditions for onset of localized deformation with phase transformation, with applications to deep-focus earthquakes Author(s): Craig Foster*, Javad Mofidi Rouchi
	09:20 - 09:40	EP241111 Time-dependent deformation of soil during freezing and thawing processes Author(s): Yingxiao Liu*, WaiChing Sun
	09:40 - 10:00	EP240859 Utilizing genetic algorithms for optimizing reactive transport modeling parameters Author(s): Chengwu Jiang*, Martial Taillefert, Chloé Arson
	10:00 - 10:20	EP240454 Optimizing heat dissipation in underground power cable duct banks using differentiable programming and Bayesian optimization Author(s): Leila Roshanali*, Krishna Kumar
0704: Advances in modeling wind and its effects on the built environment Chairs(s): Marco Giometto and Teng Wu and Catherine Gorle		
Salon 6	09:00 - 09:20	EP240583 Increasing high-fidelity modelling efficiency with automation and machine learning Author(s): Matthew Coburn*, Z. Xie
	09:20 - 09:40	EP240320 Convergence of LES and full-scale measurements for peak wind load predictions Author(s): Jack Hochschild, Catherine Gorlé*
	09:40 - 10:00	EP240597 Development of loading protocol for hurricane wind performance testing of deformation-controlled MWFRS members Author(s): Baichuan Deng*, Teng Wu
	10:00 - 10:20	EP240667 Evaluation of RANS modeling of urban wind and temperature fields using OpenFOAM for uncertainty quantification Author(s): Sen Wang*, Harindra Fernando, Rao Kotamarthi
0706: Natural hazard assessment with monitoring, modeling, and uncertainty quantification Chairs(s): Yichuan Zhu and Weibing Gong		
Chicago Room	09:00 - 09:20	EP240949 A probabilistic assessment of the liquefaction potential evaluation by considering spatial variabilities of geological and geo-property models Author(s): Wan-Ying Chien, Yu-Chen Lu, Hui Wang*, Jia-Jyun Dong, C. Hsein Juang
	09:20 - 09:40	EP240932 Impact of missing source areas and volumes on back-calculating regional earthquake-induced landslides: A case study of the 2020 Mw 6.4 Puerto Rico earthquake Author(s): Weibing Gong*
	09:40 - 10:00	EP240269 Uncertainty quantification of negative samples and model structures in landslide susceptibility characterization based on Bayesian Network models Author(s): Yichuan Zhu*, Sahand Khabiri
0801: Advances in computer vision, deep learning and artificial intelligence for structural health monitoring and inspections Chairs(s): Rih-Teng Wu and Mijia Yang		
Salon 10	09:00 - 09:20	EP240571 Pixel-level unsupervised anomaly detection for tile spalling in noisy street view images Author(s): Hai-Wei Wang*, Rih-Teng Wu
	09:20 - 09:40	EP241116 Streamlining construction inspections using advanced video analytics Author(s): Malleswari Kachireddy*, Nikkhil Vijaya Sankar, Mohammad Jahanshahi

Salon 10	09:40 - 10:00	EP240104 Reinforcement learning-based bridge inspection management Author(s): Xin Zhang, Manuel Salmeron*, Lissette Iturburu, Xiaoyu Liu, Benjamin Wogen, Shirley Dyke
	10:00 - 10:20	EP240472 Deep learning-based structural health monitoring through the infusion of optical photos and vibration data Author(s): Saleh Al-Qudah, Mijia Yang*
0807: Advancements of data-driven methods in computational mechanics Chairs(s): Nikolaos Vlassis		
Hancock Parlor	09:00 - 09:20	EP240067 A new paradigm for multiphysics and non-linear mechanics modeling: Integrated Finite Element Neural Networks (I-FENN) Author(s): Mostafa Mobasher*, Panos Pantidis, Diab Abueidda
	09:20 - 09:40	EP240306 Parametric grid convolutional encoding for physics-informed neural networks Author(s): Mehdi Shishehbor, Shirin Hosseinmardi*, Ramin Bostanabad
	09:40 - 10:00	EP240337 A constitutive neural network enhancement for multiscale fracture-to-damage modelling Author(s): Tsung-Hui Huang*, Yu-Chun Chou, Wen-Yi Hsieh, Yu-Zhen Li, Tsung-Yeh Hsieh, Po-Yu Chen
	10:00 - 10:20	EP241132 Topology optimization with graph neural network enabled thresholding Author(s): Georgios Barkoulis Gavris*, WaiChing Sun
0901: Computational methods for stochastic engineering dynamics Chairs(s): Ioannis Kougioumtzoglou		
Salon 9	09:00 - 09:20	EP240722 Analysis of fractional dynamical systems using recursive Bayesian estimation methods and response data Author(s): Kalil Erazo*, Alberto Di Matteo, Pol Spanos
	09:20 - 09:40	EP240447 Determination of probabilistic power spectral density parameters by a data-driven and physics-based approach to estimate failure probabilites Author(s): Marco Behrendt*, Chao Dang, Michael Beer
1003: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications Chairs(s): Alexandros Taflanidis		
LaSalle 2	09:00 - 09:20	EP240914 An adaptive surrogate-based multi-fidelity Monte Carlo scheme for probabilistic analysis of nonlinear systems subject to stochastic excitation Author(s): Liuyun Xu*, Seymour Spence
	09:20 - 09:40	EP240380 An iso-cost-region enrichment strategy for cost-free Reliability-Based Design Optimization Author(s): Alessio Faraci*, Maliki Moustapha, Stefano Marelli, Pierre Beaurepaire, Bruno Sudret, Nicolas Gayton
	09:40 - 10:00	EP240608 A sequential strategy based on Non-Deterministic Kriging and Subset Simulation for optimization of probabilistic systems with mixed continuous and discrete input variables Author(s): Jayasekara R. Jayasekara*, Sabarethinam Kameshwar
	10:00 - 10:20	EP241030 Bayesian neural networks for active learning and uncertainty quantification with big data Author(s): Pablo G. Morato*, Jonathan Moran A., Anna Maria Koniari, Nandar Hlaing, Seyran Khademi, Charalampos Andriotis
1005: Probabilistic, physics-guided, and multi-fidelity generative modeling for uncertainty quantification Chairs(s): Roger Ghanem and Agnimitra Dasgupta		
Wilson Room	09:00 - 09:20	EP241055 Multifidelity graph U-Net for physics simulations Author(s): Rini Gladstone, Hadi Meidani*
	09:20 - 09:40	EP240453 Generative wavelet neural operator for scientific machine learning Author(s): Tapas Tripura, Sai Teja Madda, Souvik Chakraborty*
	09:40 - 10:00	EP240970 Solving large-scale inverse problems with coupled deep generative models Author(s): Agnimitra Dasgupta*, Dhruv Patel, Deep Ray, Erik Johnson, Assad Oberai
	10:00 - 10:20	EP240698 Efficient sample-based sensitivity analysis for high-dimensional variables with normalizing flows Author(s): Ziluo Xiong*, Gaofeng Jia
1008: Infrastructure assessment automation with robotics, deep learning and digital twins Chairs(s): Vedhus Hoskere		
Water Tower Parlor	09:00 - 09:20	EP240979 3D radiance field-based novel view anomaly detection in infrastructure Author(s): Subin Varghese*, Vedhus Hoskere
	09:20 - 09:40	EP240853 Iterative active learning for damage segmentation of concrete dam structures through human-AI collaboration Author(s): Vahidreza Gharehbaghi*, Jian Li, Tasweer Ahmad, Caroline Bennett, Rémy Lequesne
	09:40 - 10:00	EP240883 Automating synthetic data generation for deep learning-based damage detection in concrete dams Author(s): Abhishek Doodgaon, Jian Li*, Caroline Bennett, Remy Lequesne
	10:00 - 10:20	EP240892 Enhancing building damage assessment in post-disaster scenarios using meta data-enriched transformer models Author(s): Deepank Singh*, Vedhus Hoskere, Pietro Milillo
1107: Objective resilience: Computational advancements for performance-based engineering and resilience assessment of communities Chairs(s): Alice Alipour and Paolo Gardoni		
Spire Parlor	09:00 - 09:20	EP240416 Long-range Ising model for performance states in regional seismic analysis Author(s): Sebin Oh*, Sang-ri Yi, Ziqi Wang
	09:20 - 09:40	EP240520 Maximum entropy-based modeling of community-level hazard responses for civil infrastructures Author(s): Xiaolei Chu*, Ziqi Wang

Spire Panel	09:40 - 10:00	EP241006 Methodology to assess and mitigate risk from sea level rise to water distribution infrastructure in coastal communities Author(s): Paola Vargas*, Iris Tien
	10:00 - 10:20	EP240704 Coupling effects of fragility fidelity and network resolution in infrastructure resilience Author(s): Raul Rincon*, Jamie Padgett
1108: Towards resilient communities: Improvements in natural hazard risk assessment using data-driven methods Chairs(s): Jize Zhang and Aikaterini Kyprioti		
LaSalle 1	09:00 - 09:20	EP240355 A machine learning approach for hurricane-induced flood depth estimation: A case study on Hurricane Harvey Author(s): Mario Di Bacco, Alessandro Contento, Anna Rita Scorzini*
	09:20 - 09:40	EP240872 Effect of strait topography on the risk assessment of extreme wind and wave induced by typhoon using WRF-ADCIRC-SWAN simulations Author(s): Li Haoyu, Wei Kai*, Cai Haowei, Ni Ming
	09:40 - 10:00	EP240856 Exploring dimensionality reduction in surrogate models for storm surge time-series predictions Author(s): Aikaterini Kyprioti*, Sujata Sahu
	10:00 - 10:20	EP240248 Selection of storm ensembles consistent with storm surge hazard maps across large geographic regions Author(s): WoongHee Jung*, Alexandros Taflanidis
Thu May 30 - Technical Session 6		
0106: Advances in modeling of material damage and fracture Chairs(s): Aditya Kumar		
Salon 12	10:50 - 11:10	EP240568 A 3-D comprehensive analysis of adhesive models in a single lap joint Author(s): Ibrahim Adediran*, Timothy Truster
	11:10 - 11:30	EP240319 A three-dimensional anisotropic localizing gradient damage model for transverse isotropic materials: With emphasis on timber Author(s): Shqipron Shala*, Haim Waisman
	11:30 - 11:50	EP240479 Development of a computationally efficient large-scale three-dimensional model for fracture propagation using parallel computing and adaptive mesh refinement. Author(s): Wasim Niyaz Munshi*, Chandrasekhar Annavarapu, Shantanu Mulay, Antonio Rodríguez-Ferran, Wolfgang Bangerth
	11:50 - 12:10	EP240702 Efficient beam element model for analysis of sandwich beams with partial shear connectivity Author(s): Alaa Elsisi*, Hani Salim
0110: Characterization and modeling of physical processes in porous materials across scales Chairs(s): Pania Newell & Mostafa Mobasher		
Salon 9	10:50 - 11:10	EP240771 Micro-scale examination of altered fracture properties in shale rocks exposed to CO2-rich brine under high-temperature and high-pressure conditions Author(s): Samah A. Mahgoub, Sara Abedi*
	11:10 - 11:30	EP240782 Investigating microcapsule transport in fractured media through coupled CFD-DEM methods Author(s): Pania Newell*, Xiaoming Zhang
	11:30 - 11:50	EP240299 Microporomechanics of non-isotropic interactions among pores and solid matrix Author(s): Yifan Yang*, Dawei Xue, Giuseppe Buscarnera
	11:50 - 12:10	EP240325 A closed-form criterion to identify high-mobility flowslides Author(s): Yanni Chen*, Giuseppe Buscarnera
0120: Architected materials Chairs(s): Nilesh Mankame		
Salon 3	10:50 - 11:10	EP240692 A data-driven modeling framework on the mechanical behavior of vertebral body Author(s): Shengzhi Luan*, Elise Morgan
	11:10 - 11:30	EP240734 Physics-informed neural operator network: Acoustic simulations of arbitrary-shape scatterers Author(s): Siddharth Nair*, Timothy Walsh, Greg Pickrell, Fabio Semperlotti
	11:30 - 11:50	EP240115 Wave propagation in scutoid-based topologically interlocking material systems Author(s): Tanner Ballance*, Thomas Siegmund
	11:50 - 12:10	EP241027 Mechanics of architected microgranular materials Author(s): Samuel Figueroa*, Bastien Aymon, Ken Kamrin, Carlos Portela
0125: Discrete models for the simulation of infrastructure materials Chairs(s): Gianluca Cusatis and Mohammed Alnaggar		
Salon 8	10:50 - 11:10	EP240238 A comparative study of wood-plastic composite infused structural insulated panels and reinforced concrete for sustainable construction Author(s): Mohamed Elnakeb*, Marina Moawad, Mohamed Ashmawy, Marwan Shawki, Mohamed Atef, Ehab Abdelhamid, Mohamed
	11:10 - 11:30	EP240145 Phase-field cohesive zone crack propagation model for hard-soft architected materials Author(s): Aimane Najmeddine*, Reza Moini
	11:30 - 11:50	EP241021 Mesoscale modeling of ultra-high performance concrete with randomly distributed steel fibers Author(s): Seda Mursel*, Berkin Dortdivanlioglu, Oguzhan Bayrak, Anca Ferche
0201: Failure and function in structural stability applications Chairs(s): Hayder Rasheed and Lawrence Virgin		

