



**2023 ASCE Engineering  
Mechanics Institute Conference**

Atlanta, Georgia | June 6 – 9, 2023



Presentation Schedule

## Wednesday, June 07, Morning Sessions, 10:00 – 11:40

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty.
EH 222 - Buckhead	MS209: Advances in probabilistic and data assimilation approaches for assessment and mitigation of climatological hazards.
SC 3294 - Castleberry	MS802: Integrated Computational Materials Engineering (ICME).
EH 242 - Centennial	MS616: CIVIC Transportation and Resilient Solutions Towards Smart and Connected Communities.
EH 203 - Highlands	MS214: Data-driven Methods for Uncertainty Quantification: Improvements and New Approaches.
EH 226 - Home Park	MS609: Geometries & Design: Opportunities for Sustainable Construction.
EH 270 - Innman Park	MS903: Eighth Symposium on Molecular Scale Modeling and Experimentation.
EH 273 - Kirkwood	MS307: Structural instabilities: From failure to function.
EH 127 - Midtown I	MS701: Computational Geomechanics.
EH 123 - Midtown II	MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections.
EH 142 - Midtown III	MS704: Data-Driven Approaches and Digital Twins for Solid and Geological Mechanics.
EH 126 - Midtown IV	MS708: Bio-inspired geotechnics: learning from nature to solve geotechnical challenges.
EH 122 - Midtown V	MS208: Advances in bridge health monitoring: Data-driven and machine learning methods, indirect monitoring, crowdsourced mobile sensing.
SC 3245 - Northside	MS402: Topology Optimization: from Algorithmic Developments to Applications.
EH 241 - Old Fourth Ward	MS601: 2nd Annual Mini-Symposium: Resilience of Coastal Structures, Systems, and Community Subjected to Hazards.
SC 3249 - Peachtree	MS605: Analysis of Heritage Structures: Tools and Methods for Assessing Unknowns in Historic Monuments and Structures.
SC 1216 - Piedmont	MS610: Objective Resilience: Balancing Portfolio of Actions Across Mitigation and Recovery to Enhance Resilience in an Uncertain Environment.
EH 247 - Sweet Auburn	MS403: Origami/Kirigami Inspired Structures and Metamaterials.
EH 266 - Summerhill	MS602: Advanced Analysis for Earthquake Engineering: 7th Edition.
SC 3252 - Techwood	MS310: Maximizing information content for data-scarce engineering mechanics applications.
Classroom B	MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures.

MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty. Organizer(s): Kostas Papakonstantinou, Charalampos Andriotis, George Deodatis, Mariyam Amir, Pablo Morato		
SC 3208 - Atlantic Theater	10:00 - 10:20	ID 366: Knowledge transfer for life-cycle optimization: Applications to the management of bridge networks and ship structures Author(s): Jianda Cheng, Minghui Cheng*, Yan Liu, Jun Wu, Wei Li, Dan M. Frangopol
	10:20 - 10:40	ID 681: Transportation Asset Management With Incorporation Of Traffic Operations Adaptation Using Deep Reinforcement Learning Author(s): Mohammad Saifullah*, Kostas Papakonstantinou, Shelley Stoffels, Weiwen Zhou, Elise Miller-Hooks
	10:40 - 11:00	ID 301: Data-driven non-homogeneous Markov deterioration models for bridges Author(s): Min Li, Gaofeng Jia*
	11:00 - 11:20	ID 934: Development of an integrated platform for probabilistic risk assessment using fault tree analysis Author(s): Nailah Afshan*, Saran Srikanth Bodda, Abhinav Gupta, Kevin Han
	11:20 - 11:40	ID 576: POMDP inference and solution of railway optimal maintenance and comparisons with deep reinforcement learning Author(s): Giacomo Arcieri*, Cyprien Hoelzl, Oliver Schwery, Daniel Straub, Konstantinos G. Papakonstantinou, Eleni Chatzi
MS209: Advances in probabilistic and data assimilation approaches for assessment and mitigation of climatological hazards. Organizer(s): Michele Barbato, Alexandros Taflanidis, Tracy Kijewski-Correa		
EH 222 - Buckhead	10:00 - 10:20	ID 280: Assessment of the combined effects of climate change and structural aging on the hurricane-induced losses for typical US wooden single-family homes Author(s): Michele Barbato*
	10:20 - 10:40	ID 283: Statistical Comparison of Resilience for Civil Infrastructure Systems and Application for Rural Distribution System subject to Hurricane Hazards Author(s): ZhiQiang Chen*, Prativa Sharma
	10:40 - 11:00	ID 363: Multi-fidelity Monte Carlo for real-time probabilistic storm surge predictions Author(s): WoongHee Jung*, Alexandros Taflanidis
	11:00 - 11:20	ID 657: Resilience of Gulf Coast communities under a changing climate Author(s): Mohamed Abdelhafez*, Hussam Mahmoud, Bruce Ellingwood
	11:20 - 11:40	ID 749: Development and Uncertainty Analysis of Probabilistic Vulnerability Model for Mid/High-Rise Buildings Author(s): Zhuoxuan Wei*, Jean-Paul Pinelli, Kurtis Gurley, Christian Bedwell
MS802: Integrated Computational Materials Engineering (ICME). Organizer(s): Mohammadreza Yaghoobi, George Z. Voyiadjis		
SC 3294 - Castleberry	10:00 - 10:20	ID 444: A comparison between the response of dissipative and non-recoverable energetic microstresses in a gradient crystal plasticity framework Author(s): Habib Pouriayevali*
	10:20 - 10:40	ID 676: Crystal plasticity modeling for material strengthening effects of multilayered copper-graphene nanopillar compression Author(s): George Z. Voyiadjis*, Juyoung Jeong

MS616: CIVIC Transportation and Resilient Solutions Towards Smart and Connected Communities. Organizer(s): Fernando Moreu, Su Zhang		
EH 242 - Centennial	10:00 - 10:20	ID 852: Route Travel Time Prediction and Uncertainty Quantification using Hierarchical Bayesian Regression Author(s): Sevin Mohammadi*, Audrey Olivier, Andrew Smyth
	10:20 - 10:40	ID 854: Application of GNN for edge ranking in Transportation systems Author(s): Debasish Jana*, Sven Malama, Sriram Narasimhan, Ertugrul Taciroglu
MS214: Data-driven Methods for Uncertainty Quantification: Improvements and New Approaches. Organizer(s): Subhayan De, Ruda Zhang		
EH 203 - Highlands	10:00 - 10:20	ID 275: Improving Accuracy and Computational Efficiency of Optimal Design of Experiment via Greedy Backward Approach Author(s): Mehdi Taghizadeh, Dongbin Xiu, Negin Alemazkooor*
	10:20 - 10:40	ID 326: Modeling Degrading Hysteretic Systems under Uncertainty with a Bi-fidelity DeepONet Author(s): Subhayan De, Patrick Brewick*
	10:40 - 11:00	ID 472: Probabilistic Operator Learning via Stochastic Processes with Implicit Kernels Author(s): Ruda Zhang*
	11:00 - 11:20	ID 970: Whitening-curvelet-based Filter for SNR Enhancement of Distributed Acoustic Sensing Data Author(s): Naveed Iqbal*, Sikandar Khan*
MS609: Geometries & Design: Opportunities for Sustainable Construction. Organizer(s): Ann Sychterz, Mija Hubler, Jiaolong Zhang		
EH 226 - Home Park	10:00 - 10:20	ID 144: Effect of stamped dimples on the stiffness of plates under uniaxial compression Author(s): Isabel de Oliveira*, Jun Sato, Sigrid Adriaenssens
	10:20 - 10:40	ID 290: A new method for fast testing of the shear strength of the interface between artificial rock and printed concrete at super-early ages Author(s): Jiao-Long Zhang*, Yong Yuan, Xiaoyun Wang, Yaxin Tao, Kim Van Tittelboom, Luc Taerwe, Geert De Schutter
	10:40 - 11:00	ID 302: Analysis of Coreless Filament Wound Structures Using Alternative Performance Indicators Author(s): David Forster*, Ann Sychterz, Manfred Bischoff
	11:00 - 11:20	ID 318: Automated planning for the construction of laterally resistant masonry walls using irregular stones Author(s): Qianqing Wang*, Bryan German Pantoja Rosero, Ketson Roberto Maximiano dos Santos, Katrin Beyer
	11:20 - 11:40	ID 490: Tensile Behavior of Multi-layered Randomized Architected Material (MLRAM) Author(s): Sagnik Paul*, Ann Christine Sychterz

MS903: Eighth Symposium on Molecular Scale Modeling and Experimentation. Organizer(s): Dinesh Katti, Sinan Keten, Nima Rahbar, Kalpana Katti, Steve Cranford, Wenjie Xia		
EH 270 - Innman Park	10:00 - 10:20	ID 496: The mechanics and adhesion of $\alpha v\beta 3$ integrin on biomaterials using steered molecular dynamics simulations Author(s): Hanmant Gaikwad*, Sharad Jaswandkar, Kalpana Katti, Dinesh Katti
	10:20 - 10:40	ID 405: Coarse-Graining of Thermomechanical Behaviors of Functional Polymer via Energy Renormalization Author(s): Zhaofan Li*, Wenjian Nie, Dawei Zhang, Wenjie Xia
	10:40 - 11:00	ID 534: Exploring the Thermomechanical and Interfacial Behaviors of Nano-Clay Using Molecular Modeling Author(s): Sarah Ghazanfari*, Wenjie Xia
	11:00 - 11:20	ID 562: Optimization and machine-assisted $\Delta$ -learning for multiscale modeling of polymer nanocomposites Author(s): Hamid Ghasemi, Hessam Yazdani*
	11:20 - 11:40	ID 813: Compress Au Nanoparticle towards 2-Dimensional Extreme: A Molecular Dynamics Study Author(s): Tanuj Gupta, Michael Cai Wang, Huijuan Zhao*
MS307: Structural instabilities: From failure to function. Organizer(s): Stylianos Yiatros, Hayder Rasheed, C. W. Lim, Noël Challamel, Rainer Groh, M. Ahmer Wadee		
EH 273 - Kirkwood	10:00 - 10:20	ID 121: Thin rectangular plate behavior under in-plane harmonic compression Author(s): Mehdi Bohlooly Fotovat, Przemyslaw Perlikowski, Tomasz Kubiak*
	10:20 - 10:40	ID 298: Inelastic Buckling of Hybrid FRP-Metal Long Tubes under External Pressure Author(s): Hayder Rasheed*
	10:40 - 11:00	ID 369: Insight into the stability and load carrying capacity estimations of double curved shells Author(s): Adrian Gliszczyński*
	11:00 - 11:20	ID 379: Interactive buckling in thin-walled steel angle columns leading to a more consistent structural design methodology Author(s): Behnam Behzadi-Sofiani, Leroy Gardner, Ahmer Wadee*
MS701: Computational Geomechanics. Organizer(s): Qiushi Chen, Xiaoyu Song, Steve Waiching Sun, Shabnam Semnani, Majid Manzari, Jose Andrade, Ronaldo Borja, Jinhyun Choo		
EH 127 - Midtown I	10:00 - 10:20	ID 396: Multiscale modeling of flowslide triggering and runout by accounting for hydro-mechanical feedbacks and granular dynamics Author(s): Ming Yang*, Giuseppe Buscarnera
	10:20 - 10:40	ID 875: Physics-informed Machine Learning for Porous Media Author(s): Ruofan Wu*, Shabnam Semnani
	10:40 - 11:00	ID 395: Homogenization model for layered media: the coupling effect of bedding direction and mineral fabric Author(s): Tingting Xu*, Chloé Arson
	11:00 - 11:20	ID 930: Nano-scale soil-water retention mechanism through MD and machine learning Author(s): Zhe Zhang, Xiaoyu Song*
	11:20 - 11:40	ID 871: Anisotropic poromechanics of gas flow in sedimentary rocks Author(s): Qi ZHANG*, Zhen-Yu YIN

MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections. Organizer(s): Mohammad Jahanshahi, Vedhus Hoskere, Jian Li, Arash Noshadravan		
EH 123 - Midtown II	10:00 - 10:20	ID 251: High-fidelity Seismic-induced Failure Mode Prediction for RC Bridge Columns Using Generative Adversarial Networks Author(s): Ting-Yan Wu*, Rih-Teng Wu, Ping-Hsiung Wang, Tzu-Kang Lin, Kuo-Chun Chang
	10:20 - 10:40	ID 848: General, unsupervised structural health monitoring based on generative adversarial networks Author(s): Mohammad Hesam Soleimani-Babakamali, Ismini Lourentzou, Korosh Nasrollahzadeh, Rodrigo Sarlo*
	10:40 - 11:00	ID 281: Multi-view deep learning for post-hurricane damage assessment of buildings Author(s): Asim Khajwal , Chih-Shen Cheng , Arash Noshadravan*
	11:00 - 11:20	ID 606: RGB-D Fusion through Depth Hallucination for Enhanced Deep Learning-based Damage Segmentation Author(s): Tarutal Ghosh Mondal, Mohammad Jahanshahi*
	11:20 - 11:40	ID 385: Can you trust your AI crack detection model in the wild: benchmarks & enhancement strategies Author(s): Chen ZHANG, Jize ZHANG*
MS704: Data-Driven Approaches and Digital Twins for Solid and Geological Mechanics. Organizer(s): Qizhi He, WaiChing Sun, Jiun-Shyan Chen, Xiaolong He		
EH 142 - Midtown III	10:00 - 10:20	ID 319: Microstructure transitions from stress field latent features extracted by a Variational Autoencoder Author(s): Daniel Chou*, Chloe Arson
	10:20 - 10:40	ID 409: Deep Learning models for subterranean navigation and soil characterization Author(s): Sanshrit Singhai*, Chloé Arson
	10:40 - 11:00	ID 870: Multi-Resolution Physics-Informed Machine Learning Approaches for Digital Twin Applications. Author(s): Karan Taneja*, Xiaolong He, Qizhi He, J. S. Chen
	11:00 - 11:20	ID 874: High-dimensional symbolic regression via neural feature polynomials for interpretable machine learning plasticity Author(s): Bahador Bahmani*, Hyoung Suk Suh, WaiChing Sun
MS708: Bio-inspired geotechnics: learning from nature to solve geotechnical challenges. Organizer(s): Julian Tao, Alejandro Martinez, J. David Frost		
EH 126 - Midtown IV	10:00 - 10:20	ID 161: Bio-inspired Horizontal Burrowing Robot by Breaking Symmetries in Granular Media Author(s): Yi Zhong*, Julian Tao
	10:20 - 10:40	ID 488: Numerical Analysis of Sequential Tunnel Excavation Inspired by Ants Author(s): Meron Belachew*, Karie Yamamoto, Chloé Arson, David Frost
	10:40 - 11:00	ID 491: Investigation of densification effect and anti-scour potential using mangrove-inspired pile group Author(s): Xiwei Li*, Leon van Paassen, Junliang Tao
	11:00 - 11:20	ID 568: Thermo-Hydro-Mechanical-Bio (THMB) Modeling of Microbially-Induced Calcite Precipitation (MICP) Technique for Ground Improvement in Cold Regions Author(s): Sophie Jung*, Pooneh Maghoul*, Amade Pouya*
	11:20 - 11:40	ID 578: Optimal design and mechanical behaviour of root-inspired anchors under combined loading Author(s): Fernando Patino-Ramirez*, Catherine O'Sullivan

MS208: Advances in bridge health monitoring: Data-driven and machine learning methods, indirect monitoring, crowdsourced mobile sensing. Organizer(s): Debarshi Sen, Basuraj Bhowmik, Shamim Pakzad		
EH 122 - Midtown V	10:00 - 10:20	ID 107: A Decision Tree-based Neural Network Approach for Railroad Bridge Event Classification Author(s): Omobolaji Lawal*, Shaik Althaf V. Shajihan, Kirill Mechitov, Billie Spencer
	10:20 - 10:40	ID 140: Bridge health monitoring using WIM-data driven reliability assessment Author(s): Mi G. Chorzepa*, Ananta Sinha
	10:40 - 11:00	ID 637: Structural Vibration Monitoring Via Mobile LiDAR Author(s): Adriana Trias Blanco*, John Vrabel
	11:00 - 11:20	ID 709: Field implementation of indirect strain sensing using acceleration response of bridges Author(s): Soheila Eshkevari*, Soheil Eshkevari, Debarshi Sen, Iman Dabbaghchian, Shamim Pakzad
	11:20 - 11:40	ID 711: Wavelet-based modal identification of bridges using field mobile sensing data Author(s): Liam Cronin*, Debarshi Sen, Shamim Pakzad
MS402: Topology Optimization: from Algorithmic Developments to Applications. Organizer(s): Mazdak Tootkaboni, Alireza Asadpoure, Josephine Carstensen, James Guest		
SC 3245 - Northside	10:00 - 10:20	ID 173: Exploiting Buckling and Contact: Exploring a New Approach for Tackling Shape and Topology Optimization With Challenging Solid Mechanics Behavior Author(s): Ryan Alberdi*, Craig Hamel, Kevin Long, Aabhas Singh, Adam Cook
	10:20 - 10:40	ID 188: Material design for thermal regulation in vascular systems using topology optimization Author(s): Kripa Adhikari*, Kalyana Babu Nakshatrala
	10:40 - 11:00	ID 475: Embodied Carbon Optimization of Multi-Material Truss Structures Subjected to Manufacturability Constraints Author(s): Zane Schemmer*, Josephine Carstensen
	11:00 - 11:20	ID 533: Topology and Aerodynamic Shape Optimization of a Bistable Camber-Morphing Airfoil Author(s): Rachel Harvey*, Kai James
	11:20 - 11:40	ID 541: Discrete topology optimization of structures through deep reinforcement learning Author(s): Maximilian Ororbia*, Gordon Warn
MS601: 2nd Annual Mini-Symposium: Resilience of Coastal Structures, Systems, and Community Subjected to Hazards. Organizer(s): Wei Zhang, Jamie Padgett, Andre Barbosa		
EH 241 - Old Fourth Ward	10:00 - 10:20	ID 377: Design Targets to Achieve Community Resilience Metrics in a Changing Climate Author(s): Jiatae Li*, John van de Lindt
	10:20 - 10:40	ID 331: Past hurricane performance of above-ground storage tanks and their future risk considering sea level rise and subsidence scenarios Author(s): Santosh Ghimire*, Sabarethinam Kameshwar
	10:40 - 11:00	ID 403: Progressive Failure of Low-rise Buildings Considering Internal Wind Pressure Change Author(s): Zhixia Ding, Wei Zhang*, Dongping Zhu, William Hughes
	11:00 - 11:20	ID 703: The Evaluation of Explicit Parameters on Eulerian-Lagrangian Simulations of Wave Impact on Coastal Bridges Author(s): Arsalan Majlesi, Adnan Shahriar, Arturo Montoya*, Ao Du, Adolfo Matamoros
	11:20 - 11:40	ID 650: Investigation of Vegetation Shielding Effects on Structural Vulnerability Author(s): Aikaterini (Katerina) P. Kyprioti*, Joaquin P. Morris Barra, Chris Irwin, Alexandros A. Taflanidis, Andrew B. Kennedy



MS605: Analysis of Heritage Structures: Tools and Methods for Assessing Unknowns in Historic Monuments and Structures. Organizer(s): Rebecca Napoiltano, Linda Seymour, Brank Glisic, Admir Masic		
SC 3249 - Peachtree	10:00 - 10:20	ID 136: Looking into the Void: Detecting and Evaluating Voids Beneath Concrete Slabs-On-Grade Author(s): Linda Seymour*
	10:20 - 10:40	ID 256: Nonlinear dimensionality reduction to identify building attributes that influence tornado damage for historic buildings Author(s): Saanchi Singh Kaushal*, Mariantonieta Gutierrez Soto, Rebecca Napolitano
	10:40 - 11:00	ID 519: Image-based 3D Modeling as a Damage Tool Prioritization in Post-Disaster Areas Author(s): Joe Kallas*, Rebecca Napolitano
	11:00 - 11:20	ID 642: Assessing Vulnerability of Historic Midwestern U.S. Timber Barns under Severe Windstorms Author(s): Moriah Hughes*, Branko Glisic*
	11:20 - 11:40	ID 744: Discrete, nonlinear, FE model for structural analysis of adobe piers at Huaca de la Luna Author(s): Cristiana Riccio, Anna Remus*, Selman Tezcan, Luis C. Silva, Gabriele Milani, Renato Perucchio
MS610: Objective Resilience: Balancing Portfolio of Actions Across Mitigation and Recovery to Enhance Resilience in an Uncertain Environment. Organizer(s): Alice Alipour, Paolo Gardoni		
SC 1216 - Piedmont	10:00 - 10:20	ID 143: Hindcasting Residential Building Damage and Predicting Recovery for the Mayfield, Kentucky December 2021 Tornado Author(s): Wanting (Lisa) Wang*, John W. van de Lindt, P. Shane Crawford, Blythe Johnston, Guirong Yan
	10:20 - 10:40	ID 184: Risk Communication of Urban Flood Hazards and Damaging Effects through Augmented Reality Author(s): ZhiQiang Chen*, Molan Zhang, Chengye Li
	10:40 - 11:00	ID 453: Multi-Stage Optimization of Mitigation and Response to Enhance Resilience of Infrastructure Systems Author(s): Alice Alipour*, Ning Zhang
	11:00 - 11:20	ID 238: Ensemble-based time series analysis considering lag information and feature importance to predict power outages during winter storms Author(s): Jangjae Lee*, Stephanie Paal
	11:20 - 11:40	ID 139: Sensitivity analysis for the development of class fragility models of transmission towers under hurricanes Author(s): Xinyue Wang*, Paolo Bocchini
MS403: Origami/Kirigami Inspired Structures and Metamaterials. Organizer(s): Evgueni Filipov, John Brigham, Pradeep Pratapa, Mark Schenk, Martin Walker		
EH 247 - Sweet Auburn	10:00 - 10:20	ID 300: Origami Metamaterials with Near-Constant Poisson Functions over Finite Strains Author(s): Siva Poornan Vasudevan, Phanisri Pradeep Pratapa*
	10:20 - 10:40	ID 190: Phononic Bandgap Programming and Fine-Tuning in Stretched Kirigami Author(s): Hesameddin Khosravi, Suyi Li*
	10:40 - 11:00	ID 792: Tube-Based Multifunctional 3D Origami-Architected Metamaterials Author(s): Hannah Kim*, Glaucio H. Paulino
	11:00 - 11:20	ID 687: Holistic inverse design of origami using interpretable machine learning Author(s): Yi Zhu, Evgueni Filipov*
	11:20 - 11:40	ID 303: Geometric mechanics of random kirigami Author(s): Lauren Niu*, Gaurav Chaudhary, Qing Han, Marta Lewicka, Lakshminarayanan Mahadevan



MS602: Advanced Analysis for Earthquake Engineering: 7th Edition. Organizer(s): Steven McCabe, Ting Lin, Kevin Wong		
EH 266 - Summerhill	10:00 - 10:20	ID 155: Seismic retrofit of low-rise reinforced concrete buildings typical to Haiti using a deterministic and a probabilistic approach. Author(s): Marc-Ansy Laguerre*, Reginald DesRoches, Mohammad Salehi
	10:20 - 10:40	ID 371: A versatile Python-based framework for EDP seismic response estimation using reduced order structural models Author(s): Parisa Toofani Movaghar*, Alexandros Taflanidis
	10:40 - 11:00	ID 476: Realistic Out-Of-Plane Shear Strength of Reinforced Concrete Walls and Slabs for Seismic Probabilistic Risk Assessment Applications Author(s): Siavash Dorvash*, Greg S. Hardy, John Richards, Tim Graf
	11:00 - 11:20	ID 588: Rocking of Deformable Bodies on Flexible Ground Author(s): Mohammad Daud*, Suparno Mukhopadhyay
	11:20 - 11:40	ID 788: Structural Behavior of 3D Printed Concrete Buildings Subjected to Seismic Loads: Numerical Modeling Author(s): Hao Chen, Mohammad Aghajani Delavar, Sumedh Sharma*, Petros Sideris
MS310: Maximizing information content for data-scarce engineering mechanics applications. Organizer(s): Audrey Olivier, Michael Shields, Lori Graham-Brady		
SC 3252 - Techwood	10:00 - 10:20	ID 584: Fisher Information based Optimal Sensor Locations for Structural Identification: Non-Stationary Inputs and Non-Classically Damped Systems Author(s): Dhiraj Ghosh*, Suparno Mukhopadhyay
	10:20 - 10:40	ID 794: Heterogenous Sensor Placement Under Uncertainty Considering Sensor Failure Author(s): Amin Jabini*, Erik Johnson
	10:40 - 11:00	ID 399: From partial and limited structural health data to optimal management of engineering systems Author(s): Pablo G. Morato*, Charalampos P. Andriotis, Konstantinos G. Papakonstantinou
	11:00 - 11:20	ID 324: A knowledge transfer LSTM model to predict the seismic response of structures Author(s): Hongrak Pak*, Stephanie German Paal
	11:20 - 11:40	ID 514: A multifidelity control variates formulation for rare event simulation when model covariance estimation is infeasible Author(s): Promit Chakroborty*, Michael Shields, Somayajulu Dhulipala

MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures. Organizer(s): Dinesh Katti, Christian Hellmich		
Classroom B	10:00 - 10:20	ID 494: Actin Dynamics at Cancer Metastasis to Bone Author(s): Dinesh Katti*, Sharad Jaswandkar, Kalpana Katti
	10:20 - 10:40	ID 621: Inducing Bone Regeneration in Critical Bone Defects using “LegoBlocks” and Bone Morphogenic Proteins Author(s): kalpana katti*, Krishna Kundu, Dinesh Katti
	10:40 - 11:00	ID 717: A bone organoid to simulate human bone formation Author(s): Elisa Budyn*
	11:00 - 11:20	ID 878: Nanoindentation and micromechanics of dental cement paste Author(s): Petr Dohnalik, Bernhard Pichler, Gilles Richard, Christian Hellmich*
	11:20 - 11:40	ID 497: Horizontal flow bioreactor for mimicking the migration of late-stage prostate cancer cells to bone Author(s): Sharad Jaswandkar*, Haneesh Jasuja, Kalpana Katti, Dinesh Katti

## Wednesday, June 07, Early Afternoon Sessions, 14:15 – 15:35

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty.
EH 222 - Buckhead	MS607: Advances in Resilience Analytics and Quantitative Sustainability.
SC 3294 - Castleberry	MS302: Challenges and Advances in Material Damage Modeling.
EH 242 - Centennial	MS202: Structural Identification and Damage Detection.
EH 203 - Highlands	MS301: Advances and Applications of Elasticity within Applied Mechanics.
EH 226 - Home Park	MS401: Design optimization of long span bridges and tall buildings.
EH 270 - Innman Park	MS613: Scientific computing for regional risk assessment and performance/resiliency based design.
EH 273 - Kirkwood	MS307: Structural instabilities: From failure to function.
EH 127 - Midtown I	MS701: Computational Geomechanics.
EH 123 - Midtown II	MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections.
EH 142 - Midtown III	MS706: Understanding the mechanics of induced seismicity.
EH 126 - Midtown IV	MS708: Bio-inspired geotechnics: learning from nature to solve geotechnical challenges.
EH 122 - Midtown V	MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering.
SC 3245 - Northside	MS807: Innovations in advanced cementitious materials and low-carbon concrete.
EH 241 - Old Fourth Ward	MS601: 2nd Annual Mini-Symposium: Resilience of Coastal Structures, Systems, and Community Subjected to Hazards.
SC 3249 - Peachtree	MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation.
SC 1216 - Piedmont	MS610: Objective Resilience: Balancing Portfolio of Actions Across Mitigation and Recovery to Enhance Resilience in an Uncertain Environment.
EH 247 - Sweet Auburn	MS403: Origami/Kirigami Inspired Structures and Metamaterials.
EH 266 - Summerhill	MS602: Advanced Analysis for Earthquake Engineering: 7th Edition.
SC 3252 - Techwood	MS310: Maximizing information content for data-scarce engineering mechanics applications.
Classroom A	MS703: Porous flow and geomechanics of CO2 storage - high fidelity physics and surrogate modeling approaches.
Classroom B	MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures.

MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty. Organizer(s): Kostas Papakonstantinou, Charalampos Andriotis, George Deodatis, Mariyam Amir, Pablo Morato		
SC 3208 - Atlantic Theater	14:15 - 14:35	ID 566: Truncated Unscented Kalman Filter for Incorporating Constraints in Joint State-Parameter Estimation Author(s): Adrita Kundu*, Suparno Mukhopadhyay
	14:35 - 14:55	ID 678: Copula-based Quadratic Point Estimate Method under Incomplete Probability Information Author(s): Minhyeok Ko*, Kostas Papakonstantinou
	14:55 - 15:15	ID 235: Bayesian Model Calibration Under Statistical and Model Errors Based on Polynomial Chaos Methodologies Author(s): Zhiheng Wang*, Roger Ghanem
	15:15 - 15:35	ID 509: Rare Event Uncertainty Quantification Using Hamiltonian MCMC and Inverse Importance Sampling Approaches Author(s): Kostas G. Papakonstantinou, Ehsayed Eshra*, Hamed Nikbakht
MS607: Advances in Resilience Analytics and Quantitative Sustainability. Organizer(s): Arghavan Louhghalam, Mazdak Tootkaboni, Mohammad Javad Abdolhosseini Qomi, Hadi Meidani, Franz-Josef Ulm, Roger Ghanem		
EH 222 - Buckhead	14:15 - 14:35	ID 174: Handling High-dimensional Data through Basis Reduction via Interactive Decomposition: Application to Smart Meter Big Data Author(s): Esmaeil Rezaei*, Mohammad Pourghasemi Saghand, Yanlai Chen, Arghavan Louhghalam, Mazdak Tootkaboni
	14:35 - 14:55	ID 332: A Potential of Mean Force-Based Lattice Element Method for Modeling Progressive Collapse of Structures Author(s): Shayan Razi*, Mazdak Tootkaboni, Arghavan Louhghalam
	14:55 - 15:15	ID 469: A Dynamic Potential of Mean Force Approach to Lattice Element Method for Estimation of Damage Under Extreme Events Author(s): Soolmaz Khoshkalam*, Shayan Razi, Mazdak Tootkaboni, Arghavan Louhghalam
	15:15 - 15:35	ID 483: The Impact of Urban Texture on Flood Hazards Author(s): Sarah Balaian*, Brett Sanders, Mohammad Javad Abdolhosseini Qomi
MS302: Challenges and Advances in Material Damage Modeling. Organizer(s): Mostafa Mobasher, Lampros Svolos, Alessandro Fascetti, Haim Waisman, Ravindra Duddu, Somnath Ghosh		
SC 3294 - Castleberry	14:15 - 14:35	ID 304: Density-Driven Damage Model (D3M) of Concrete Structures Author(s): Yingbo Zhu*, Zachary Grasley, Alessandro Fascetti
	14:35 - 14:55	ID 124: Understanding the training dynamics of PINNs for the non-local gradient damage equation Author(s): Panos Pantidis*, Mostafa Mobasher
	14:55 - 15:15	ID 427: Mechanistic Mapping of Random Fields for Stochastic FE Simulations of Quasibrittle Fracture Author(s): Josh Vievering*, Jia-Liang Le
	15:15 - 15:35	ID 808: Physics and chemistry-based constitutive framework for thermo-chemically aged elastomer using phase-field approach Author(s): Aimane Najmeddine*, Maryam Shakiba

MS202: Structural Identification and Damage Detection. Organizer(s): Eleni Chatzi, Costas Papadimitriou, Babak Moaveni		
EH 242 - Centennial	14:15 - 14:35	ID 634: The Impact of Modelling Error when estimating the foundation parameters of Offshore Wind Turbines through Bayesian Model Updating Author(s): Harry Simpson*, Imad Abdallah, Costas Papadimitriou, Eleni Chatzi, Manolis Chatzis
	14:35 - 14:55	ID 310: Operational Modal Analysis of Two Offshore Wind Turbines in CVOW Wind Farm Author(s): Burak Bagirgan*, Babak Moaveni, Eric Hines
	14:55 - 15:15	ID 690: Digital Twinning and Wind Load Estimation of Block Island Offshore Wind Turbines Using One Year of Data Author(s): Babak Moaveni*, Eric Hines
	15:15 - 15:35	ID 747: Output-Only Bayesian System Identification for Digital Twinning of Floating Offshore Wind Turbines Author(s): Martin Masanes Didyk, Vahid Bagherian, Saeed Eftekhar Azam*, Mohsen Ebrahimzadeh Hassanabadi, Babak Moaveni
MS301: Advances and Applications of Elasticity within Applied Mechanics. Organizer(s): John C Brigham, Ney Dumont, Evgueni T. Filipov, Euclides Mesquita, Sonia Mogilevskaya, Anil C Wijeyewickrema		
EH 203 - Highlands	14:15 - 14:35	ID 648: Machine-precision, complex-variable implementation of the consistent boundary element method in two-dimensional elasticity Author(s): Ney Dumont*
	14:35 - 14:55	ID 821: A NOVEL ANALYTICAL APPROACH FOR CYLINDRICAL CAVITY EXPANSION/ CONTRACTION PROBLEMS IN MOHR-COULOMB MATERIALS Author(s): Shengli Chen, Xu Wang*, Yanhui Han, Younane Abousleiman
	14:55 - 15:15	ID 589: Eshelby Tensor in Integral Nonlocal Elasticity: Theoretical Formulation and Numerical Validation Author(s): Wei Ding*, Fabio Semperlotti
	15:15 - 15:35	ID 293: Two dimensional problem of an elastic matrix containing multiple Gurtin-Murdoch material surfaces along straight segments Author(s): Rohit S Patil*, Sofia G Mogilevskaya
MS401: Design optimization of long span bridges and tall buildings. Organizer(s): Santiago Hernandez		
EH 226 - Home Park	14:15 - 14:35	ID 135: Advances in aero-structural optimization techniques for long-span bridges Author(s): Miguel Cid Montoya*, Santiago Hernández, Ahsan Kareem
	14:35 - 14:55	ID 176: Tall Building Optimization in Regions of High Seismicity: Balancing Stiffness and Ductility Requirements Author(s): Abel Diaz*, David Shook
	14:55 - 15:15	ID 839: Multi-fidelity Sequential Design with CFD Applications of Twisted Building Design Author(s): Fei Ding*, Jize Zhang, Ahsan Kareem
	15:15 - 15:35	ID 181: MULTIDISCIPLINARY APPROACH FOR THE CROSS-SECTION SHAPE OPTIMIZATION OF HIGH-RISE BUILDINGS Author(s): Felix Nieto*, Santiago Hernandez, Miguel Cid-Montoya

MS613: Scientific computing for regional risk assessment and performance/resiliency based design. Organizer(s): Seymour Spence, Alexandros Taflanidis, Andre Barbosa		
EH 270 - Innman Park	14:15 - 14:35	ID 258: Leveraging Automation and Surrogate Modeling to Quantify Post-Earthquake Functional Recovery Performance at the Regional Scale Author(s): Laxman Dahal*, Henry Burton*
	14:35 - 14:55	ID 265: Spatial and Computational Analysis to Prioritize Green and Grey Flood Infrastructure under Uncertainty to Increase Resilience Author(s): Michelle Reckner*, Iris Tien
	14:55 - 15:15	ID 273: Computational tool for community-level probabilistic building performance assessment under excavation-induced ground settlements. Author(s): Jinyan Zhao*, Matthew DeJong
	15:15 - 15:35	ID 311: Informed post-earthquake building inspection planning using adaptive batch-mode active learning Author(s): Amirhossein Cheraghi*, Ge Ou, Yinhu Wang, Nikola Markovic
MS307: Structural instabilities: From failure to function. Organizer(s): Stylianos Yiatros, Hayder Rasheed, C. W. Lim, Noël Challamel, Rainer Groh, M. Ahmer Wadee		
EH 273 - Kirkwood	14:15 - 14:35	ID 175: Buckling of Short Beams Considering Warping with Application to Fiber-Reinforced Elastomeric Isolators Author(s): Eduardo Montalto*, Dimitrios Konstantinidis
	14:35 - 14:55	ID 515: Stability of Thin Cylindrical Shells Under Combined Bending and Torsion Author(s): Victoria Ding*, Shahab Torabian, Sandor Adany, Xiang Yun, Ben Schafer
	14:55 - 15:15	ID 545: POST-BUCKLING CAPACITY OF OF CORRODED STEEL BRIDGE BEAMS UNDER REPETITIVE MONOTONIC LOADING Author(s): Shahrukh Islam*, Aidan Q. Provost, Simos Gerasimidis
	15:15 - 15:35	ID 645: Stochastic Buckling Analysis of Geometrically Imperfect Spherical Shells Author(s): Zheren Baizhikova*, Jia-Liang Le, Roberto Ballarini
MS701: Computational Geomechanics. Organizer(s): Qiushi Chen, Xiaoyu Song, Steve Waiching Sun, Shabnam Semnani, Majid Manzari, Jose Andrade, Ronaldo Borja, Jinhyun Choo		
EH 127 - Midtown I	14:15 - 14:35	ID 425: Data-driven breakage mechanics for granular media Author(s): Jacinto Ulloa*, Anna Gorgogianni, Michael Ortiz, José E. Andrade
	14:35 - 14:55	ID 208: Direct Numerical Simulation (DNS) of Binder-Grain Composite Materials Using Pure Discrete Element Method (DEM) Modeling Author(s): Beichuan Yan*, Richard Regueiro
	14:55 - 15:15	ID 484: Effect of anisotropic consolidation on cyclic liquefaction of granular materials: insights from 3D-DEM modeling Author(s): Ming Yang, Mahdi Taiebat*
	15:15 - 15:35	ID 928: Discrete element modeling and design optimization of bio-inspired drilling into the lunar regolith Author(s): Liang Zhang, Lei Wang*, Quan Sun, Jesus Badal, Qiushi Chen

MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections. Organizer(s): Mohammad Jahanshahi, Vedhus Hoskere, Jian Li, Arash Noshadravan		
EH 123 - Midtown II	14:15 - 14:35	ID 94: Damage detection of a cantilevered beam using LSTM deep learning algorithm Author(s): Ehsan Sadeghian*, Elena Dragomirescu, Diana Inkpen
	14:35 - 14:55	ID 683: Unpaired Image-to-Image Translation of Structural Damage Author(s): Subin Varghese*, Vedhus Hoskere
	14:55 - 15:15	ID 525: A Deep Learning-Based Data Fusion Model to Predict Building Attributes Using Google Street View Images, Census Block Group Characteristics, and Real-Estate Data Author(s): Abhishek Subedi*, Mohammad R. Jahanshahi, David Johnson
	15:15 - 15:35	ID 216: Roadmap for fully autonomous robotic visual inspection of bridges Author(s): Yasutaka Narazaki*
MS706: Understanding the mechanics of induced seismicity. Organizer(s): Xiao Ma, Dakshina Valiveti, Yang Chen		
EH 142 - Midtown III	14:15 - 14:35	ID 148: The influence of fluid injection on energy partitioning during the earthquake cycle Author(s): Maryam Alghannam*, Hector Gomez, Ruben Juanes
	14:35 - 14:55	ID 156: Scale dependence of frictional rupture prestress: Implications for earthquake statistics and inferences of fault stress Author(s): Valère Lambert*, Nadia Lapusta, Daniel Faulkner
	14:55 - 15:15	ID 468: How well do we really know the b-value? New estimates of earthquake magnitude for the Delaware Basin and the effect of magnitude uncertainty on induced seismic hazard estimates. Author(s): Sydney Gable *, Yihe Huang, David Shelly
	15:15 - 15:35	ID 659: Role of fault zone complexity in modulating injection-induced seismicity Author(s): Md Shumon Mia*, Mohamed Abdelmeguid, Chunhui Zhao, Ahmed Elbanna
MS708: Bio-inspired geotechnics: learning from nature to solve geotechnical challenges. Organizer(s): Julian Tao, Alejandro Martinez, J. David Frost		
EH 126 - Midtown IV	14:15 - 14:35	ID 882: How fracture properties of sediments influences bioturbation: A discrete numerical approach Author(s): Xuejing Wang*, Sanjay Arwade, Kelly Dorgan, Arghavan Louhghalam
	14:35 - 14:55	ID 916: Stability of kangaroo rat burrows in the Sonoran Desert: initial evidence of bio-cementation Author(s): Sera Tirkes, Duygu Aydin, Haluk Beyenal, Clint Collins, Idil Deniz Akin*
	14:55 - 15:15	ID 924: Investigating Changes to Seabed Properties Due to Biogenic Processes in the York River Estuary, Chesapeake Bay Author(s): Chesna Cox*, Kelly Dorgan, Nina Stark, Grace Massey, Carl Friedrichs , Adrian Rodriguez-Marek, Eric Hunstein, Md Rejwanur Rahman
	15:15 - 15:35	ID 929: From Geo to Bio and back – Learning from Multiphysics processes in porous media to explore the evolution of branched biological networks Author(s): Nariman Mahabadi*, Benjamin Blonder



MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering. Organizer(s): Johann Guilleminot, Michael Shields, Lori Graham-Brady, Kirubel Teferra		
EH 122 - Midtown V	14:15 - 14:35	ID 312: Probabilistic Gait Parameters from Floor Vibrations Author(s): Yohanna MejiaCruz*, Juan M. Caicedo, Zhaoshuo Jiang, Jean Franco Lozada
	14:35 - 14:55	ID 334: Multi-fidelity Physics-informed Generative Adversarial Network for Solving Partial Differential Equations Author(s): Mehdi Taghizadeh*, Mohammad Amin Nabian, Negin Alemazkooor
	14:55 - 15:15	ID 375: Quantification of the effect of uncertainty in noise on posterior probability values Author(s): Yupeng Zhang*, Jeffrey Hart
	15:15 - 15:35	ID 410: Multi-scale stochastic modeling and uncertainty quantification of rare events using the switching diffusion model Author(s): Zheming Gou*, Xiaohui Tu, Sergey Lototsky, Roger Ghanem
MS807: Innovations in advanced cementitious materials and low-carbon concrete. Organizer(s): Jianqiang Wei		
SC 3245 - Northside	14:15 - 14:35	ID 416: Commercial and Sustainable Hydrogels for Internal Curing and Shrinkage Control in Concrete Author(s): Asif Jalal*, Ravi Kiran
	14:35 - 14:55	ID 817: Influence of carbonation on alkali-silica reaction Author(s): Dayou Luo*, Jianqiang Wei
	14:55 - 15:15	ID 569: Experimental study of the effect of single fiber pullout behavior of recycled steel fiber on the performance of fiber reinforced concrete Author(s): Md. Mashfiqul Islam*, Qian Zhang
	15:15 - 15:35	ID 836: Phase and Property Evolutions of Alkali-silica Reaction Gels Under Carbonation Author(s): Arkabrata Sinha*, Jianqiang Wei
MS601: 2nd Annual Mini-Symposium: Resilience of Coastal Structures, Systems, and Community Subjected to Hazards. Organizer(s): Wei Zhang, Jamie Padgett, Andre Barbosa		
EH 241 - Old Fourth Ward	14:15 - 14:35	ID 633: Probabilistic Analysis of Hurricane-Induced Debris Impacts towards Enhancing Coastal Community Resilience Author(s): Kooshan Amini*, Jamie Padgett
	14:35 - 14:55	ID 667: Analysis of the equity in post hurricane access to emergency services Author(s): Naqib Mashrur*, Sabarethinam Kameshwar
	14:55 - 15:15	ID 189: Prestressed Concrete Piles with GFRP Spirals against Corrosion Hazard Author(s): Olayiwola Adegbulugbe*, Sungmoon Jung
	15:15 - 15:35	ID 261: Long-term Salt Spray and Electrochemical Corrosion Behavior of Cu-Al-Mn Shape Memory Alloys and Steel Rebar Author(s): Huanpeng Hong*, Bora Gencturk

MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation. Organizer(s): Wei Song, Richard Christenson		
SC 3249 - Peachtree	14:15 - 14:35	ID 116: Hybrid Simulation with Combined Displacement and Force Based Experimental Control Points Author(s): Claudio Sepulveda*, Gilberto Mosqueda, Chia-Ming Uang, Chung-Che Chou, Kung-Juin Wang
	14:35 - 14:55	ID 778: Revisiting Hybrid Simulation with a Cost-Effective Hardware-Software Platform Author(s): Juan Meriles*, Khalid M. Mosalam
MS610: Objective Resilience: Balancing Portfolio of Actions Across Mitigation and Recovery to Enhance Resilience in an Uncertain Environment. Organizer(s): Alice Alipour, Paolo Gardoni		
SC 1216 - Piedmont	14:15 - 14:35	ID 517: Optimal Strategies for Enhancing Healthcare Resilience Under Mainshock-Aftershock Events Author(s): Emad Hassan*, Hussam Mahmoud
	14:35 - 14:55	ID 192: A dynamic Bayesian network approach to assess resilience to cascading events in industrial facilities Author(s): QI TONG*, Thomas Gernay
MS403: Origami/Kirigami Inspired Structures and Metamaterials. Organizer(s): Evgueni Filipov, John Brigham, Pradeep Pratapa, Mark Schenk, Martin Walker		
EH 247 - Sweet Auburn	14:15 - 14:35	ID 737: Coarse graining planar kirigami, Part 1: Continuum PDE description Author(s): Paul Plucinsky*, Ian Tobasco
	14:35 - 14:55	ID 736: Coarse graining planar kirigami, Part 2: A Mechanism Gradient Theory Author(s): Ian Tobasco*, Paul Plucinsky
	14:55 - 15:15	ID 287: Homogeneous lattice modes of Miura-ori tessellations with voids Author(s): Anandaroop Lahiri*, Phanisri Pradeep Pratapa
	15:15 - 15:35	ID 98: REPROGRAMMING THE ENERGY LANDSCAPE OF META-STRUCTURES FOR TUNABLE MULTI-STABILITY Author(s): Giada Risso*, Max Kudisch, Paolo Ermanni, Chiara Daraio
MS602: Advanced Analysis for Earthquake Engineering: 7th Edition. Organizer(s): Steven McCabe, Ting Lin, Kevin Wong		
EH 266 - Summerhill	14:15 - 14:35	ID 909: A multiaxial plasticity model to represent softening in steel hollow square beam-columns under monotonic loading Author(s): Diego I. Heredia Rosa*, Albano de Castro e Sousa, Dimitrios G. Lignos, Arka Maity, Amit Kanvinde
	14:35 - 14:55	ID 972: Distribution of Seismic Demand and Damage During the 2015 Gorkha Earthquake Author(s): Raymond Hilly, Supratik Bose, Andreas Stavridis*, Yingjie Hu
MS310: Maximizing information content for data-scarce engineering mechanics applications. Organizer(s): Audrey Olivier, Michael Shields, Lori Graham-Brady		
SC 3252 - Techwood	14:15 - 14:35	ID 712: Bayesian Neural Networks with Physics-Aware Regularization For Travel Time Modeling from Imbalanced Data Author(s): Audrey Olivier*, Sevin Mohammadi, Andrew Smyth, Matt Adams
	14:35 - 14:55	ID 810: The impact of data-driven design approaches on shear connector reliability Author(s): Hyeyoung Koh*, Hannah Blum
	14:55 - 15:15	ID 883: Evaluation of Feature Selection Methods for the Shear Failure Mode Prediction of Prestressed Concrete Beams Author(s): Luis Alberto Bedriñana*, Jhon Tovar, Christian Malaga-Chuquitaype

MS703: Porous flow and geomechanics of CO2 storage - high fidelity physics and surrogate modeling approaches. Organizer(s): Dakshina Valiveti, Xiao-Hui Wu, Matthias Imhof, Yanhui Han		
Classroom A	14:15 - 14:35	ID 206: Uncertainty-aware time-lapse monitoring of geological carbon storage with learned surrogates Author(s): Ziyi Yin, Rafael Orozco, Mathias Louboutin, Ali Siahkoohi, Felix Herrmann*
	14:35 - 14:55	ID 99: Coupled Reservoir-Geomechanical Analysis and CO2 Leakage Modeling during CO2 Injection into the Hanifa Reservoir: A Study Focused on Climate Change Mitigation Author(s): Sikandar Khan*, Abdullatif Al-Shuhail
	14:55 - 15:15	ID 102: Research on the carbon dioxide flooding effect in an injection-production well pattern with hydraulic fractures in the tight oil reservoir Author(s): Nanlin Zhang*, Fushen Liu, Zhifeng Luo, Yusong Chen, Lin Wu, Xiang Chen
	15:15 - 15:35	ID 117: Uncertainty Quantification of CO2 Leakage and Risk Analysis of Induced Seismicity for Large-scale Geological CO2 Sequestration Author(s): Hannah Lu*, Lluís Saló Salgado, Ruben Juanes, Youssef Marzouk
MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures. Organizer(s): Dinesh Katti, Christian Hellmich		
Classroom B	14:15 - 14:35	ID 456: The Effect of Intraocular and Intracranial Pressure Gradient on Lamina Cribrosa Biomechanics for Subjects with and without Glaucoma Author(s): Soumaya Ouhssousou*, Lucy Q. Shen, Amin Pourasghar, Chhavi Saini, Mengyu Wang, John C. Brigham
	14:35 - 14:55	ID 115: Modeling of Heat Flow in the Eye Author(s): Dipika Gongal, Craig Foster*
	14:55 - 15:15	ID 892: Nanomechanical Characterization of Bacterial Biofilms via Bioindentation and Nanoscratch Tests Author(s): Haklae Lee*, Ange-Therese Akono
	15:15 - 15:35	ID 112: Bio-inspired silica coating for steel fibers Author(s): Jialai Wang*

## Wednesday, June 07, Late Afternoon Sessions, 16:00 – 18:00

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty.
EH 222 - Buckhead	MS209: Advances in probabilistic and data assimilation approaches for assessment and mitigation of climatological hazards.
SC 3294 - Castleberry	MS302: Challenges and Advances in Material Damage Modeling.
EH 242 - Centennial	MS202: Structural Identification and Damage Detection.
EH 226 - Home Park	MS811: Architected Materials.
EH 270 - Innman Park	MS613: Scientific computing for regional risk assessment and performance/resiliency based design.
EH 273 - Kirkwood	MS705: Mechanics and Physics of Granular Materials.
EH 127 - Midtown I	MS701: Computational Geomechanics.
EH 123 - Midtown II	MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections.
EH 142 - Midtown III	MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications.
EH 126 - Midtown IV	MS803: Coupled chemical, physical and mechanical processes in porous heterogeneous materials - From additive manufacturing to long term deterioration.
EH 122 - Midtown V	MS215: Probabilistic Learning, Stochastic Optimization, and Digital Twins.
SC 3245 - Northside	MS402: Topology Optimization: from Algorithmic Developments to Applications.
EH 241 - Old Fourth Ward	MS211: Complex Dynamics and Vibration Control of Infrastructure Exposed to Single/Multiple Hazards.
SC 3249 - Peachtree	MS804: Mechanics of Pavements and Pavement Materials.
SC 1216 - Piedmont	MS611: Objective Resilience: From Performance-Based Engineering to Community Resilience.
EH 247 - Sweet Auburn	MS403: Origami/Kirigami Inspired Structures and Metamaterials.
EH 266 - Summerhill	MS808: Cementitious Materials: Experiments and Modeling Across the Scales.
SC 3252 - Techwood	MS501: Computational/Experimental Fluid Dynamics and Fluid-Structure Interaction.
Classroom A	MS703: Porous flow and geomechanics of CO <sub>2</sub> storage - high fidelity physics and surrogate modeling approaches.
Classroom B	MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures.

MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty. Organizer(s): Kostas Papakonstantinou, Charalampos Andriotis, George Deodatis, Mariyam Amir, Pablo Morato		
SC 3208 - Atlantic Theater	16:00 - 16:20	ID 741: Rapid Uncertainty Propagation by LSTM Networks and Knowledge Transfer in High-dimensional Nonlinear System subject Stochastic Excitation Author(s): Bowei Li, Seymour Spence*
	16:20 - 16:40	ID 223: Mapping component reliabilities to system reliability in flange-angle partially restrained steel moment connections Author(s): Trisha Chakravorty*, Aritra Chatterjee, Baidurya Bhattacharya
	16:40 - 17:00	ID 760: A sequential decision process for the multi-objective design optimization of structural systems based on life cycle costs Author(s): Aditya Sharma*, Gordon Warn
	17:00 - 17:20	ID 542: Discrete optimization of structures through a sequential decision process: benchmarking and validation Author(s): Maximilian Ororbia*, Gordon Warn
	17:20 - 17:40	ID 831: Performance-based design optimization of uncertain wind-excited systems under life-cycle loss constraint with climate change considerations Author(s): Thays Duarte, Imad Alhayik*, Arthriya Subgranon
	17:40 - 18:00	ID 720: A Novel Fragility Framework for Assessing the Performance of Marine Vessels Author(s): Aws Idris*, Mohamed Soliman*
MS209: Advances in probabilistic and data assimilation approaches for assessment and mitigation of climatological hazards. Organizer(s): Michele Barbato, Alexandros Taflanidis, Tracy Kijewski-Correa		
EH 222 - Buckhead	16:00 - 16:20	ID 755: Text mining to predict the impact of wind disasters Author(s): Huy Pham*, Monica Arul Jayachandran
	16:20 - 16:40	ID 768: Digital twin for damage diagnosis in steel framed structures Author(s): GBANDI NIKABOU*, JingWen Du, Pranav M. Karve, Sankaran Mahadevan
	16:40 - 17:00	ID 779: Knowledge Discovery from Post-Storm Reconnaissance Data: From Frequentist Inference to Bayesian Knowledge Graphs Author(s): Jordan Nakayama*, Daniel Yahya, David Roueche
	17:00 - 17:20	ID 863: Tiered Infrastructure Performance Assessment Framework for Field Reconnaissance of Built Environment Across Hazards (Seismic, Windstorm, and Coastal) and Infrastructure Typologies Author(s): Mohammad Alam*, Tracy Kijewski-Correa, Khalid Mosalam, Ian Robertson, David Prevatt, David Roueche
	17:20 - 17:40	ID 889: The utility of visual document understanding in regional building inventory generation Author(s): Rachel Hamburger*, Tracy Kijewski-Correa

MS302: Challenges and Advances in Material Damage Modeling. Organizer(s): Mostafa Mobasher, Lampros Svolos, Alessandro Fascetti, Haim Waisman, Ravindra Duddu, Somnath Ghosh		
SC 3294 - Castleberry	16:00 - 16:20	ID 762: A virtual element method for the fourth-order phase-field equation with application to fracture modeling in materials with microstructure Author(s): Lampros Svolos*, Gianmarco Manzini, Hashem Mourad
	16:20 - 16:40	ID 596: An efficient computational framework for the damage assessment of multistory steel frames Author(s): Jade Cohen*, Filip Filippou
	16:40 - 17:00	ID 133: A displacement-controlled Arc Length scheme for Continuum Damage Mechanics problems Author(s): Roshan Philip Saji*, Mostafa Mobasher
	17:00 - 17:20	ID 486: Adaptive domain decomposition using image detection for local and nonlocal damage formulations Author(s): Cornelius Otchere*, Panos Pantidis, Mostafa Mobasher
	17:20 - 17:40	ID 574: Fracture mode investigation in the Brazilian splitting test using a micromechanics-based variational phase-field model Author(s): Mina Sarem*, Nuhamin Eshetu Deresse, Jaincto Ulloa, Els Verstryngge, Stijn François
	17:40 - 18:00	ID 847: Preventing cracks in continuously reinforced concrete with peridynamic models: temperature/shrinking effects in early-age CRCP, and corrosion-induced fracture Author(s): Yupeng Liu, Ziguang Chen, Jiangming Zhao, Florin Bobaru*
MS202: Structural Identification and Damage Detection. Organizer(s): Eleni Chatzi, Costas Papadimitriou, Babak Moaveni		
EH 242 - Centennial	16:00 - 16:20	ID 707: A Transfer Learning Strategy for Virtual Sensing in Offshore Wind Farms Author(s): Eleonora Maria Tronci*, Anna Haensch, Babak Moaveni, Eric Hines
	16:20 - 16:40	ID 552: Unsupervised Damage Detection for Smart Extraterrestrial Habitats Using Autoencoders and Information Fusion Author(s): Zixin Wang*, Mohammad Jahanshahi, Ilias Bilonis, Amin Maghareh, Yuguang Fu, Shirley Dyke
	16:40 - 17:00	ID 734: Physics-informed machine learning for hidden crack localization in concrete structure: Experimental evaluation of multi-fidelity transfer learning approaches Author(s): Sarah Miele*, Pranav Karve, Sankaran Mahadevan
	17:00 - 17:20	ID 268: Framework for Near-real-time Seismic Damage Detection of Structural Systems using Structural-mode-based Graph Neural Network Author(s): Minkyu Kim*, Junho Song
	17:20 - 17:40	ID 434: Transfer Learning Enhanced Neural ODEs for Adaptive Digital Twin Modeling Author(s): Yujie GAN*, Zhilu LAI
	17:40 - 18:00	ID 804: Supervised Learning with GPR A-scans for Material Property Prediction in Building Envelopes Author(s): Ahmed Nirjhar Alam*, Wesley Reinhart, Rebecca Napolitano

MS811: Architected Materials. Organizer(s): Stavros Gaitanaros		
EH 226 - Home Park	16:00 - 16:20	ID 237: Arbitrary-Order Sensitivity Analysis in the Wave Propagation Behavior of Architected Materials Using HYPAD-FEM Author(s): Juan David Navarro, Juan Camilo Velasquez, Arturo Montoya, Harry Millwater, David Restrepo*
	16:20 - 16:40	ID 504: Acoustic metasurface for wavefront manipulation of ultrasound waves Author(s): Xhorxha Kuci*, Marc G.D. Geers, Varvara G. Kouznetsova
	16:40 - 17:00	ID 245: Dynamics of bilayer topological Maxwell lattices and the quest for omnimodal polarization Author(s): Mohammad Charara, James McInerney, Kai Sun, Xiaoming Mao, Stefano Gonella*
	17:00 - 17:20	ID 969: Dispersive engineering of metasurfaces for directional and omnidirectional band gaps Author(s): Heedong Goh*, Ke Ma, Loukas Kallivokas
	17:20 - 17:40	ID 663: Effects of granular media on energy absorption of architected lattices under dynamic loading Author(s): Luis Baldelomar Pinto*, Kathryn Matlack
	17:40 - 18:00	ID 378: Irregular architected materials with programmable properties Author(s): Ke Liu*, Rachel Sun, Chiara Daraio
MS613: Scientific computing for regional risk assessment and performance/resiliency based design. Organizer(s): Seymour Spence, Alexandros Taflanidis, Andre Barbosa		
EH 270 - Innman Park	16:00 - 16:20	ID 398: Computational tsunami risk management Author(s): Cláudia Reis*, André R. Barbosa
	16:20 - 16:40	ID 426: Adaptive importance sampling for efficient probabilistic storm surge estimation Author(s): WoongHee Jung, Alexandros Taflanidis*, Aikaterini Kyprioti
	16:40 - 17:00	ID 556: Life-cycle assessment of long-span bridge's wind resistant performance considering multi-source time-variant effects and uncertainties Author(s): Xiaolei Chu*, Wei Cui, Lin Zhao, Yaojun Ge
	17:00 - 17:20	ID 735: A Multi-fidelity Bayesian-based framework for collapse reliability analysis under hurricane hazards Author(s): Liuyun Xu*, Srinivasan Arunachalam, Seymour Spence
	17:20 - 17:40	ID 799: Propagation of modeling uncertainty in the seismic behavior of specimens employing spines. Author(s): Bryam Astudillo*, Barbara Simpson
	17:40 - 18:00	ID 825: Error quantification and guidance on the use of wind tunnel-informed stochastic wind load models for the applications of performance-based wind engineering Author(s): Thays Duarte*, Srinivasan Arunachalam, Arthriya Subgranon, Seymour Spence



MS705: Mechanics and Physics of Granular Materials. Organizer(s): Yida Zhang, Payam Poorsolhjoui, Marcial Gonzalez		
EH 273 - Kirkwood	16:00 - 16:20	GMTC Introduction
	16:20 - 16:40	ID 96: In-Situ Measurements of Stresses and Kinematics in Triaxial Tests Author(s): Ryan Hurley*, Ghassan Shahin, Ye Tian, Oyvind Torgersrud, Eleni Stavropoulou, Edward Ando, Andrew King
	16:40 - 17:00	ID 604: Influence of Loading Rate and Crystal Structure on Constitutive Anisotropy of Silica Cubes Author(s): Ibraheem Gharaibeh*, Daniel Casem, Wadi Imseeh, Khalid Alshibli, Peter Kenesei, Hemant Sharma
	17:00 - 17:20	ID 374: Evolution of Stress Tensor in terms of Multivariate Probability Distributions using Internal State Variable Theory Author(s): Abhinav Ramkumar*, Marcial Gonzalez
	17:20 - 17:40	ID 523: Particle shape effect on granular materials mechanics under high strain rate Author(s): Dawa Seo*, Nitin Pandurang Daphalapurkar, Darby Jon Luscher
	17:40 - 18:00	ID 704: A unified descriptive framework for co-evolving particle shape and size in comminution Author(s): Priya Tripathi, Seung Jae Lee*, Moochul Shin, Chang Hoon Lee
MS701: Computational Geomechanics. Organizer(s): Qiushi Chen, Xiaoyu Song, Steve Waiching Sun, Shabnam Semnani, Majid Manzari, Jose Andrade, Ronaldo Borja, Jinhyun Choo		
EH 127 - Midtown I	16:00 - 16:20	ID 521: A New Assumed Deformation Gradient Approach for Mitigating Volumetric Locking in Explicit Material Point Methods Author(s): Yidong Zhao*, Chenfanfu Jiang, Jinhyun Choo
	16:20 - 16:40	ID 917: Neural network-encoded signed distance field for shape representation and computational particle mechanics of granular materials Author(s): Zhengshou Lai*
	16:40 - 17:00	ID 464: Formulation of a nonlocal gradient enhanced numerical model for geomaterials guided by controllability criteria Author(s): Dawei Xue*, Xilin Lu, Giuseppe Buscarnera
	17:00 - 17:20	ID 362: Modeling fracture propagation in porous media with assumed enhanced strain method Author(s): Fushen Liu*
	17:20 - 17:40	ID 636: Numerical Study on Phase Transformation Induced Material Fracture Author(s): S. Sindhusuta*, Sheng-Wei Chi, Craig Foster
	17:40 - 18:00	ID 526: Modeling of high strain rate impact of single crystal silica cubes using phase field fracture formulation Author(s): Shank Kulkarni*, Timothy Truster, Ibraheem Gharaibeh, Khalid Alshibli, Daniel Casem

MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections. Organizer(s): Mohammad Jahanshahi, Vedhus Hoskere, Jian Li, Arash Noshadravan		
EH 123 - Midtown II	16:00 - 16:20	ID 548: Active Perception Based on Deep Reinforcement Learning for Autonomous Robotic Inspection Author(s): Wen Tang*, Mohammad Jahanshahi*
	16:20 - 16:40	ID 402: Methods of Inspection of Deteriorated Steel Beam Ends using LiDAR & 3D Scanning Author(s): Aidan Provost*, Shahrukh Islam, Georgios Tzortzinis, Chengbo Ai, Simos Gerasimidis
	16:40 - 17:00	ID 872: Integrating image and LiDAR data for measuring road and roadside objects on hillside streets Author(s): Sven Malama*, Debasish Jana, Sriram Narasimhan, Ertugrul Taciroglu
	17:00 - 17:20	ID 553: Autonomous Pavement Surface Evaluation and Rating (PASER) Condition Assessment Using a Cost-effective RGB-D Data Acquisition System Author(s): Yu-Ting Huang*, Nikkhil Vijaya Sankar, Mohammad Reza Jahanshahi, Fangjia Shen
	17:20 - 17:40	ID 101: Automated Multi-Damage Detection on Historic Buildings in Post-Disaster Areas Using Image Segmentation Author(s): Joe Kallas*, Rebecca Napolitano
	17:40 - 18:00	ID 462: Automated image localization to support rapid building reconnaissance in a large-scale area Author(s): Xiaoyu Liu*, Shirley Dyke, Ali Lenjani, Ilias Bilonis, Xin Zhang, Jongseong Choi
MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications. Organizer(s): Gaofeng Jia, Abdollah Shafieezadeh		
EH 142 - Midtown III	16:00 - 16:20	ID 153: Discrete Wavelet Transform Based Earthquake Data Augmentation for Training Surrogate Models of Nonlinear Structures Author(s): Siddharth Parida*, Christina Bocirnea, Supratik Bose, Georgios Apostolakis
	16:20 - 16:40	ID 209: Non-Deterministic Kriging for Systems with Mixed Continuous and Discrete Input Variables Author(s): J Heeralu P Ravindu Jayasekara *, Sabarethinam Kameshwar
	16:40 - 17:00	ID 495: Advances in node condition classification within storm surge surrogate modeling framework Author(s): Christopher Irwin*, Alexandros Taflanidis
	17:00 - 17:20	ID 264: Physics-Informed Machine Learning for Structural Metamodeling of Nonlinear Structures Author(s): Robert Bond*, Pu Ren, Hao Sun, Jerome Hajjar
	17:20 - 17:40	ID 698: Adaptive Surrogate Improvement for High-dimensional Problems Author(s): Yulin Guo*, Paromita Nath, Sankaran Mahadevan
	17:40 - 18:00	ID 342: Physics-constrained Gaussian Process Model for Prediction of Power Generation in Wave Energy Converter Arrays Author(s): Suraj Khanal*, Gaofeng Jia

MS803: Coupled chemical, physical and mechanical processes in porous heterogeneous materials - From additive manufacturing to long term deterioration. Organizer(s): Mohammed Alnaggar, Gianluca Cusatis, Giovanni Di Luzio, Roman Wan-Wendner, Jan Elias		
EH 126 - Midtown IV	16:00 - 16:20	ID 906: Coupling between ion irradiation-induced expansion and mechanical stress: An irradiation-induced flow phenomenon Author(s): Mohammed Alnaggar*, Yann Le Pape
	16:20 - 16:40	ID 580: Thermal stability and degradation kinetics of polystyrene-layered double hydroxide composites Author(s): Farrukh Shehzad*, Sikandar Khan, Mamdouh Al-Harhi
	16:40 - 17:00	ID 922: Microstructure and mechanical properties of brucite recovered from reject brine via different precipitating agents Author(s): Inderjeet Singh*, Rotana Hay, Kemal Celik
	17:00 - 17:20	ID 939: Study of Effect of Oxide Layer on the Strength of the Cold Spray Layer Author(s): Mobin Vandadi*, Nima Rahbar, Winston Soboyejo
	17:20 - 17:40	ID 493: Poly-Material Lattice Discrete Particle Model (P-LDPM) for the Multiscale Prediction of Concrete Mechanical Behavior Author(s): Matthew Troemner*, Elham Ramyar, Gianluca Cusatis
	17:40 - 18:00	ID 696: Stochastic Lattice Discrete Particle Modeling of Fracture in Pervious Cementitious Composites Author(s): Alessandro Fascetti*, John Bolander
MS215: Probabilistic Learning, Stochastic Optimization, and Digital Twins. Organizer(s): Amir H Gandomi, Roger Ghanem, Christian Soize		
EH 122 - Midtown V	16:00 - 16:20	ID 879: A data-driven statistical inverse identification method for phase field modeling of fracture in random heterogeneous elastic media Author(s): Florent Pled*, Christophe Desceliers
	16:20 - 16:40	ID 442: Bayesian deep learning for probabilistic virtual load monitoring of offshore wind farms Author(s): Nandar Hlaing*, Pablo G. Morato, Francisco de Nolasco Santos, Wout Weijtjens, Philippe Rigo, Christof Devriendt
	16:40 - 17:00	ID 803: Probabilistic digital twin for damage-adaptive rotorcraft control Author(s): William Sisson*, Pranav Karve, Sankaran Mahadevan
	17:00 - 17:20	ID 512: Surrogate Modeling of Highway Bridge Column Earthquake Response Using Probabilistic Learning on Manifolds (PLoM) Author(s): Peter Lee, Kuanshi Zhong*, Sanjay Govindjee, Gregory Deierlein
	17:20 - 17:40	ID 661: Rare-events simulation using normalizing flows Author(s): Agnimitra Dasgupta*, Erik Johnson
	17:40 - 18:00	ID 481: Quantifying Uncertainty in Quantum Approximate Optimization Algorithms Author(s): Jungin Kim*, Yan Wang

MS402: Topology Optimization: from Algorithmic Developments to Applications. Organizer(s): Mazdak Tootkaboni, Alireza Asadpoure, Josephine Carstensen , James Guest		
SC 3245 - Northside	16:00 - 16:20	ID 601: Addressing the issue of parameter tuning in topology optimization algorithms Author(s): Dat Ha*, Josephine Carstensen
	16:20 - 16:40	ID 622: Stress-constrained topology optimization of anisotropic structures Author(s): Oliver Giraldo-Londono*, Rogelio Muneton-Lopez, Chadwick Bettale
	16:40 - 17:00	ID 701: Fiber Orientation and Topology Optimization of Tow-Steered Composite Laminates with Manufacturability Control Author(s): CHUAN LUO*, James Guest
	17:00 - 17:20	ID 769: Finite Strain Robust Topology Optimization Considering Multiple Uncertainties Author(s): Nan Feng, Shiyao Sun*, Guodong Zhang, Kapil Khandelwal
	17:20 - 17:40	ID 775: Multiphysics topology optimization of heat sinks considering additive manufacturing constraints Author(s): Ardalan Nejat*, James Guest
	17:40 - 18:00	ID 777: Efficient reliability-based topology optimization via polynomial chaos expansion: A multi-fidelity, greedy-Kaczmarz approach Author(s): Alberto Torres*, James Guest, James Warner, Mazdak Tootkaboni
MS211: Complex Dynamics and Vibration Control of Infrastructure Exposed to Single/Multiple Hazards. Organizer(s): Chao Sun, Mariantonieta Gutierrez Soto , Lin Chen		
EH 241 - Old Fourth Ward	16:00 - 16:20	ID 266: Global Motions of a Floating Platform with Tuned Liquid Damper in Waves Author(s): Wen-Huai Tsao*, Ying-Chuan Chen, Christopher Kees, Lance Manuel
	16:20 - 16:40	ID 289: A New Macro Model for Steel-Concrete Shear Walls using CSI PERFORM-3D Author(s): Nakisa Haghi*, siamak Epackachi, Steve Efe
	16:40 - 17:00	ID 381: Numerical Evaluation of Dynamic Responses of Oregon Bridge Rail under Multi-level Vehicular Impacts Author(s): Howie Fang*, Qian Wang
	17:00 - 17:20	ID 539: Investigation on the performance of a rolling pendulum isolation system subject to 3D seismic excitations Author(s): Esteban Villalobos Vega*, Erika Vanderheiden, P. Scott Harvey
	17:20 - 17:40	ID 668: Assessment of ship impact force on offshore structures with varying collision scenarios Author(s): Hyunjoong Kim*

MS804: Mechanics of Pavements and Pavement Materials. Organizer(s): Zhanping You, Linbing Wang, Shane Underwood		
SC 3249 - Peachtree	16:00 - 16:20	ID 306: Acceleration Monitoring for Pavements Author(s): Linbing Wang*, Zhoujing Ye
	16:20 - 16:40	ID 308: Use of time-temperature shift factors for waveform-based viscoelastic measures in asphalt binder systems Author(s): Saqib Gulzar*, Shane Underwood
	16:40 - 17:00	ID 851: Computational Modeling of Skid Resistance of Aircraft Tire on Wet Runway Pavement Author(s): Baiyu Jiang*, Hao Wang
	17:00 - 17:20	ID 895: Modeling Plastic Deformation of Granular Materials in Pavements Using the Modified Drucker-Prager Cap (MDPC) Model Author(s): Mohammad Rahmani*, Santosh Kommidi*, Yong-Rak Kim*, Dallas Little, John Rushing
	17:20 - 17:40	ID 898: Strain Field Distribution in Asphalt Mixes Using Digital Image Correlation Author(s): Babak Asadi*, Ramez Hajj
MS611: Objective Resilience: From Performance-Based Engineering to Community Resilience. Organizer(s): Alice Alipour, Paolo Gardoni		
SC 1216 - Piedmont	16:00 - 16:20	ID 255: Multi-Disciplinary Simulation-Based Model for Interdependent Seismic Resilience Assessment of Communities Author(s): Omar Sediek*, Milad Roohi, John van de Lindt, Nathanael Rosenheim, Sara Hamideh
	16:20 - 16:40	ID 742: An Objective-based Framework for Linking Reconnaissance Data to Performance-based Engineering and Community Resilience Performance Metrics Author(s): Amir Safiey*, David Roueche
	16:40 - 17:00	ID 759: Enhancing Community Resilience with Minimal Instrumentation and Performance-based Seismic Monitoring of Buildings Author(s): Milad Cheraghzade*, Milad Roohi*
	17:00 - 17:20	ID 920: Cascade failure analysis of transmission tower systems Author(s): Saransh Dikshit*, Alice Alipour*
MS403: Origami/Kirigami Inspired Structures and Metamaterials. Organizer(s): Evgueni Filipov, John Brigham, Pradeep Pratapa, Mark Schenk, Martin Walker		
EH 247 - Sweet Auburn	16:00 - 16:20	ID 786: A nonlinear iterated map for a graded Waterbomb origami tube Author(s): Americo Cunha Jr*, Glaucio Paulino
	16:20 - 16:40	ID 577: Folding Polygonal Kirigami Tubes Author(s): Martin Walker*
	16:40 - 17:00	ID 754: Multi-Objective Optimisation of Origami Bellows Author(s): Mengzhu Yang, Fabrizio Scarpa, Mark Schenk*
	17:00 - 17:20	ID 609: Hybrid Origami Patterns Author(s): Kevin T. Liu*, Glaucio H. Paulino
	17:20 - 17:40	ID 750: Structural morphing surfaces based on self-standing, snap-through building blocks Author(s): Asifur Rahman, Samuele Ferracin, Sujata Tank, Paolo Celli*
	17:40 - 18:00	ID 142: Multifunctional magnetic origami robots Author(s): Renee Zhao*

