USNCCM15 Program Addendum

MS102 Advances in Computational Subsurface Modeling, in honor of Prof. Mary F. Wheeler

- Enriched Finite Volume Methods - Taylored Test Spaces for Flows with Particles - Gabriel Wittum
  Add | TS 2 | Lone Star Ballroom A | 2019-07-29 | 03:20 - 03:40
- Fast Simulations of Coupled Flow and Geomechanics in Ultra-Low Permeability (ULP) Reservoirs Via Reduced-Order Modeling - Eduardo Gildin
  From TS 4 to TS 3 | Lone Star Ballroom A | 2019-07-29 | 05:50 - 06:10

MS105 Computational Geomechanics, in honor of Prof. Mary F. Wheeler

- Fourier Series-based Discrete Element Method for Computational Mechanics of Irregular-shaped Particles - Qiushi Chen
  Cancel | TS 7 | Lone Star Ballroom C | 2019-07-31 | 02:40 - 03:00
- Predicting Properties of Cementitious Materials by Mesoscale Modeling - Mei Chandler
  TS 7 | Lone Star Ballroom C | 2019-07-31 | **From 03:00 - 03:20 to 02:40 - 03:00**

MS202 Dakota Software for Optimization, Uncertainty Quantification and Model Calibration

- Spectre: A Computational Environment for Managing Total Uncertainty Quantification in High Fidelity Simulations - Earl P.N. Duque
  Cancel | TS 1 | Room 302 | 2019-07-29 | 11:20 - 11:40

MS207 Model Construction, Uncertainty Quantification, and Data Driven Modeling in Computational Mechanics

- Probabilistic Forecasting of Plausible Debris Flows Using Data and Multiple Models of the Physics - Andrea Bevilacqua
  Cancel | TS 2 | Room 207 | 2019-07-29 | 02:00 - 02:20
- A Gradient-Based Optimization Approach for the Detection of Partially Connected Surfaces Using Vibration Tests - Timothy Walsh
  TS 2 | Room 207 | 2019-07-29 | **From 02:20 - 02:40 to 02:00 - 02:20**
- Eigenvector Based Materials Identification Approach - Gregory Bunting
  TS 2 | Room 207 | 2019-07-29 | **From 02:40 - 03:00 to 02:20 - 02:40**
- Data-driven Shape Functions for Higher-order Beam Finite Element Analysis of Thin-walled Composite Beams - Dongil Shin
  TS 2 | Room 207 | 2019-07-29 | **From 03:00 - 03:20 to 02:40 - 03:00**
- **From "Data-driven Inference with Density Tracking" to "Low-rank multifidelity approaches for quantifying uncertainty in topology optimization"** - Akil Narayan
  TS 1 | Room 207 | 2019-07-29 | 11:00 - 11:20

MS301 Advances and Applications in Meshfree and Particle Methods

- **From "A Weighted Meshfree Collocation Method for Incompressible Flows Using Radial Basis Functions" to "A meshfree stabilized collocation method (SCM) based on reproducing kernel approximation" -** Lihua Wang
  TS 2 | Lone Star Ballroom C | 2019-07-29 | 03:00 - 03:20

MS303 Peridynamics and Its Applications

- A Comparative Study on Peridynamics and Physically-based Nonlocal Elasticity - Zaixing Huang
  Cancel | TS 4 | Lone Star Ballroom B | 2019-07-30 | 11:00 - 11:20
- A Non-ordinary State-based Peridynamic Formulation for Thermo-visco-plastic Deformation and Impact Fracture - Dan Huang
  Cancel | TS 2 | Lone Star Ballroom B | 2019-07-29 | 02:20 - 02:40
- Existence of Solutions in Topology Optimization: the Nonlocal Perspective - Anton Evgrafov
  TS 4 | Lone Star Ballroom B | 2019-07-30 | **From 11:20 - 11:40 to 11:00 - 11:20**
- A Fully Coupled Non-Ordinary State-Based Peridynamics Model for Functionally Graded Materials under Thermal Shock - Yang Tan
  TS 2 | Lone Star Ballroom B | 2019-07-29 | **From 02:40 - 03:00 to 02:20 - 02:40**

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- A Non-Ordinary State-Based Peridynamic Method to Model Elastic-Plastic Behavior of Ice - Renwei Liu
  TS 2 | Lone Star Ballroom B | 2019-07-29 | **From 03:00 - 03:20 to 02:40 - 03:00**
- A Peridynamics (PD) Correspondence Model for Steel Reinforced Concrete Structures - Gabriel Hattori
  TS 2 | Lone Star Ballroom B | 2019-07-29 | **From 03:20 - 03:40 to 03:00 - 03:20**

