Workshop on Power and Energy Aspects of Computations (PEAC)

Workshop on Power and Energy Aspects of Computations (PEAC) will be held in conjunction with the 13th International Conference on Parallel Processing and Applied Mathematics PPAM 2019 in Białystok, Poland, on September 8-11, 2019.

Scope

Power constraints and energy consumption have become an important issue for designing, development and maintenance of computing systems. The fast growth of data centers capacity along with demand for computing, both clouds and HPC, in everyone's life makes it a major research, business and societal problem nowadays. In particular, power and energy aspects are one of the most critical constraints that advanced computing community must face to progress towards building exascale systems.

For these reasons, power and energy consumption have become the driving metrics for the design of computing hardware, including multicore CPUs and accelerators, over the last decade. Power-aware designs also dominate large supercomputing installations as well as large data centers hosting cloud computing and big data analytics. However, the advances in hardware efficiency must be followed by energy-aware algorithms, appropriate choice and allocation of specific hardware to applications, and adequate management techniques. Due to financial and environmental requirements, large scale computing community has to cope with careful software design and implementation to fit demanding power levels and tight energy envelopes.

This workshop will present research into new ways of addressing these pressing issues of energy preservation, power consumption, and heat dissipation while attaining best possible performance levels at the scale demanded by modern scientific challenges. We hope to provide a vibrant forum for exchanging ideas, methodologies, and insights into more sustainable computing solutions.

Suggested topics include (but are not limited to):

- Power and energy consumption analysis
- Evaluation of modern and emerging computer architectures and systems
- Accurate and efficient power and energy monitoring techniques
- Power and energy consumption modeling and simulation
- Energy-aware algorithms and applications
- Software solutions, techniques, and paradigm for energy efficiency optimization and management
- Optimization techniques that directly influence power consumption in computing, for example by using DPM/DVFS
- Thermal aspects of computing including thermal management and cooling approaches

- Trade-offs between energy efficiency and other important aspects such as performance and reliability
- Position statements and surveys in the topic of power, energy, and heat in large scale computing installations

Paper Submission and Publication

Two types of submissions are expected:
- Extended abstracts
- Regular papers

Extended abstract should include title, authors, abstract text and keywords. It should not exceed a single page (LNCS style). It will follow the same submission procedure as regular papers.

All rules of paper submission of the PPAM conference apply. In particular:

- Abstracts and papers will be refereed and accepted on the basis of their scientific merit and relevance to the Workshop topics
- Papers presented at the Workshop will be included into the conference proceedings and published after the conference by Springer in the LNCS series
- Before the Workshop, abstracts of accepted papers and accepted abstracts will be posted on the conference site
- Authors should submit abstract and papers (PDF files) **using the online submission tool**
- Papers are not to exceed 10 pages (LNCS style)
- Final camera-ready versions of accepted papers will be required by November 2, 2019
- Authors of extended abstracts can submit full papers for additional review after the Workshop (by September 30, 2019) and, if paper is accepted, submit a camera-ready version by November 2, 2019

The authors of the papers presented at the workshop, as well as all the interested scientists through a usual Call for Papers, will be invited to submit extended versions of their work to a special issue of an indexed scientific journal.

Dates

Submission of Extended Abstracts and Papers: May 19, 2019
Notification of Acceptance: June 16, 2019
Conference: September 8-11, 2019
Camera-Ready Papers: November 2, 2019

Workshop chairs

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Program committee (tentative)

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