Salon 7	10:50 - 11:10	EP240004 On the buckling mechanics of monofilaments used in touch sensory perception Author(s): Lawrence Virgin*
	11:10 - 11:30	EP240193 Lateral torsional buckling of fixed-fixed anisotropic laminated beam under mid-span load Author(s): Hayder Rasheed*
	11:30 - 11:50	EP240233 Inelastic buckling and ultimate capacity of cruciform columns: Recent advances Author(s): Jurgen Becque*
	11:50 - 12:10	EP240863 Buckling analysis of MWCNT and functionally graded carbon nanotube reinforced composite quadrilateral plate Author(s): Jianfei Wang*, CW Lim
0206: Biological and biologically inspired materials and structures Chairs(s): Dr. John Brigham and Dr. Kalpana Katti		
LaSalle 3	10:50 - 11:10	EP240441 Mechanobiologically regulated wood growth predicted by means of a micromechanics-informed beam model Author(s): Antonia Wagner, Stefan Scheiner*
	11:10 - 11:30	EP240263 A thermoregulating model of the human eye for localized hypothermia treatment Author(s): Dipika Gongal*, Craig Foster, John Hetling
	11:30 - 11:50	EP240307 Inhomogeneous viscoelastic shear properties of human and porcine cornea Author(s): M.E. Emu, A.R. Djalilian, Hamed Hatami-Marbini*
	11:50 - 12:10	EP240308 Assessing anisotropic mechanical properties of cornea and the effect of CXL therapy Author(s): M.E. Emu*, A.R. Djalilian, H. Hatami-Marbini
0208: Meshfree, peridynamic, and particle methods: Advancements and applications Chairs(s): Sheng-Wei Chi and JS Chen		
Adams Room	10:50 - 11:10	EP240731 Taylor-series expansion for meshfree methods: Solids and shells Author(s): Yuri Bazilevs*
	11:10 - 11:30	EP240293 Strong form meshless analysis of solids using constrained polynomial differential operators Author(s): Sumedh Sharma*, Nikhil Potnuru, Petros Sideris
	11:30 - 11:50	EP240431 Multiphysics degradation modeling of energy storage materials via RKPM with a neural network-enhancement Author(s): Kristen Susuki*, Jeffery Allen, Jiun-Shyan Chen
	11:50 - 12:10	EP240383 Existence, Uniqueness and Multiplicity of RANS solutions in terms of the initial vorticity Author(s): Carla Valencia-Negrete*
0210: Assessing human-infrastructure interactions and their performance Chairs(s): Fernando Moreu		
Grant Park Parlor	10:50 - 11:10	EP241119 Development and verification of a data capturing algorithm in neuromorphic imagers for complex events Author(s): Wyatt Saeger*, Brandon Sisk, Duncan Gardner, Fernando Moreu
	11:10 - 11:30	EP240747 Vision-based monitoring for pedestrian suspention bridges Author(s): Hyungchul Yoon*, Youngseo Park
	11:30 - 11:50	EP241082 Human interface for indoor infrastructure maintenance using networked sensors, robots, and augmented reality Author(s): Alireza Fath*, Nicholas Hanna, Yi Liu, Scott Tanch, Tian Xia, Dryver Huston
	11:50 - 12:10	EP240869 When transfer learning meet low-rank dictionary learning: A fast crack detection method in SHM Author(s): Siyi Chen*, Youwu Wang, Yiqing Ni
0213: 4M (modeling of multiphysics-multiscale-multifunctional) engineering materials and structures Chairs(s): Chung Song and Xiaoyu Song		
Salon 1	10:50 - 11:10	EP240085 A physics-based crystal plasticity model with applications in simulation of micropillar compression and strengthening effect of multilayered copper-graphene nanocomposites Author(s): George Z. Voyiadjis*, Juyoung Jeong
	11:10 - 11:30	EP240489 Inverse characterization of desiccation-induced shrinkage and fracture properties of microfiber-reinforced buffer materials for geological repositories of nuclear spent fuel Author(s): Mohammad Rahmani, Abdullah Azzam, Yong-Rak Kim*, Jongwan Eun, Seunghee Kim
	11:30 - 11:50	EP240232 Modelling of concrete shrinkage at mesoscale in a multi-physics framework Author(s): Yilin Wang*, Giovanni Di Luzio, Jan Vorel, Jan Belis, Roman Wan-Wendner
0301: Smart IoT sensors and artificial intelligence for civil infrastructure monitoring Chairs(s): Fu Yuguang and Li Jian		
Salon 2	10:50 - 11:10	EP240072 Vision-based vehicle axle load identification on highway infrastructures using semantic deep classifier of vehicle components Author(s): Cheng Peng*, Yi Jiang
	11:10 - 11:30	EP240264 Driving into the future: Exploring the efficacy of artificial intelligence in traffic monitoring and capacity assessment for Morelia City, Mexico Author(s): José A. Guzmán-Torres*, Francisco J. Domínguez-Mota, Gerardo Tinoco-Guerrero, Elia M. Alonso-Guzmán
	11:30 - 11:50	EP240371 Wind-induced vibration of high mast illumination poles – field monitoring and mitigation Author(s): Mona Shaheen*, Jian Li, William Collins, Caroline Bennett
0302: Analysis of heritage structures: Tools and methods for assessing unknowns in historic monuments and structures Chairs(s): Rebecca Napolitano and Linda Seymour and Branko Glisic		

Price Room	10:50 - 11:10	EP240911 An innovative only-output method useful for historic monuments Author(s): Salvatore Russotto, Chiara Masnata, Antonina Pirrotta*
	11:10 - 11:30	EP240655 On determining structural wall layout during the adaptive reuse process of unreinforced masonry buildings Author(s): Daniele Melo Santos Paulino*, Heather Ligler, Rebecca Napolitano
	11:30 - 11:50	EP240803 Structural challenges of working with existing cast-iron columns Author(s): Fatemeh Shirmohammadi*, Aydin Pekoz, Kevin Poulin
	11:50 - 12:10	EP240896 Evaluation historic masonry structures using nondestructive, destructive, and analytical tools Author(s): Peter Babaian, Connor Bruns*
0303: Innovations and advances in passive, active, and semi-active structural control Chairs(s): Scott Harvey and Nicholas Wierschem		
Monroe Room	10:50 - 11:10	EP240414 Deep reinforcement learning strategies for inerter-integrated devices with mechanical motion rectifier Author(s): Takehiko Asai*, Yuto Inaba, Kentaro Komori
	11:10 - 11:30	EP240210 Risk-based design of inerter vibration absorbers utilizing embodied energy sustainability criteria Author(s): Parisa Toofani Movaghar*, Alexandros Taflanidis, Agathoklis Giaralis, Dimitrios Vamvatsikos
	11:30 - 11:50	EP240428 Investigation of a variable lead rotational inertia mechanism Author(s): Anika Sarkar, Carter Manson, Nicholas Wierschem*
	11:50 - 12:10	EP240429 Experimental validation of a variable inertia rotational mechanism Author(s): Anika Sarkar*, Nicholas Wierschem
0305: Structural identification and damage detection Chairs(s): Vasilis Dertimanis and Manolis Chatzis		
Wabash Room	10:50 - 11:10	EP240652 Input-state-parameter estimation using Physics-Informed Neural Networks augmented with Spectral Information of Natural Hazards-Induced Excitation Author(s): Antonina Kosikova*, Andrew Smyth
	11:10 - 11:30	EP240153 Decoupled Bayesian learning of process and measurement noise statistics in nonlinear Kalman filtering Author(s): Nihan Bilgin*, Audrey Olivier
	11:30 - 11:50	EP241163 Short-term memory Kalman filter-based data fusion method using intermittent-displacement and acceleration with time-varying bias Author(s): Ashish Pal*, Satish Nagarajaiah
	11:50 - 12:10	EP240995 A sub-structuring approach to overcome model limitations for input-state estimation of offshore wind turbines Author(s): Harry Simpson*, Eleni Chatzi, Manolis Chatzis
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Francisco Pena and Qipei (Gavin) Mei		
Crystal Room	10:50 - 11:10	EP240257 Pavement subsurface monitoring with embedded wireless passive RF sensing system Author(s): Kent Eng*, Zygmunt Haas, Petar Djuric, Samir Das, Milutin Stanacevic, Branko Glisic
	11:10 - 11:30	EP240719 Ground penetrating radar diagnostics for building envelopes: A data-driven approach Author(s): Ahmed Nirjhar Alam*, Reinhart Wesley, Rebecca Napolitano
	11:30 - 11:50	EP240850 Convolutional neural network for ultrasonic imaging of arbitrary fluid-filled inclusions in solid Author(s): Jinho Hahn*, Salma Abdelgawad, Boyoung Kim, Chanseok Jeong
	11:50 - 12:10	EP240922 Image-based real-time behavior measurement of physical infrastructure systems driven by deep learning Author(s): Zhidong Zhang*, Ayatollah Yehia, Zahra Zhiyanpour, Mehrdad Shafiei Dizaji, Devin Harris
0313: Complex dynamics and vibration control of infrastructure exposed to single/multiple hazards Chairs(s): Chao Sun and Mariantonieta Soto and Lin Chen		
Buckingham Room	10:50 - 11:10	EP241010 Dynamics of a prestressed concrete bridge with an accelerated bridge construction end-diaphragm system for seismic regions Author(s): Esteban Villalobos Vega*, P. Scott Harvey, Royce W. Floyd, Omar M. Yadak
	11:10 - 11:30	EP240787 Mitigating vortex-induced vibration challenges in long-span bridges: A comprehensive study of Chongqi Bridge Author(s): Zhen Sun*, Xuyong Ying
	11:30 - 11:50	EP241028 Experimental validation and mechanical characterization of additively manufactured lattice-core beams with digital image correlation Author(s): Seth Roth*, Kyra Kathleen-Le Martindale, Daniel Whisler, Mariantonieta Gutierrez Soto
	11:50 - 12:10	EP241196 Recent developments in surrogate and digital twin modeling of tall buildings Author(s): Maria Todorovska*, Eyerusalem A. Girmay, Haidar Ali, Lichiel Cruz, Mohammadtaghi Rahmani, Mihailo D. Trifunac
0315: Intelligent techniques and deep learning for bridge health monitoring Chairs(s): Yasutaka Narazaki and Hyunjoong Kim		
Chicago Room	10:50 - 11:10	EP240685 Deep learning based structural load identification Author(s): Hyunjoong Kim*, Richard Snyder
	11:10 - 11:30	EP240370 Fully autonomous bridge visual inspection based on mobile robots with visual recognition capabilities: Technical roadmap and prototype development Author(s): Yasutaka Narazaki*, Mingyu Shi, Linlong Meng
	11:30 - 11:50	EP240234 Partition modeling and heterogeneous solution of 3D train-track-bridge coupled system subjected to earthquake excitations Author(s): Peng Yuan*, Michael Beer

	11:50 - 12:10	EP240321 Vision-based cable displacement measurement using uni-KLT Author(s): GeonYeol Jeon*, Hyungchul Yoon
0401: Topology optimization: From algorithmic developments to applications Chairs(s): Shelly Zhang		
Salon 5	10:50 - 11:10	EP240070 Sustainable infrastructure through topology-optimization-based additive construction Author(s): Islam Mantawy*, Jenna Migliorino, Anthony Mackin, Aly Ahmed, Zaid Hanoun
	11:10 - 11:30	EP240503 Application of multiscale material modeling in structural topology optimization Author(s): Rowin Bol, Herm Hofmeyer, Akke Suiker, Payam Poorsolhjouy*
	11:30 - 11:50	EP241101 A Gridap-based implementation of topology optimization under uncertainty for brittle fracture resistance Author(s): Maryam Maghazeh*, Ayyappan Unnikrishna Pillai, Mohammad Masiur Rahaman, Subhayan De
	11:50 - 12:10	EP241169 A topology optimization study applied to structural foundation designs via the TOBS-GT method Author(s): Kamilla Emily Santos Silva, Gabriel Vicentin Pereira Lapa, Josue Labaki, Alfredo Gay Neto, Emilio Carlos Nelli Silva, Renato Picelli*
0501: Computational geomechanics Chairs(s): Shabnam Semnani		
Salon 4	10:50 - 11:10	EP240514 Modeling large deformation soil loading and failure under undrained conditions using a meshfree approach Author(s): Enrique del Castillo*, Ronaldo Borja
	11:10 - 11:30	EP240821 Numerical investigation of shear band formation during olivine transformation using integrated Reproducing Kernel Particle and Cracking Particle Method Author(s): S. Sindhusuta*, Sheng-Wei Chi, Craig Foster
	11:30 - 11:50	EP240761 Microstructure descriptors for predictive homogenization Author(s): Anna Gorgogianni*, Chloé Arson
	11:50 - 12:10	EP241128 A MPM Lagrangian-Eulerian hydrocode for simulating buried explosions in transversely isotropic geomaterials Author(s): Mian Xiao*, WaiChing Sun
0704: Advances in modeling wind and its effects on the built environment Chairs(s): Catherine Gorle and Teng Wu and Marco Giometto		
Salon 6	10:50 - 11:10	EP240666 Advancing aero-structural optimization methods for long-span bridges: from synoptic to non-synoptic wind design scenarios Author(s): Miguel Cid Montoya*, Sumit Verma
	11:10 - 11:30	EP240539 An aeroelastic emulator comprising shape, frequency, and mean angle of attack for the aero-structural design of bridges under non-synoptic winds. Author(s): Sumit Verma*, Miguel Cid Montoya, Ashutosh Mishra
	11:30 - 11:50	EP241092 A two-way coupled fluid-structure interaction framework for aeroelastic modeling of tall buildings using large-eddy simulation Author(s): Abiy Melaku*, Girma Bitsuamlak
	11:50 - 12:10	EP240773 City-scale wind-induced simulation of building motions using oblique photography and time history analysis Author(s): Ahsan Kareem*, Ning Zhang, Zhen Xu, Donglian Gu, Xinzheng Lu
0801: Advances in computer vision, deep learning and artificial intelligence for structural health monitoring and inspections Chairs(s): Rih-Teng Wu and Peng "Patrick" Sun		
Salon 10	10:50 - 11:10	EP240678 Measuring torsional displacement using multi-vision synchronization in shake table tests Author(s): Mohammad Vasef, Peng "Patrick" Sun*, Kevin Mackie
	11:10 - 11:30	EP240572 Physics-informed failure prediction framework using hysteretic loops of RC columns Author(s): Ting-Yan Wu*, Rih-Teng Wu, Ping-Hsiung Wang, Tzu-Kang Lin, Kuo-Chun Chang
	11:30 - 11:50	EP240609 In-line quality control for additively constructed concrete structures using 3D-laser scanning Author(s): John Vrabel, Priyam Chowdhury*, Jenna Migliorino, Anthony Mackin, Zaid Hanoun, Aly Ahmed, Adriana Trias Blanco, Islam Mantawy
	11:50 - 12:10	EP240867 Training accurate computer vision based infrastructure defect detection model under annotation noise Author(s): Chen Zhang*, Jize Zhang
0807: Advancements of data-driven methods in computational mechanics Chairs(s): Nikolaos Vlassis		
Hancock Parlor	10:50 - 11:10	EP240484 Machine learning for force field parameterization - Application to fracture of 2D materials Author(s): Horacio Espinosa*, Yue Zhang, Kui Lin, Hoang Nguyen
	11:10 - 11:30	EP241029 A large language model and denoising diffusion framework for targeted design of microstructures with commands in natural language Author(s): Nikita Kartashov, Nikolaos Napoleon Vlassis*
	11:30 - 11:50	EP240273 A deep material network using micropolar mechanics Author(s): Noah Francis*, Dongil Shin, Ricardo Lebensohn, Fatemeh Pourahmadian, Rémi Dingreville
	11:50 - 12:10	EP240997 Multiscale materials modeling and optimization by bridging scales using a deep convolutional network Author(s): Ashwini Gupta*, Lori Graham-Brady
1003: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications Chairs(s): Abdollah Shafieezadeh		
	10:50 - 11:10	EP240880 A generalized physics-informed polynomial chaos framework for surrogate modeling and uncertainty quantification Author(s): Michael Shields*, Himanshu Sharma, Lukas Novak