MS808: Cementitious Materials: Experiments and Modeling Across the Scales. Organizer(s): Bernhard Pichler, Franz-Josef Ulm, Günther Meschke, Christian Hellmich, Gilles Pijaudier-Cabot		
EH 266 - Summerhill	16:00 - 16:20	ID 122: Modeling the chloride ingress in well cement due to the carbonation reaction underground Author(s): Jinliang Liu, Yuxiang Jing, Linfei Li*
	16:20 - 16:40	ID 169: A framework for predicting tensile strength of cement paste using multi-scale micro-CT and nanoindentation Author(s): Tong-Seok Han*, Se-Yun Kim, Donghwi Eum
	16:40 - 17:00	ID 355: Multiscale modeling of thermal Young's modulus degradation of concrete at elevated temperatures Author(s): Simon Peters*, Günther Meschke
	17:00 - 17:20	ID 414: Multiscale Characterization to Examine Carbonation of Alkali-Activated Binders in Cementitious Materials Author(s): Shayan Gholami*, Yong-Rak Kim*, Dallas Little, Sukmin Kwon, Jong Suk Jung
	17:20 - 17:40	ID 452: Viscoelastic properties of an LC3-paste: ultrasound pulse transmission and hourly repeated minute-long creep testing Author(s): Sophie J. Schmid*, Luis Zelaya-Lainez, Olaf Lahayne, Martin Peyerl, Bernhard L.A. Pichler
	17:40 - 18:00	ID 466: Measurements of Rate Effects on Damage and Fracture of Different Ultra-High Performance Concretes Author(s): Aidan Carlson, Eric Landis*
MS501: Computational/Experimental Fluid Dynamics and Fluid-Structure Interaction. Organizer(s): Georgios Moutsanidis, Ning Zhang, Jinhui Yan		
SC 3252 - Techwood	16:00 - 16:20	ID 93: Application of Wray-Agarwal One-Equation Turbulence Model to NASA Benchmark Problems of Wall-Bounded Flows with Separation Author(s): Ramesh Agarwal*
	16:20 - 16:40	ID 226: Recent Advances on Multiscale Simulations of Multiphase Interactions under Extreme Loadings with Continuum- and Particle-Based Methods Author(s): Zhen Chen*, Andrew Bowman, Mohammed Saffarini, Hani Salim
	16:40 - 17:00	ID 231: Multiphase Fluid-Structure Interaction in Deformable Porous Media at Multiple Scales Author(s): Samuel Fagbemi*, Pejman Tahmasebi, Mohammad Piri
	17:00 - 17:20	ID 358: HYBRID RANS-LES SIMULATION OF TURBULENT HEAT TRANSFER IN A BACKWARD-FACING STEP FLOW Author(s): Olalekan Olubunmi Shobayo*, Dibbon Keith Walters, Samuel Ruegsegger
	17:20 - 17:40	ID 516: Reducing Drag, Improving Performance: A Study of V-Shaped Riblets on Shipping Vessel Hulls Author(s): Nathaniel Werner, Katherine Rioux*, Ryan Pritzkau
	17:40 - 18:00	ID 549: High Fidelity Modeling of Fracture Under Extreme Hydrodynamic Events: A Coupled SPH-Phase-Field FSI Approach Author(s): Mohammad Naqib Rahimi*, Georgios Moutsanidis

MS703: Porous flow and geomechanics of CO2 storage - high fidelity physics and surrogate modeling approaches. Organizer(s): Dakshina Valiveti, Xiao-Hui Wu, Matthias Imhof, Yanhui Han		
Classroom A	16:00 - 16:20	ID 146: Surrogate Model for CO2 Storage with Coupled Flow and Geomechanics and Its Use in MCMC-based Data Assimilation Author(s): Yifu Han*, Francois Hamon, Su Jiang, Louis Durlafsky
	16:20 - 16:40	ID 307: Simulation of large-scale geological carbon sequestration in the Gulf of Mexico using fully coupled flow and geomechanics Author(s): Yanhua Yuan*, Kevin Dugan, Prasanna Krishnamurthy, Stephen Morgan, Josh White
	16:40 - 17:00	ID 309: Fourier-enhanced multiple-input neural operators for accurate and efficient surrogate modeling for geological carbon sequestration Author(s): Zhongyi Jiang, Min Zhu, Lu Lu, Dongzhuo Li, Yanhua Yuan, Qiuzi Li, Kun Wang*
	17:00 - 17:20	ID 424: Characterizing the geomechanical constraints of long-term CO2 injection and storage through fully coupled 3D fluid flow, geomechanics and hydraulic fracture simulations. Author(s): Ankush Singh*, Mark McClure, Garrett Fowler
	17:20 - 17:40	ID 435: FluidFlower concept for visualizing and studying CO2 storage: From lab experiments to quantitative imaging Author(s): Jakub W. Both*, Martin A. Fernø, Jan M. Nordbotten
	17:40 - 18:00	ID 908: Anomaly detection for CO2 capture and sequestration monitoring Author(s): Jose Hernandez Mejia*, Matthias Imhof, Michael Pyrcz
MS902: 21st Symposium on Biological and Biologically Inspired Materials and Structures. Organizer(s): Dinesh Katti, Christian Hellmich		
Classroom B	16:00 - 16:20	ID 114: Soft Solid-Liquid Composites in Biomedical Applications: Understanding the Size Effect Author(s): Karthik Kundapur, Vinu Unnikrishnan*
	16:20 - 16:40	ID 614: Viscoelastic characteristics of nacre-like materials Author(s): Li-Wei Liu*, Yuan-Jyun Shih
	16:40 - 17:00	ID 725: On the mechanics of the tooth-stylus-radula systems of chitons: a soft conveying-belt for efficient force transduction Author(s): John Connolly, Phani Saketh Dasika, Jungeun Lee, Taifeng Wang, David Kisailus, Pablo Zavattieri*



## Thursday, June 08, Morning Sessions, 10:00 – 12:00

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division).
EH 222 - Buckhead	MS307: Structural instabilities: From failure to function.
SC 3294 - Castleberry	MS303: Multiscale Behavior of Damage and Failure Mechanics.
EH 242 - Centennial	MS202: Structural Identification and Damage Detection.
EH 203 - Highlands	MS301: Advances and Applications of Elasticity within Applied Mechanics.
EH 226 - Home Park	MS811: Architected Materials.
EH 270 - Innman Park	MS613: Scientific computing for regional risk assessment and performance/resiliency based design.
EH 273 - Kirkwood	MS705: Mechanics and Physics of Granular Materials.
EH 127 - Midtown I	MS701: Computational Geomechanics.
EH 123 - Midtown II	MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections.
EH 142 - Midtown III	MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications.
EH 126 - Midtown IV	MS803: Coupled chemical, physical and mechanical processes in porous heterogeneous materials - From additive manufacturing to long term deterioration.
EH 122 - Midtown V	MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering.
SC 3245 - Northside	MS402: Topology Optimization: from Algorithmic Developments to Applications.
EH 241 - Old Fourth Ward	MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods.
SC 3249 - Peachtree	MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation.
SC 1216 - Piedmont	MS805: Self-healing infrastructure materials and systems.
EH 247 - Sweet Auburn	MS403: Origami/Kirigami Inspired Structures and Metamaterials.
EH 266 - Summerhill	MS808: Cementitious Materials: Experiments and Modeling Across the Scales.
SC 3252 - Techwood	MS501: Computational/Experimental Fluid Dynamics and Fluid-Structure Interaction.
Classroom A	MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm.
Classroom B	MS314: Mechanics of Wood and Wood Based Materials.

MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division). Organizer(s): Ramesh Malla, Ph.D., F. ASCE, F. EMI, Robert Mueller, Kris Zacny, Hongyu (Nick) Zhou		
SC 3208 - Atlantic Theater	10:00 - 10:20	ID 816: Industrialized and Robotic Construction Advances in Terrestrial Construction and Opportunities in Space Construction Author(s): Naveen Kumar Muthumanickam*
	10:20 - 10:40	ID 554: Temperature Profile on a Lunar Habitat Structure Covered with Regolith Protective Layer Author(s): Sachin Tripathi*, Ramesh Malla*
	10:40 - 11:00	ID 253: Incorporating a Finite Element-Based Structural model within a System of Systems Modeling Framework to Analyze Smart Habitats in Deep Space Environments. Author(s): Adnan Shahriar*, Arsalan Majlesi, David Avila, Arturo Montoya
	11:00 - 11:20	ID 728: Considering the non-linear behavior of materials in the design of lunar habitats Author(s): Arsalan Majlesi*, Amir Behjat, Adnan Shahriar, David Avila, Arturo Montoya, Shirley Dyke, Julio Ramirez
	11:20 - 11:40	ID 793: Seismic Regolith-Structure Interaction on Proposed Martian Habitats Author(s): Hamed Seifamiri, Pooneh Maghoul*, Roberto de Moraes, Ramesh B. Malla
MS307: Structural instabilities: From failure to function. Organizer(s): Stylianos Yiatros, Hayder Rasheed, C. W. Lim, Noël Challamel, Rainer Groh, M. Ahmer Wadee		
EH 222 - Buckhead	10:00 - 10:20	ID 246: A novel testing method for composite-metal hybrid dihedral wing root structure Author(s): Tiren He*, Jifeng Xu, Jin Guo, Zhiyang Ma, Tianliang Qin, Limin Gao
	10:20 - 10:40	ID 660: Waisted Post-buckling Configuration of Mechanical Metamaterials Cylindrical Shell and Its Applications Author(s): Jiabin Sun, C.W. Lim*, Zhenhuan Zhou, Xinsheng Xu
	10:40 - 11:00	ID 738: Static friction models for a rod deforming on a cylinder Author(s): Gert van der Heijden*, Rehan Shah
	11:00 - 11:20	ID 809: Comparison of stiffness reduction factors for rotary-straightened and hot-rolled W-shape members Author(s): Hyeyoung Koh*, Barry Rosson, Hannah Blum
	11:20 - 11:40	ID 815: Stability of a novel all-steel modular floor assembly Author(s): Rajshri Chidambaram Muthu Kumar*, Sandor Adany, Benjamin Schafer
	11:40 - 12:00	ID 919: Active learning-based reliability analysis of dynamic response of transmission towers Author(s): Le Cao*

MS303: Multiscale Behavior of Damage and Failure Mechanics. Organizer(s): Leong Hien Poh, Oliver Giraldo-Londono, Lizhi Sun, Jiann-Wen Ju, George Z. Voyiadjis, Glaucio H. Paulino		
SC 3294 - Castleberry	10:00 - 10:40	Keynote ID 234: Strong and tough fibrous hydrogels reinforced by multiscale hierarchical structures with multimechanisms Author(s): Huajian Gao*
	10:40 - 11:00	ID 152: Computationally Efficient Modeling of Microstructurally Short Cracks in Polycrystalline Materials Author(s): Damin Xia*, Caglar Oskay
	11:00 - 11:20	ID 353: A simple implementation of localizing gradient damage model in Abaqus for the dynamic fracture Author(s): Guangyuan Yang, Leong Hien Poh*
	11:20 - 11:40	ID 215: Multiscale Phase Field formulation for capturing Anisotropy in Network Response of Rubber-like materials Author(s): Prajwal Kammardi Arunachala*, Matthias Neuner, Christian Linder
	11:40 - 12:00	ID 474: A phase-field formulation for fracture modeling of rate- and temperature-dependent materials Author(s): Rogelio Muñeton-Lopez*, Oliver Giraldo-Londoño
MS202: Structural Identification and Damage Detection. Organizer(s): Eleni Chatzi, Costas Papadimitriou, Babak Moaveni		
EH 242 - Centennial	10:00 - 10:20	ID 351: Model-based Unknown Input Estimation via Partially Observable Markov Decision Processes Author(s): Wei Liu*, Zhilu Lai, Charikleia Stoura, Kiran Bacsá, Eleni Chatzi
	10:20 - 10:40	ID 397: Kernel ridge regression based force identification in the time domain Author(s): Shuo HAO*, Su-Mei WANG, Yi-Qing NI
	10:40 - 11:00	ID 510: Identification of Fractional Dynamical Systems using Recursive Nonlinear Stochastic Filtering Methods Author(s): Kalil Erazo*, Alberto Di Matteo
	11:00 - 11:20	ID 662: Wind Load Estimation of an Operational 6 MW Offshore Wind Turbine: a comparison of physics-based vs. data-driven approaches Author(s): Azin Mehrjoo*, Finn Rüdinger, Ross McAdam, Babak Moaveni, Eric Hines
	11:20 - 11:40	ID 305: Dual state-parameter estimation of continuous structural systems using Adaptive Physics-informed parallel neural networks Author(s): Rui Zhang*, Gordon P. Warn, Aleksandra Radlińska
	11:40 - 12:00	ID 592: State-Input-Parameter Identifiability in Output Only Structural Identification Author(s): Adrita Kundu*, Suparno Mukhopadhyay

MS301: Advances and Applications of Elasticity within Applied Mechanics. Organizer(s): John C Brigham, Ney Dumont, Evgueni T. Filipov, Euclides Mesquita, Sonia Mogilevskaya, Anil C Wijeyewickrema		
EH 203 - Highlands	10:00 - 10:20	ID 593: Biaxial testing and elastic characterization of a laminated membrane composite Author(s): Steven Palkovic*, Andrew Sarawit, Mehdi Zarghamee
	10:20 - 10:40	ID 726: Tailorable thermoelectricity of cubic lattice-based cellular and granular materials by the configuration stress Author(s): Chao Liu*, Huiming Yin
	10:40 - 11:00	ID 257: Analytical solution for Mode I stress intensity factor in aviation pavement reflection cracking model Author(s): Kairat Tuleubekov*, David Brill
	11:00 - 11:20	ID 357: Simulation of a hot forming tool with a thermoelastic boundary element formulation Author(s): Michael Leitner, Martin Schanz*
	11:20 - 11:40	ID 590: The response of multi-span railway bridges accounting for dynamic soil-structure interaction Author(s): Pieter Reumers, Geert Lombaert, Geert Degrande*
	11:40 - 12:00	ID 239: A Transfer Matrix Approach for the Simulation of 2D Rainbow Traps Author(s): Prasannakumar Salasiya*, Bojan Guzina
MS811: Architected Materials. Organizer(s): Stavros Gaitanaros		
EH 226 - Home Park	10:00 - 10:20	ID 716: A Data-Driven Framework for Structure-Property Correlation in Ordered and Disordered Cellular Metamaterials Author(s): Shengzhi Luan, Enze Chen, Stavros Gaitanaros*
	10:20 - 10:40	ID 938: Computational Modeling of Tensegrity Metamaterials Author(s): Julian Rimoli*, Kevin Garanger, Julie Kraus
	10:40 - 11:00	ID 166: Stress focusing and damage protection in topological Maxwell metamaterials Author(s): Caleb Widstrand*, Chen Hu, Xiaoming Mao, Joseph Labuz, Stefano Gonella
	11:00 - 11:20	ID 106: Auxetic confinement of steel-reinforced concrete members with architected truss lattices Author(s): Thomas Vitalis*, Andrew Gross, Georgios Tzortzinis, Brian Schagen, Simos Gerasimidis
	11:20 - 11:40	ID 420: Nanogenerator Mechanical Metamaterial Concrete Systems Author(s): Amir Alavi*, Kaveh Barri, Qianyun Zhang, Wenyun Lu, Jianzhe Luo
	11:40 - 12:00	ID 943: Influence of Carbon Nanofibers and Multiwalled Carbon Nanotubes on the Elastic and Creep Properties of Metakaolin - Based Geopolymers Author(s): Ange-Therese Akono*, Yunzhi Xu, Haklae Lee, Nathaniel Buettner
MS613: Scientific computing for regional risk assessment and performance/resiliency based design. Organizer(s): Seymour Spence, Alexandros Taflanidis, Andre Barbosa		
EH 270 - Innman Park	10:00 - 10:20	ID 843: Stochastic emulation of seismic structural response using enhanced partial replication strategy Author(s): Sang-ri Yi*, Alexandros Taflanidis
	10:20 - 10:40	ID 864: Graph Neural Networks for Efficient Assessment of Transportation Network Response to Disasters Author(s): Tong Liu, Hadi Meidani*
	10:40 - 11:00	ID 948: Seismic reliability-based retrofitting optimization of non-ductile reinforced concrete frame structures Author(s): Antonio Pio Sberna*, Angshuman Deb, Fabio Di Trapani, Joel P. Conte

MS705: Mechanics and Physics of Granular Materials. Organizer(s): Yida Zhang, Payam Poorsolhjoui, Marcial Gonzalez		
EH 273 - Kirkwood	10:00 - 10:20	ID 850: An experimental investigation of the transient friction of granular materials at low sliding velocities and pressures Author(s): Aizhan Zhakupova*, Behrooz Ferdowsi
	10:20 - 10:40	ID 110: Fabric characteristics of jammed and unjammed granular materials Author(s): Yida Zhang*, Yuxuan Wen
	10:40 - 11:00	ID 204: Particle-scale kinematics and kinetics of particle rearrangement in granular materials Author(s): Kwangmin Lee*, Ryan Hurley
	11:00 - 11:20	ID 455: A nonlinear elastic constitutive framework for anisotropic granular materials based on particle-scale mechanics Author(s): Shubjot Singh*, Giuseppe Buscarnera
	11:20 - 11:40	ID 624: Multiscale analysis of fiber-reinforced 3D printed concrete Author(s): Pouriya Pirmoradi, Payam Poorsolhjoui*, Akke Suiker
	11:40 - 12:00	ID 202: The effect of drained cyclic loading on changes in fabric anisotropy using DEM Author(s): Tara Sassel*, Catherine O'Sullivan
MS701: Computational Geomechanics. Organizer(s): Qiushi Chen, Xiaoyu Song, Steve Waiching Sun, Shabnam Semnani, Majid Manzari, Jose Andrade, Ronaldo Borja, Jinhyun Choo		
EH 127 - Midtown I	10:00 - 10:20	ID 182: Yielding and fracture in the nucleation of frictional slip Author(s): Miguel Castellano*, Flavio Lorez, David Kammer
	10:20 - 10:40	ID 746: Finite element model of fault zone of northeast Japan subduction zone for intermediate depth earthquake initiation. Author(s): Ashay Panse*, Craig Foster, Shen Wei Chi, Fnu Sindhusuta
	10:40 - 11:00	ID 945: On the effects of fabric on the instability onset under constant shear drained loading Author(s): Srinivas Vivek Bokkisa*, Jorge Macedo, Alexandros Petalas
	11:00 - 11:20	ID 572: Reaction cross-diffusion and the long-term behaviour of bio-geomaterials Author(s): Manman Hu*, Klaus Regenauer-Lieb
	11:20 - 11:40	ID 546: Anisotropic bounding surface model for clay under monotonic and cyclic loading conditions Author(s): Yang Yu*, Zhongxuan Yang
	11:40 - 12:00	ID 167: A domain reduction approach for moving loads on half-space and its implementation to ABAQUS Author(s): Yufeng Dong*, Ertugrul Taciroglu, Wenyang Zhang, Ahmad Dehghanpoor, Anoosh Shamsabadi, Li Shi

MS216: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Health Monitoring & Inspections. Organizer(s): Mohammad Jahanshahi, Vedhus Hoskere, Jian Li, Arash Noshadravan		
EH 123 - Midtown II	10:00 - 10:20	ID 270: Multi-Vision System for Full-field Strain Measurement and Crack Tracking on UHPC Beams Author(s): Mostafa Iraniparast*, Seyed Sina Shid-Moosavi, Peng "Patrick" Sun, Tiancheng Wang, Georgios Apostolakis, Kevin Mackie
	10:20 - 10:40	ID 679: Super-sensitivity full-field displacement measurements Author(s): Shanwu Li, Yongchao Yang*
	10:40 - 11:00	ID 830: Photogrammetric Reconstructions for Bridge Inspections: Establishing Performance Metrics for Automated Drone Acquisition Algorithms Author(s): Emilie Hollingsworth*, Ishan Pradhan*, Michael Sanchez, Rodrigo Sarlo
	11:00 - 11:20	ID 254: A Novel Multi-scale Branch Fusion Network for Tile Spalling Segmentation Using Limited Samples Author(s): Hai-Wei Wang*, Rih-Teng Wu
MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications. Organizer(s): Gaofeng Jia, Abdollah Shafieezadeh		
EH 142 - Midtown III	10:00 - 10:20	ID 384: Scalable Bayesian Optimization with Metaheuristics for Efficiency and Exploitation Author(s): Ibrahim Aydogdu*, Michaela Kempner, Yan Wang
	10:20 - 10:40	ID 722: Efficient Bayesian Posterior Sampling Aided by Kriging Surrogate Model Author(s): Aakash Bangalore Satish*, Sang-ri Yi, Alexandros Taflanidis
	10:40 - 11:00	ID 354: The Application of Surrogate Modelling Methods to the Calibration of Crystal Plasticity Finite Element Models Author(s): Hugh Dorward*, Matthew Peel, Mahmoud Mostafavi
	11:00 - 11:20	ID 341: Augmented sample-based approach for multi-fidelity uncertainty quantification Author(s): Leila Naderi*, Gaofeng Jia
MS803: Coupled chemical, physical and mechanical processes in porous heterogeneous materials - From additive manufacturing to long term deterioration. Organizer(s): Mohammed Alnaggar, Gianluca Cusatis, Giovanni Di Luzio, Roman Wan-Wendner, Jan Elias		
EH 126 - Midtown IV	10:00 - 10:20	ID 957: Investigation of Scaling-Up Cement Paste Rheological Measurement to Fresh State Behavior of Concrete Author(s): Raul Marrero Rosa*, Ayesha Ahmed, Elmer Irizarry, Liza Dill, Nasser Nduhi, David Corr, Gianluca Cusatis
	10:20 - 10:40	ID 543: Computational Modelling of Flow-induced Fiber Orientation for Ultra-high-performance Concrete Flow Author(s): Tathagata Bhaduri*, Shady Gomma, Mohammed Alnaggar
	10:40 - 11:00	ID 288: Charactering the basic creep behavior of 3D printed concrete with layered structures Author(s): Mohammadhossein (Mahan) Kosarimovahhed*, Qian Zhang, Sungmoon Jung
	11:00 - 11:20	ID 975: Osmotic Ion Concentration Control of Steady-State Subcritical Fracture Growth in Shale Author(s): Anh Tay Nguyen*, Hoang T Nguyen, Zdeněk P. Bažant

MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering. Organizer(s): Johann Guilleminot, Michael Shields, Lori Graham-Brady, Kirubel Teferra		
EH 122 - Midtown V	10:00 - 10:20	ID 450: Reconstruction of 3D microstructures from 2D images by using a pre-trained deep neural network in a gradient-based sequential optimization approach Author(s): Ashwini Gupta*, Noah Wade, Lori Graham-Brady
	10:20 - 10:40	ID 498: Data-driven projection pursuit adaptation in polynomial chaos expansion for high-dimensional problems Author(s): Xiaoshu Zeng*, Roger Ghanem
	10:40 - 11:00	ID 638: Constitutive Relationship Exploration in A fiber-reinforced Composite Material with Uncertainty Author(s): Zhengtao Yao*, Roger Ghanem, Venkat Aitharaju, Jay Mahishi
	11:00 - 11:20	ID 789: Manifold Learning to Map Amorphous Microstructural Features to Local Yield Stress Author(s): Rahul Meena*, Spencer Fajardo, Michael D. Shields, Michael L. Falk, Dimitris Giovanis, Thomas J. Hardin, Michael Chandross, Yannis Kevrekidis
	11:20 - 11:40	ID 818: Prediction of Microstructure Evolution with Physics-Constrained Bayesian Neural Networks Author(s): Luka Malashkhia, Dehao Liu, Anh Tran, Yanglong Lu, Yan Wang*
	11:40 - 12:00	ID 840: Error quantification of wind tunnel-informed stochastic wind model based on the translation processes for simulation of non-Gaussian wind pressures on buildings Author(s): Thays Duarte, Srinivasan Arunachalam, Arthriya Subgranon*, Seymour Spence
MS402: Topology Optimization: from Algorithmic Developments to Applications. Organizer(s): Mazdak Tootkaboni, Alireza Asadpoure, Josephine Carstensen, James Guest		
SC 3245 - Northside	10:00 - 10:20	ID 894: Development of Material Property Feasibility Constraints for a Multiscale Topology Optimization Framework Using Radial Basis Function Interpolations Author(s): Brent Bielefeldt*, Richard Beblo, Eddie Meixner, Robert :Lowe
	10:20 - 10:40	ID 946: A Smooth Maximum Regularization Approach for Robust Topology Optimization in the Ground Structure Setting Author(s): Emily Alcazar*, Lorrán Foliveira, Fernando Vasconcelos Da Senhora, Adeildo Ramos, Glaucio Paulino
	10:40 - 11:00	ID 968: Embodied carbon-based topology and sizing optimization of seismic retrofit for non-conforming RC structures Author(s): Fabio Di Trapani*, Antonio P. Sberna, Josephine V. Carstensen, Giuseppe C. Marano



MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods. Organizer(s): Xiang Zhang, Pinlei Chen, Ravindra Duddu, Soheil Soghrati, Timothy Timothy Truster		
EH 241 - Old Fourth Ward	10:00 - 10:40	Keynote ID 109: Micromechanical Analysis of Materials with Complex Microstructures: Automated Modeling and Deep Learning Algorithms Author(s): Soheil Soghrati*, Salil Pai, Pengfei Zhang, Balavignesh Vemparala
	10:40 - 11:00	ID 524: Physics-Informed Neural Network-based computational Solid Mechanics Model for Problems with Material Heterogeneity Author(s): Hyeeyun Kong*, Pinlei Chen
	11:00 - 11:20	ID 252: A paradigm for fast exploring of material repones space considering microstructure statistics and application to particulate composites Author(s): Min Lin, Xiang Zhang*
	11:20 - 11:40	ID 178: Computation Infrastructure for Modeling Discontinuities within Materials: DEIP, BEAVER and MOOSE Author(s): Timothy Truster*, Sunday Aduloju, Amirfarzad Behnam
	11:40 - 12:00	ID 411: Novel Lagrange Multiplier Formulation for Imposing Displacement and Traction Discontinuities in Material Microstructures Author(s): ARIFUL HASAN*, Timothy Truster
MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation. Organizer(s): Wei Song, Richard Christenson		
SC 3249 - Peachtree	10:00 - 10:20	ID 276: Modeling of the Dynamic Interaction between the NHERI@UCSD 6-DOF Large High-Performance Outdoor Shake Table and TallWood Building Specimen Author(s): Chin-Ta Lai*, Joel Conte
	10:20 - 10:40	ID 796: Multi-Axis Shake Table Real-time Hybrid Simulations of Buildings with Floor Isolation Systems Author(s): James Ricles*, Liang Cao, Esteban Villalobos Vega, Scott Harvey, Thomas Marullo, Faisal Malik
	10:40 - 11:00	ID 880: Experimental Validation of Real-Time Hybrid Substructuring for a Seismically Excited Building using an Inertial Shaker Transfer System Author(s): David Vanasse, Sergio Lobo-Aguilar, Richard Christenson*
	11:00 - 11:20	ID 171: Investigation of the Effect of Dynamic Axial Force on the Lateral Response of RC Columns Using Real-Time Hybrid Simulation Author(s): Yunbyeong Chae*, Jamin Park, Minseok Park, Chul-Young Kim
	11:20 - 11:40	ID 798: Thermomechanical Real-Time Hybrid Simulation: Identification, Control, and Experimental Implementation Author(s): Herta Montoya*, Christian Silva, Shirley Dyke, Manuel Salmeron

MS805: Self-healing infrastructure materials and systems. Organizer(s): Ali Ghahremaninezhad		
SC 1216 - Piedmont	10:00 - 10:20	ID 272: Crack-healing in reinforced concrete beams with engineered aggregates Author(s): Xiaoying Pan, Bora Gencturk*, Hadi Aryan
	10:20 - 10:40	ID 587: Towards self-healing concrete using protein encapsulated hydrogels Author(s): Elvis Baffoe, Ali Ghahremaninezhad*
	10:40 - 11:00	ID 926: Development of a damage-responsive self-healing system using bio-inspired polymeric fiber (BioFiber) for incorporation into infrastructure materials Author(s): Mohammad Houshmand Khaneghahi*, Divya Kamireddi, Seyed Ali Rahmaninezhad, Aidan Cotton, Caroline L. Schauer, Christopher M. Sales, Ahmad Najafi, Reeve Street, Amirreza Sadighi, Yaghoob (Amir) Farnam*
MS403: Origami/Kirigami Inspired Structures and Metamaterials. Organizer(s): Evgueni Filipov, John Brigham, Pradeep Pratapa, Mark Schenk, Martin Walker		
EH 247 - Sweet Auburn	10:00 - 10:20	ID 529: Cable-Actuated Prestressed Origami Tubes Author(s): Megan Ochalek, Manan Arya*
	10:20 - 10:40	ID 390: Additively Manufactured Multi-material Monolithic Self Deployable Spacecraft Structures containing Hinges Author(s): Colin Hunter*, Avinkrishnan Ambika Vijayachandran, Anthony Waas
	10:40 - 11:00	ID 612: Design of Thick Origami for Reusable and Deployable Load Carrying Structures and Infrastructure Author(s): Yi Zhu*, Evgueni Filipov
	11:00 - 11:20	ID 457: Evaluation of kirigami-inspired façade concepts to improve building energy performance Author(s): Rodrigo Arauz*, Aminallah Pourasghar, John Brigham
	11:20 - 12:00	Open Discussion On 'Education with Origami/Kirigami Mechanics'
MS808: Cementitious Materials: Experiments and Modeling Across the Scales. Organizer(s): Bernhard Pichler, Franz-Josef Ulm, Günther Meschke, Christian Hellmich, Gilles Pijaudier-Cabot		
EH 266 - Summerhill	10:00 - 10:20	ID 467: Seasonal variation of FWD test results of a concrete-over-asphalt composite pavement: asphalt-related temperature correction of measured deflections Author(s): Rodrigo Diaz Flores*, Valentin Donev, Mehdi Aminbaghai, Lukas Eberhardsteiner, Luis Zelaya-Lainez, Raphael Höller, Christian Hellmich, Martin Buchta, Bernhard L.A. Pichler
	10:20 - 10:40	ID 485: A Numerical Investigation of Gas Migration in Wellbore Cementing Processes using the Lattice Boltzmann Method Author(s): Carlos Garcia Verdugo*, Ping Lyu, Eilis Rosenbaum, Julie Vandenbossche, Anthony Iannacchione, John Brigham
	10:40 - 11:00	ID 501: Carbon nanotube (CNT) reinforced cementitious composites using carboxymethyl cellulose (CMC) treatment for enhanced dispersion, mechanical, and piezoresistive properties Author(s): Dawei Zhang*, Ying Huang, Wenjie Xia, Leonard Chia
	11:00 - 11:20	ID 819: Raman Imaging of Alkali Silica Reaction Product Formed Under Accelerated Conditions Author(s): Chirayu Kothari*, Nishant Garg
	11:20 - 11:40	ID 887: Carbon sequestration in cementitious materials: Characterizing the hydration processes in early-stage carbonated concretes Author(s): Marcin Hajduczek*, Damian Stefaniuk, James C. Weaver, Franz-Josef Ulm, Admir Masic

MS501: Computational/Experimental Fluid Dynamics and Fluid-Structure Interaction. Organizer(s): Georgios Moutsanidis, Ning Zhang, Jinhui Yan		
SC 3252 - Techwood	10:00 - 10:20	ID 617: An Enriched Immersed Boundary Method for Solidification and Melting Problems in Additive Manufacturing Author(s): Ze Zhao*, Jinhui Yan
	10:20 - 10:40	ID 699: Heat and mass transfer analysis for nanofluid flows in a channel Author(s): Gabriella Bognar*
MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm. Organizer(s): Ange-Therese Akono, Mohammad Javad Abdolhosseini Qomi, Matthieu Vandamme		
Classroom A	10:00 - 10:40	Keynote ID 520: Engineering now! Are we ready? Author(s): Franz-Josef Ulm*
	10:40 - 11:00	ID 118: Sustainable and Resilient Coastal Infrastructure Amidst A Sea Level Rise and Coastal Storm Environment Author(s): George Deodatis*, Kyle Mandli, Yuki Miura
	11:00 - 11:20	ID 333: The Physics of Urban Flooding Author(s): Sarah Balaian, Brett Sanders, Mohammad Javad Abdolhosseini Qomi*
	11:20 - 11:40	ID 923: Mesoscale logic mediates microscale chatter and scientific discovery Author(s): Roger Ghanem*, Zheming Gou
	11:40 - 12:00	ID 389: Chemo-mechanical homogenization applied to climate and energy geomechanics Author(s): Chloe Arson*
MS314: Mechanics of Wood and Wood Based Materials. Organizer(s): Markus Lukacevic, Josef Füssl		
Classroom B	10:00 - 10:20	ID 360: Microprestress Theory for the Simulation of Mechanosorptive Effects in Wood Author(s): Susan Alexis Brown*, Danyang Tong, Hao Yin, Gianluca Cusatis
	10:20 - 10:40	ID 286: Phase field method-based modeling of wood fracture Author(s): Sebastian Pech*, Markus Lukacevic, Josef Füssl
	10:40 - 11:00	ID 451: Energy Dissipation Mechanisms in Cross-Grain Fracture of Spruce Author(s): Parinaz Belalpour Dastjerdi*, Eric Landis
	11:00 - 11:20	ID 323: Micromechanical-guided nanoindentation of five hot-pressed lignins extracted from different feedstocks Author(s): Luis Zelaya-Lainez*, Michael Schwaighofer, Markus Königsberger, Markus Lukacevic, Sebastian Serna-Loaiza, Olaf Lahayne, Michael Harasek, Valentin Senk, Josef Füssl
	11:20 - 11:40	ID 595: Size effect of glued laminated timber beams predicted by numerical simulations Author(s): Markus Lukacevic*, Christoffer Vida, Josef Füssl
	11:40 - 12:00	ID 751: A Probabilistic Model for the Spatial Variation of Eastern Hemlock Tensile Strength Author(s): Fiona O'Donnell*

## Thursday, June 08, Early Afternoon Sessions, 14:15 – 15:35

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division).
EH 222 - Buckhead	MS307: Structural instabilities: From failure to function.
SC 3294 - Castleberry	MS303: Multiscale Behavior of Damage and Failure Mechanics.
EH 242 - Centennial	MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications.
EH 203 - Highlands	MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification.
EH 226 - Home Park	MS811: Architected Materials.
EH 270 - Innman Park	MS709: Recent Advances in Unsaturated Poromechanics.
EH 273 - Kirkwood	MS705: Mechanics and Physics of Granular Materials.
EH 127 - Midtown I	MS701: Computational Geomechanics.
EH 123 - Midtown II	MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering.
EH 142 - Midtown III	MS301: Advances and Applications of Elasticity within Applied Mechanics.
EH 122 - Midtown V	MS807: Innovations in advanced cementitious materials and low-carbon concrete.
EH 241 - Old Fourth Ward	MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty.
SC 3249 - Peachtree	MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation.
SC 1216 - Piedmont	MS308: Machine Learning in Mechanics, Materials, and Structures.
EH 247 - Sweet Auburn	MS810: Advanced Design and Manufacturing of Programmable Matter.
EH 266 - Summerhill	MS809: Mechanics of Sustainable Alternative Pavement Materials.
SC 3252 - Techwood	MS608: Analysis and Prediction of Wind Effects on the Built Environment.
Classroom A	MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm.
Classroom B	MS314: Mechanics of Wood and Wood Based Materials.

MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division). Organizer(s): Ramesh Malla, Ph.D., F. ASCE, F. EMI, Robert Mueller, Kris Zacny, Hongyu (Nick) Zhou		
SC 3208 - Atlantic Theater	14:15 - 14:35	ID 388: Experimental investigation on the in-plane compressive behavior of curved steered fiber laminated panels Author(s): Avinkrishnan Ambika Vijayachandran*, Shiyao Lin, Anthony Waas
	14:35 - 14:55	ID 260: Machinability Characteristics of Cu-Al-Mn and NiTi Shape Memory Alloys and Common Steels Author(s): Huanpeng Hong, Bora Gencturk*
MS307: Structural instabilities: From failure to function. Organizer(s): Stylianos Yiatros, Hayder Rasheed, C. W. Lim, Noël Challamel, Rainer Groh, M. Ahmer Wadee		
EH 222 - Buckhead	14:15 - 14:35	ID 961: Lowerbound buckling loads of cylindrical shells with periodic imperfections Author(s): Rainer Groh*
	14:35 - 14:55	ID 967: Progressive Wrinkling and Collapse of Lined Pipe due to Cyclic Bending and Reeling Author(s): Stelios Kyriakides*, Emile Naous
	14:55 - 15:15	ID 700: Buckliphilia to the rescue: Prototypes for buckling-driven shading solutions Author(s): Stylianos Yiatros*
MS303: Multiscale Behavior of Damage and Failure Mechanics. Organizer(s): Leong Hien Poh, Oliver Giraldo-Londono, Lizhi Sun, Jiann-Wen Ju, George Z. Voyiadjis, Glaucio H. Paulino		
SC 3294 - Castleberry	14:15 - 14:35	ID 180: Prediction and Multi-objective Optimization of the Three-Phase Particulate Concrete Parameters with Artificial Neural Network and Particle Swarm Optimization Author(s): YIJIE CHEN*, Sze Dai Pang
	14:35 - 14:55	ID 599: Modeling Frictional Contact Between a Blunt Tool and Rock With Anisotropic Damage Author(s): Yaneng Zhou*, George Z. Voyiadjis
	14:55 - 15:15	ID 284: A Machine Learning-Aided Digital Twin for Damage Sensing based on a Multiphysics-Multiscale Computational Modeling Framework using Piezoelectric Composites Author(s): Saikat Dan*, Preetam Tarafder, Somnath Ghosh
	15:15 - 15:35	ID 241: A Micromorphic Filter for Determining Stress and Deformation from Grain-Resolving DNS Author(s): Nathan Miller, Farhad Shahabi, Joseph Bishop, Richard Regueiro*
MS312: Surrogate modeling for uncertainty quantification, optimization, and statistical inference in engineering applications. Organizer(s): Gaofeng Jia, Abdollah Shafieezadeh		
EH 242 - Centennial	14:15 - 14:35	ID 771: Enhanced Support Vector Machine for efficient reliability analysis of offshore wind turbines Author(s): Xukai Zhang*, Asim Khajwal, Arash Noshadravan
	14:35 - 14:55	ID 695: Deep Learning-based Integrated Probabilistic Cost Analysis for Future Decarbonized Hurricane-Prone Power Systems Author(s): Kamiar Khayambashi*, Andrés Clarens, William Shobe, Negin Alemazkoo
	14:55 - 15:15	ID 758: Quantifying the Fatigue Reliability of Ship Hulls with Long Propagating Cracks Author(s): Mohamed Soliman, Mohammad F. Tamimi, Somayeh Shojaeikhah*

MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification. Organizer(s): Hamed Ebrahimiyan, Babak Moaveni, Haeyoung Noh, Yang Wang		
EH 203 - Highlands	14:15 - 14:35	ID 123: Finite Element Model Updating through Global Optimization of Smooth Nonconvex Problems Author(s): Trent Schreiber*, Yang Wang
	14:35 - 14:55	ID 294: Normalizing Flow-based Deep Variational Bayesian Network for Seismic Multi-hazards and Impacts Estimation from InSAR Imagery Author(s): Xuechun Li, Susu Xu*
	14:55 - 15:15	ID 443: Dynamic response prediction of nonlinear MDOF systems by neural-network-augmented physics models Author(s): Jaehwan Jeon*, Junho Song
	15:15 - 15:35	ID 471: DISPLACEMENT-BASED STRUCTURAL IDENTIFICATION USING DIFFERENTIABLE PHYSICS Author(s): Borna Rahnamay Farnod*, Wesley Reinhart, Rebecca Napolitano
MS811: Architected Materials. Organizer(s): Stavros Gaitanaros		
EH 226 - Home Park	14:15 - 14:35	ID 677: Light stiff instability-tolerant lattice architectures: the topological efficiency of deep sea sponges Author(s): Mazdak Tootkaboni, Ladan Salari, Lorenzo Valdevit, Ardalan Nejat, Alireza Asadpoure*
	14:35 - 14:55	ID 141: Superkagome: a framework for augmented topological lattices Author(s): Mohammad Charara*, Stefano Gonella
	14:55 - 15:15	ID 530: Enhanced Mechanical Properties of Marine sponges Inspired Tubular Metamaterials Author(s): Zhennan Zhang*, Yanyu Chen
	15:15 - 15:35	ID 149: Fragile topology and corner modes in elastic self-dual kagome metamaterials Author(s): Pegah Azizi*, Siddhartha Sarkar, Kai Sun, Stefano Gonella
MS709: Recent Advances in Unsaturated Poromechanics. Organizer(s): Xiaoyu Song, Ning Lu, Marte Gutierrez		
EH 270 - Innman Park	14:15 - 14:35	ID 487: 2D stochastic analysis of Vette fault stability in potential CO2 storage site Smeaheia, offshore Norway Author(s): Xiongyu Hu*, Marte Gutierrez, Nazmul Haque Mondol, Md Jamilur Rahman
	14:35 - 14:55	ID 931: Nonlocal micro-polar poromechanics for shear bands and cracks in porous media under dynamic loads Author(s): Xiaoyu Song*, Hossesin Pashazad

MS705: Mechanics and Physics of Granular Materials. Organizer(s): Yida Zhang, Payam Pooresolhjoui, Marcial Gonzalez		
EH 273 - Kirkwood	14:15 - 14:35	ID 195: Fracture and damage mechanics on sea ice floes using LS-ICE DEM Author(s): Rigoberto Moncada Lopez*, Jacinto Ulloa, Mukund Gupta, Andrew Thompson, Jose Andrade
	14:35 - 14:55	ID 952: Predicting the yield limit of sandstones Author(s): Julien Khoury*, Sébastien Boutareaud, Gilles Pijaudier-Cabot
	14:55 - 15:15	ID 723: Continuum stress and strain analysis of the Discrete Element Method (DEM) as applied to shear loading of cuboidal grain assemblies Author(s): Yu-Hsuan Lee*, Beichuan Yan, Zhou Lei, Richard Regueiro
	15:15 - 15:35	ID 869: Micromechanics based homogenization of truss lattices with experimental validation Author(s): Kehinde Omotayo*, Samal Aminashairi, Ranganathan Parthasarathy
MS701: Computational Geomechanics. Organizer(s): Qiushi Chen, Xiaoyu Song, Steve Waiching Sun, Shabnam Semnani, Majid Manzari, Jose Andrade, Ronaldo Borja, Jinhyun Choo		
EH 127 - Midtown I	14:15 - 14:35	ID 350: Numerical implementation and validation of an advanced Thermo-Elasto-Viscoplastic (TEVP) constitutive model for saturated frozen geomaterials Author(s): Dana Amini*, Pooneh Maghoul, Amade Pouya
	14:35 - 14:55	ID 907: Implementation of a fabric driven mobilized friction angle to improve estimated K <sub>0</sub> in Norsand Author(s): Mason Ghafghazi, Wyatt Handspiker*
MS201: Physics-Based Data-Driven Modeling and Uncertainty Quantification in Computational Materials Science and Engineering. Organizer(s): Johann Guilleminot, Michael Shields, Lori Graham-Brady, Kirubel Teferra		
EH 123 - Midtown II	14:15 - 14:35	ID 868: A First-Order formulation with exact imposition of boundary conditions for physics-informed neural networks Author(s): Rini J. Gladstone*, Mohammad A. Nabian, Hadi Meidani
MS301: Advances and Applications of Elasticity within Applied Mechanics. Organizer(s): John C Brigham, Ney Dumont, Evgueni T. Filipov, Euclides Mesquita, Sonia Mogilevskaya, Anil C Wijeyewickrema		
EH 142 - Midtown III	14:15 - 14:35	ID 212: TRANSIENT RESPONSE OF FRAME STRUCTURES INTERACTING WITH SOIL PROFILES BY MODIFIED MODAL BASIS Author(s): Amauri Ferraz, Lucas Pacheco, Ronaldo Carrion, Euclides Mesquita*
	14:35 - 14:55	ID 837: Mechanics of nanomaterials from first principles Author(s): Phanish Suryanarayana*
MS807: Innovations in advanced cementitious materials and low-carbon concrete. Organizer(s): Jianqiang Wei		
EH 122 - Midtown V	14:15 - 14:35	ID 859: Data-driven design of low-carbon concrete mixture for additive construction Author(s): Chaofeng Wang*, Jianhao Gao
	14:35 - 14:55	ID 845: Understanding the role of magnesium in modifying structure and properties of calcium silicate hydrate Author(s): Amirhossein Madadi*, Jianqiang Wei



MS212: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty. Organizer(s): Kostas Papakonstantinou, Charalampos Andriotis, George Deodatis, Mariyam Amir, Pablo Morato		
EH 241 - Old Fourth Ward	14:15 - 14:35	ID 733: Bayesian fragility estimation for risk assessment of structures within the setting of generalized stratified sampling Author(s): Srinivasan Arunachalam*, Seymour Spence
	14:35 - 14:55	ID 835: A Novel Approach to Computing Generalized Variability Response Functions for Structures with Random Parameters Author(s): Manuel Miranda*
	14:55 - 15:15	ID 594: Wavelet-Based Generation of Ensemble of Ground Motions Compatible with a Probabilistic Target Response Spectrum Author(s): Suparno Mukhopadhyay*, Sandip Das, Vinay K. Gupta
	15:15 - 15:35	ID 224: Threat-independent progressive collapse analysis to identify dominant failure sequences and estimate system failure probability Author(s): Trisha Chakravorty*, Minangshu Baidya, Aritra Chatterjee, Baidurya Bhattacharya
MS207: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation. Organizer(s): Wei Song, Richard Christenson		
SC 3249 - Peachtree	14:15 - 14:35	ID 230: Application of Hydro-Real-Time Hybrid Simulation to Examine the Response of Offshore Wind Turbines Author(s): Akiri Seki*, Jonah Gadas, Cameron Irmas, Bret Bosma, Shangyan Zou, Michael Devin, Barbara Simpson, Bryson Robertson, Bryony DuPont, Ted Brekken, Andreas Schellenberg, Pedro Lomonaco
	14:35 - 14:55	ID 664: A Real-Time Hybrid Simulation Platform for Monopile Offshore Wind Turbines Author(s): Wei Song*, Chao Sun, Santiago Ruiz*
	14:55 - 15:15	ID 217: Real-time hybrid simulation test of mast structure considering fluid-structure interaction Author(s): Yucai Chen*, Xiaojun Zheng, X. Shawn Gao, Kun Wang, Jiurong Wu, Huimeng Zhou, Pin Tan
	15:15 - 15:35	ID 602: Multi-directional Behavior of a Tall Building Equipped with Damped Outriggers using 3D Real-Time Hybrid Simulation Author(s): Safwan Al-Subaihawi*, James Ricles, Thomas Marullo, Liang Cao
MS308: Machine Learning in Mechanics, Materials, and Structures. Organizer(s): Christos Athanasiou, Miguel Bessa, Kai Guo, Vikas Srivastava, Jan Fuhg		
SC 1216 - Piedmont	14:15 - 14:35	ID 194: Transfer Learning Genetic Expression Programming for Reduced Data Modeling of Civil Engineering Systems Author(s): Jacob Murphy*
	14:35 - 14:55	ID 382: Characterization of the Damage Tolerance of Composite Overlays through Subspace Evaluation Author(s): Corey Arndt, Stephanie TerMaath*
	14:55 - 15:15	ID 433: How can graph neural networks help in the analysis and design of structures Author(s): Kai Guo*
	15:15 - 15:35	ID 441: A conditional Variational AutoEncoder-boosted Reduced Order Model for multi-parametric dependencies in nonlinear dynamics Author(s): Kontantinos Vlachas*, Thomas Simpson, Anthony Garland, Carianne Martinez, Eleni Chatzi