MS401 Advances in Computational Biomechanics

- Estimating Pressure Dependent Outflow Facility for the Human Eye - David Smith
  From TS 8 to TS 6 | Room 208 | 2019-07-31 | 11:00 - 11:20
- Early Detection of Breast Cancer through an Inverse Problem Approach to Stiffness Mapping: Tissue Phantom Experiments with Improved Cost Functions - Lorraine Olson
  From TS 6 to TS 8 | Room 208 | 2019-07-31 | 05:30 - 05:50

MS408 Mechanobiology of Cells, Vesicles and Biomembranes

- Wrinkling Analysis of Membranes Based on the Co-rotational Formulation and Parametric Variational Principle - Liang Zhang
  Cancel | TS 1 | Room 212 | 2019-07-29 | 11:00 - 11:20
- A Monte Carlo Framework for Modeling Protein Assembly on Lipid Membranes - Carlos Osorio
  TS 1 | Room 212 | 2019-07-29 | **From 11:20 - 11:40 to 11:00 - 11:20**
- Arbitrary Lagrangian–Eulerian Finite Element Method for Biological Lipid Membranes - Amaresh Sahu
  TS 1 | Room 212 | 2019-07-29 | **From 11:40 - 12:00 to 11:20 - 11:40**

MS412 Direct and Inverse Methods for Cardiovascular and Pulmonary Biomechanics

- Visualization of the Lung Acinar Structure in Small Animals - Bertrand Maury
  Cancel | TS 7 | Room 212 | 2019-07-31 | 03:00 - 03:20

MS501 Computational Fluid Mechanics with Free and Moving Boundaries: Methods and Applications

- Analysis of the Flow Behaviour and Aerodynamic Noise Characteristics of the Pantograph of a High-speed Train under Crosswind - Yadong Zhang
  Cancel | TS 5 | Room 302 | 2019-07-30 | 02:40 - 03:00

MS502 Computational Fluid-Structure Interaction and Moving Boundaries and Interfaces

- ELL Method for 3D FSI Analysis with Thin Flexible Structures Modelled by Continuum Based Shell Element - Dong Han
  Cancel | TS 3 | Room 201 | 2019-07-29 | 05:10 - 05:30
- A Spatially Varying Robin Transmission Condition for Fluid-Structure Coupled Problems with Strong Added-Mass Effect - **From Guangyao Wang to Shunxiang Cao**
  From TS 5 to TS 3 | Room 201 | 2019-07-30 | 05:10 to 05:30

MS503 Variational Stabilization, Structure- and Positivity-preserving Techniques for Complex Flows

- Hybridized discretization techniques for incompressible and compressible flow problems - Antonio Huerta
  Add | TS 4 | Room 205 | 2019-07-30 | 11:40 - 12:00

MS602 Numerical Modeling of Extreme Loading Environments

- Numerical Modeling of Fragment and Blast Loaded Concrete Structures Using Massively-Parallel Coupled CFD-CSD Techniques - Orlando Soto
  Cancel | TS 6 | Room 203 | 2019-07-31 | 10:40 - 11:00
- Comparison of Methods for Computing Momentum Enhancement due to Hypervelocity Impact - James Walker
  TS 6 | Room 203 | 2019-07-31 | **From 11:00 - 11:20 to 10:40 - 11:00**

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- The Challenge of Numerical Modelling in Order to Prepare Full Scale Testing of Explosion Events in Urban Spaces - Norbert Gebbeken
  Cancel | TS 6 | Room 203 | 2019-07-31 | 11:20 - 11:40

MS605 Recent Advances in Computational Fracture Mechanics

- Phase Field Modeling of Microstructure Dependent Fracture in Anisotropic Polycrystals - Wen Jiang
  Cancel | TS 3 | 2019-07-29 | 05:30 - 05:50
- Three-Dimensional Fracture Propagation in Anisotropic Materials Using the Generalized Finite Element Method - Bryce Mazurowski
  TS 3 | 2019-07-29 | **From 05:50 - 06:10 to 05:30 - 05:50**
- A Phase Field Model of Crack Propagation in Anisotropic Brittle Materials - Shuaifang Zhang
- TS 3 | 2019-07-29 | **From 06:10 - 06:30 to 05:50 - 06:10**

MS705 High Order Numerical Methods and High Order Mesh Generation

- A Hermite Based High-Order Meshless Method - Hua Li
  Cancel | TS 2 | Room 308 | 2019-07-29 | 02:20 - 02:40
- Super Conforming Mixed Element in Nonlinear Structure Analysis - XiangRong Fu
  Cancel | TS 2 | Room 308 | 2019-07-29 | 02:20 - 02:40
- Analysis of Trimmed Kirchhoff-Love Shells in Finite Deformation Using the p-version C1- Finite Element with Curved Boundaries - Bo Liu
  Cancel | TS 2 | Room 308 | 2019-07-29 | 11:00 - 11:20
- A Characteristic-based low-dissipative shock capturing method for Compressible Large-eddy Simulation - Niccolo' Tonicello
  From TS 2 to TS 1 | 2019-07-29 | 11:00 - 11:20

