



The 2015 World Congress in Computer Science Computer Engineering and Applied Computing

CSC'15 - The 13th International Conference on Scientific Computing

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You are invited to submit a paper for consideration. All accepted papers will be published in printed conference books/proceedings (ISBN) and will also be made available online. The proceedings will be indexed in science citation databases that track citation frequency/data. In addition, like prior years, extended versions of selected papers (about 35%) of the conference will appear in journals and edited research books (publishers include: Springer, Elsevier, BMC, and others; a list that includes a small subset of such books and journal special issues appear **Here**) ; some of these books and journal special issues have already received the top 25% downloads in their respective fields.

The conference is composed of a number of tracks, tutorials, sessions, workshops, poster and panel discussions; all will be held simultaneously, same location and dates: July 27-30, 2015.

Topics of interest include, but are not limited to, the following:

- Prologue: The core of Scientific Computing includes the construction of mathematical models and quantitative analysis tools as well as the use of computers to analyze and solve scientific problems. The list of topics that appears below is by no means meant to be exhaustive.
- Algorithms and Methods: Monte Carlo methods and applications; Numerical methods and simulation; Quantum computing; Computational number theory; Optimization and approximation methods; Probabilistic and randomized methodologies; Computational geometry; Computational biology; Computational chemistry; Computational fluid dynamics; Computational physics; Computational mechanics; Computational electromagnetics and computational electrodynamics; computational sociology; Splines and wavelets; Inversion problems; Cellular automata; Ordinary and partial differential equations; Stochastic differential equations; Integral equations; Finite element methods; Multi-level and Multi-grid methods; Operational research; Dynamical systems; Nonsymmetric solvers; Engineering problems and emerging applications.
- High Performance Computing and Communication Systems: Cluster computing; Supercomputing; Cloud computing; Autonomic computing; P2P computing; Mobile computing; Grid computing; Parallel/distributed architectures and algorithms; Networks and interconnection networks; Reliability and fault-tolerance; The use of building block processors; Real-time and embedded systems; Multimedia communications, systems, and applications; Software tools and environments for Scientific Computing; Performance analysis, evaluation and monitoring; Distributed systems; FPGA, multicore, GPU, SOC and applications; Nanotechnology in HPC; High-performance mobile computation and communication; Petri Nets; Web-based simulation and computing; and Emerging technologies.
- Modeling, Simulation and Visualization Methods: Computational modeling and simulation in science and engineering; Molecular modeling and simulation; Simulation languages and tools; Performance modeling; Information and scientific visualization; Modeling methodologies; Visual interactive simulation and modeling; Visualization tools and systems for simulation and modeling; Process, device, circuit simulation and modeling Multi-level modeling; CAD/CAE/CAM; Agent based simulation; Analytical and stochastic modeling techniques and applications; Chaos modeling, control and signal transmission; Simulation of complex systems; Simulation of intelligent systems; Vision and visualization; Prototyping and simulation; Biomedical visualization and applications; Discrete and numeric simulation; **Modeling and simulation frameworks**, and Virtual reality and simulation.
- Big Data and Data Analytic: Software and hardware architectures; Big Data visualization; Services; Data analytics; toolkits; open platforms; business processes; Managing, analyzing, and using large volumes of structured and/or unstructured data; Simulation and modeling; Big Data and decision sciences and analytics; Scientific Crowdsourcing; Case studies; and Applications.

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