MS810: Advanced Design and Manufacturing of Programmable Matter. Organizer(s): Jochen Mueller, Wesley Reinhart, Amir Alavi		
EH 247 - Sweet Auburn	14:15 - 14:35	ID 168: Development of a custom metal DED 3D printer for real-time printing quality control Author(s): Subin Shin*, Sangjun Kim, Hoon Sohn
	14:35 - 14:55	ID 220: Architected materials with effective water intake, storage, and release properties inspired by the feathers of namaqua sandgrouse (Pterocles namaqua) Author(s): Jochen Mueller*, Lorna Gibson
	14:55 - 15:15	ID 419: Automated Design and Discovery of Mechanical Metamaterials Author(s): Qianyun Zhang, Kaveh Barri, Wenyun Lu, Jianzhe Luo, Amir Alavi*
	15:15 - 15:35	ID 787: Evaluating Regression and Generative Modeling Paradigms for Materials Design Author(s): Arindam Debnath, Wesley Reinhart*
MS809: Mechanics of Sustainable Alternative Pavement Materials. Organizer(s): Ramez Hajj, Shane Underwood, Hao Wang, Amit Bhasin		
EH 266 - Summerhill	14:15 - 14:35	ID 428: How Does Chemical Makeup of Recycling Agents and Antioxidants Affect the Long-Term Performance of Recycled Asphalt Binder Blends? Author(s): Hamzeh Haghshenas*, David Mensching, Michael Elwardany, Panos Apostolidis
	14:35 - 14:55	ID 591: On the Use of Alternative Paving Materials: a RILEM research from TC 279 WMR Author(s): Augusto Cannone Falchetto*, Lily Poulidakos, Emiliano Pasquini, Di Wang, Marjan Tušar, Jorge Pais, Fernando Moreno-Navarro, Davide Lo Presti, Ana Jiménez del Barco Carrión
	14:55 - 15:15	ID 888: Investigation of the Reactivity in Epoxy-Modified Asphalt (EMA) as an Alternative Paving Material for Durable Open-Graded Friction Course (OGFC) Author(s): Michael Elwardany*, Adrian Andriescu, Hamzeh Haghshenas, Panos Apostolidis, Raj Dongré, David Mensching, Jack Youtcheff
	15:15 - 15:35	ID 933: Rheological modeling of recycled asphalt binder blends as fluid mixtures Author(s): Saqib Gulzar*, Andrew Fried, Jaime Preciado, Shane Underwood, Cassie Castorena
MS608: Analysis and Prediction of Wind Effects on the Built Environment. Organizer(s): Teng Wu, Catherine Gorle, Marco Giometto, Panneer Selvam		
SC 3252 - Techwood	14:15 - 14:35	ID 447: Application of Incremental Dynamic Analysis to Performance-Based Wind Design Author(s): Baichuan Deng*, Teng Wu
	14:35 - 14:55	ID 482: Performance-Based Wind Design of Tall Buildings: Challenges of Implementation Author(s): Teng Wu*, Baichuan Deng
	14:55 - 15:15	ID 844: Database-enabled surrogate-assisted investigation on the interference effects of two adjacent buildings Author(s): Fei Ding*, Sang-ri Yi, Alexandros Taflanidis, Ahsan Kareem
	15:15 - 15:35	ID 783: CFD-enabled surrogate modeling of self-excited forces for single-box deck bridges Author(s): Sumit Verma, Miguel Cid Montoya*, Ashutosh Mishra

MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm. Organizer(s): Ange-Therese Akono, Mohammad Javad Abdolhosseini Qomi, Matthieu Vandamme		
Classroom A	14:15 - 14:35	ID 291: Viscous behavior of shale rocks due to dissolution and precipitation processes Author(s): Ravi Prakash, Arash Noshadravan, Sara Abedi*
	14:35 - 14:55	ID 903: Analytical solution for a poroelastic inclusion embedded within an elastoplastic matrix Author(s): Yidi Wu, Amin Mehrabian*, Shengli Chen, Younane Abousleiman
	14:55 - 15:15	ID 567: Falling Weight Deflectometer tests on multi-layered pavements: design and evaluation of innovative experiments Author(s): Rodrigo Díaz Flores, Valentin Donev, Mehdi Aminbaghai, Lukas Eberhardsteiner, Luis H. Zelaya-Lainez, Raphael Höller, Christian Hellmich, Ronald Blab, Martin Buchta, Bernhard L.A. Pichler*
	15:15 - 15:35	ID 824: Hidden environmental footprint of roadway network: when mechanistic models meet data analytics Author(s): Mazdak Tootkaboni*, Meshkat Botshekan, Franz Ulm, Arghavan Louhghalam
MS314: Mechanics of Wood and Wood Based Materials. Organizer(s): Markus Lukacevic, Josef Füssl		
Classroom B	14:15 - 14:35	ID 757: A Probabilistic Modeling Approach for Wind Uplift Resistance in Wood-Frame Load Paths Author(s): Brandon Rittelmeyer*, David Roueche
	14:35 - 14:55	ID 336: Experimental Evaluation of Post-Tensioning Losses in Mass Timber Wall Panels Author(s): Jacob Gesh*, Esther Baas, Mariapaola Riggio, Andre R. Barbosa, Lech Muszynski, Gabriele Granello
	14:55 - 15:15	ID 902: Computational Evaluations of the Flexural Behavior of Steel-CLT Composite Floor Members Author(s): Megan Potuzak*, Kadir Sener, David Roueche

## Thursday, June 08, Late Afternoon Sessions, 16:00 – 18:00

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division).
EH 222 - Buckhead	MS213: Smart sensing and artificial intelligence for civil infrastructure monitoring.
SC 3294 - Castleberry	MS303: Multiscale Behavior of Damage and Failure Mechanics.
EH 242 - Centennial	MS202: Structural Identification and Damage Detection.
EH 203 - Highlands	MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification.
EH 226 - Home Park	MS811: Architected Materials.
EH 270 - Innman Park	MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures.
EH 273 - Kirkwood	MS203: Computational Methods for Stochastic Engineering Dynamics.
SC 3245 - Northside	MS702: Characterization and modeling of physical processes in porous materials across scales.
EH 241 - Old Fourth Ward	MS308: Machine Learning in Mechanics, Materials, and Structures.
SC 3249 - Peachtree	MS205: Innovations and Advances in Passive, Active, and Semi-active Structural Control.
SC 1216 - Piedmont	MS206: Infrastructure assessment automation with robotics, deep learning and digital twins.
EH 247 - Sweet Auburn	MS810: Advanced Design and Manufacturing of Programmable Matter.
EH 266 - Summerhill	MS614: Sustainable and Resilient Infrastructure Using Lightweight Materials.
SC 3252 - Techwood	MS502: New advances in tropical cyclone induced winds, surge-wave, and flooding.
Classroom A	MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm.

MS104: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division). Organizer(s): Ramesh Malla, Ph.D., F. ASCE, F. EMI, Robert Mueller, Kris Zacny, Hongyu (Nick) Zhou		
SC 3208 - Atlantic Theater	16:00 - 16:20	ID 415: Sintering for ISRU-Oriented Lunar Regolith Densification: Multiscale Characterization and Multiphysics Computational Modeling Author(s): Shayan Gholami, Young-Jae Kim, Xiang Zhang, Yong-Rak Kim*, Bai Cui, Hyu-Soung Shin, Jangguen Lee
	16:20 - 16:40	ID 564: A Stabilized Interface Method for 3D Printing: Terrestrial and Extraterrestrial Applications Author(s): Arif Masud*, Ignasius Wijaya, Eric Kreiger
	16:40 - 17:00	ID 811: Micromechanics-guided design of functional cementitious composites for 3D printing Author(s): Hongyu Zhou*, Adam Brooks, Zhenglai Shen
	17:00 - 17:20	ID 682: Discrete Element Method for Regolith-Tool Interaction Modeling of RASSOR Collection System Author(s): Daniel Gaines*, Qushi Chen, Laura Redmond
	17:20 - 17:40	ID 345: Vibration effects on assisting penetration into granular materials Author(s): Mahdi Alaei, Pooneh Maghoul*, Nan Wu
	17:40 - 18:00	ID 274: Risks and Challenges of Using Earth Rock Mass Classification System on the Moon Author(s): Roberto Mendonca de Moraes*, Antonio Bobet
MS213: Smart sensing and artificial intelligence for civil infrastructure monitoring. Organizer(s): Jian Li, Yuguang Fu		
EH 222 - Buckhead	16:00 - 16:20	ID 271: Measuring 3D Torsional Displacement of Structures by Computer Vision Author(s): Mohammad Vasef*, Mostafa Iraniparast*, Lin Chen, Peng "Patrick" Sun*
	16:20 - 16:40	ID 461: Simultaneous seismic input and state estimation with optimal sensor placement for building structures using incomplete acceleration measurements Author(s): Jian Li*, Sdiq Taher, Huazhen Fang
	16:40 - 17:00	ID 536: Prototyping of An Edge-Intelligence-Enabled Smart Adaptive Triggering Mechanism for Wireless Vibration-based Structural Health Monitoring Author(s): Shuaiwen Cui*, Yuguang Fu
	17:00 - 17:20	ID 232: Impact Detection and Localization Using Deep Learning and Information Fusion Author(s): Yuguang Fu*, Zixing Wang, Amin Maghareh, Shirley Dyke, Mohammad Jahanshahi
	17:20 - 17:40	ID 296: Bridge pier structural performance prediction framework driven by scour monitoring and extreme event forecasting Author(s): Neandro DeMello*, Jennifer A. Bridge
MS303: Multiscale Behavior of Damage and Failure Mechanics. Organizer(s): Leong Hien Poh, Oliver Giraldo-Londono, Lizhi Sun, Jiann-Wen Ju, George Z. Voyiadjis, Glaucio H. Paulino		
SC 3294 - Castleberry	16:00 - 16:20	ID 842: Modeling fatigue overload behavior in microstructurally short cracks: connecting initiation and long crack behavior Author(s): Robert Fleishel*, Stephanie TerMaath
	16:20 - 16:40	ID 236: Molecular Dynamics Study of the Impact Response of Architected Metallic Foam Nanocomposites Author(s): Mohammed Saffarini, Tommy Sewell*, Zhen Chen

MS202: Structural Identification and Damage Detection. Organizer(s): Eleni Chatzi, Costas Papadimitriou, Babak Moaveni		
EH 242 - Centennial	16:00 - 16:20	ID 761: A framework for design allowables accounting for paucity of data and errors in complex models Author(s): Philippe Hawi*, Roger Ghanem
	16:20 - 16:40	ID 248: Sensitivity Analysis of Model-Assisted Probability of Detection for Guided-Wave-Based Structural Health Monitoring Systems Author(s): Juan David Navarro*, Juan Camilo Velasquez-Gonzalez, Mauricio Aristizabal, Harry Millwater, Arturo Montoya, David Restrepo
	16:40 - 17:00	ID 249: Rapid performance evaluation of building structures under seismic excitations based on prior dynamic testing Author(s): Luji Wang*, Jiazeng Shan
	17:00 - 17:20	ID 518: Environmental Effects on Output-Only Vibration Parameters of Reinforced Concrete Systems Author(s): Maya Rao, Riley Brown, Karl Gaebler, Carol Shield, Lauren Linderman*
	17:20 - 17:40	ID 598: Strain Transfer Mechanisms of Fiber Optic Sensors and Recent Applications of Distributed Fiber Optic Sensing on Structural Component Testing Author(s): Shenghan Zhang*, Matthew DeJong
	17:40 - 18:00	ID 710: Finite element model updating of non-proportional non-viscous damping systems using complex eigenvalues and eigenvectors Author(s): Yu Otsuki*, Yang Wang
MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification. Organizer(s): Hamed Ebrahimian, Babak Moaveni, Haeyoung Noh, Yang Wang		
EH 203 - Highlands	16:00 - 16:20	ID 528: Axial stress measurement in continuous welded rails using impact-driven vibrations Author(s): Alireza Enshaeian*, Matthew Belding, Piervincenzo Rizzo
	16:20 - 16:40	ID 563: Learning nonlinear material constitutive models using machine-infused mechanics-based model training Author(s): Mohammad Valikhani*, Kasra Shamsaei, Hamed Ebrahimian
	16:40 - 17:00	ID 635: TelecomTM: A Fine-grained and Ubiquitous Traffic Monitoring System Using Pre-Existing Telecommunication Cables as Sensors Author(s): Jingxiao Liu*, Siyuan Yuan, Yiwen Dong, Biondo Biondi, Hae Young Noh
	17:00 - 17:20	ID 641: Efficient Combination of Modal Data for Structural Parameter Estimation Using Artificial Neural Networks Author(s): Milad Mehrkash*, Erin Bell
	17:20 - 17:40	ID 670: Bayesian Inversion for Soil-Structure System Identification Author(s): Abdelrahman Taha*, Hamed Ebrahimian
	17:40 - 18:00	ID 714: Physics-Constrained Dictionary Learning with Sensor Fusion for Machine Health Monitoring Author(s): Sungjin Hong*, Yanglong Lu, Sung-Hoon Ahn, Yan Wang

MS811: Architected Materials. Organizer(s): Stavros Gaitanaros		
EH 226 - Home Park	16:00 - 16:20	ID 846: Phase Transforming Cellular Materials under Concentrated Loading Conditions Author(s): Yunlan Zhang*, Phani Saketh Dasika, Nilesh Mankame, Pablo Zavattieri
	16:20 - 16:40	ID 666: Time Domain Analysis of Resonant Microstructured Media under Impact Loading Author(s): Erdem Caliskan*, Willoughby Cheney, Weidi Wang, Reza Abedi, Alireza Amirkhizi
	16:40 - 17:00	ID 763: Tension-Compression Asymmetry and Failure of Lattice Metamaterials Author(s): Enze Chen*, Shengzhi Luan, Stavros Gaitanaros
	17:00 - 17:20	ID 233: Study of architected materials exhibiting simultaneously negative Poisson's ratio and negative thermal expansion Author(s): Yunche Wang*, Tsechun Liso
	17:20 - 17:40	ID 337: Healable Magneto-elastic Networks from Self-assembly with Tunable Network Patterns and Mechanical Properties Author(s): Xinyan Yang*, Junqing Leng, Cheng Sun, Sinan Keten
	17:40 - 18:00	ID 392: Design and 3D-Printing of Woven Textiles Author(s): Tian Chen*
MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures. Organizer(s): Yong-Rak Kim, Xiaoyu Song, Chung Song, Huiming Yin, Qiming Wang, Congrui Grace Jin		
EH 270 - Innman Park	16:00 - 16:20	ID 314: Harnessing Carbon Sequestration to Manufacture Coral-Inspired Extremely Tough Materials Author(s): Haoxiang Deng*, Yuyan Gao, Haixu Du, Ketian Li, Yanchu Zhang, Kyunghoon Lee, Qiming Wang
	16:20 - 16:40	ID 412: Inverse Determination of Shrinkage and Fracture Properties of Engineered Buffer Materials for Geological Repositories of Nuclear Waste Using an Integrated DIC-FEM Approach Author(s): Mohammad Rahmani*, Abdullah Azzam*, Julia Grasley, Yong-Rak Kim, Jongwan Eun, Seunghee Kim
	16:40 - 17:00	ID 610: The effect of wrapping force on the transverse stiffness of packed bridge cables: an elastoplastic analysis Author(s): Linda Teka*, Huiming Yin
	17:00 - 17:20	ID 348: Modeling of the environment-dependent microstructure of hydrogel-based concrete (HBC) – for Mars application Author(s): Ning Liu*, Jishen Qiu
	17:20 - 17:40	ID 618: Stress and Fracture Analysis of a Perforated Spherical Container under Internal Pressure Author(s): Xin He*, Huiming Yin
	17:40 - 18:00	ID 511: Harnessing microorganisms to manufacture engineered living materials with environmentally friendly, low-cost, mechanically strong, and fire-resistant performance Author(s): Yuyan Gao*, Audie Lee, Qiming Wang



MS203: Computational Methods for Stochastic Engineering Dynamics. Organizer(s): Ketson Dos Santos, Vasileios Fragkoulis, Ioannis Kougioumtzoglou, Antonina Pirrotta		
EH 273 - Kirkwood	16:00 - 16:20	ID 108: Is self-similarity useful for finding the fractional Fokker-Planck equation? Author(s): Antonina Pirrotta*, Salvatore Russotto, Mario Di Paola
	16:20 - 16:40	ID 119: A statistical linearization-based technique for nonstationary stochastic response determination of nonlinear systems endowed with fractional derivative elements Author(s): Wei Zhang*, Pol D. Spanos
	16:40 - 17:00	ID 718: Combination of Statistical Linearization and Harmonic Balance for non-stationary random vibration analyses. Author(s): Beatrice Pomaro*, Pol D. Spanos
	17:00 - 17:20	ID 446: Efficient Wiener path integral most probable path determination based on extrapolation Author(s): Ilias Mavromatis*, Ioannis Kougioumtzoglou
	17:20 - 17:40	ID 465: A Rayleigh-Ritz solution approach for determining the Wiener path integral technique most probable path with mixed fixed/free boundaries Author(s): Ketson Roberto Maximiano dos Santos*, Ioannis A. Kougioumtzoglou
	17:40 - 18:00	ID 439: Response evolutionary power spectrum determination of nonlinear oscillators endowed with fractional derivative elements Author(s): Vasileios Fragkoulis*, Ioannis Kougioumtzoglou, Athanasios Pantelous, Michael Beer
MS702: Characterization and modeling of physical processes in porous materials across scales. Organizer(s): Mostafa Mobasher, Pania Newell, Jean-Michel Pereira, Giuseppe Buscarnera, Sara Abedi, Manolis Vevakis		
SC 3245 - Northside	16:00 - 16:20	ID 111: Unified surface poromechanics theory capturing condensation-induced contraction of mesoporous materials Author(s): Yida Zhang*, Mohammadali Behboodi
	16:20 - 16:40	ID 120: A hydrodynamic model for chemical dissolution of poroelastic materials Author(s): Yanni Chen*, François Guillard, Itai Einav
	16:40 - 17:00	ID 207: Bound Preserving Numerical Methods for Infiltration in Porous Media Author(s): Arnob Barua*, CE Kees
	17:00 - 17:20	ID 338: Porohyperelastic modeling of high-dose subcutaneous injection of monoclonal antibodies using data-driven tissue geometries Author(s): Mario de Lucio*, Yu Leng, Atharva Hans, Ilias Bilonis, Melissa Brindise, Arezoo M. Ardekani, Pavlos P. Vlachos, Hector Gomez
	17:20 - 17:40	ID 367: Classical density functional theory for nanoconfined inhomogeneous water-Co2 mixture on mineral surfaces. Author(s): Ali Morshedifard*, Mohammad Javad Abdolhosseini Qomi
	17:40 - 18:00	ID 391: Finite Element Analysis for Predicting greenhouse gas emissions in riparian and hyporheic zones Author(s): Chengwu Jiang*, Martial Tallefert, Chloe Arson

MS308: Machine Learning in Mechanics, Materials, and Structures. Organizer(s): Christos Athanasiou, Miguel Bessa, Kai Guo, Vikas Srivastava, Jan Fuhg		
EH 241 - Old Fourth Ward	16:00 - 16:20	ID 459: Predicting Fracture Paths in Heterogeneous Brittle Materials using Deep and Probabilistic Learning Author(s): Yen Peng (Ariana) Quek*, Jin Yi Yong, Johann Guilleminot
	16:20 - 16:40	ID 477: Multiscale mechanics modeling by transferring knowledge across scales using a deep convolutional network Author(s): Ashwini Gupta, Lori Graham-Brady*
	16:40 - 17:00	ID 565: Prestressed Concrete Beam Shear Capacity Prediction Models based on Regression and Genetic Programming Author(s): Wonsuh Sung*, Suhaib Alfaris, Nikhil Potnuru, Stephanie Paal, Maria Koliou, Petros Sideris, Anna Birely, Mary Beth Hueste, Stefan Hurlebaus
	17:00 - 17:20	ID 603: Investigating large language models' understanding of mechanics Author(s): Mohd Zaki*, N. M. Anoop Krishnan
	17:20 - 17:40	ID 628: Predicting floor response of RC buildings under near-field ground motions using convolutional neural network Author(s): Iqra Latif*, Arnab Banerjee, Mitesh Surana
	17:40 - 18:00	ID 706: Knowledge extraction and transfer in data-driven fracture mechanics Author(s): Xing Liu*, Christos Athanasiou, Nitin Padture, Brian Sheldon, Huajian Gao
MS205: Innovations and Advances in Passive, Active, and Semi-active Structural Control. Organizer(s): Nicholas Wierschem, P. Scott Harvey		
SC 3249 - Peachtree	16:00 - 16:20	ID 359: Tuned-inerter dampers in vibration control of semi-submersible offshore wind platforms to improve system lifespan and energy harvesting Author(s): Lauren Hall*, Duncan Lambert, Ryan Okuda, Lei Zuo, Biao Fang, Yifan Luo, Javad Javaherian
	16:20 - 16:40	ID 557: Inerters: Mapping the Multiple Mechanisms for Magnifying Mass Author(s): Jonathan Shell*, Nicholas Wierschem
	16:40 - 17:00	ID 278: Deep reinforcement learning strategies for structural control devices with variable inerter Author(s): Takehiko Asai*, Yuto Inaba
	17:00 - 17:20	ID 561: Seismic Performance of Multi-degree-of-freedom Structures with Variable Inertia Rotational Mechanisms Author(s): Anika Sarkar*, Nicholas Wierschem
	17:20 - 17:40	ID 832: Experimental Testing of T-FLC Yielding Element with Non-Degrading Hysteretic Profile to Limit Floor Accelerations in SMF-Spine Systems Author(s): Jessica Duke*, Richard Sause, James Ricles, Larry Fahnestock, Barbara Simpson, Bryam Astudillo, Zhuoqi Tao
	17:40 - 18:00	ID 674: Application of Fe-SMA Bars as Self-Centering Elements in Bridge Piers to Improved Seismic Resilience Author(s): Masood Vahedi*, Hamed Ebrahimiyan, M. Saïid Saïidi

MS206: Infrastructure assessment automation with robotics, deep learning and digital twins. Organizer(s): Vedhus Hoskere, Jian Li, Wei Song		
SC 1216 - Piedmont	16:00 - 16:20	ID 352: Towards real-time digital twins for post-earthquake damage assessment of masonry buildings Author(s): Bryan German Pantoja-Rosero*, Radhakrishna Achanta, Katrin Beyer
	16:20 - 16:40	ID 853: The role of digital twins for predictive maintenance of concrete deck bridges Author(s): Manuel Salmeron*, Xin Zhang, Shirley Dyke, Julio Ramirez
	16:40 - 17:00	ID 932: Digital twins for inspections of reinforced concrete bridges Author(s): Asad ur Rahman*, Deepank Kumar Singh, Subin Varghese, Vedhus Hoskere
	17:00 - 17:20	ID 829: Agile Simulation of Structural Systems within a Digital Twin Framework Author(s): Zahra Zhiyanpour*, Ayatollah Yehia, Mehrdad Shafiei Dizaji, Devin Harris
MS810: Advanced Design and Manufacturing of Programmable Matter. Organizer(s): Jochen Mueller, Wesley Reinhart, Amir Alavi		
EH 247 - Sweet Auburn	16:00 - 16:20	ID 790: Studying Neural Network Constitutive Models in Open-Source Finite Element Analysis Software Author(s): Nilay Upadhyay*, Wesley Reinhart
	16:20 - 17:00	Keynote ID 949: Universal principles of flexible mechanical metamaterials Author(s): Zeb Rocklin*
	17:00 - 17:20	ID 956: Pathways to Manufacturing Mechanical Metamaterials by Examining Auxeticity in Nonwoven Fiber Networks Author(s): Prateek Verma, Anselm Griffin, Meisha Shofner*
MS614: Sustainable and Resilient Infrastructure Using Lightweight Materials. Organizer(s): Fariborz Tehrani		
EH 266 - Summerhill	16:00 - 16:20	ID 727: Contributions of Internally-Cured Concrete to Sustainability and Resilience of Pavements Author(s): Daron Brown*
	16:20 - 16:40	ID 103: What Goes Up On a Roof Can Come Down ..... But It Will Cost You. Understanding the Sustainable Design Intent of Green Roof Growing Media Author(s): Chuck Friedrich, PLA, GRP*
	16:40 - 17:00	ID 361: Asphalt Chip Seal: An Alternative to Sealcoating Author(s): Steven Hoard*
	17:00 - 17:20	ID 615: Sustainable Biobased Coatings for In-situ Repair of Damaged Coated Rebars Author(s): Sher Afgan*, Ravi Kiran
	17:20 - 17:40	ID 492: Applied Development of Environmental Declarations for Rotary-Kiln Manufactured Expanded Aggregates Author(s): Fariborz Tehrani*