LaSalle 2	11:10 - 11:30	EP240195 Physics-informed Graph Neural Network for predicting power generation of wave farms Author(s): Suraj Khanal*, Gaofeng Jia
	11:30 - 11:50	EP240933 Evaluation of a transfer learning approach to multi-fidelity wind loading predictions Author(s): Mattia Ciarlatani*, Catherine Gorlé
	11:50 - 12:10	EP240249 Statistical inference with high-dimensional surrogate models Author(s): Yulin Guo, Sankaran Mahadevan*
1005: Probabilistic, physics-guided, and multi-fidelity generative modeling for uncertainty quantification Chairs(s): Roger Ghanem and Agnimitra Dasgupta		
Wilson Room	10:50 - 11:10	EP240947 Unsupervised disentanglement and dimension reduction for large-scale engineering systems Author(s): Tiffany Fan*, Nathaniel Trask, Marta D'Elia, Alireza Doostan, Eric Darve
	11:10 - 11:30	EP240417 Dimensionality reduction as a surrogate model for high-dimensional forward uncertainty quantification Author(s): Jungho Kim*, Sang-ri Yi, Ziqi Wang
	11:30 - 11:50	EP240967 Cross entropy adaptive importance sampling using an expressive non-parametric mixture modeling approach Author(s): Tianyu Zhang*, Jize Zhang
	11:50 - 12:10	EP240487 Tailored Gröbner basis analysis of the Reynolds-Averaged Navier-Stokes equations Author(s): Manuel Romero De Terreros*, Carla Valencia-Negrete
1008: Infrastructure assessment automation with robotics, deep learning and digital twins Chairs(s): Jian Li		
Water Tower Parlor	10:50 - 11:10	EP241139 BIM development with damage detections based on UAV Author(s): Su-Kyeong Geum*, Hyun-Jin Jung, Jong-Han Lee
	11:10 - 11:30	EP241159 Automating the instance segmentation of RC bridges Author(s): Asad Ur Rahman*, Vedhus Hoskere
	11:30 - 11:50	EP240236 Scan-to-FEM: Digital Transformation of Truss Bridge Author(s): Jaehyuk Lee*, Hyungchul Yoon
1107: Objective resilience: Computational advancements for performance-based engineering and resilience assessment of communities Chairs(s): Alice Alipour and Paolo Gardoni		
Spire Parlor	10:50 - 11:10	EP240042 Integrative multi-hazard fragility assessment: Advancing community resilience through cumulative damage modelling Author(s): Mojtaba Harati*, John van de Lindt
	11:10 - 11:30	EP240305 Community resilience analysis under seismic hazards using agent-based modeling Author(s): Xu Han*, Maria Koliou
	11:30 - 11:50	EP240968 Towards a computational platform for integrated regional resilience assessment of interdependent systems Author(s): Nikola Blagojevic, Jinyan Zhao*, Sina Naeimi Dafchahi, Adam Zsarnoczay, Frank McKenna, Matthew DeJong, Bozidar Stojadinovic
	11:50 - 12:10	EP240699 Enhancing traffic resilience for emergency evacuation by efficient network-wide speed limit optimization under uncertainty Author(s): Ziluo Xiong*, Gaofeng Jia
1108: Towards resilient communities: Improvements in natural hazard risk assessment using data-driven methods Chairs(s): Jize Zhang and Aikaterini Kyprioti		
LaSalle 1	10:50 - 11:10	EP240750 TC-Diffusion: A deep Markov-chain tropical cyclone simulation model with application to typhoon wind hazard analysis Author(s): Wenjun Jiang, Xi Zhong, Jize Zhang*
	11:10 - 11:30	EP240576 Optimal retrofitting policy for earthquake-induced landslide hazard on transportation networks using graph neural networks Author(s): Debasish Jana*, Sven Malama, Sriram Narasimhan, Ertugrul Taciroglu
	11:30 - 11:50	EP240966 Estimating building-level seismic damage through selected structural members Author(s): Milad Cheragh Zade, Shenghan Zhang, Jize Zhang*
	11:50 - 12:10	EP240048 Mechanical analysis of segmented tunnel structures under active fault actions Author(s): Longjun Xu*, Heng Zhang, Lili Xie
Thu May 30 - Technical Session 7		
0110: Characterization and modeling of physical processes in porous materials across scales Chairs(s): Yanni Chen & Mostafa Mobasher		
Salon 9	14:20 - 14:40	EP241056 Localization and instability in fluid infiltrated sheared granular materials Author(s): Ahmed Elbanna*, Xiao Ma
	14:40 - 15:00	EP240110 Chemo-mechanical couplings at the micro scale in porous geomaterials Author(s): Alexandre Sac-Morane*, Hadrien Rattez, Manolis Veveakis
	15:00 - 15:20	EP240696 Determination of the relative permeability response of water-CO2 through poromechanical measurements and its validation Author(s): Majd Awarke, Kiseok Kim*
	15:20 - 15:40	EP240799 Effects of reactive permeating fluid on deformation of elastic solids in coupled porous systems Author(s): John Hickman*, Ignasius Wijaya, Arif Masud, Scott Roberts

0113: Advances and applications of elasticity within applied mechanics Chairs(s): Sofia Mogilevskaya and Evgueni Todorov Filipov		
Salon 6	14:20 - 14:40	EP240222 Modeling materials with prestressed thin and stiff reinforcements of circular cross-sections Author(s): Sofia Mogilevskaya*, Zhilin Han, Anna Zemlyanova
	14:40 - 15:00	EP240246 Eshelby inclusion-based technique for modeling heterogeneous elastic formations under the condition of incomplete field data Author(s): Hadis Amirinezhad*, Sofia Mogilevskaya, Emmanuel Detournay
	15:00 - 15:20	EP240301 Tailor the buckling resistance of a thin-walled tube filled with a granular lattice by prestress Author(s): Chao Liu*, Byung Wook Kim, Mehdi Zadshir, Huiming Yin
	15:20 - 15:40	EP240798 Nanoscale cylindrical defects in flexoelectric solids Author(s): Jinchen Xie*, Christian Linder
0120: Architected materials Chairs(s): Pablo Zavattieri		
Salon 3	14:20 - 14:40	EP240254 Efficient computation framework for recurrent identification of bandgaps in metamaterials Author(s): Jesus Pereira, Rafael Ruiz*
	14:40 - 15:00	EP240334 Shock dynamics of architected materials Author(s): Shengzhi Luan, James Guest, Stavros Gaitanaros*
	15:00 - 15:20	EP240650 Geometric phase in elastic waves: Exploring differential geometry, topology, and design applications Author(s): Mohit Kumar*, Fabio Semperlotti
	15:20 - 15:40	EP240895 Source localization with 1D metamaterial arrays for acoustic applications Author(s): Weidi Wang*, Shayan Razi, Arghavan Louhghalam, Mazdak Tootkaboni, Alireza Amirkhizi
0201: Failure and function in structural stability applications Chairs(s): Hannah Blum and Hyeyoung Koh		
Salon 7	14:20 - 14:40	EP240893 Buckling and lift-off of a heavy rod compressed into a cylinder Author(s): Gert van der Heijden*, Rehan Shah
	14:40 - 15:00	EP240358 New experimental apparatus for testing of thin-walled systems prone to instabilities Author(s): Hyeyoung Koh, Thomas Sputo, Hannah Blum*
	15:00 - 15:20	EP240687 Full-scale shake table collapse testing of a three-story post tensioned mass timber rocking wall building Author(s): Prashanna Mishra*, John W. Van De Lindt, Andre Barbosa, Patricio Uarac, Shiling Pei, Steve Pryor, Steven Kontra, Barbara Simpson, Arijit Sinha, Tara Hutchinson
	15:20 - 15:40	EP240530 Buckling detection of profiled steel deck using innovative measurement techniques Author(s): Hyeyoung Koh*, Gowshikan Arulananthan, Nate Opperman, Jesse Hampton, Hannah Blum
0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Xiaojia Shelly Zhang		
Salon 12	14:20 - 14:40	EP240069 Repairable concentric braced frames through additive manufacturing Author(s): Islam Mantawy*, Hamdy Farhoud
	14:40 - 15:00	EP240797 Mechanical characterization of nano-modified 3D-printable ultra high-performance concrete: A novel approach Author(s): Elmer Irizarry*, Shady Gomaa, Ayesha Ahmed, Raul Marrero Rosa, Gianluca Cusatis
	15:00 - 15:20	EP240133 Validation of system-level assumptions in seismic analysis of RC structures: An experimental framework based on 3D printing of the reinforcement Author(s): Medhat Elmorsy*, Michalis Vassiliou
	15:20 - 15:40	EP240178 Additive repair of corroded bridge beams: Cold spray additive manufacturing Author(s): Brian Schagen*, Wen Chen, Shengbiao Zhang, Haden Edward Quinlan, Anastasios John Hart, Simos Gerasimidis
0206: Biological and biologically inspired materials and structures Chairs(s): Dr. Stefan Scheiner and Dr. Elisa Budyn		
LaSalle 3	14:20 - 14:40	EP240724 A shape-based computational approach for in vivo cardiac tissue property estimation from clinical imaging data Author(s): Elaheh Mehdizadeh*, Amin Pourasghar, Timothy Wong, Arvind Hoskoppal, John Brigham
	14:40 - 15:00	EP240826 Molecular dynamics study of biopolymer composites Author(s): Ali Shomali, Jan Carmeliet, Dominique Derome*
	15:00 - 15:20	EP241199 Engineered biological construction material: self-healing carbon negative enzymatic construction materials (ECM) Author(s): Shuai Wang, Nima Rahbar*, Suzanne Scarlata
0208: Meshfree, peridynamic, and particle methods: Advancements and applications Chairs(s): Mike Hillman		
Adams Room	14:20 - 14:40	EP240681 Data-driven peridynamic model for fragmentation in the crushing of solids Author(s): Stewart Silling*
	14:40 - 15:00	EP240801 Aspects of continuum-kinematics-inspired peridynamics Author(s): Ali Javili*
	15:00 - 15:20	EP240316 Adaptive Spacetime Wavelet Method for the Solution of Partial Differential Equations Author(s): Cody Cochran*, Karel Matouš

