

# FEMTEC 2011 - Monday, May 9

- 8:45 Conference opening
- **9:00 - 11:00 Keynote Session** (chairman C. Dawson)
  - 9:00 - 10:00 P. Colella - Progress on High-Order Finite-Volume Methods
  - 10:00 - 11:00 J. Shadid - Solution Methods for Multiple-time-scale Multiphysics Systems: Application to Transport/Reaction and Resistive MHD
- 11:00 - 11:15 Coffee break
- **11:15 - 12:15 Contributed Session I-A** (chairman G. Hansen)
  - 11:15 - 11:45 S. J. Owen - Parallel Hexahedral Mesh Generation from Volume Fraction Data
  - 11:45 - 12:15 R. W. Douglass - Laplace-Beltrami Enhancement for Unstructured Meshes having Dendritic Elements and Boundary Node Movement
- **11:15 - 12:15 Contributed Session I-B** (chairman M. Walther)
  - 11:15 - 11:45 V. A. Dobrev - High Order Curvilinear Finite Elements for Lagrangian Hydrodynamics
  - 11:45 - 12:15 L. Korous - Combined Adaptive Multimesh *hp*-FEM/*hp*-DG for Multiphysics Coupled Problems Involving Compressible Inviscid Flows
- 12:15 - 13:30 Lunch
- **13:30 - 15:30 Contributed Session II-A** (chairman V. F. de Almeida)
  - 13:30 - 14:00 M. Ebeida - Conforming Voronoi Meshing Based on Maximal Poisson Sampling
  - 14:00 - 14:30 B. Azarenok - Generation of Structured Mesh in 2D Domain with Singularities on Boundary by using Elliptic PDEs
  - 14:30 - 15:00 A. Reid - Object-Oriented Finite Element Materials Modeling at NIST
  - 15:00 - 15:30 D. Pugal - Using *hp*-FEM to Model Actuation of IPMC Materials
- **13:30 - 15:30 Contributed Session II-B** (chairman J. Trommler)
  - 13:30 - 14:00 I. Doležel - Monolithic Model of Combined Electromagnetic-Thermoelastic Actuator for Accurate Setting of Position
  - 14:00 - 14:30 D. Meeker - Improved Continuum Skin and Proximity Effect Model for Hexagonally Packed Wires
  - 14:30 - 15:00 H. Hakula - On *hp*-Adaptive Solution of Complete Electrode Model Forward Problems of Electrical Impedance Tomography
  - 15:00 - 15:30 P. Karban - Monolithic Modeling of Assembly of Induction Shrink Fits
- 15:30 - 15:45 Coffee break
- **15:45 - 17:15 Contributed Session III-A** (chairman T. Austin)
  - 15:45 - 16:15 G. Fujii - Finite Element Analysis of Laser Modes within Photonic Random Media
  - 16:15 - 16:45 J. D. McAlpine - Simulation and parameterization of atmospheric surface flow with computational fluid dynamics
  - 16:45 - 17:15 N. Böttcher - Heat Transport Simulation for CO<sub>2</sub> Enhanced Gas Recovery
- **15:45 - 17:15 Contributed Session III-B** (chairman D. Meeker)
  - 15:45 - 16:15 J. Trommler - A Finite-Element Thin-Sheet Approach in Magneto-Quasistatics
  - 16:15 - 16:45 S. Durand - Convergence of the mixed finite element method for Maxwell's equations with non-linear conductivity
  - 16:45 - 17:15 J. J. Heys - Implicit Discontinuous Galerkin Methods for Parabolic Problems
- **18:00 - 20:00 Welcome reception**

# FEMTEC 2011 - Tuesday, May 10

- **9:00 - 11:00 Keynote Session** (chairman J. Shadid)
  - 9:00 - 10:00 M. Heroux - Scalability of Trilinos: People, Processes and Parallelism
  - 10:00 - 11:00 C. Dawson - Finite Elements in Coastal Ocean Circulation Modeling
- 11:00 - 11:15 Coffee break
- **11:15 - 12:15 Contributed Session I-A** (chairman N. Böttcher)
  - 11:15 - 11:45 C. E. Kees - Multiscale Numerical Modeling of Levee Breach Processes
  - 11:45 - 12:15 M. Walther - Large-scale Density-dependent Groundwater Modelling in Agriculturally Used Coastal Arid Regions
- **11:15 - 12:15 Contributed Session I-B** (chairman M. Slodička)
  - 11:15 - 11:45 T. Austin - An Efficient Preconditioner for Elliptic Problems Discretized by High-Order Finite Element Problems
  - 11:45 - 12:15 S. Giani - An a Posteriori Error Estimator for *hp*-Adaptive Discontinuous Galerkin Methods for Elliptic Eigenvalue Problems
- 12:15 - 13:30 Lunch
- **13:30 - 15:30 Software Workshop I**
  - 13:30 - 15:30 Cubit
- 15:30 - 15:45 Coffee break
- **15:45 - 17:45 Software Workshop II**
  - 15:45 - 17:45 Paraview