MS502: New advances in tropical cyclone induced winds, surge-wave, and flooding. Organizer(s): Chao Sun, Grace Yan, Celalettin Ozdemir		
SC 3252 - Techwood	16:00 - 16:20	ID 210: Fragility assessment of bottom plate and shell of above ground storage tanks during flood events using finite element analysis Author(s): Md Manik Mia*, Sabarethnam Kameshwar
	16:20 - 16:40	ID 555: Investigation of Hurricane Wind Effects on Solitary Wave Energy Dissipation in a Storm Surge Author(s): Hunter Boswell, Grace Yan*, Wouter Mostert
	16:40 - 17:00	ID 605: Large Eddy Simulation of Wind Loading on Elevated Low-rise Buildings Author(s): Xiangjie Wang*, Chao Sun*, Chunsheng Cai
	17:00 - 17:20	ID 689: Large Eddy Simulation of Wind Turbulences Over Non-breaking and Breaking Waves Author(s): Tianqi Ma*, Chao Sun
	17:20 - 17:40	ID 801: Analysis of the Non-Linear Tide-River Flow Interactions of the Lower Mississippi and Atchafalaya Rivers in the Low-Lying Louisiana Coastline Author(s): Sayed Omar Hofioni*, Peter Bacopoulos, Jin Ikeda, Celalettin Emre Ozdemir
	17:40 - 18:00	ID 918: The Role of Turbulence and Roughness Length Parameterizations in Improving Major Hurricane Simulations in Weather Forecasting Models Author(s): Mostafa Momen*, Leo Matak, Meng Li
MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm. Organizer(s): Ange-Therese Akono, Mohammad Javad Abdolhosseini Qomi, Matthieu Vandamme		
Classroom A	16:00 - 16:20	ID 630: Elastic and Plastic Characteristics of Lithium–Graphite Intercalation Phase Author(s): Edris Akbari*, George Z. Voyiadjis
	16:20 - 16:40	ID 890: Carbon-cement supercapacitors: A scalable bulk energy storage solution Author(s): Damian Stefaniuk, Nicolas Chanut, James C. Weaver, Yang Shao-Horn, Franz-Jozef Ulm, Admir Masic*
	16:40 - 17:00	ID 611: Reducing Thermal Conductivity of Calcium Silicate Hydrates: New Technological Opportunities provided by Cross-Linking with Organic Molecules Author(s): Amir Moshiri, Ali Morshedifard, Damian Stefaniuk, Santiago EL Awad, Kamil Krzywinski, Debora Frigi Rodrigues, Tejasree Phatak, Mohammad Abdolhosseini Qomi, Konrad Krakowiak*
	17:00 - 17:20	ID 619: Molecular simulations study of freezing of water confined in C-S-H, and implications for the cryo-suction process Author(s): Xinping ZHU, Laurent Brochard, Matthieu Vandamme*
	17:20 - 17:40	ID 826: Forces between Calcium-Silicate-Hydrate Surfaces: A Density Functional Approach Author(s): Thomas Petersen*
	17:40 - 18:00	ID 200: Thermo-poro-mechanical couplings from molecular fluctuations and application to cellulose Author(s): Laurent Brochard*

## Friday, June 09, Morning Sessions, 10:00 – 12:00

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS702: Characterization and modeling of physical processes in porous materials across scales.
EH 222 - Buckhead	MS707: Mechanics of Nonconventional Granular Materials.
SC 3294 - Castleberry	MS901: Biomechanics of Human Movement, Performance, and Training.
EH 242 - Centennial	MS806: Small Scale Phenomena in Sustainable & Complex Materials.
EH 203 - Highlands	MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification.
EH 226 - Home Park	MS811: Architected Materials.
EH 270 - Innman Park	MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures.
EH 273 - Kirkwood	MS203: Computational Methods for Stochastic Engineering Dynamics.
EH 127 - Midtown I	MS606: Wildfire Engineering: Research and practice in wildland and wildland-urban-interface.
EH 123 - Midtown II	MS603: Machine Learning Applications in Wind Engineering.
EH 142 - Midtown III	MS315: Meshfree, Peridynamic, and Particle Methods: Contemporary Methods and Applications.
EH 122 - Midtown V	MS217: Infrastructure Health Condition Evaluation Using Emerging Sensor and AI Technologies.
SC 3245 - Northside	MS612: Mechanics and Impacts of Wind-borne Debris.
EH 241 - Old Fourth Ward	MS615: Assessing Human-Infrastructure Interactions and their Performance.
SC 3249 - Peachtree	MS205: Innovations and Advances in Passive, Active, and Semi-active Structural Control.
SC 1216 - Piedmont	MS206: Infrastructure assessment automation with robotics, deep learning and digital twins.
EH 247 - Sweet Auburn	MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods.
EH 266 - Summerhill	MS604: Recent Advances in Response Modification Devices and Strategies.
SC 3252 - Techwood	MS608: Analysis and Prediction of Wind Effects on the Built Environment.
Classroom A	MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm.

MS702: Characterization and modeling of physical processes in porous materials across scales. Organizer(s): Mostafa Mobasher, Pania Newell, Jean-Michel Pereira, Giuseppe Buscarnera, Sara Abedi, Manolis Vevakis		
SC 3208 - Atlantic Theater	16:00 - 16:20	ID 407: Simulation of spontaneous excess pore pressure development during compaction band formation in saturated porous rock Author(s): Divyanshu Lal*, Giuseppe Buscarnera
	16:20 - 16:40	ID 573: Reactive chemo-hydro-mechanics for modelling aggressive fluid injection Author(s): Xiaojie Tang*, Manman Hu
	16:40 - 17:00	ID 575: Multiscale modeling of heterogeneous porous solids saturated by a thermoviscous fluid: beyond longwave homogenization Author(s): Renan Liupekevicius*, Hans van Dommelen, Marc Geers, Varvara Kouznetsova
	17:00 - 17:20	ID 600: Particle Scale Assessment of Strain Localization in Saturated Sheared Sand Author(s): Mohammed Elnur*, Khalid Alshibli
	17:20 - 17:40	ID 644: Influence of Micro- and Crystalline-Scale Properties on the Fracture of Silica Sand Particles Using 3D Finite Element Analysis Author(s): Wadi Imseeh, Mohammad Safi*, Khalid Alshibli
	17:40 - 18:00	ID 838: Poroelastic Spherical Indentation for Material Characterization Author(s): Ming Liu, Haiying Huang*
MS707: Mechanics of Nonconventional Granular Materials. Organizer(s): Wencheng Jin, Yidong Xia, Mehari Tekeste, Hariswaran Sitaraman		
EH 222 - Buckhead	16:00 - 16:20	ID 187: Shear Characterization of Particulate Rigid Plastics From Non-recyclable Municipal Solid Waste Author(s): Abdallah Ikbarieh*, Yimin Lu, Sheng Dai
	16:20 - 16:40	ID 113: Smoothed particle hydrodynamics development for modeling granular biomass handling Author(s): Yumeng Zhao*, Wencheng Jin, Sheng Dai
	16:40 - 17:00	ID 130: Impacts of moisture content on the flowability of milled biomass Author(s): Yimin Lu*, Wencheng Jin, Jordan Klinger, Hariswaran Sitaraman, Sheng Dai
	17:00 - 17:20	ID 503: A material-point-method based model for the flow behavior of biomass particles with varying moisture content Author(s): Yudong Li*, Nicholas Deak, Yimin Lu, Hariswaran Sitaraman
	17:20 - 17:40	ID 165: Quantitative Assessment of Particle Characteristics Impact on the Flowability of Granular Biomass in Handling and Feeding Units Author(s): Ahmed Hamed*, Yidong Xia, Nepu Saha, Jordan Klinger, David Lanning, Jim Dooley, Neal Yancey
	17:40 - 18:00	ID 259: Discrete particle simulation of granular pine residues in an FT4 powder rheometer Author(s): Zakia Tasnim*, Dr. Qiushi Chen, Dr. Yidong Xia, Dr. Ahmed Hamed

MS901: Biomechanics of Human Movement, Performance, and Training. Organizer(s): J. Brent Knight, John C. Brigham, Amir H. Alavi		
SC 3294 - Castleberry	16:00 - 16:30	Keynote ID 959: Motion Tape Sensors and the Warfighter Digital Twin for Enhancing Physical Performance Author(s): Ken Loh*
	16:30 - 17:00	Keynote ID 653: Neuromechanical Approaches for Improving Human Movement Author(s): Minoru Shinohara*
	17:00 - 17:20	ID 685: Robotic System to Enable Active and Passive Embodiment for Hand Rehabilitation Author(s): Joshua Posen*, Joshua Lee, Frank Hammond III, Minoru Shinohara
	17:20 - 17:40	ID 160: Effect of occupant position on ejection and injury mitigation during the rollover of cutaway buses Author(s): Mohamad Alagheband*, Sungmoon Jung, MohammadReza Seyedi
	17:40 - 18:00	ID 418: In-Vitro Assessment of Lumbar Spinal Fusion in Human Cadaver Models Using Self-powered Sensors Author(s): Amir Alavi*, Kaveh Barri, Jianzhe Luo
MS806: Small Scale Phenomena in Sustainable & Complex Materials. Organizer(s): Nishant Garg, Claire White		
EH 242 - Centennial	16:00 - 16:20	ID 540: Composition-structure-reactivity relationship for aluminosilicate glasses in alkaline environment Author(s): Kai Gong*, Claire White, Elsa Olivetti
	16:20 - 16:40	ID 279: INDENTATION SIZE EFFECT IN CARBONITRIDED AISI 1045 STEEL Author(s): TABIRI KWAYIE ASUMADU*, Dr. Kwadwo MENSAH-DARKWA, Dr. Emmanuel Gikunoo, Dr. Desmond Klenam*, Mobin Vandadi, Prof. Samuel Kwofie, Prof. Nima Rahbar*, Prof. Winston Wole Soboyejo*
	16:40 - 17:00	ID 370: CO2 mineralization of silicate minerals and the potential inhibiting effect of amorphous silica-rich surface layers Author(s): Kumaran Coopamootoo*, Claire E. White
	17:00 - 17:20	ID 691: Dissolution kinetics of silica fume in alkaline solutions Author(s): Yoonjung Han*, Jonathan Lapeyre, Umme Zakira, Mine G. Ucak-Astarlioglu, Jedadiah F. Burroughs, Jeffrey W. Bullard
	17:20 - 17:40	ID 885: Novel Polymer-Ceramic Nanocomposites Using Advanced Electrospinning Methods Author(s): Yunzhi Xu*, Ping Guo, Ange-Therese Akono
	17:40 - 18:00	ID 531: Molecular insight on creep of cement-based systems from in situ neutron total scattering experiments Author(s): Nishant Garg, Brendan Kehoe, Daniel Olds, Joseph Vocaturo, Michelle Everett, Katharine Page, Joerg Neufeind, Claire White*
MS210: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification. Organizer(s): Hamed Ebrahimiyan, Babak Moaveni, Haeyoung Noh, Yang Wang		
EH 203 - Highlands	16:00 - 16:20	ID 782: Operational Health Monitoring of Bridges Using Bayesian Model Updating and Computer Vision Techniques Author(s): Niloofar Malekghaini*, Farid Ghahari, Hamed Ebrahimiyan, Vinayak Sachidanandam, Eric Ahlberg, Matthew Bowers, Ertugrul Taciroglu
	16:20 - 16:40	ID 950: Scaled Spherical Simplex Filter for finite-element model updating and system identification Author(s): Mariyam Amir*, Konstantinos G. Papakonstantinou, Gordon P. Warn



MS811: Architected Materials. Organizer(s): Stavros Gaitanaros		
EH 226 - Home Park	10:00 - 10:20	ID 721: Mechanics of bioinspired and hierarchical tape-springs Author(s): Kristiaan Hector, Phani Saketh Dasika, Adwait Trikanad, Julian Rimoli, Nilesh Mankame, Pablo Zavattieri*
	10:20 - 10:40	ID 925: Experimental investigation of nature-inspired nano-architected porous materials Author(s): Seo Young Ahn*, Pania Newell
	10:40 - 11:00	ID 285: Tunable Mechanical Properties and Functions in Stretchable Architected Materials Author(s): Yanyu Chen*
	11:00 - 11:20	ID 857: Evaluating and tailoring stiffness of lattices for various states Author(s): Yash Agrawal*, Gabriel Dreisbach, James Guest
MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures. Organizer(s): Yong-Rak Kim, Xiaoyu Song, Chung Song, Huiming Yin, Qiming Wang, Congrui Grace Jin		
EH 270 - Innman Park	10:00 - 10:20	ID 458: Parametric Study to Determine Hydrodynamics Input Parameters in FLOW-3D-Hydro for Crushed Limestones in Nebraska Author(s): Basil Abualshar*, Chung Song
	10:20 - 10:40	ID 413: Use of Alkali-activated Slag Binder and Shape-stabilized Phase Change Material to Develop an Energy-efficient Multifunctional Cementitious Composite in Buildings Author(s): In Kyu Jeon*, Abdullah Azzam, Hussein Al Jebaei , Yong-Rak Kim, Ashrant Aryal, Juan Carlos Baltazar
	10:40 - 11:00	ID 654: Thermoelastic Model of Cubic Crystals for Structural Metals Author(s): Byung-Wook Kim*, Chao Liu, Huiming Yin
	11:00 - 11:20	ID 694: Size effect on the thermoelastic behavior of a particulate composite beam - a comparative study of micromechanical models and numerical simulation Author(s): Jinming Zhang*, S.H. Chu, Chunlin Wu, Huiming Yin
	11:20 - 11:40	ID 470: AI- Approach to Predict the Erosion Resistance of Highway Shoulder Gravels Author(s): Bashar Al-Nimri*, Aiman Tariq, Basil Abualshar, Chung Song, Babur Deliktas
	11:40 - 12:00	ID 729: Bspline material point method for strongly coupled poroelastic materials Author(s): Ashkan Ali Madadi*, David Garza, Berkin Dortdivanlioglu

MS203: Computational Methods for Stochastic Engineering Dynamics. Organizer(s): Ketson Dos Santos, Vasileios Fragkoulis, Ioannis Kougioumtzoglou, Antonina Pirrotta		
EH 273 - Kirkwood	10:00 - 10:20	ID 159: Dynamics and extreme response probability distributions of linear elastic structures subjected to harmonizable loads Author(s): Zifeng Huang*, Michael Beer
	10:20 - 10:40	ID 582: First-passage stochastic incremental dynamics methodology for nonlinear structural systems with fractional derivative elements Author(s): Peihua Ni*, Ioannis Mitsas, Vasileios Fragkoulis, Michael Beer
	10:40 - 11:00	ID 150: A Bayesian compressive sampling approach for modeling, analysis and diagnostics of dynamic cerebral autoregulation in cardiovascular disease Author(s): Maria Katsidoniotaki*, Leonidas Taliadouros, Ioannis Kougioumtzoglou, Eliza Miller, Randolph Marshall
	11:00 - 11:20	ID 480: Hierarchical Bayesian Approach for Electromechanical Properties Updating in Piezoelectric Energy Harvesters Author(s): Rafael Ruiz*, Alejandro Poblete, Gaofeng Jia
	11:20 - 11:40	ID 205: Performance Enhancement of Vibro-Impact Targeted Energy Transfer Within a Random Environment Author(s): Rahul Kumar*, Daniil Yurchenko, Rachel Kuske
	11:40 - 12:00	ID 269: Response statistics of vibro-impact system via the Step Matrix Multiplication based on Path Integration method Author(s): Henrik Tamás Sykora, Rachel Kuske, Daniil Yurchenko*
MS606: Wildfire Engineering: Research and practice in wildland and wildland-urban-interface. Organizer(s): Hamed Ebrahimian, Erica Fischer, Hussam Mahmoud, Negar Elhami-Khorasani		
EH 127 - Midtown I	10:00 - 10:20	ID 191: Mapping wildfire ignition probability with ensemble-based machine learning models Author(s): Qi Tong, Thomas Gernay*
	10:20 - 10:40	ID 320: A Physics-Based Model for Predicting Diurnal and Seasonal Changes in the Ignition Potential of Complex Landscapes and Fuels Author(s): Saurabh Saxena*, Ritambhara Dubey, Neda Yaghoobian
	10:40 - 11:00	ID 321: Investigation of the Impact of Dynamic Fuel Moisture on Fire and Plume Behavior Author(s): Ritambhara Dubey*, Neda Yaghoobian
	11:00 - 11:20	ID 731: WRF-Fire for Landscape-Scale Wildfire Simulation: Sensitivity Analysis, The Role of Fuel Characteristics and Fire Spotting, and Data Assimilation Author(s): Kasra Shamsaei, Timothy W. Juliano, Matthew Roberts, Hamed Ebrahimian*, Branko Kosovic, Neil P. Lareau
	11:20 - 11:40	ID 356: The Influence of Urban Landscape on Firebrand Spotting Author(s): Iago Dal-Ri dos Santos*, Neda Yaghoobian
	11:40 - 12:00	ID 643: Modeling Wildfire Propagation: A Stochastic Level-Set Formulation Author(s): Sourangshu Ghosh*, Armin Tabendah, Paolo Gardoni

MS603: Machine Learning Applications in Wind Engineering. Organizer(s): Sungmoon Jung, Pedro Fernandez-Caban		
EH 123 - Midtown II	10:00 - 10:20	ID 151: Producing Heterogeneous Upwind Terrain Dataset for Wind Tunnel Testing Using Image Classification Method Author(s): Nasrollah Alinejad*, Sungmoon Jung
	10:20 - 10:40	ID 127: Experimental study on the effect of complex heterogeneous terrain on wind pressure in low-rise building Author(s): Lee Sak An*, Sungmoon Jung
	10:40 - 11:00	ID 128: Physics-informed few-shot learning for wind pressure prediction of low-rise buildings Author(s): Yanmo Weng*, Stephanie Paal
	11:00 - 11:20	ID 201: A data-driven DNN model for wind load prediction based on inflow turbulence and minor architectural features of low-rise building roof systems Author(s): Nasreldin Mokhktar, Pedro Fernández-Cabán*
	11:20 - 11:40	ID 244: Prediction of pressure coefficients on roof soffits and walls of low-rise building using artificial neural networks and ensemble methods Author(s): Karim Mostafa*, Ioannis Zisis*, Amal Elawady
	11:40 - 12:00	ID 328: Machine Learning-Enabled Parameterization Scheme for Aerodynamic Shape Optimization of Wind-Sensitive Structures Author(s): Shaopeng Li*, Brian Phillips, Zhaoshuo Jiang
MS315: Meshfree, Peridynamic, and Particle Methods: Contemporary Methods and Applications. Organizer(s): Mike Hillman, J. S. Chen, Foster John, Pablo Seleson, Sheng-Wei Chi		
EH 142 - Midtown III	10:00 - 10:20	ID 522: Concurrent Semi-Lagrangian Reproducing Kernel Formulation and Stability Analysis Author(s): Mohammed Atif, Sheng-Wei Chi*
	10:20 - 10:40	ID 849: Partition of Unity Neural Network-enhanced Reproducing Kernel Particle Method for Localization Modeling Author(s): Jonghyuk Baek*, J. S. Chen
	10:40 - 11:00	ID 499: CabanaPD: A meshfree GPU-enabled peridynamics code for exascale fracture simulations Author(s): Pablo Seleson*, Sam Reeve
	11:00 - 11:20	ID 508: Naturally Stabilized Conforming Nodal Integration with Novel Stress Update Author(s): Mike Hillman*, Jiarui Wang, Dominic Wilmes, Joseph Magallanes
	11:20 - 11:40	ID 866: Maximum principle preserving meshfree methods for linear elliptic equations via nonlocal relaxation Author(s): Xiaochuan Tian*, Qihao Ye
	11:40 - 12:00	ID 965: Multiphase dissipative particle dynamics modeling of dynamic spreading of molten sand droplet on porous surfaces Author(s): Zhen Li*, Rahul Koneru, Alison Flatau, Luis Bravo, Muthuvel Murugan, Anindya Ghoshal, George Karniadakis

MS217: Infrastructure Health Condition Evaluation Using Emerging Sensor and AI Technologies. Organizer(s): Mohamad Alipour, Yichang (James) Tsai		
EH 122 - Midtown V	10:00 - 10:20	ID 145: Self-Powered Sensors for Sustainable Condition Monitoring of Bridges under Traffic-Induced Vibration Author(s): Mohsen Amjadian*, Anil Kumar Agrawal, Hani Nasif
	10:20 - 10:40	ID 684: Pavement Crack Detection Using Machine Learning and a Fusion of 2D & 3D Data Author(s): Paul Roeser*, Yi-Chang (James) Tsai
	10:40 - 11:00	ID 631: Gaze informed path optimization of building inspection for automated damage diagnostics Author(s): Muhammad Rakeh Saleem*, Rebecca Napolitano
	11:00 - 11:20	ID 513: Performance-based UAS path planning for automated infrastructure inspection Author(s): Yuxiang Zhao*, Binyao Guo, Mohamad Alipour
	11:20 - 11:40	ID 344: Automatic Segmentation and Measurement of Surface Concrete Spalling for Structural Members Author(s): Luis Espinola-Diaz*, Smith Huamani-Rojas, Luis Alberto Bedriñana
	11:40 - 12:00	ID 373: Autonomous delamination detection in reinforced concrete bridge decks using infrared thermography and an encoder-decoder-type DCNN model Author(s): Eberechi ICHI*, Sattar Dorafshan*
MS612: Mechanics and Impacts of Wind-borne Debris. Organizer(s): David Roueche, Franklin Lombardo, Gregory Kopp, Nigel Kaye, Seymour Spence, Yanlin Guo		
SC 3245 - Northside	10:00 - 10:20	ID 95: Validation of an analytical model for estimating debris trajectories in a tornadic wind field Author(s): Connell Miller*, Gregory Kopp
	10:20 - 10:40	ID 137: Predicting Wildfire Ignition and Windborne Ember Accumulation on Roofs via Deep Learning (DL) Author(s): Mohammad khaled al-Bashiti*, Dac Nguyen, Nigel B Kaye, M.Z Naser
	10:40 - 11:00	ID 138: Experimental Study of Roof Gravel Motion Initiation Author(s): Md Safwan Ahsanullah*, Nigel Kaye
	11:00 - 11:20	ID 158: A tornadic field retrieval method based on wind-induced debris video-analysis Author(s): Guangzhao Chen*, Franklin Lombardo, David Roueche
	11:20 - 11:40	ID 179: Wind-Borne Debris Façade Impact Design: Validation of a 2D Monte Carlo Numerical Model Author(s): Angela Mejorin*, Gregory Kopp
	11:40 - 12:00	ID 330: Impact of Tall Building Cluster Layout on Urban Wind Field and Debris Flight Trajectory Author(s): Shaopeng Li, Yue Dong, Kimia Yousefi Anarak, Yanlin Guo*, Kurtis Gurley, John van de Lindt, Ryan Catarelli

MS615: Assessing Human-Infrastructure Interactions and their Performance. Organizer(s): Fernando Moreu, Hae Young Noh, Ken Loh		
EH 241 - Old Fourth Ward	10:00 - 10:20	ID 240: Understanding Gait Biomechanics through Structural Mechanics: Foot-Floor Contact Modeling using Footstep-induced Structural Vibrations Author(s): Yiwen Dong*, Hae Young Noh
	10:20 - 10:40	ID 376: Theory and Computational Framework for Quantifying Social Capital Derived from Human-Human and Human-Infrastructure Interactions Author(s): Maral Doctor Arastoo, Katherine Flanigan*, Mario Bergés
	10:40 - 11:00	ID 532: A novel approach for repairing corroded structural steel bridge structures using plasma arc additive manufacturing Author(s): Rajat Kawalkar*, Shengbiao Zhang, John Hart, Wen Chen, Simos Gerasimidis
	11:00 - 11:20	ID 740: Emotion Recognition Using Footstep-Induced Floor Vibration Signals Author(s): Yuyan Wu*, Yiwen Dong, Hae Young Noh
	11:20 - 11:40	ID 800: Gait Speed Estimations Using the Change of Amplitude of Vibration Signals Author(s): Jean Michel Franco Lozada*, Yohanna MejiaCruz*, Juan M. Caicedo*, Zhaoshuo Jiang
	11:40 - 12:00	ID 823: Exploring Interaction Methods for Human Machine Collaboration in Bridge Inspection via Augmented Reality Author(s): Alan Smith*, Eric Bianchi, Kyle Tanous, Joseph Gabbard, Rodrigo Sarlo
MS205: Innovations and Advances in Passive, Active, and Semi-active Structural Control. Organizer(s): Nicholas Wierschem, P. Scott Harvey		
SC 3249 - Peachtree	10:00 - 10:20	ID 125: Control Performance of Sloped Rolling-type Bearings with an Added Rotational Inerter Author(s): Shiang-Jung Wang*, Yi-An Lai, Chung-Han Yu, Yu-Wen Chang, Ting-Yu Hsu
	10:20 - 10:40	ID 559: A Numerical Study of Clutching Inerter Dampers for Mitigating the response of Multi-degree-of-freedom Base-Isolated Structures Author(s): Wyatt Cupp*, Nicholas Wierschem
	10:40 - 11:00	ID 781: On the effect of vertical flexibility in objects isolated on pendulum-type systems Author(s): Mia Griffin, P. Scott Harvey*
	11:00 - 11:20	ID 199: Active Control of Equipment Seismic Isolation System by Output Feedback Skyhook Algorithm Author(s): Yong-An Lai*, Po-Yen Wu
	11:20 - 11:40	ID 295: Experimental Validation real-time, weighted control algorithm on civil infrastructure Author(s): Courtney Peckens*, Clara Voskuil, Dylan Clem
	11:40 - 12:00	ID 607: Semi-active cam-lever friction device for structural control of buildings subjected to natural hazards Author(s): Alejandro Palacio-Betancur*, Mariantonieta Gutierrez Soto

