



CALL FOR PAPERS

2nd Workshop on using Emerging Parallel Architectures (WEPA)

<http://www3.ntu.edu.sg/home/asbschmidt/>

held in conjunction with the

International Conference on Computational Science (ICCS 2010)
Amsterdam, The Netherlands, May 31 – June 2, 2010

The computing landscape has undergone significant transformation with the emergence of more powerful processing elements such as GPUs, FPGAs, Cell B.E., multi-cores, etc. On the multi-core front, Moore's Law has transcended beyond the single processor boundary with the prediction that the number of cores will double every 18 months. Going forward, the primary method of gaining processor performance will be through parallelism. Multi-core technology has visibly penetrated the global market. Accordingly to the latest Top500 lists the HPC landscape has evolved from supercomputer systems into large clusters of dual or quad-core processors. Furthermore, GPUs, FPGAs and heterogeneous multi-cores have been shown to be formidable computing alternatives, where certain classes of applications witness more than one order of magnitude improvement over their GPP counterpart. Therefore, future computational science centers will employ resources such as FPGAs, GPUs and Cell architectures to serve as co-processors to offload appropriate compute-intensive portions of applications from the servers.

This workshop provides a forum for exploring the capabilities of emerging parallel architectures to accelerate computational science applications. Papers are being sought on a wide variety of topics related to the field of using emerging parallel architectures for computational science including but not limited to:

- Application studies on emerging architectures such as GPUs, FPGAs and Cell B.E.
- Parallel algorithms and methodologies on emerging architectures
- Languages, models, tools, and compilation techniques for emerging architectures
- Hybrid computer systems consisting of a combination of GPUs, FPGAs, etc.
- Use of emerging architectures in clusters, grids and supercomputers

Submission Guidelines:

Authors are invited to submit manuscripts reporting original, unpublished research and recent developments. All accepted oral papers will be printed in the conference proceedings published by Elsevier Science in the open-access *Procedia Computer Science* series (on-line and CD). The submitted paper must be camera-ready and formatted according to the rules of *Procedia Computer Science* (http://www.elsevier.com/wps/find/journaldescription.cws_home/719435/description) (for Latex

formatting: www.elsevier.com/framework_products/promis_misc/procediacs_authorguide_latex.pdf;
MSword: http://www.elsevier.com/framework_products/promis_misc/procediacs_authorguide_word.pdf).
Submission implies the willingness of at least one of the authors to register and present the paper.
PostScript and source versions of your paper must be submitted electronically through the ICCS 2010
paper submission system: <http://www.iccs-meeting.org/iccs2010/papers/upload.php>.

Please, note that papers must not exceed **ten pages** in length, when typeset using the Procedia format.

Important Dates:

- Full paper submission: **January 01, 2010**
- Acceptance notification: February 15, 2010
- Camera ready papers: March 01, 2010
- Early registration opens: February 15, 2010
- Early registration ends: March 31, 2010

Workshop Co-Chairs:

- Bertil Schmidt, Nanyang Technological University, Singapore, asbschmidt@ntu.edu.sg,
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- Douglas Maskell, Nanyang Technological University, Singapore, asdouglas@ntu.edu.sg,
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Program Committee:

- Vipin Chaudhary (Uni Buffalo, USA)
- John Paul Walters (USC, USA)
- Scott Emrich (Uni Notre Dame, USA)
- Witold Rudnicki (Uni Warsaw, Poland)
- Arpith Jacob (Washington Uni in St Louis, USA)
- Mathieu Giraud (INRIA, France)
- Rob Farber (PNNL, USA)
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- Chris Clarke (Uni Bath, UK)
- Manfred Schimmler (University of Kiel, Germany)
- Simon See (SUN Microsystems)
- Neil Bergmann (University of Queensland, Australia)
- Heiko Schroder (RMIT, Australia)
- Alexandros Stamatakis (TU Munich, Germany)
- Dominique Lavenier (IRISA, France)
- Jaroslaw Zola (Iowa State Uni, USA)
- Ananth Kalyanaraman (Washington State Uni, USA)
- Shi Haixiang (NTU, Singapore)
- Gerrit Voss (Fraunhofer Institute, Germany and NTU, Singapore)
- Weiguo Liu (NTU, Singapore)
- Malcolm Low (NTU, Singapore)