



IEEE e-Science 2010 Computational Science and Engineering Workshop

Tuesday, 7 December 2010

Brisbane, Australia



Call for Papers

The sixth IEEE e-Science 2010 Conference, sponsored by the IEEE Computer Society's Technical Committee for Scalable Computing (TCSC), will be held in Brisbane, Australia, from 7th – 10th December 2010. The IEEE e-Science 2010 Computational Science and Engineering Workshop will be held on Tuesday, 7th December, and is co-located with the main conference.

Computational Science and Engineering merges science, mathematics, and computing to produce computer simulations that allow scientific researchers to study complex scientific behavior. There are a growing number of challenges that computational engineers face in today's computational climate. The increasing complexity of the modelling techniques, coupled with heterogeneous computer architectures plagued by inadequate program development tools, complicates simulation development. ***New processing hardware poses the need to re-think algorithms in terms of massively, probably asynchronous parallelization schemes.***

The aging legacy libraries on which most science user driven requirements are dependent are long overdue with replacement software suitable to handle today's more multifaceted computer architectures. To adapt to the current generation of kilo-core processing, new algorithms, software designs and advanced parallel programming techniques need to be developed.

This workshop is aimed at bringing together computational scientists and engineers of different disciplines to discuss new issues, tackle complex problems and find advanced solutions propagating new trends in Computational Science. This will present the opportunity to enable closer cooperation between computational modellers to share results attained from model developments and applications. All computational researchers are encouraged to present their results related to:

- • Computational challenges
- • Multi-scale simulations

- • Mathematical modelling of complex systems
- • New, efficient algorithms in computational science, including scalable algorithms
- • Tools, environments, and techniques for improving usability of large computational Units
- • Marco HPC Applications
- Key application areas where the above is applied to specific area of science
- MPI distributed CPU Supercomputer, cluster, applications
- • Micro HPC Applications
- OpenCL/CUDA applications

Papers are limited to 6 pages, single-spaced, in 10-point type, including title, abstract (250 words or less), figures, tables, text, and bibliography. The IEEE Computer Society author guidelines for proceedings manuscripts can be found at <http://www.computer.org/portal/web/cscps/formatting>. Accepted papers will receive additional formatting and submission instructions from Program Committee Co-Chairs. Submit papers electronically in PDF format. Submit papers using the EasyChair conference system via the web address <http://www.easychair.org/conferences/?conf=escience2010cseworkshop>. You must create an EasyChair account if you do not already have one.

Submissions must be received no later than 18 August 2010. Authors will be notified of their submission's status 2 September 2010, and to meet the publication deadline, final corrected versions must be received no later than 15 September 2010.

Important Dates

Submission date: 18 August 2010

Author Acceptance date: 2 September 2010

Final Paper Revision date: 15 September 2010

About IEEE and the IEEE Computer Society

IEEE is the world's largest professional association advancing innovation and technological excellence for the benefit of humanity. IEEE and its members inspire a global community to innovate for a better tomorrow through its highly cited publications, conferences, technology standards, and professional and educational activities. IEEE is the trusted "voice" for engineering, computing and technology information around the globe.

With nearly 85,000 members, the IEEE Computer Society (CS) is the world's leading organization of computing professionals. Founded in 1946, and the largest of the 38 societies of the Institute of Electrical and Electronics Engineers (IEEE), the CS is

dedicated to advancing the theory and application of computer and information-processing technology.

PROGRAM COMMITTEE

If you have any questions or queries on IEEE e-Science 2010 Computational Science and Engineering Workshop, please send email karen.haines@uwa.edu.au.

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