0210: Assessing human-infrastructure interactions and their performance Chairs(s): Haeyoung Noh		
Grant Park Parlor	14:20 - 14:40	EP241122 Human-machine-structures interfaces enabling new theories for management and safety Author(s): Fernando Moreu*, Kaveh Malek
	14:40 - 15:00	EP240963 Bridge structure maintenance and disaster mitigation using UAV and AI-human interaction Author(s): Ji Dang*, Tonan Fujishima, Pang-jo Chun
	15:00 - 15:20	EP240622 Automated mapping of human-human and human-infrastructure interactions to social benefits using privacy-preserving sensing Author(s): Cheyu Lin*, Katherine Flanigan
	15:20 - 15:40	EP240557 Integrating gait biomechanics and structural dynamics to estimate lower-limb joint motion for human gait health Author(s): Yiwen Dong*, Sung Eun Kim, Kornél Schadl, Jessica Rose, Hae Young Noh
0213: 4M (modeling of multiphysics-multiscale-multifunctional) engineering materials and structures Chairs(s): Yong-Rak Kim and Qiming Wang		
Salon 1	14:20 - 14:40	EP240122 Challenges in integrating CFD modeling with UNLETB for gravel erosion analysis Author(s): Basil Abualshar*, Chung Song
	14:40 - 15:00	EP240449 Singum modeling of multiscale and multiphysical behavior of lattice-based materials Author(s): Huiming Yin*
	15:00 - 15:20	EP240126 Modeling the uncoupled damage-healing behavior of self-healing cementitious material with phase field method Author(s): Hsiao Wei Lee*, Li Meng, Amirreza Sadighi, Alireza Ashkpour, Mohammad Irfan Iqbal, Geetika Mishra, Christopher Sales, Yaghoob Amir Farnam, Ahmad Najafi
0214: Finite element modeling and simulation of train derailments and their role in assessing tank car safety Chairs(s): Paul Gharzouzi		
Salon 5	14:20 - 14:40	EP241189 Probabilistic modeling of optimal placement strategies of hazardous materials railcars in freight trains Author(s): Chen-Yu Lin, Xinhao Liu*, Christopher Barkan
	14:40 - 15:00	EP241073 Validation of tank car derailment models Author(s): Paul Gharzouzi*, Paolo Gardoni, Todd Treichel, Steven Kirkpatrick, Leandro Iannacone, Chen-Yu Lin, Christopher Barkan
0301: Smart IoT sensors and artificial intelligence for civil infrastructure monitoring Chairs(s): Fu Yuguang and Li Jian		
Salon 2	14:20 - 14:40	EP240665 Global-local 3D Digital Image Correlation for full-field strain mapping on concrete structures Author(s): Mostafa Iraniparast*, Peng "Patrick" Sun, Kevin Mackie, Georgios Apostolakis
	14:40 - 15:00	EP240228 Acoustic emission-based damage localization: A time-frequency analysis and deep learning approach Author(s): Van Vy*, Hyungchul Yoon
	15:00 - 15:20	EP241124 Wireless Intelligent Sensor Ecosystem (WISE): An open-source framework for cost-effective Structural Health Monitoring Author(s): Jordan Kooyman, Andrew Bryan, Andrew Holm, Lucas Wilkerson, Ali Ozdagli*
0302: Analysis of heritage structures: Tools and methods for assessing unknowns in historic monuments and structures Chairs(s): Rebecca Napolitano and Linda Seymour and Branko Glisic		
Price Room	14:20 - 14:40	EP240642 Comparative structural analysis of historic Midwestern timber barn typologies under wind actions Author(s): Moriah Hughes*, Branko Glisic
	14:40 - 15:00	EP240929 Structural assessment of 19th century wood trusses: A case study of the Brooklyn Friends Meeting House roof Author(s): Melanie McCloy*
	15:00 - 15:20	EP241009 Understanding historic wood structures and how to assess them Author(s): Steven Hall*
	15:20 - 15:40	EP241094 Computational simulation of tornado damage and response for historical masonry buildings from field reconnaissance data Author(s): Saanchi Kaushal, Mariantonieta Gutierrez Soto, Rebecca Napolitano*
0303: Innovations and advances in passive, active, and semi-active structural control Chairs(s): Scott Harvey and Nicholas Wierschem		
Monroe Room	14:20 - 14:40	EP241200 Multi-objective feedback design for self-powered structural control systems Author(s): Jonathan Shell*, Connor Ligeikis, Jeff Scruggs
	14:40 - 15:00	EP240109 Innovative latched mass damper for vibration control inspired by wave energy converter Author(s): Hao Wang*, Songye Zhu
	15:00 - 15:20	EP240835 Experimental study of segmental elastic spines with joint stiffness for buildings Author(s): Sima Abolghasemi*, Nicholas Wierschem, Mark Denavit
0305: Structural identification and damage detection Chairs(s): Vasilis Dertimanis		
Wabash Room	14:20 - 14:40	EP240250 Impurity gas monitoring for spent nuclear fuel canisters using a variational autoencoder (VAE) Author(s): Bozhou Zhuang*, Bora Gencturk, Assad Oberai, Harisankar Ramaswamy, Ryan Meyer, Anton Sinkov, Morris Good
	14:40 - 15:00	EP240625 Detection of selective leaching damage in buried cast iron pipes using ultrasonic wave pitch-catch Author(s): Dongjin Du, Pranav Karve*, Sankaran Mahadevan

Wabash Room	15:00 - 15:20	EP240990 Structural Health Monitoring for risk assessment and reliability of a bridge after an extreme loading like earthquake Author(s): Umesh Chand*, Chandrasekhar Putcha
	15:20 - 15:40	EP240767 Vibration-based Structural Health Monitoring of an aging post-tensioned concrete girder bridge Author(s): Menno van de Velde*, Dimitrios Anastasopoulos, Hans De Backer, Edwin Reynders, Geert Lombaert
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Qipei Mei and Gbandi Nikabou		
Crystal Room	14:20 - 14:40	EP240996 A hybrid machine learning and image processing approach for scale invariant crack width quantification Author(s): Ishan Pradhan*, Rodrigo Sarlo
	14:40 - 15:00	EP241014 MDT bridge deck cracking evaluation - instrumentation and monitoring based solution Author(s): Jack Dai*, Todd Nelson
	15:00 - 15:20	EP240534 Distributed structural health monitoring of a five-span bridge Author(s): Chengwei Wang*, Antonio Domel, Farhad Ansari
	15:20 - 15:40	EP241174 Automatic detection and quantification of spalling damage level in reinforced concrete elements using foundational models Author(s): Melissa M. Trigueros*, Luis A. Bedriñana
0311: Eco-friendly systems, devices, and metamaterials for structural vibration control Chairs(s): Nicolo' Vaiana		
Wilson Room	14:20 - 14:40	EP240345 Nonlinear dynamic analysis of structures equipped with eco-friendly hysteretic devices by using NextFEM designer Author(s): Nicolo' Vaiana*, Giovanni Rinaldin
	14:40 - 15:00	EP240654 Response modification of moment resisting frames using sustainable structural systems: Rocking walls Author(s): Mehrdad Aghagholizadeh*
	15:00 - 15:20	EP240438 Mitigating vortex-induced vibrations in offshore structures through metamaterial-based control Author(s): Raffaele Capuano*, Muhammad Hajj
	15:20 - 15:40	EP240715 Seismic response of slender structures equipped with inertial devices. Author(s): Christian Malaga-Chuquitaype*
0312: Seismic isolation: Theoretical advancements, experimental insights, and innovative applications Chairs(s): Dimitrios Konstantinidis and Michalis Vassiliou		
Buckingham Room	14:20 - 14:40	EP241181 Buckling behavior of fiber-reinforced elastomeric isolators under elevated temperatures Author(s): Sarranya Banerjee*, Akanshu Sharma, Vasant Matsagar
	14:40 - 15:00	EP240410 Experimental development of a seismic isolation device for lunar surface habitat resilience Author(s): Oscar Forero*, Shirley Dyke, Julio Ramirez
	15:00 - 15:20	EP240768 An assessment of the vibration mitigation performance of seismic metasurfaces on layered soils by means of power flow Author(s): David Carneiro, Zohre Kabirian, Geert Degrande, Geert Lombaert*
	15:20 - 15:40	EP240795 Intermediate Isolation System for existing buildings Author(s): Francesco Esposito, Diana Faiella, Elena Mele*
0315: Intelligent techniques and deep learning for bridge health monitoring Chairs(s): Jian Guo and Hyungchul Yoon		
Chicago Room	14:20 - 14:40	EP240408 Graded protection analysis of sea-crossing bridges for ship collision Author(s): Jian Guo*, Zheng Wang, Yuhao Cui
	14:40 - 15:00	EP240189 Bayesian two-stage structural identification with equivalent formulation and EM algorithm Author(s): Jia-Xin Zhu*, Siu-Kui Au
0501: Computational geomechanics Chairs(s): Craig Foster		
Salon 4	14:20 - 14:40	EP240076 A physics informed constrained optimization approach to modeling geomaterial visco-elastoplasticty Author(s): Bozo Vazic*, Eric Cushman Bryant, Kane Bennett
	14:40 - 15:00	EP240244 A fiber-reinforced constitutive model for earthen material in partially saturated conditions Author(s): Persid Koci*, Craig Foster
	15:00 - 15:20	EP240764 Sequential stress and fabric analysis by a Non-Linear Variational Auto-Encoder Author(s): Daniel Chou*, Chloe Arson
0801: Advances in computer vision, deep learning and artificial intelligence for structural health monitoring and inspections Chairs(s): Vedhus Hoskere and Rih-Teng Wu		
Salon 10	14:20 - 14:40	EP240465 A novel generalizable opening detection model for rapid disaster response Author(s): Hong-Bo Huang*, Rih-Teng Wu
	14:40 - 15:00	EP241149 Classification of bridge members using PCD training and parametric BIM algorithms Author(s): MinJin Lee*, Dahyeon Yang, Jong-Han Lee
	15:00 - 15:20	EP240913 Unsupervised domain adaptative semantic segmentation of building components using a synthetic image source domain. Author(s): Charles Abdo*, Vedhus Hoskere

	15:20 - 15:40	EP241183 Machine and Deep Learning applications for damage quantification on reinforced concrete columns Author(s): Juan-Carlos Singaucho*, Vangelis Metsis, Andreas Stavridis
0803: Data-scarce modeling in engineering mechanics: Probabilistic learning, information maximization & transfer learning Chairs(s): Audrey Olivier and Michael Shields		
LaSalle 1	14:20 - 14:40	EP240937 Probabilistic convolutional neural networks for surrogate modeling and uncertainty quantification in solid mechanics Author(s): George D. Pasparakis*, Michael Shields, Lori Graham-Brady
	14:40 - 15:00	EP240770 Enhancing uncertainty quantification in structural damage classification using weighted ensembles of neural networks Author(s): Javad Ghorbanian*, Jayne Bottarini, Audrey Olivier
	15:00 - 15:20	EP240690 Integrating physics-based deep learning models and data augmentation for hysteresis prediction and quantifying model uncertainty Author(s): Jaehwan Jeon*, Junho Song, Oh-Sung Kwon
	15:20 - 15:40	EP240669 Deep reinforcement learning based heterogeneous sensor placement under non-stationary input Author(s): Amin Jabini*, Erik Johnson
0804: Data-driven approaches to engineering mechanics Chairs(s): Fatemeh Pourahmadian and Tom Seidl and John Brigham and Evgueni Filipov and Alessandro Fascetti		
Salon 8	14:20 - 14:40	EP240752 Accelerating multiscale simulation with machine learning Author(s): Reese Jones*, Craig Hamel, Dan Bolintineanu, Jan Niklas Fuhg, Nikolaos Bouklas
	14:40 - 15:00	EP240147 Calibration of hybrid constitutive models from full-field data Author(s): Daniel Seidl*, Brian Granzow, Reese Jones, Ravi Patel
	15:00 - 15:20	EP241144 ML-regularized functionals for imaging in complex environments Author(s): Fatemeh Pourahmadian*, Yang Xu, Jian Song, Todd Murray, Venkatalakshmi Narumanchi
	15:20 - 15:40	EP241165 Extreme sparsification of physics-augmented neural networks for interpretable model discovery in solid mechanics Author(s): Jan Niklas Fuhg*, Reese Jones, Nikolaos Bouklas
0807: Advancements of data-driven methods in computational mechanics Chairs(s): Waiching Sun		
Hancock Parlor	14:20 - 14:40	EP240805 Agentic language-based strategies for mechanics and materials modeling to connect scales, disciplines, and modalities using hierarchical architectures Author(s): Markus Buehler*
	14:40 - 15:00	EP240579 Enhancing robot-soil interaction policy optimization through hybrid differentiable simulation and global search techniques Author(s): Cheng-Hsi Hsiao*, Krishna Kumar
1003: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications Chairs(s): Gaofeng Jia		
LaSalle 2	14:20 - 14:40	EP241022 A generalized polynomial chaos expansion for high-dimensional design optimization under dependent random variables Author(s): Dongjin Lee, Sharif Rahman*
	14:40 - 15:00	EP240894 Multi-objective performance-based risk optimization of steel structures subjected to seismic actions Author(s): Isabela D. Rodrigues*, André T. Beck, Seymour Spence
	15:00 - 15:20	EP240849 Graph neural networks for optimal power flow solutions under high-dimensional uncertainty Author(s): Kamiar Khayambashi*, Md Abul Hasnat, Negin Alemazkoor
	15:20 - 15:40	EP240324 Graph neural Bayesian optimization for seismic retrofit prioritization of transportation networks Author(s): Min Li*
1008: Infrastructure assessment automation with robotics, deep learning and digital twins Chairs(s): Wei Song		
Water Tower Parlor	14:20 - 14:40	EP240229 Vision-based structural displacement measurement using transforming model prediction Author(s): Tinh Nguyen*, Hyungchul Yoon
	14:40 - 15:00	EP240087 Forensic technique for structural material identification of reinforced concrete structures using 2D DIC and metaheuristic optimization Author(s): Tabish Ali, Robin Eunju Kim*
	15:00 - 15:20	EP241187 Deep learning based initial deformation modeling in shield tunnel: Preliminary results Author(s): Yimin Qin*, Wei Song, Xian Liu
	15:20 - 15:40	EP240615 Advancing the accuracy and interpretability of digital twins with hybrid physics-informed models Author(s): Sizhe Ma*, Katherine Flanigan, Mario Bergés
1107: Objective resilience: Computational advancements for performance-based engineering and resilience assessment of communities Chairs(s): Alice Alipour and Paolo Gardoni		
Spire Parlor	14:20 - 14:40	EP240138 A methodology for prioritizing simulation-based stress tests for transportation systems Author(s): Hossein Nasrazadani*, Bryan T. Adey, Maria Nogal, Stergios Mitoulis
	14:40 - 15:00	EP240535 Probabilistic numerical analysis on the fire resilience of composite floors designed per performance-based approach Author(s): Chenzhi Ma*, Thomas Gernay
	15:00 - 15:20	EP240364 Structural performance sensitivity of buildings to wind-induced interference effects in growing cities Author(s): Azin Ghaffary*, Luis Ceferino