MS206: Infrastructure assessment automation with robotics, deep learning and digital twins. Organizer(s): Vedhus Hoskere, Jian Li, Wei Song		
SC 1216 - Piedmont	10:00 - 10:20	ID 627: Addressing Structural Health Monitoring Uncertainty in a Deep Learning-based Anomaly Detection System Author(s): Kareem Eltouny*, Xiao Liang
	10:20 - 10:40	ID 322: Autonomous Defect Detection in Bolted Connections of Highway Ancillary Structures Using Deep Learning Author(s): Faezeh Jafari*, Sattar Dorafshan
	10:40 - 11:00	ID 756: Insights on Hyperparameter Importance in Crack Segmentation DCNNs Author(s): Carlos Canchila*, Shanglian Zhou, Wei Song
	11:00 - 11:20	ID 753: Autonomous Crack Sealing Robot for Infrastructure Maintenance using Reinforcement Learning Author(s): Joshua Genova*, Subin Varghese, Vedhus Hoskere
MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods. Organizer(s): Xiang Zhang, Pinlei Chen, Ravindra Duddu, Soheil Soghrati, Timothy Timothy Truster		
EH 247 - Sweet Auburn	10:00 - 10:20	ID 861: On the modeling of interfaces with resultant-based formulations in composite materials Author(s): Ghadir Haikal*
	10:20 - 10:40	ID 193: Prediction of Kink Bands and Splitting in Multidirectional Double-edge Notch Compression Specimens Author(s): Alexander Faupel*, Caglar Oskay
	10:40 - 11:00	ID 597: Parametrically Upscaled Crack Nucleation Model (PUCNM) for Fatigue Nucleation in Titanium Alloys Containing Micro-Texture Regions (MTR) Author(s): Somnath Ghosh*, Jinlei Shen
	11:00 - 11:20	ID 705: Shape Dependence of Diffusion Creep Behavior in Polycrystalline Materials with Two Strength-Contrasting Phases Author(s): Heechen Cho*
	11:20 - 11:40	ID 423: A Combined Variational Multiscale and Phase Field Approach for Coupled Thermomechanical Problems with Interface Separation, Crack Propagation, and Heat Transport Author(s): Pinlei Chen*, Wan Wan
	11:40 - 12:00	ID 400: The Effect of Disorder on the Dynamic Properties of One-Dimensional Metamaterials Author(s): Ali Heidari Shirazi*, Reza Abedi

MS604: Recent Advances in Response Modification Devices and Strategies. Organizer(s): Nicos Makris, Kostas Kalfas		
EH 266 - Summerhill	10:00 - 10:20	ID 325: Design and component testing of pressurized sand-dampers: Effects of the design parameters Author(s): Konstantinos Kalfas*, Nicos Makris
	10:20 - 10:40	ID 505: Seismic Response of Core Wall Building with Force-Limiting Connections Author(s): Kyoungyeon Lee*, Georgios Tsampras
	10:40 - 11:00	ID 506: Structural connection with predetermined discrete variable friction forces for high-performance earthquake-resistant buildings Author(s): Kaixin Chen*, Georgios Tsampras
	11:00 - 11:20	ID 558: Scaled Experimental Investigation of the Sensitivity of Strongback Performance to Location of Supplemental Dampers and Stiffness Irregularities Author(s): Sima Abolghasemi*, Nicholas Wierschem, Mark Denavit
	11:20 - 11:40	ID 616: Real-time Hybrid Simulation of a CLT Rocking Wall System equipped with Pressurized Sand Dampers for Seismic Hazard Mitigation Author(s): Liang Cao*, Kostas Kalfas, Nicos Makris, James Ricles
	11:40 - 12:00	ID 752: Multi-Hazard Analysis of Multi-Story Frames with Viscoelastic Semi-Rigid Connections Author(s): Alessandro Palmeri*, Mariateresa Lombardo
MS608: Analysis and Prediction of Wind Effects on the Built Environment. Organizer(s): Teng Wu, Catherine Gorle, Marco Giometto, Panneer Selvam		
SC 3252 - Techwood	10:00 - 10:20	ID 172: Advancements in the Physical Simulation of Atmospheric Surface Layer Flows using Synthetic Turbulence Modulation in a Large Boundary Layer Wind Tunnel Author(s): Ryan Catarelli*, Yutiwadee Pinyochotiwong, Forrest Masters, Brian Phillips, Tai-An Chen, Jennifer Bridge, Kurtis Gurley
	10:20 - 10:40	ID 891: Large-Scale Open-Jet Testing to Meet Field Pressures on a Flat-Roof Building Author(s): Aly Mousaad Aly*, Faiaz Khaled
	10:40 - 11:00	ID 527: Investigating the Accuracy of Wind Tunnel Simulations for Wind Profiles over Heterogeneous Terrain: A Comparison Study with Field Measurements Author(s): Sejin Kim*, Nasrollah Alinejad, Sungmoon Jung, Pedro Fernández-Cábán
	11:00 - 11:20	ID 608: Assessment of Wind Hazard Mitigation on a Tall Building equipped with Performance Control Devices using 3D Real-Time Aeroelastic Hybrid Simulation Author(s): Liang Cao*, Haitham Ibrahim, Thomas Marullo, James Erwin, James Ricles, Amal Elawady, Arindam Chowdhury
	11:20 - 11:40	ID 858: Comparison of LES and wind tunnel tests of wind loads on a low-rise building in an urban area. Author(s): Themistoklis Vargiomezis*, Catherine Gorlé
	11:40 - 12:00	ID 697: Comparison of full-scale measurements and large-eddy simulations of wind pressures on a high-rise building. Author(s): Jack Hochschild, Catherine Gorle*



MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm. Organizer(s): Ange-Therese Akono, Mohammad Javad Abdolhosseini Qomi, Matthieu Vandamme		
Classroom A	10:00 - 10:20	ID 225: Leapfrog in Fracture and Damage Mechanics inspired by Gap Test and Curvature-Resisting Sprain Energy Author(s): Zdeněk Bažant*, Houlin Xu, A. Abdullah Dönmez, Anh Nguyen, Yupeng Zhang
	10:20 - 10:40	ID 126: Are Configurational Forces Real Forces Author(s): Roberto Ballarini*, Gianni Royer-Carfagni
	10:40 - 11:00	ID 886: Multi-scale Toughness via Scratch Testing: From QuasiBrittle to Ductile Materials Author(s): Ange-Therese Akono*
	11:00 - 11:20	ID 780: Enhance Structures' Resilience with Particle Physics: a Statistical Approach of Quasi-Static Brittle Fracture. Author(s): Ariel Attias*, Franz-Josef Ulm
	11:20 - 11:40	ID 537: A Machine-learning approach to development of Microtexture-Effective Property relationship Author(s): Xuejing Wang, Mazdak Tootkaboni, Arghavan Louhghalam*
	11:40 - 12:00	ID 973: Fluctuation-based fracture and healing of materials and structures in the semi-grand canonical ensemble Author(s): Nima Rahbar*

## Friday, June 09, Afternoon Sessions, 14:15 – 15:55

Room	Mini symposia number and title
SC 3208 - Atlantic Theater	MS702: Characterization and modeling of physical processes in porous materials across scales.
EH 222 - Buckhead	MS707: Mechanics of Nonconventional Granular Materials.
SC 3294 - Castleberry	MS305: Quasibrittle Fracture of Heterogenous Composites: Modeling and Characterization.
EH 242 - Centennial	MS806: Small Scale Phenomena in Sustainable & Complex Materials.
EH 203 - Highlands	MS311: Phase-field models of fracture.
EH 226 - Home Park	MS308: Machine Learning in Mechanics, Materials, and Structures.
EH 270 - Innman Park	MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures.
EH 273 - Kirkwood	MS203: Computational Methods for Stochastic Engineering Dynamics.
EH 127 - Midtown I	MS606: Wildfire Engineering: Research and practice in wildland and wildland-urban-interface.
EH 123 - Midtown II	MS603: Machine Learning Applications in Wind Engineering.
EH 142 - Midtown III	MS315: Meshfree, Peridynamic, and Particle Methods: Contemporary Methods and Applications.
EH 122 - Midtown V	MS217: Infrastructure Health Condition Evaluation Using Emerging Sensor and AI Technologies.
SC 3245 - Northside	MS612: Mechanics and Impacts of Wind-borne Debris.
EH 241 - Old Fourth Ward	MS615: Assessing Human-Infrastructure Interactions and their Performance.
SC 3249 - Peachtree	MS204: Machine learning innovations towards long-term safety, performance, and serviceability assessment of civil infrastructure.
SC 1216 - Piedmont	MS206: Infrastructure assessment automation with robotics, deep learning and digital twins.
EH 247 - Sweet Auburn	MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods.
SC 3252 - Techwood	MS608: Analysis and Prediction of Wind Effects on the Built Environment.
Classroom A	MS101: Mechanics, Physics, and Chemistry for Sustainable and Resilient Civil, Energy, and Bio-related Infrastructures and Materials - In honor of the NAE Recognition of Prof. Franz-Josef Ulm.

MS702: Characterization and modeling of physical processes in porous materials across scales. Organizer(s): Mostafa Mobasher, Pania Newell, Jean-Michel Pereira, Giuseppe Buscarnera, Sara Abedi, Manolis Vevakis		
SC 3208 - Atlantic Theater	14:15 - 14:35	ID 862: Computation of per atom strain in classical molecular dynamics simulations Author(s): Ranganathan Parthasarathy*, Andrew Mikhaeil
	14:35 - 14:55	ID 953: Surface and size effect in nanoporous materials Author(s): Gilles Pijaudier-Cabot*, Dono Toussaint, Gyorgy Hantal, Romain Vermorel
	14:55 - 15:15	ID 974: Phase-Field Fracture Modeling Informed by Molecular Dynamics Simulation for Investigating Hierarchical Porous Structures Author(s): Pania Newel*, Bang He
MS707: Mechanics of Nonconventional Granular Materials. Organizer(s): Wencheng Jin, Yidong Xia, Mehari Tekeste, Hariswaran Sitaraman		
EH 222 - Buckhead	14:15 - 14:35	ID 372: Topological Interlocking Materials with Tunable Mechanical Properties Author(s): Ziran Zhou*, Tracy Lu, Anna Gorgogianni, Chiara Daraio, Jose Andrade
	14:35 - 14:55	ID 719: What is shape? Characterizing particle morphology with genetic algorithms and deep generative models Author(s): Robert Buarque de Macedo*, Slavish Monfared, Konstantinos Karapiperis, Jose Andrade
MS305: Quasibrittle Fracture of Heterogenous Composites: Modeling and Characterization. Organizer(s): Kedar Kirane, Marco Salviato, Jia-Liang Le		
SC 3294 - Castleberry	14:15 - 14:35	ID 132: Size effect and failure behavior of woven composites under biaxial flexure Author(s): Felix Liu, Kedar Kirane*
	14:35 - 14:55	ID 177: Multi-scale characterization of mode-II interlaminar fracture in scaled stitched resin-infused composites using digital image correlation Author(s): Jakob Black*, Wayne Huberty, Christopher Bounds, Han-Gyu Kim
	14:55 - 15:15	ID 346: Size Effect on Random Structural Strength of Prenotched Quasibrittle Structures Author(s): Jia-Liang Le*, Jan Eliáš
	15:15 - 15:35	ID 774: Use of characteristics method for fragmentation analysis of 1D heterogeneous quasi-brittle materials Author(s): Reza Abedi*, Giang Hyunh
MS806: Small Scale Phenomena in Sustainable & Complex Materials. Organizer(s): Nishant Garg, Claire White		
EH 242 - Centennial	14:15 - 14:35	ID 766: Role of cellulose ethers on Portland cement hydration kinetics and rheological properties Author(s): Elsa Qoku*, Angus Wilkinson, Pearl Dumbu, Erika Landayan, Kimberly Kurtis
	14:35 - 14:55	ID 784: Influence of Gypsum on Tricalcium Silicate in Blended System: in situ X-ray Total Scattering Study Author(s): Hyeonseok Jee*, Chirayu Kothari, Nishant Garg
	14:55 - 15:15	ID 812: FROM SMALL SCALE FRACTURE TESTS TO OPEN METROLOGY Author(s): Christos Athanasiou*
	15:15 - 15:35	ID 884: Using Nanomaterials to Improve the Performance of Recycled Aggregate Concrete Author(s): Nathaniel Buettner*, Ange-Therese Akono
	15:35 - 15:55	ID 899: Tracking Spatiotemporal Evolution of Cementitious Carbonation via Raman Imaging Author(s): Nishant Garg*

MS311: Phase-field models of fracture. Organizer(s): Aditya Kumar, Haim Waisman		
EH 203 - Highlands	14:15 - 14:35	ID 708: Working towards a modular, fully-coupled phase field fracture model integrating elasticity, plasticity, and damage Author(s): Chiraag Nataraj*, Andrew Stershic
	14:35 - 14:55	ID 147: Phase-field modelling of fatigue fracture in anisotropic aluminium sheets Author(s): Martha Kalina*, Markus Kästner
	14:55 - 15:15	ID 267: A thermodynamical phase field fracture modeling of concrete structures Author(s): Sina Abrari Vajari*, Matthias Neuner, Christian Linder
	15:15 - 15:35	ID 502: A Phase field model for anisotropic incompressible materials at finite strains Author(s): Wen Yuan Xue*, Prajwal Kammardi Arunachala, Sina Abrari Vajari, Christian Linder
	15:35 - 15:55	ID 222: Role of strength and toughness in the indentation problem Author(s): Aditya Kumar*, Oscar Lopez-Pamies
MS308: Machine Learning in Mechanics, Materials, and Structures. Organizer(s): Christos Athanasiou, Miguel Bessa, Kai Guo, Vikas Srivastava, Jan Fuhg		
EH 226 - Home Park	14:15 - 14:35	ID 807: Artificial language and machine learning-integrated approach for understanding and designing concrete with consideration of physiochemical properties Author(s): Soroush Mahjoubi*, Rojyar Barhemat, Weina Meng, Yi Bao
	14:35 - 14:55	ID 896: Optimization of vascular structure of self-healing concrete using generative deep neural network (GDNN) Author(s): Zhi Wan*, Yading Xu, Ze Chang, Branko Šavija
	14:55 - 15:15	ID 313: Accelerated Multi-scale Simulations of Nonlinear Elastic Heterogeneous Materials using Machine Learning with Knowledge Transfer Author(s): Zhongbo Yuan*, Leong Hien Poh
MS313: 7th Mini-Symposium on 4M (Modeling of Multiphysics-Multiscale-Multifunctional) Engineering Materials and Structures. Organizer(s): Yong-Rak Kim, Xiaoyu Song, Chung Song, Huiming Yin, Qiming Wang, Congrui Grace Jin		
EH 270 - Innman Park	14:15 - 14:35	ID 646: The Green's function based thermoelastic analysis of spherical geothermal tanks in a semi-infinite domain Author(s): Chunlin Wu, Tengxiang Wang, Huiming Yin*
	14:35 - 14:55	ID 183: Optical Properties of Topological Semimetals MX (M = Ti, Zr, Hf, and X = S, Se, Te) Family by DFT Approach Author(s): Sami Ullah*, Sikandar Khan, Firoz Khan
	14:55 - 15:15	ID 571: A GID-OpenSEES framework for the structural fire analysis of reinforced concrete structures Author(s): Anand Kumar*, P. Ravi Prakash, Mohamed Anwar Orabi
	15:15 - 15:35	ID 860: Digital Twin of Foamed Concrete toward Design and Development of High Performance Building Envelope Author(s): S.H. Chu*, J.M. Zhang, H.M. Yin
	15:35 - 15:55	ID 90: Experimental Investigation on Enhancing Tube Energy Absorption Capacity by Orifice Effect Author(s): Farhad Farzaneh*, Sungmoon Jung

MS203: Computational Methods for Stochastic Engineering Dynamics. Organizer(s): Ketsos Dos Santos, Vasileios Fragkoulis, Ioannis Kougioumtzoglou, Antonina Pirrotta		
EH 273 - Kirkwood	14:15 - 14:35	ID 327: The Emergence of an Inherent Urban Resilience to Natural Hazards Author(s): Nicos Makris*, Tue Vu, Gholamreza Moghimi, Georgios Chatzikyriakidis, Eric Godat
MS606: Wildfire Engineering: Research and practice in wildland and wildland-urban-interface. Organizer(s): Hamed Ebrahimian, Erica Fischer, Hussam Mahmoud, Negar Elhami-Khorasani		
EH 127 - Midtown I	14:15 - 14:35	ID 544: An Integrated Network Approach for Managing Wildfire Risk to Communities Author(s): Hussam Mahmoud*, Akshat Chulawat
	14:35 - 14:55	ID 672: A Preliminary Analysis of the Wildfire Hazard in Oklahoma Author(s): Richard Campos*, P. Scott Harvey, Kanthasamy Muraleetharan
	14:55 - 15:15	ID 806: Artificial Intelligence-based wildfire community risk assessment considering physical and social impacts Author(s): Abdur Rasheed*, Do-Eun Choe
	15:15 - 15:35	ID 910: Long term slope stability after the 2019 Williams Flats wildfire Author(s): Mustafa Demir, Idil Deniz Akin*
MS603: Machine Learning Applications in Wind Engineering. Organizer(s): Sungmoon Jung, Pedro Fernandez-Caban		
EH 123 - Midtown II	14:15 - 14:35	ID 387: Physics-Informed Deep Learning for Wind Load Identification on Nonlinear Structures Author(s): Haifeng Wang*
	14:35 - 14:55	ID 394: Prediction of Wind Profile in Heterogeneous Terrain using Artificial Neural Network Author(s): Zihan Mahmood Nahian*, Lee-Sak An*, Sungmoon Jung
	14:55 - 15:15	ID 507: Data-driven Modeling of Urban Wind Field Using Conditional Generative Adversarial Networks Author(s): yue dong*, yanlin guo
MS315: Meshfree, Peridynamic, and Particle Methods: Contemporary Methods and Applications. Organizer(s): Mike Hillman, J. S. Chen, Foster John, Pablo Seleson, Sheng-Wei Chi		
EH 142 - Midtown III	14:15 - 14:35	ID 822: A Coupled Lagrangian and Semi-Lagrangian RKPM with Smooth Contact for Penetration Problems Author(s): Ryan Schlinkman*, Jonghyuk Baek, Frank Beckwith, Stacy Nelson, Jiun-Shyan Chen
	14:35 - 14:55	ID 317: Simulation of vehicle impact with barriers based on the Discrete Element Method Author(s): Abinet K. Habtemariam*, Kai Fischer, Luis Brunnabend, Alexander Stolz
	14:55 - 15:15	ID 647: Investigation of Damage and Crack Propagation in Quasi-Brittle Materials via Peridynamics Author(s): Semsi Rakici*, Bora Pulatsu, Ece Erdogmus

MS217: Infrastructure Health Condition Evaluation Using Emerging Sensor and AI Technologies. Organizer(s): Mohamad Alipour, Yichang (James) Tsai		
EH 122 - Midtown V	14:15 - 14:35	ID 368: Machine Learning with Microtexture Feature Extraction for Automated Pavement Raveling Classification Author(s): Haolin Wang*, Yi-Chang (James) Tsai
	14:35 - 14:55	ID 713: Optimized Correlation Between Mean Profile Depth and Pavement Friction Author(s): Pavan Chandrasekar*, Yichang James Tsai
	14:55 - 15:15	ID 292: A Generalized digital image correlation Using Attention-based Deep Learning Architecture to Extract Full-field Subpixel Displacement Measurements from Limited Data Using Transfer Learning Author(s): Mehrdad Shafiei Dizaji*, Devin Harris*
MS612: Mechanics and Impacts of Wind-borne Debris. Organizer(s): David Roueche, Franklin Lombardo, Gregory Kopp, Nigel Kaye, Seymour Spence, Yanlin Guo		
SC 3245 - Northside	14:15 - 14:35	ID 550: A physics-based approach to estimate wind speed from wind-borne debris flight trajectory Author(s): Daniel Yahya*, David Roueche, Franklin Lombardo, Guangzhao Chen
	14:35 - 14:55	ID 745: An AI-based framework for damage estimation of hurricane-impacted residential communities through CFD simulations Author(s): Segin Kim*, Fei Ding, Seymour Spence
MS615: Assessing Human-Infrastructure Interactions and their Performance. Organizer(s): Fernando Moreu, Hae Young Noh, Ken Loh		
EH 241 - Old Fourth Ward	14:15 - 14:35	ID 936: Enhanced Human Interfaces for Rebar Inspection using RGBD-equipped UAV – Field Application Author(s): Mahsa Sanei*, Ali Mohammad khorasani, Fernando Moreu
MS204: Machine learning innovations towards long-term safety, performance, and serviceability assessment of civil infrastructure. Organizer(s): Mauricio Pereira, Branko Glisic		
SC 3249 - Peachtree	14:15 - 14:35	ID 316: Structural Dynamics Learning using a Supervised Variational Auto-Encoder (SVAE) Author(s): Kiran Bacsa*, Wei Liu, Eleni Chatzi
	14:35 - 14:55	ID 649: Prediction of long-term time-dependent behavior in prestressed concrete structures Author(s): Mauricio Pereira*, Branko Glisic
	14:55 - 15:15	ID 671: Machine Learning Algorithm to Predict Axial Stress in Continuous Welded Rails Author(s): Matthew Belding*, Alireza Enshaeian, Piervincenzo Rizzo
	15:15 - 15:35	ID 732: Machine Learning- Based Virtual Buoys Model for Live Prediction of Wave Height Author(s): Eleonora Maria Tronci, Matteo Vitale, Therese Patrosio*, Seixas Aldrich, Anela Bajric, Babak Moaveni, Usman Khan

MS206: Infrastructure assessment automation with robotics, deep learning and digital twins. Organizer(s): Vedhus Hoskere, Jian Li, Wei Song		
SC 1216 - Piedmont	14:15 - 14:35	ID 329: An image-based modeling-to-simulation framework for hazard vulnerability assessment of unreinforced masonry structures Author(s): Mohammad Abu-Haifa*, Seung Jae Lee
	14:35 - 14:55	ID 547: Monitoring Infrastructure using Augmented Reality in a Network of Microrobots with Visual Data Analysis Author(s): Alireza Fath*, Nicholas Hanna, Yi Liu, Scott Tanch, Tian Xia, Dryver Huston
	14:55 - 15:15	ID 865: Bridge Deck Underside Condition Assessments with UAS Acoustic Sensor Author(s): Damien Garland, Tian Xia, Dryver Huston*
MS309: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods. Organizer(s): Xiang Zhang, Pinlei Chen, Ravindra Duddu, Soheil Soghrati, Timothy Timothy Truster		
EH 247 - Sweet Auburn	14:15 - 14:35	ID 639: Self-limited dynamics and patio-temporal complexity of crustal seismicity enabled by elasto-plastic fracture mehanics Author(s): Ahmed Elbanna*, Md Shumon Mia, Mohamed Abdelmeguid
	14:35 - 14:55	ID 625: Peridynamics with stochastic bond strengths for determination of final failure in composite laminates Author(s): Ernest Ytuarte*, Hossam Ragheb, Adam Sobey, Stephanie TerMaath
	14:55 - 15:15	ID 791: Characterizing the elasto-adhesive length of polymeric materials Author(s): A. Derya Bakiler, Berkin Dortdivanlioglu*
MS608: Analysis and Prediction of Wind Effects on the Built Environment. Organizer(s): Teng Wu, Catherine Gorle, Marco Giometto, Panneer Selvam		
SC 3252 - Techwood	14:15 - 14:35	ID 262: Computation of Building Corner Peak Pressure Using CFD Author(s): Rathinam Selvam*
	14:35 - 14:55	ID 693: An LES-based neural network multi-fidelity framework for wind loading predictions. Author(s): Mattia Fabrizio Ciarlatani*, Themistoklis Vargiomezis, Catherine Gorlè