# FEMTEC 2011 - Wednesday, May 11

- **9:00 - 11:00 Keynote Session** (chairman M. Heroux)
  - 9:00 - 10:00 L. Taylor -The Challenge to Provide Computational Tools for Increasingly Complex Models and Physics
  - 10:00 - 11:00 S. Kodiyalam - GPU Experiences for Applications in Computational Mechanics
- 11:00 - 11:15 Coffee break
- **11:15 - 12:15 Contributed Session I-A** (chairman L. Taylor)
  - 11:15 - 11:45 G. Hansen - Development of a Reactor System Analysis Code using TRILINOS
  - 11:45 - 12:15 V. F. de Almeida - Anisotropic Thermal Conductivity of Cermet Nuclear Waste
- **11:15 - 12:15 Contributed Session I-B** (chairman C. E. Kees)
  - 11:15 - 11:45 R. Belu - Modeling the Influence of Wind Characteristics and the Atmospheric Parameters on the Wind Turbine Performances
  - 11:45 - 12:15 J. Jiang - Application Of Variational Data Assimilation To Dynamical Downscaling Of Regional Wind Energy Resources In The Western U.S.
- 12:15 - 13:30 Lunch
- **13:30 - 15:30 Software Workshop I**
  - 13:30 - 14:30 FEMM
  - 14:30 - 15:30 Hermes
- 15:30 - 15:45 Coffee break
- **15:45 - 16:45 Software Workshop II**
  - 15:45 - 16:45 Agros2D

# FEMTEC 2011 - Thursday, May 12

- **9:00 - 11:00 Contributed Session I-A** (chairman I. Doležel)
  - 9:00 - 9:30 J. Novák - Compression of large microstructural data sets via aperiodic tiling
  - 9:30 - 10:00 M. Šejnoha - Homogenization of Non-Stationary Transport Processes in Masonry Structures
  - 10:00 - 10:30 J. Vorel - Numerical Simulations of Concrete Mechanical Tests
  - 10:30 - 11:00 J. Sýkora - Acceleration of Uncertainty Updating in Description of Transport Processes in Heterogeneous Materials
- **9:00 - 11:00 Contributed Session I-B** (chairman S. Giani)
  - 9:00 - 9:30 M. Paprocki - FEMhub Online Numerical Methods Laboratory
  - 9:30 - 10:00 R. W. Douglass - A Python Implementation of the Wilson-Fowler Spline for Open and Closed Curves
  - 10:00 - 10:30 N. Muhtaroglu - A Smart Job Scheduler for Non-linear Finite Element Analyses on Cloud Computing Platforms
  - 10:30 - 11:00 A. Guardone - Finite Volume/Element Equivalence for the Euler Equations in the Cylindrical and Spherical References
- 11:00 - 11:15 Coffee break
- **11:15 - 12:15 Contributed Session II-A** (chairman M. Šejnoha)
  - 11:15 - 11:45 N. Celik - A Rebar P-version Finite Element for Three-dimensional Reinforced Concrete Structures
  - 11:45 - 12:15 M. Slodička - Numerical Scheme for Augmented Landau-Lifshitz Equation in Heat Assisted Recording
- **11:15 - 12:15 Contributed Session II-B** (chairman V. A. Dobrev)
  - 11:15 - 11:45 S. Li - Mesh alignment and generation
  - 11:45 - 12:15 I. C. Husanu - Vaporization and Combustion of Droplet Clusters in Zero Gravity Environment
- 12:15 - 13:30 Lunch
- **13:30 - 15:30 Software Workshop I**
  - 13:30 - 14:30 Uintah
  - 14:30 - 15:30 OFELI
- 15:30 - 15:45 Coffee break
- **15:45 - 16:45 Software Workshop II**
  - 15:45 - 16:45 AMDiS
- **16:45 - 17:45 Contributed Session III** (chairman M. Berzins)
  - 16:45 - 17:15 R. Montenegro - Adaptive Solar Radiation Numerical Model
  - 17:15 - 17:45 M. Shukla - Finite Element Analysis of the Effect of Multiple Abrasive Particle Impact on Erosion Behaviour of Titanium Alloy in Abrasive Water Jet Machining
- **19:00 - 21:00 Farewell reception**

# FEMTEC 2011 - Friday, May 13

- **9:00 - 11:00 Contributed Session I** (chairman P. Karban)
  - 9:00 - 9:30 D. Isola - Simulation of shock tube flows with an adaptive conservative scheme
  - 9:30 - 10:00 S. Piskin - Visualization of Blood Flow Simulation in Human Arteries
  - 10:00 - 10:30 M. Hernandez - Reduced-Order Modeling of Two-Phase Flow Hydraulics using Orthonormal Wavelets
  - 10:30 - 11:00 X. Zhang - Immersed Finite Element (IFE) Methods for Elasticity Interface Problems
- 11:00 - 11:15 Coffee break
- **11:15 - 12:15 Contributed Session II** (chairman P. Solin)
  - 11:15 - 11:45 K. R. Jayaraman - Minimum Sobolev Norm Methods For Bi-Harmonic Type Equations Hyperelastic Layers
  - 11:45 - 12:15 A. Ramabathiran - Conserving Integrators for Wave Propagation in Hyperelastic Layers
- **12:15 Conference closing**