	15:20 - 15:40	EP240624 Data-enabled performance improvement of buildings located in high wind hazard regions Author(s): Bahareh Dokhaei*, Behrouz Shafei, Alice Alipour
Thu May 30 - Technical Session 8		
0103: Mechanics of granular materials: Modeling and characterization Chairs(s): Dawa Seo and Jibril Coulibaly		
Salon 3	16:10 - 16:30	EP240054 Modeling shock attenuation in granular materials: The role of particle shape Author(s): Jibril Coulibaly*, Joel Clemmer, Robert Buarque de Macedo
	16:30 - 16:50	EP240064 Bonded discrete element method analysis of landfast sea ice fracture by ocean currents Author(s): Rigoberto Moncada Lopez*, Jacinto Ulloa, Mukund Gupta, Andrew Thompson, Jose Andrade
	16:50 - 17:10	EP240159 Efficient modeling approaches for lattice discrete particle models Author(s): Jiajia Wang*, Jan Vorel, Wouter Botte, Roman Wan-Wendner
	17:10 - 17:30	EP240163 Mesoscale computational modeling on square-shaped granular salt under weak shock compaction Author(s): Dawa Seo*, Nitin Daphalapurkar, Darby Luscher
0110: Characterization and modeling of physical processes in porous materials across scales Chairs(s): Yanni Chen & Mostafa Mobasher		
Salon 9	16:10 - 16:30	EP240362 Fault friction under thermal pressurization during large seismic slip Author(s): Alexandros Stathas*, Ioannis Stefanou
	16:30 - 16:50	EP240202 An analytical model for hygroscopic bilayers based on surface poromechanics theory Author(s): Mohammadali Behboodi*
0113: Advances and applications of elasticity within applied mechanics Chairs(s): Fatemeh Pourahmadian and John Charles Brigham		
Salon 6	16:10 - 16:30	EP240027 Vibration problems in the coupled theory thermoelastic nanomaterials with triple porosity Author(s): Merab Svanadze*
	16:30 - 16:50	EP240018 Numerical analysis of bandgap-inducing properties of 1D and 2D sandwich foundations Author(s): Luis Filipe do Vale Lima, Leonardo Antoniazzi Marques, Euclides Mesquita, Josue Labaki*
	16:50 - 17:10	EP240311 The general equilibrium of elastic layered systems (GELS), an open-source implementation in Python Author(s): David Yang*
	17:10 - 17:30	EP240959 Inelastic processes in material evolution with application to frontal polymerization Author(s): Ignasius Wijaya*, Arif Masud
0126: Mechanics and modeling of pavement structures and materials Chairs(s): Ramez Hajj		
Hancock Parlor	16:10 - 16:30	EP240781 Development of plasticity-based fatigue model in asphalt binder Author(s): Haifang Wen*
	16:30 - 16:50	EP240991 Variability in compaction of asphalt mixtures--experimental investigation and probabilistic modeling Author(s): Tianhao Yan*, Jia-Liang Le, Mugurel Turos, Mihai Marasteanu
	16:50 - 17:10	EP240844 Effects of confinement condition on ductility of asphalt binders Author(s): Ramez Hajj*
0201: Failure and function in structural stability applications Chairs(s): Hayder Rasheed and Stelios Yiatros		
Salon 7	16:10 - 16:30	EP240285 Buckliphilia to the rescue: Prototypes for buckling-driven shading solutions Author(s): Stylianos Yiatros*
	16:30 - 16:50	EP240387 Influence of sinusoidal filament geometry on interface interlayer bond strength of 3D printed concrete Author(s): Pardis Pourhaji*, Mobin Vandadi, Nima Rahbar
	16:50 - 17:10	EP240593 Variations in the development length of a high-strength steel wire in a bridge cable under the influence of wrapping force and axial loading Author(s): Linda Teka*, Raimondo Betti, Huiming Yin
0203: Recent advances in hybrid simulation and real-time hybrid simulation Chairs(s): Wei Song and Richard Christenson		
Salon 2	16:10 - 16:30	EP240113 Robust dynamic compensation of multi-actuator real-time hybrid simulation testing of stiff specimens using a compliant beam connector Author(s): Diego Araya, Maria Quiroz, Gaston Fermandois*
	16:30 - 16:50	EP240452 Advanced real-time force control and its application to the seismic performance evaluation of base isolation bearings Author(s): Yunbyeong Chae*, Chunghyun Lee
	16:50 - 17:10	EP241086 Real-time hybrid simulation for infrastructure degradation assessment: Conceptual framework and application example Author(s): Manuel Salmeron*, Herta Montoya, Edwin Patino, Ingrid E. Madera Sierra, Shirley Dyke
	17:10 - 17:30	EP240543 Aero-hydro-geotechnical real-time hybrid simulation of monopile offshore wind turbine structures under operational and extreme conditions Author(s): Safwan Al-Subaihawi, Qasim Abu-Kassab, James Ricles*, Muhannad Suleiman, Richard Sause, Arindam Banerjee, Justin

0204: Design and additive manufacturing of engineering structures and materials Chairs(s): Josephine V. Carstensen and Xiaojia Shelly Zhang		
Salon 12	16:10 - 16:30	EP240046 Influence of infill patterns on the mechanical and fatigue characteristics of fused filament fabricated polymer parts Author(s): Mohamad Alagheband, Sungmoon Jung*, Qian Zhang
	16:30 - 16:50	EP240175 Investigating the mechanical behavior of 3D-printed Inconel 718 hexagonal honeycomb structures: A comprehensive study Author(s): George Z. Voyiadjis*, Reem Abo Znemah, Paul Wood
	16:50 - 17:10	EP240071 Is additive construction ready for seismic regions? – A new seismic protective system enabled by additive construction Author(s): Islam Mantawy*, Anthony Mackin, Jenna Migliorino, Hamdy Farhoud
	17:10 - 17:30	EP240601 Long short-term memory network based surrogate model for predicting fracture in metals Author(s): Surajit Dey*, Ravi Yellavajjala
0205: Origami/kirigami inspired structures and metamaterials Chairs(s): Evgueni Filipov and John Brigham		
Salon 5	16:10 - 16:30	EP240177 A coarse-grained “Theorema Egregium” for origami tessellations Author(s): Hussein Nassar*, Andrew Weber
	16:30 - 16:50	EP240470 Optimal kirigami-inspired façade cut designs for building energy performance in varying environmental conditions Author(s): Rodrigo Arauz, John Brigham*
	16:50 - 17:10	EP240258 Framework for uncertainty identification of bandgaps in Kirigami-based structures Author(s): Jesus Pereira*, Rafael Ruiz
	17:10 - 17:30	EP240958 Origami via instability Author(s): Yi Yang*, Helen Read, David Melancon, Katia Bertoldi
0208: Meshfree, peridynamic, and particle methods: Advancements and applications Chairs(s): Mike Hillman		
Adams Room	16:10 - 16:30	EP240537 N-Adaptivity: A neural network enriched Partition of Unity for solving boundary value problems based on potential energy minimization Author(s): Jonghyuk Baek, Yanran Wang*, Jiun-Shyan Chen
	16:30 - 16:50	EP240328 A space-time modularized neural network approach for shock wave modeling Author(s): Tsung-Yeh Hsieh*, Yang-Ming Tsai, Tsung-Hui Huang
	16:50 - 17:10	EP240312 Modeling phase-transformation induced strain localization using a neural-network enhanced reproducing kernel particle method Author(s): Xuejun Li*, Sheng-Wei Chi
0210: Assessing human-infrastructure interactions and their performance Chairs(s): Fernando Moreu		
Grant Park Parlor	16:10 - 16:30	EP241117 Real-time concrete crack detection and sensing using Augmented Reality Author(s): Fernando Moreu, Yen-ting Liu, Ali Khorasani*, Kaveh Malek, Chia-Ming Chang
	16:30 - 16:50	EP240854 Evaluating human-machine collaboration in augmented reality-based bridge inspections Author(s): Alan Smith, Rodrigo Sarlo*
	16:50 - 17:10	EP241107 Enhancing system diagnostics and performance by embedding human interaction within digital twins Author(s): John Martins*, Katherine Flanigan
0213: 4M (modeling of multiphysics-multiscale-multifunctional) engineering materials and structures Chairs(s): Huiming Yin		
Salon 1	16:10 - 16:30	EP240524 Dynamic responses of viscoelastic composite beams with spherical inclusions under harmonic excitation Author(s): Jinming Zhang*, Chunlin Wu, Huiming Yin
	16:30 - 16:50	EP240497 Carbonation of one-part alkali-activated materials incorporated by MgO and CaO: Phase evolution, micromechanical properties, and surface free energy Author(s): Shayan Gholami, Yong-Rak Kim*, Dallas Little, Jong Suk Jung
	16:50 - 17:10	EP240123 Seasonally fluctuating strength of soils in Mid-Western USA and CPT based quantification method Author(s): Bashar Al-Nimri*, Chung Song
	17:10 - 17:30	EP240786 Non-extensive statistical mechanics of fracture in fibre reinforced cementitious composites using acoustic emission Author(s): Kashif Naukhez*, R Vidya Sagar, Chandra Kishen
0303: Innovations and advances in passive, active, and semi-active structural control Chairs(s): Nicholas Wierschem and Scott Harvey		
Monroe Room	16:10 - 16:30	EP240036 The pressurized sand-damper: A low-cost, long-stroke, rate/temperature independent energy dissipation device Author(s): Nicos Makris*, Konstantinos Kalfas
	16:30 - 16:50	EP241146 Modelling tuned liquid dampers using smoothed particle hydrodynamics Author(s): Michael Tait*, Bishoy Awad, Shayne Love
	16:50 - 17:10	EP240879 Combating hardening behavior in shallow tuned sloshing dampers Author(s): Kevin McNamara*, Shayne Love
0311: Eco-friendly systems, devices, and metamaterials for structural vibration control Chairs(s): Nicolo Vaiana		

Wilson Room	16:10 - 16:30	EP240809 Numerical modeling of unbounded fiber-reinforced elastomeric isolators with recycled rubber Author(s): Shiv Prakash, Nicolò Vaiana*, Daniele Losanno
	16:30 - 16:50	EP240589 Vibration attenuation in a mass in mass frictional metamaterial unit cell: An analytical investigation Author(s): Muskaan Sethi*, Arnab Banerjee, Bappaditya Manna
0312: Seismic isolation: Theoretical advancements, experimental insights, and innovative applications Chairs(s): Dimitrios Konstantinidis and Michalis Vassiliou		
Buckingham Room	16:10 - 16:30	EP240656 Multiscale modeling of elastomeric seismic isolators Author(s): Eduardo Montalto*, Dimitrios Konstantinidis
	16:30 - 16:50	EP240443 Experimental and numerical studies on a low cost isolator based on rolling of a rubber sphere on concrete surfaces. Author(s): Sergio Reyes, Antonios Katsamakas, Michalis Vassiliou*
0315: Intelligent techniques and deep learning for bridge health monitoring Chairs(s): Ji Dang and Mohamad Alipour		
Chicago Room	16:10 - 16:30	EP240395 Reinforcement learning-powered model-free framework for UAS-based bridge column inspection mission planning Author(s): Yuxiang Zhao*, Mohamad Alipour
	16:30 - 16:50	EP240407 Bridge 3D model reconstruction from UAV videos and damage segmentation projection Author(s): Ji Dang*
	16:50 - 17:10	EP240779 A fast newton algorithm for Bayesian modal identification in multiple-setup ambient vibration test Author(s): Wei Zhu*, Binbin Li
0501: Computational geomechanics Chairs(s): Craig Foster		
Salon 4	16:10 - 16:30	EP240124 Discrete element modeling of flexible granular materials – from contact models to particle flow simulations Author(s): Qiushi Chen*
	16:30 - 16:50	EP240421 Wave propagation properties in granular media: Relating elastic waves to mechanical signatures Author(s): Li Zhang*, Jun Yang
0503: Uncertainty in geomechanical and geochemical processes: Their role on prediction of natural and engineered system behavior Chairs(s): Pouyan Asem		
Wabash Room	16:10 - 16:30	EP240495 The void ratio distribution in response to jacking installation of displacement piles: Findings from physical modeling Author(s): Amin Barari, Lars Bo Ibsen*
	16:30 - 16:50	EP241204 Uncertainty in silicate mineral dissolution rates and its role in constraining reaction paths in MgO-SiO2-H2O system Author(s): Pouyan Asem*
	16:50 - 17:10	EP240348 Assessing rainfall-induced slope failure fragility curves considering the effect of water erosion by a FEM hydromechanical model: case study in the road network of Biobío Region - Chile Author(s): Manuel Contreras-Jara, Esteban Sáez*, Cristina Contreras, Juan de Dios Guzmán, Carlos Bonilla, Jorge Gironás, Alondra
0705: Advancements in wind engineering: From atmospheric boundary-layer processes to resilient built environments Chairs(s): Aly Mousaad Aly		
LaSalle 3	16:10 - 16:30	EP241152 Numerical simulation of fluid-structure interaction based on different coupling mechanisms: A parametric study Author(s): Mohammad Asgari, Aly Mousaad Aly*
	16:30 - 16:50	EP241151 Enhancing wind resilience in photovoltaic systems: Integrating CFD simulations, design standards, and experimental insights Author(s): Aly Mousaad Aly*
	16:50 - 17:10	EP240401 Performance-based wind design of tall mass timber buildings with rocking post-tensioned cross laminated timber shear walls Author(s): Nahom K Berile, Matiyas A Bezabeh*
0801: Advances in computer vision, deep learning and artificial intelligence for structural health monitoring and inspections Chairs(s): Rih-Teng Wu		
Salon 10	16:10 - 16:30	EP240290 Toward green and intelligent transportation infrastructure: a novel double-YOLOv7 network and data autoaugment for road crack detection from CCD and GPR images Author(s): Zhen Liu*, Bingyan Cui, Shihui Shen
	16:30 - 16:50	EP240971 Optimized filter design framework for phase-based video motion estimation with controlled error distribution Author(s): Haifeng Wang*
	16:50 - 17:10	EP240473 Enhancing the visual structural inspections using AI-assisted crack detection tools Author(s): Kareem Eltouny*, Shivani Gandage, Nicholas Catella
	17:10 - 17:30	EP240169 Reinventing disaster response: Integrated approach for enhanced 3D damage segmentation Author(s): Joe Kallas*, Rebecca Napolitano
0803: Data-scarce modeling in engineering mechanics: Probabilistic learning, information maximization & transfer learning Chairs(s): Audrey Olivier and Hadi Meidani		
LaSalle 1	16:10 - 16:30	EP240374 Advancing material genomics with active learning and Bayesian analysis in polymer-bonded explosives Author(s): Ozge Ozbayram*, Maruthi Annamaraju, Andreas Robertson, Daniel Olsen, Min Zhou, Lori Graham-Brady, Surya Kalidindi
	16:30 - 16:50	EP240385 Constrained cost-aware multi-fidelity Bayesian optimization Author(s): Zahra Zanjani Foumani*, Amin Yousefpour, Ramin Bostanabad

