MULTI-SCALE AND MULTI-PHYSICS COMPUTATIONS IN FLUIDS AND SOLIDS

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ABSTRACT
The symposium will address some of the emerging themes in the computational applied mechanics. Due to the enormous recent advances in computer hardware, software, and algorithms, many researchers are now able to obtain the numerical solutions for even more complex problems than before. Some of the key developments in this on-going process are the multi-scale, multi-physics, and parallel computations. The contributions will include atomistic/continuum computations, peridynamics, fast multi-pole method (FMM), acoustic and optical metamaterials, fluid-structure interactions, multi-phase flow, lattice Boltzmann method, magneto-electro-mechanical systems, computations in biological systems such as protein and cortical folding modeling and cell mechanics, high performance computing using MPI or OpenMP, etc. Cross-disciplinary contributions are particularly welcome.