MS802 Modeling and Simulation for Additive Manufacturing

- 3D Image Based Inspection and Simulation Applied to Additive Manufactured Spinal Truss Medical Implants - **From Kerim Genc to Thomas Spirka**
  TS 7 | Room 205 | 2019-07-31 | 02:20 - 02:40

MS803 Modeling and Simulation of Additive Manufacturing Processes

- An AI-guided Polydispersed DEM Model for Predicting the Spreading Process in Powder-bed Additive Manufacturing - C. Fred Higgs III
  Cancel | TS 5 | Room 301 | 2019-07-30 | 03:00 - 03:20

MS902 Mathematical Models and Computations in Structural Mechanics in Conjunction with Classical and Non-Classical Continuum Mechanics

- Analysis of Non-classical Kirchhoff Plate Theory Using a New Differential Quadrature Element - Mohammed Ishaquddin
  Cancel | TS 2 | Room 203 | 2019-07-29 | 02:00 - 02:20
- Mathematical Models and Computations in Structural Mechanics in Conjunction with Classical and Non-Classical Continuum Mechanics - Archana Arbind
  TS 2 | Room 203 | 2019-07-29 | **From 02:20 - 02:40 to 02:00 - 02:20**
- Nonlinear Finite Element Analysis of Functionally Graded Micro Porous Plates under Thermal-Mechanical Loading - Francisco Yapor Genao
  TS 2 | Room 203 | 2019-07-29 | **From 02:40 - 03:00 to 02:20 - 02:40**
- Realistic Simulation of Brittle Plates - P.K. Basu
  TS 2 | Room 203 | 2019-07-29 | **From 03:00 - 03:20 to 02:40 - 03:00**
- Thermodynamic Consistency of Plate and Shell Mathematical Models in the context of Classical and Non-classical Continuum Mechanics and a Thermodynamically Consistent New Formulation - Sai Mathi
  TS 2 | Room 203 | 2019-07-29 | **From 03:20 - 03:40 to 03:00 - 03:20**

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MS1104 Atomistic and Multiscale Modeling and Simulation of Nano- and Micro-structures of Materials and Their Failure Mechanisms

- Multiscale Modeling of Dislocation Patterns and Simulation of Nanoscale Plasticity in BCC Single Crystals - Lu-Wen Zhang
  Cancel | TS 7 | Room 303 | 2019-07-31 | 02:40 - 03:00
- Dynamic Fracture Behavior Analysis of the Functionally Graded Materials in the Frequency Domain - Yang Yang
  Cancel | TS 9 | Room 303 | 2019-08-01 | 10:20 - 10:40
- The Multiscale Coupling Model between Lithium Ion Diffusion and Stress in Polycrystalline Electrodes - Lisheng Liu
  TS 7 | Room 303 | 2019-07-31 | **From 03:00 - 03:20 to 02:40 - 03:00**
- Quantum Couple Stress and Quantum Flexoelectricity - Jun Li
  TS 7 | Room 303 | 2019-07-31 | **From 03:20 - 03:40 to 03:00 - 03:20**
- Coupled Peridynamics/Finite Element Method for Multiscale Fracture Simulations - Rui Zhang
  TS 9 | Room 303 | 2019-08-01 | **From 10:40 - 11:00 to 10:20 - 10:40**

MS1105 Process-induced Deformation and Defects Control Method for Structures

- Modelling of Geometric Deviation of Hole Wall in Drilling of Low-stiffness Composite Structures - Bin Luo
  Cancel | TS3 | Room 304 | 2019-07-29 | 04:50 - 05:10
- Uncertainty Quantification for Microstructural Features of Additively Manufactured Materials - Pinar Acar
  TS 3 | Room 304 | 2019-07-29 | **From 05:10 - 05:30 to 04:50 - 05:10**
- Behavior of Frustrated Antiferrmagnets in Random Field - Siddhartha Srivastava
  TS 3 | Room 304 | 2019-07-29 | **From 05:30 - 05:50 to 05:10 - 05:30**
- Micromechanics Modeling of Multiferroic Particulate Composites - Chien-hong Lin
  TS 3 | Room 304 | 2019-07-29 | **From 05:50 - 06:10 to 05:30 - 05:50**

MS1109 Towards Optimization and Real-Time Simulation of Multiscale Material Behavior: Methods and Applications

- Accelerating Multiscale Finite Element Simulations of History-Dependent Materials Using a Recurrent Neural Network - Angelo Simone
  Cancel | TS 2 | Room 213 | 2019-07-29 | 03:20 - 03:40

MS1205 New Trends in Topology Optimization

- Structural Shape Optimization Based on the Adjoint Variable Method and the Local Complex Finite Element Method - Andres Mauricio Aguirre-Mesa
  Cancel | TS 1 | Lone Star Ballroom H | 2019-07-29 | 11:00 - 11:20