	16:50 - 17:10	EP241049 Physics-informed neural networks with strong imposition of Dirichlet boundary condition Author(s): Rini Gladstone*, Nahil Sobh, Hadi Meidani
0804: Data-driven approaches to engineering mechanics Chairs(s): Fatemeh Pourahmadian and Tom Seidl and John Brigham and Evgueni Filipov and Alessandro Fascetti		
Salon 8	16:10 - 16:30	EP240834 Multiplexed laser ultrasonic imaging via the Linear Sampling Method Author(s): Jian Song*, Fatemeh Pourahmadian, Todd Murray, Venkatalakshmi Narumanchi
	16:30 - 16:50	EP241001 Reliability-based optimization of minimum shear reinforcement in prestressed concrete beams via reserve shear strength index and Bayesian regression Author(s): Wonsuh Sung*, Nikhil Potnuru, Suhaib Alfaris, Stephanie Paal, Maria Koliou, Petros Sideris, Mary Beth Hueste, Anna Birely,
1002: Uncertainty characterization and propagation in complex nonlinear structures Chairs(s): Zhi-Heng Wang and Meng-Ze Lyu		
Price Room	16:10 - 16:30	EP240703 Data-driven projection pursuit for uncertainty quantification and surrogate modeling in high-dimensional and dependent parameter spaces Author(s): Xiaoshu Zeng*, Roger Ghanem
	16:30 - 16:50	EP240444 Physically-driven dimension-reduced probability density evolution equation Author(s): Meng-Ze Lyu*, Jian-Bing Chen
	16:50 - 17:10	EP240059 A physics and data co-driven surrogate modeling method for high-dimensional rare event simulation Author(s): Jianhua Xian*, Ziqi Wang
	17:10 - 17:30	EP240915 Metamodeling of dynamic nonlinear systems by physics-informed LSTM networks and Taylor series expansions Author(s): Haimiti Atila*, Seymour Spence
1003: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications Chairs(s): Min Li		
LaSalle 2	16:10 - 16:30	EP240986 InVAErt networks: A data-driven framework for model synthesis and identifiability analysis Author(s): Guoxiang Grayson Tong*, Daniele Schiavazzi, Carlos Sing-Long
	16:30 - 16:50	EP240190 Surrogate models to capture the influence of neighboring structures on hydraulic demand modification Author(s): Jainish Maheshbhai Patel*, Jamie Padgett
	16:50 - 17:10	EP240216 A machine learning-based surrogate modeling approach for seismic response analysis of soil-structure systems Author(s): Hamid Taghavi Ganji*, Elnaz Seylabi
	17:10 - 17:30	EP241012 Decision variable-based inverse design of isolated steel frames using Gaussian process regression Author(s): Huy Pham*, Tracy Becker
1008: Infrastructure assessment automation with robotics, deep learning and digital twins Chairs(s): Vedhus Hoskere		
Water Tower Parlor	16:10 - 16:30	EP241004 Adaptive robotics for autonomous surface crack repair Author(s): Joshua Genova*, Vedhus Hoskere
	16:30 - 16:50	EP240298 Application of autonomous systems for noncontact aggregate stockpiles volume measurement Author(s): Faezeh Jafari*, Sattar Dorafshan
	16:50 - 17:10	EP240686 Digital twinned cyber-physical system for understanding infrastructure operational state Author(s): Zhidong Zhang*, Zahra Zhiyanpour, Mehrdad Shafiei Dizaji, Ayatollah Yehia, Devin Harris
1114: Advances in regional hazard modeling and risk assessment Chairs(s): Aakash Bangalore Satish		
Spire Parlor	16:10 - 16:30	EP240227 Enhancing the efficiency of earthquake rupture forecasting models with adaptive importance sampling in regional seismic risk assessment Author(s): Jinyan Zhao*, Sang-ri Yi, Alexandros Taflanidis
	16:30 - 16:50	EP240673 An end-to-end framework for building inventory generation through public data fusion and artificial intelligence Author(s): Mohammad Askari*, Mohammad Hesam Soleimani-Babakamali, Ertugrul Taciroglu
	16:50 - 17:10	EP240736 TC-SINDy: A data-driven framework to discover physics-based tropical cyclone track and intensity models Author(s): Xi Zhong, Wenjun Jiang, Jize Zhang*
	17:10 - 17:30	EP240208 Exploring the role of information fidelity when constructing reduced-order models (ROMs) for regional risk assessment seismic applications Author(s): Parisa Toofani Movaghar, Sang-ri Yi, Alexandros Taflanidis*, Carmine Galasso
Fri May 31 - Technical Session 9		
0103: Mechanics of granular materials: Modeling and characterization Chairs(s): Dawa Seo and Jibril Coulibaly		
Salon 3	09:00 - 09:20	EP240367 Data-driven mechanical behavior modeling of granular biomass materials Author(s): Xuyang Li, Wencheng Jin*
	09:20 - 09:40	EP240598 Spheroidal harmonics (SOH) for generalizing the analysis, reconstruction, and generation of granular materials Author(s): Mahmoud S. M. Shaqfa*, Wim M. van Rees
	09:40 - 10:00	EP240610 A Constitutive Model for Crushable Granular Materials with Non-Spherical Particles Author(s): Divyanshu Lal*, Giuseppe Buscarnera

0107: Multiscale organization, mechanics and physics of layer-like, fibrous materials and related structures Chairs(s): Pedro Miguel Godinho		
Salon 7	09:00 - 09:20	EP241129 Tailoring mechanical properties of self-healing fiber-reinforced polymer composites Author(s): Jack Turicek*, Vikita Kamala, Ghadir Haikal, Jason Patrick
	09:20 - 09:40	EP241050 Numerical modeling of a fiber reinforced polymer composite with interlaminar thermoplastic inclusions Author(s): Vikita Kamala*, Jack Turicek, Jason Patrick, Ghadir Haikal
	09:40 - 10:00	EP240434 Effect of fiber configuration on mechanical behavior of fiber-epoxy composites through computational analysis Author(s): Yizhou Lin*, Junyi Duan, Chengcheng Tao, Ying Huang
0113: Advances and applications of elasticity within applied mechanics Chairs(s): Josue Labaki and Sofia Mogilevskaya		
Salon 6	09:00 - 09:20	EP240012 Least square finite element model for analysis of multilayered composite plates under arbitrary boundary conditions Author(s): Christian Mathew*, Yao Fu
	09:20 - 09:40	EP240569 Die swell of rubber: A Gibbs energy-based, elasto-viscous model informed by a comprehensive experimental campaign comprising compression, viscosity, and extrusion tests Author(s): Robert Plachy, Stefan Scheiner*, Florian Arthofer, Armin Holzner, Christian Hellmich
0124: Physics informed machine learning (PIML) for mechanics of porous media Chairs(s): Dakshina Valiveti and Yanhua Yuan		
Salon 9	09:00 - 09:20	EP240045 In-context operator learning with data prompts for differential equation problems Author(s): Liu Yang*, Siting Liu, Tingwei Meng, Stanley Osher
	09:20 - 09:40	EP240039 Operator learning for solving PDE forward and inverse problems Author(s): Haizhao Yang*
	09:40 - 10:00	EP240182 Efficient DNN modeling of unknown PDE systems Author(s): Zhongshu Xu*, Dongbin Xiu
	10:00 - 10:20	EP240435 Physics informed neural networks for heterogeneous poroelastic media Author(s): Sumanta Roy, Chandrasekhar Annavarapu, Pratanu Roy, Brice Lecampion, Dakshina Murthy Valiveti*
0203: Recent advances in hybrid simulation and real-time hybrid simulation Chairs(s): Richard Christenson and Wei Song		
Salon 2	09:00 - 09:20	EP241141 Validation of LHPOST6 Shake Table-Specimen Model using shake table test data Author(s): Chin-Ta Lai*, Joel Pascal Conte
	09:20 - 09:40	EP240278 Multi-element pseudo-dynamic hybrid simulations on high-performance ductile steel structures at the University of Toronto Author(s): Pedram Mortazavi*, Oh-Sung Kwon, Constantin Christopoulos
	09:40 - 10:00	EP240545 Multi-directional RTHS of a 3 story MRF with nonlinear viscous dampers and soil-structure interaction using neural networks Author(s): Faisal Nissar Malik*, Davide Noè Gorini, James Ricles, Safwan Al-Subaihawi, Thomas Marullo
	10:00 - 10:20	EP240053 Advancing real-time hybrid simulation: Complexities and innovations in boundary conditions Author(s): Amirali Najafi*
0205: Origami/kirigami inspired structures and metamaterials Chairs(s): Martin Walker and Rafael Ruiz		
Salon 5	09:00 - 09:20	EP241044 Origami-wrapped thin-shell structures with corrugated unfolded forms: Design, analysis, and experiments Author(s): Matthew Kreider, Manan Arya*
	09:20 - 09:40	EP240930 Numerical modeling of the deployment mechanism of a metallic plate-lattice space frame Author(s): Isabel M. de Oliveira*, Eduardo M. Sosa, Sigrid Adriaenssens
	09:40 - 10:00	EP240643 Design considerations for thick origami with application in adaptable infrastructure Author(s): Yi Zhu*, Evgueni Filipov
0207: Data-driven methods and research for physical testing in structural engineering Chairs(s): Hannah Blum and Zhidong Zhang		
Hancock Parlor	09:00 - 09:20	EP240925 Data-driven prediction models for the backbone curve of cold-formed steel fastener connections Author(s): Zhidong Zhang*, Kai Chen, Cristopher Moen
	09:20 - 09:40	EP240359 A data-driven approach to hollow structural section column design Author(s): Hyeyoung Koh*, Hannah Blum
	09:40 - 10:00	EP241160 Damage-spread and future condition ratings in PSC-I bridges considering combined damage types and compound deterioration Author(s): Hyun-Jin Jung*, Su-Kyeong Geum, Jong-Han Lee
	10:00 - 10:20	EP240924 Mechanics-informed data model prediction of steel column strength considering buckling deformation and initial geometric imperfections Author(s): Kai Chen, Cem Bartu Cevik, Cristopher Moen, Yile Wang, Yuchen Yang*, Zhidong Zhang
0305: Structural identification and damage detection Chairs(s): Manolis Chatzis		
	09:00 - 09:20	EP240050 Gradient-based sensor placement optimization for structural health monitoring systems design based on hypercomplex automatic differentiation (HYPAD) Author(s): Juan C. Velasquez-Gonzalez*, Juan David Navarro, Arturo Montoya, Harry Millwater, David Restrepo

Wabash Room	09:20 - 09:40	EP240973 Neural operators for parametric structural response prediction and system identification Author(s): Mingyuan Zhou, Haoze Song, Zhilu Lai*
	09:40 - 10:00	EP240691 Concurrent estimation of time-varying and time-invariant parameters in nonlinear aeroelastic systems Author(s): Brandon Robinson*, Philippe Bisaillon, Mohammad Khalil, Chris Pettit, Dominique Poirel, Abhijit Sarkar
	10:00 - 10:20	EP240721 Solving transient structural source inversion problems using randomized truncated singular value decomposition Author(s): Chandler Smith*, Timothy Walsh, Wilkins Aquino, Ryan Schultz
0306: Recent advances in sensing, SHM, and automated inspections for infrastructure condition assessment: Toward actionable solutions Chairs(s): Mohamad Alipour and Yasutaka Narazaki and Travis Fillmore		
Crystal Room	09:00 - 09:20	EP240218 Active and passive functionality of piezoelectric sensors for monitoring high-temperature piping systems in liquid metal reactors Author(s): Chenxi Xu*, Talha Khan, Muhammad Khan, Matthew Daly, Alexander Heifetz, Derek Kultgen, Miguel A. Gonzalez Nunez, Ed Lowenhar, Didem Ozevin
	09:20 - 09:40	EP240527 Field deployment validation of a low-cost and high-precision displacement sensor combining millimeter-wave radar and accelerometer Author(s): Zhanxiong Ma, Kyuwon Han, Jaemook Choi, Jiqu Lee, Ohjun Kwon, Hoon Sohn*, Jingxiao Liu, Doyun Hwang, Jatin Aggarwal,
0307: Recent advances in mechanical energy harvesting and its applications in structural health monitoring and control Chairs(s): Mohsen Amjadian and Chao Sun		
Wilson Room	09:00 - 09:20	EP241085 Impact-driven electromagnetic energy harvester with dual resonators Author(s): Mohsen Amjadian*, Anil Kumar Agrawal
	09:20 - 09:40	EP240645 Experimental validation of a prototype self-powered structural control system Author(s): Connor Ligeikis*, Jeff Scruggs
	09:40 - 10:00	EP240935 Electromagnetic energy harvester for rural railway crossings Author(s): Prince E. Mensah*, Mohsen Amjadian, Constantine Tarawneh, Joseph A. Turner
	10:00 - 10:20	EP240456 Modeling and evaluating performance of piezoelectric-multiple tuned mass dampers for vibration reduction and energy harvesting Author(s): Yong-An Lai*, Tsen-Han Zhong, Yun Tsao
0501: Computational geomechanics Chairs(s): Qiushi Chen		
Salon 4	09:00 - 09:20	EP240270 Thermomechanical enhanced finite element method with phase transformation for fault modeling in deep-focus earthquakes Author(s): Javad Mofidi Rouchi*, Craig Foster, Sheng-Wei Chi, Sinhusuta LNU, Ashay Panse
	09:20 - 09:40	EP240409 Large deformation analysis of pile installation effect for the open-ended pipe pile Author(s): Yibo Ma*, Jun Yang
	09:40 - 10:00	EP240653 Finite element model of fault zone of Northeast Japan subduction zone for deep earthquakes. Author(s): Ashay Panse*, Craig Foster
	10:00 - 10:20	EP240613 A study on the dynamic behaviour of a fully saturated idealized 2D embankment Author(s): Arun M George*, Swetha Veeraraghavan
0702: Understanding and managing the wildfire problem Chairs(s): Professor Hussam Mahmoud and Professor Hamed Ebrahimian		
Salon 1	09:00 - 09:20	EP240989 Residential exterior wall assembly – response to exposure from adjacent post-flashover compartment fire Author(s): Daniel Gorham*, Joseph Willi, Gavin Horn
	09:20 - 09:40	EP241130 Window failure during exterior fire exposure Author(s): Joseph Willi*, Daniel Gorham, Gavin Horn
	09:40 - 10:00	EP240089 Validation case studies for the AGNI-NAR wildfire community vulnerability and damage model Author(s): Akshat Chulahwat*, Hussam Mahmoud
	10:00 - 10:20	EP240504 A framework for firebrand generation and fire spotting simulation within WRF-Fire Author(s): Kasra Shamsaei, Steven Wong, Hamed Ebrahimian*
0801: Advances in computer vision, deep learning and artificial intelligence for structural health monitoring and inspections Chairs(s): Vedhus Hoskere and Yasutaka Narazaki		
Salon 10	09:00 - 09:20	EP240956 AI-enhanced estimation of post-disaster debris using aerial imagery Author(s): Chih-Shen Cheng, Xukai Zhang*, Arash Noshadravan
	09:20 - 09:40	EP240205 A large-scale synthetic 3D point cloud dataset for vision-based bridge condition assessment Author(s): Mingyu Shi*, Hyunjun Kim, Yasutaka Narazaki
0803: Data-scarce modeling in engineering mechanics: Probabilistic learning, information maximization & transfer learning Chairs(s): Hadi Meidani and Audrey Olivier		
LaSalle 1	09:00 - 09:20	EP240080 Evaluation of physics-informed machine learning for reduced data shear prediction Author(s): Jacob Murphy*, Stephanie Paal
	09:20 - 09:40	EP240166 Deep learning for model correction Author(s): Caroline Tatsuoka*, Dongbin Xiu
	09:40 - 10:00	EP240868 Transfer learning-based model for the service life prediction of façade materials Author(s): Felipe Basquiroto de Souza*, Anthoni Giam, Yijie Chen, Sida Wu, Jiaqi He, Sze Dai Pang

0804: Data-driven approaches to engineering mechanics Chairs(s): Fatemeh Pourahmadian and Tom Seidl and John Brigham and Evgueni Filipov and Alessandro Fascetti		
Salon 8	09:00 - 09:20	EP240282 Operator learning via neural networks with kernel-weighted corrective residuals Author(s): Carlos Mora*, Amin Yousefpour, Shirin Hosseinmardi, Ramin Bostanabad
	09:20 - 09:40	EP240928 Bayesian neural networks with physics-driven functional priors to enhance predictive modeling in engineering mechanics Author(s): Nicholas de Araujo Gonzalez Casaprima, Javad Ghorbanian, Audrey Olivier*
	09:40 - 10:00	EP240711 Uncertainty quantification for model-constrained deep-learning inverse solvers Author(s): Russell Philley*, Hai Nguyen, Tan Bui-Thanh
	10:00 - 10:20	EP240829 A neural operator learning approach to model poroelastodynamics of rocks Author(s): Yang Xu*, Fatemeh Pourahmadian
0805: Machine learning and its applications in civil and mechanical engineering Chairs(s): Aly Mousaad Aly		
Salon 12	09:00 - 09:20	EP240102 Llm-based structure drawing generation from natural language description using retrieval-augmented generation technique Author(s): Xin Zhang, Lissette Iturburu*, Manuel Salmeron, Nicolas Villamizar, Xiaoyu Liu, Shirley Dyke, Julio Ramirez
	09:20 - 09:40	EP240111 Innovative approaches in modeling corrosion-induced degradation of steel structures: A machine learning perspective Author(s): Mohamed El Amine Ben Seghier*, Vagelis Plevris
	09:40 - 10:00	EP240217 Machine learning-based prediction of mechanical properties in thermally exposed recycled aggregate concrete Author(s): Huthaifa Alkhatatbeh, Mohammad Abu-Haifa*, Bara'a Etawi
	10:00 - 10:20	EP240418 Training machine learning model with metaheuristic algorithms to predict the compressive strength of GFRP- confined circular concrete specimens Author(s): Nima Khodadadi*, Francisco Decaso, Antonio Nanni
0808: A new horizon - Quantum computing and quantum materials (by invitation only) Chairs(s): Caglar Oskay		
Buckingham Room	09:00 - 09:20	EP241164 Quantum horizons for computational mechanics Author(s): Suvranu De*, Osama Raisuddin
	09:20 - 09:40	EP241161 Computing sparse approximate preconditioners for topology optimization on quantum annealing machines Author(s): Krishnan Suresh*
	09:40 - 10:00	EP241178 Quantum computing for simulating fluid flow through fractured media Author(s): John Golden*, Dan O'Malley
	10:00 - 10:20	EP241175 Element stiffness-based matrix decomposition for quantum computing implementation of the Finite Element Method Author(s): Caglar Oskay*, Abhishek Arora, Benjamin M. Ward
1001: Computational statistics for natural hazards engineering: Advances in uncertainty quantification, surrogate modeling, and dimension reduction for performance-based design of structures and systems Chairs(s): Alexandros Taflanidis		
Grant Park Parlor	09:00 - 09:20	EP240335 Gaussian process surrogate modeling of wind pressure statistics of two adjacent buildings Author(s): Sang-ri Yi*, Fei Ding, Alexandros Taflanidis, Ahsan Kareem
	09:20 - 09:40	EP240637 Adaptive covariance tapering for large spatial datasets: Applications to storm surge estimation Author(s): Christopher Irwin*, Alexandros Taflanidis
	09:40 - 10:00	EP240824 Neural operators for stochastic response of structures subjected to natural hazards Author(s): Dimitris Giovanis, Somdatta Goswami, Bowei Li, Seymour Spence*, Michael Shields
	10:00 - 10:20	EP240866 Stochastic surrogate modeling via Bayesian deep learning for seismic response estimation Author(s): Han Peng*, Jize Zhang, Shenghan Zhang
1002: Uncertainty characterization and propagation in complex nonlinear structures Chairs(s): Meng-Ze Lyu and Zhi-Heng Wang		
Price Room	09:00 - 09:20	EP241069 Wind-induced nonlinear behavior and collapse risk from non-stationary hurricane wind fields Author(s): Srinivasan Arunachalam, Seymour Spence*
	09:20 - 09:40	EP241118 Fragility estimation framework for performance-based structural design of Floating Offshore Wind Turbines Author(s): Do-Eun Choe*
	09:40 - 10:00	EP240131 Non-parametric directional environmental contours: A method for estimating bridge design load combinations of wind and temperature Author(s): Zhi-wei Wang*, Wen-ming Zhang, Michael Beer
	10:00 - 10:20	EP240916 Discrepancies in structural reliability: A comparative analysis of load and resistance factor design and probabilistic performance-based wind design Author(s): Jieling Jiang*, Seymour Spence
1008: Infrastructure assessment automation with robotics, deep learning and digital twins Chairs(s): Jian Li		
Water Tower Parlor	09:00 - 09:20	EP240276 A case study of detecting segment joints in shield tunnels using range images Author(s): Baichuan Zhang*, Song Wei, Xian Liu
	09:20 - 09:40	EP240646 Investigating and comparing 3D imaging techniques for inspections of structure retaining walls Author(s): Maxwell Wondolowski*, Alexandra Hain, Sarira Motaref, Michael Grilliot

	09:40 - 10:00	EP240651 UAV-based monitoring system for water ponding detection and volume estimation on municipal solid waste landfills Author(s): Syed Zohaib Hassan*, Peng "Patrick" Sun, Poyu Zhang, Jiannan Chen, Debra Reinhart
1009: Toward data-driven approaches for uncertainty quantification and propagation Chairs(s): Subhayan De		
LaSalle 2	09:00 - 09:20	EP241018 Network vulnerability assessment: Critical component identification Author(s): Kundan Goswami*, Michael Shields, Eric Sammarco
	09:20 - 09:40	EP240505 Data-driven discovery of governing equations and mechanical properties from experimental ultrasonic data with quantified uncertainty Author(s): Abigail Schmid*, Alireza Doostan, Fatemeh Pourahmadian
	09:40 - 10:00	EP240078 Creating a multi-fidelity surrogate for UNDEX events on ship structures Author(s): Patrick Brewick*
	10:00 - 10:20	EP241087 A comparative study of bi-fidelity transfer learning of Bayesian neural networks Author(s): Shaojie Wang, Aayush Dulal*, Patrick Brewick, Subhayan De
1010: Addressing uncertainties in infrastructure risk management Chairs(s): Jessica Boakye and Alessandro Contento		
Adams Room	09:00 - 09:20	EP240350 Assessing the impact of culvert failure in the Franklin County Watershed Author(s): Jessica Boakye*, Egemen Okte, Joshua Govina
	09:20 - 09:40	EP240160 Predicting real-time deterioration of bridges subject to spectrum-compatible ground motions Author(s): Leandro Iannacone*, Paolo Gardoni
	09:40 - 10:00	EP240864 Role of parametric risk transfer in bridging the protection gap in infrastructure risk management Author(s): Roberto Guidotti*, Guillermo Franco
	10:00 - 10:20	EP240544 Analysis of the joint effects of thermal stresses and corrosion on integral abutment bridges Author(s): Alessandro Contento*, Angelo Aloisio, Junqing Xue, Giuseppe Quaranta, Bruno Briseghella, Paolo Gardoni
1102: Objective resilience: Harnessing emerging technologies for enhancing infrastructure and community resilience Chairs(s): Milad Roohi and ZhiQiang Chen		
Chicago Room	09:00 - 09:20	EP240733 Disaster scene modeling: From photogrammetric to generative AI techniques Author(s): ZhiQiang Chen*, Bowu Chen
	09:20 - 09:40	EP240748 Reinforcement learning-based post disaster resource allocation for enhanced infrastructure resilience Author(s): Sandeep Acharya, Debarshi Sen*
	09:40 - 10:00	EP241170 Enhancing predictive accuracy in tornado community resilience models through hindcasting and post-event reconnaissance data analysis Author(s): Pramodit Adhikari*, Milad Roohi, Saeid Ghasemi, Richard L. Wood, David Roueche
	10:00 - 10:20	EP241188 Data-driven reliability and resilience evaluation of bridge networks for proactive infrastructure management Author(s): Saeid Ghasemi*, Vahid Aghaei Doost, Milad Roohi
1110: Advances in resilience analytics and sustainable infrastructure: Bridging theory and practice Chairs(s): Arghavan Louhghalam		
Monroe Room	09:00 - 09:20	EP241078 A Potential of Mean Force-Based Lattice Element Method for analysis of structural systems: Towards nonlinear and progressive collapse analysis Author(s): Shayan Razi*, Arghavan Louhghalam, Mazdak Tootkaboni
	09:20 - 09:40	EP240648 Determination of a building drag coefficient for flow resistance in complex urban forms Author(s): Sarah Balaian*, Brett Sanders, Mohammad Javad Abdolhosseini Qomi
	09:40 - 10:00	EP241076 Online parametric Gaussian process regression Author(s): Esmaeil Rezaei*, Arghavan Louhghalam, Mazdak Tootkaboni
	10:00 - 10:20	EP241105 Uncovering the hidden emission of roadway network Author(s): Mohammad Pourghasemi Saghand*, Meshkat Botshekan, Franz-Josef Ulm, Arghavan Louhghalam, Mazdak Tootkaboni
1114: Advances in regional hazard modeling and risk assessment Chairs(s): Alexandros Taflanidis		
Spire Parlor	09:00 - 09:20	EP240660 Multi-objective optimization approach for placing water level sensors in coastal communities for real-time regional risk assessment Author(s): Jorge-Mario Lozano, Iris Tien*
	09:20 - 09:40	EP240762 Wind vulnerability model for components of refinery plants or industrial facilities: A preliminary study Author(s): Nahuel Bonfante*, Jean-Paul Pinelli
	09:40 - 10:00	EP241026 Modeling flood damage to residential buildings and contents with explicit uncertainty quantification for more informed decision-making Author(s): Mario Di Bacco*, Pradeep Acharya, Daniela Molinari, Anna Rita Scorzini
	10:00 - 10:20	EP241202 Advancing regional landslide risk assessment based on hybrid data-driven and physics-based susceptibility mapping model: a pixel-to-slope transformation Author(s): Xin Wei*, Lulu Zhang, Paolo Gardoni
Fri May 31 - Technical Session 10		
0103: Mechanics of granular materials: Modeling and characterization Chairs(s): Dawa Seo and Jibril Coulibaly		

Salon 3	10:50 - 11:10	EP240632 Discrete element investigation of critical state soil fabric Author(s): Cyrena Ridgeway*, Debadrita Das, Fernando Garcia
	11:10 - 11:30	EP240739 Time-dependent properties of coral sand under triaxial stress states Author(s): Kaifeng Zeng, Huabei Liu*
	11:30 - 11:50	EP240926 A semi-resolved ALE-VMS-DEM Framework for particle-flow interaction Author(s): Haojia Cheng*, Jinhui Yan
0107: Multiscale organization, mechanics and physics of layer-like, fibrous materials and related structures Chairs(s): Pedro Miguel Godinho		
Salon 7	10:50 - 11:10	EP241136 Non-ageing, linear viscoelasticity of paper sheets: A continuum micromechanics approach Author(s): Pedro Miguel Jesus de Sousa Godinho*
	11:10 - 11:30	EP240636 Mechanics of prestressed fibrous network materials subjected to local contraction Author(s): Ashutosh Mishra*, Hamed Hatami-Marbini
0114: Phase change materials (PCMs)-based multifunctional architected construction composites Chairs(s): Qingxu (Bill) Jin and Hongyan Ma		
Salon 6	10:50 - 11:10	EP240300 Scalable, transportable thermochemical energy storage using cementitious materials Author(s): Paul Ginsberg*, Arpit Dwivedi, Lakshmi Amulya Nimmagadda
	11:10 - 11:30	EP240423 Investigation of the pozzolanic reaction of phase change material (PCM)-loaded diatomite Author(s): Wenyu Liao*, Hongyan Ma
	11:30 - 11:50	EP240713 Use of Phase Change Materials-Based Cementitious Composites for Pavement Overlay in Snow Melting Applications Author(s): Xiaoqiang "Antonio" Ni, Brennan Sollenberger, Qingxu "Bill" Jin*
0124: Physics informed machine learning (PIML) for mechanics of porous media Chairs(s): Yanhua Yuan		
Salon 9	10:50 - 11:10	EP240108 Data-space inversion for CO2 storage with flow and geomechanics Author(s): Su Jiang*, Xiaowen He, Louis Durlofsky
	11:10 - 11:30	EP240723 Four-dimensional prediction of geological carbon sequestration using Fourier-DeepONet Author(s): Lu Lu*, Jonathan Lee
	11:30 - 11:50	EP240813 Probabilistic sensitivity analysis in optimizing operational conditions in CO2 sequestration using neural operators Author(s): Fernando Rochinha*, Alvaro Coutinho, Rômulo Silva, Rodolfo Freitas, Gabriel Barros, Ezequiel Santos
	11:50 - 12:10	EP240559 On the use of physics informed neural networks (PINNs) to solve inverse problems in heterogeneous materials Author(s): Dibakar Roy Sarkar*, Abhisek Chanda, Chandrasekhar Annavarapu, Pratanu Roy
0203: Recent advances in hybrid simulation and real-time hybrid simulation Chairs(s): Wei Song and Richard Christenson		
Salon 2	10:50 - 11:10	EP241131 Thermomechanical real-time hybrid simulation for lunar habitats Author(s): Herta Montoya*, Manuel Salmeron, Christian Silva, Shirley Dyke
	11:10 - 11:30	EP241060 A delay compensation controller for multi-axial real-time hybrid simulation (RTHS) via adaptive control Author(s): Wei Song*, Santiago Ruiz
	11:30 - 11:50	EP240478 Real-time hybrid simulation for floating wind turbines: Challenges and solutions in force control for fluid-structure interaction testing Author(s): Yun Ni*, Akiri Seki, Bret Bosma, Barbara Simpson, Ted Brekken, Bryson Robertson, Bryony DuPont, Andreas Schellenberg,
	11:50 - 12:10	EP240985 Dynamic characterization of architected metamaterials using real-time hybrid simulation Author(s): Tao Zhang*, Luz Maria Agudelo Urrego, Sun-Beom Kwon, Arun Prakash
0205: Origami/kirigami inspired structures and metamaterials Chairs(s): Martin Walker and Rafael Ruiz		
Salon 5	10:50 - 11:10	EP240152 Energy absorption of metallic kirigami structures Author(s): Sahand Khalilzadeh Tabrizi, Martin Walker*
	11:10 - 11:30	EP240011 Integrated origami and tensegrity systems dynamics based on the bar-hinge model Author(s): Muhao Chen*, Shuo Ma, Robert E. Skelton
	11:30 - 11:50	EP240647 Origami of multi-layered spaced sheets Author(s): G. Wayne Tu*, Evgueni Filipov
0308: Advances in vibration and structural control Chairs(s): Aly Mousaad Aly and Sardar Malek		
Wilson Room	10:50 - 11:10	EP240881 Sequential Optimal Control: A global optimal structural control of forced vibration system Author(s): Yongfeng Du*
	11:10 - 11:30	EP240442 Seismic isolation of structure using geofoam inserts in soil Author(s): Manoj Sharma*, Swetha Veeraraghavan
	11:30 - 11:50	EP240529 Floor vibration in mass timber office buildings Author(s): Sardar Malek*, Najmeh Cheraghi-Shirazi, Ariel Creagh, Fendy Setiawan, Roger Parra, Parham Khoshkbari

0314: Advancing infrastructure management through structural health monitoring: A value of information perspective Chairs(s): Leandro Iannacone		
Wabash Room	10:50 - 11:10	EP240870 Value of Structural Health Monitoring based on linear Bayesian filter Author(s): Francesca Marsili, Leandro Iannacone*, Sylvia Keßler
	11:10 - 11:30	EP240353 Machine-learning assisted damage state identification for deteriorating bridges Author(s): Athanasia Kazantzi, Sokratis Moutsianos, Konstantinos Bakalis, Stergios-Aristoteles Mitoulis*
	11:30 - 11:50	EP241148 BIM-based condition assessment and BIM-FEM interconnection for bridges Author(s): Dahyeon Yang*, MinJin Lee, Jong-Han Lee
	11:50 - 12:10	EP241155 ARGOS: Revolutionizing bridge bearing monitoring with a computer vision-based system and cloud computing Author(s): Jongwoong Park*, Gunhee Kim, Junsik Shin
0702: Understanding and managing the wildfire problem Chairs(s): Professor Hussam Mahmoud and Professor Hamed Ebrahimian		
Salon 1	10:50 - 11:10	EP241171 Wildfire fragility assessment using damage inspection and satellite imagery Author(s): Prakash Singh Badal, Michele Barbato*
	11:10 - 11:30	EP240587 Probabilistic wildfire risk assessment and retrofitting optimization for hillside transportation networks in California Author(s): Sven Malama*, Debasish Jana, Fernando Szasdi-Bardales, Riyaaz Shaik, Sriram Narasimhan, Negar Elhami-Khorasani, Ertugrul Taciroglu
	11:30 - 11:50	EP240855 Heat transfer analysis of water service laterals during wildland-urban interface fires Author(s): Amy Metz*, Erica Fischer, Brad Wham
	11:50 - 12:10	EP240903 Enhancing electrical distribution network resilience to wildfires through simulation and risk assessment. Author(s): Richard Campos*, P. Scott Harvey, Kanthasamy K. Muraleetharan
0802: Machine learning applications in wind engineering Chairs(s): Pedro Fernández-Cabán and Sungmoon Jung and Haifeng Wang		
Salon 10	10:50 - 11:10	EP240309 Extrapolating wind-induced pressures on roof soffits of low-rise buildings using few-shot learning Author(s): Yanmo Weng*, Stephanie Paal
	11:10 - 11:30	EP240717 Integrating large- and small-scale atmospheric turbulence features into ML-based wind load prediction models Author(s): Pedro Fernández-Cabán*, Nasreldin Mokhtar
	11:30 - 11:50	EP240378 Surrogate-based cyber-physical aerodynamic shape optimization of high-rise buildings Author(s): Wei-Ting Lu, Brian Phillips*, Zhaoshuo Jiang
0805: Machine learning and its applications in civil and mechanical engineering Chairs(s): Aly Mousaad Aly		
Salon 12	10:50 - 11:10	EP240467 Reinforcement learning for multi-stability control of nonlinear dynamical system Author(s): Nida Ahsan*, Muhammad Hajj, Mahmoud Ayyad
	11:10 - 11:30	EP240716 Physics-informed AI models of rocking response and the role of ground-motion characteristics Author(s): Shirley Shen*, Christian Malaga-Chuquitaype
	11:30 - 11:50	EP240891 Applying machine learning to explore cohesive zone parameters in mixed-mode fractures within composite sandwich structures Author(s): Arash Ramian*, Rani Elhajjar
	11:50 - 12:10	EP241054 Enabling high-dimensional wave physics-informed learning Author(s): Joel Harley*, Amanda Beck, Woohyun Eum, Michael MacIssac, Matthew Stormant, Charlie Tran, Ghatu Subhash
1001: Computational statistics for natural hazards engineering: Advances in uncertainty quantification, surrogate modeling, and dimension reduction for performance-based design of structures and systems Chairs(s): Seymour Spence		
Grant Park Parlor	10:50 - 11:10	EP241071 Machine learning with knowledge transfer for rapid estimation of small failure probability of large-scale nonlinear dynamic system Author(s): Bowei Li*, Seymour Spence
	11:10 - 11:30	EP241102 Uncertainty quantification in wind-tunnel-informed stochastic wind models for applications in structural performance assessment Author(s): Thays Duarte, Srinivasan Arunachalam, Arthriya Subgranon*, Seymour Spence
	11:30 - 11:50	EP241109 Quantification and propagation of uncertainty in wind-tunnel-informed translation models for simulation of non-Gaussian stochastic wind pressures on buildings Author(s): Thays Duarte, Srinivasan Arunachalam, Arthriya Subgranon*, Seymour Spence
1002: Uncertainty characterization and propagation in complex nonlinear structures Chairs(s): Meng-Ze Lyu and Zhi-Heng Wang		
Price Room	10:50 - 11:10	EP240224 Random vibration analysis of maglev vehicle-bridge coupled systems with nonlinear electromagnetic force using equivalent linearization - explicit time domain method Author(s): Ran Chen*, Yu-Chen Zhao, Cheng Su, Yiqing Ni
	11:10 - 11:30	EP240581 Elucidating the effect of material uncertainty on seismic fragility of reinforced concrete frames Author(s): Iqra Latif*, Arnab Banerjee, Mitesh Surana
1012: Probabilistic learning, stochastic optimization, and digital twins Chairs(s): Roger Ghanem		
	10:50 - 11:10	EP240167 Data-driven modeling of stochastic differential equations Author(s): Yuan Chen, Dongbin Xiu*

Adams Room	11:10 - 11:30	EP241081 Probabilistic learning and Bayesian information fusion for the construction of a building digital twin Author(s): Jingwen Du*, Ibrahim Ahmed, Vinay Dhanvada, Gbandi Nikabou, Pranav Karve, Sankaran Mahadevan
	11:30 - 11:50	EP240701 Sparse learning of a semi-empirical aerodynamic model using Bayesian inference for nonlinear aeroelastic systems Author(s): David Clarabut*, Brandon Robinson, Rimple Sandhu, Mohammad Khalil, Chris Pettit, Dominique Poirel, Abhijit Sarkar
	11:50 - 12:10	EP240483 Coupled MATLAB-ANSYS framework for the calibration of input parameters of a constitutive model for wood materials using genetic algorithms optimization Author(s): Bleriot Vincent Feujofack Kemda*, Cristiano Loss
1102: Objective resilience: Harnessing emerging technologies for enhancing infrastructure and community resilience Chairs(s): Milad Roohi and ZhiQiang Chen		
Chicago Room	10:50 - 11:10	EP240044 Interdependent post-hazard functionality assessment approach for buildings exposed to flood hazards Author(s): Omar Nofal*, Nathanael Rosenheim, Sabarethinam Kameshwar, Jayant Patil, Xiangnan Zhou, John van de Lindt, Leonardo Duenas-Osorio, Eun Jeong, Amin Endrami, Elaina Sutley, Chen Wang
	11:10 - 11:30	EP241191 Infrastructure resilience quantification for developing seismic mitigation policies and recovery planning Author(s): Milad Roohi*, Saeid Ghasemi, Omar A. Sediek, John van de Lindt
	11:30 - 11:50	EP240842 Investigating and implementing alternative repair and replacement strategies for waterway infrastructures Author(s): Christine Lozano*
	11:50 - 12:10	EP240026 Intelligent agricultural management subject to climate variability Author(s): Shaoping Xiao*, Zhaoan Wang
1112: Structural reliability, bridges, and truck loads Chairs(s): Gongkang Fu		
Water Tower Parlor	10:50 - 11:10	EP240114 Variation in reliability of bridge girders flexurally strengthened with externally bonded FRP Author(s): Chris Eamon*, Safaa Dardar, Gustavo Parra-Montesinos
	11:10 - 11:30	EP240392 Longitudinal multiple presence of trucks on continuous bridge spans Author(s): Qing Wang*, Gongkang Fu
	11:30 - 11:50	EP240008 Recent developments in WIM data gathering and application Author(s): Gongkang Fu*, Jingya Chi, Qing Wang
	11:50 - 12:10	EP241040 Parametric study of rotational restraint in prestressed concrete bridge joints Author(s): Narek Galustanian*
1114: Advances in regional hazard modeling and risk assessment Chairs(s): Sang-ri Yi and Alexandros Taflanidis		
Spire Parlor	10:50 - 11:10	EP240710 Reliability-based optimization of regional building retrofit strategy using buffered failure probability Author(s): Uichan Seok*, Ji-Eun Byun, Junho Song
	11:10 - 11:30	EP240811 A unified consequence scale to account for cumulated effects in multi-hazard analysis Author(s): Leandro Iannacone*, Kenneth Otárola, Roberto Gentile, Carmine Galasso
	11:30 - 11:50	EP241061 Graph neural networks for assessing impacts of extreme events on regional mobility Author(s): Tong Liu*, Hadi Meidani