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Special Issue on
Emerging Trends in High Performance Computing and Simulation

Concurrency and Computation: Practice & Experience
Editor-in-Chief: Geoffrey Fox

Call for Papers

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Scope and Objectives

In the last decades, the complexity of scientific and engineering problems has largely increased. In many areas of engineering and science, High-Performance Computing (HPC) and Simulations have become determinants of industrial competitiveness and advanced research. Advances in HPC architectures, storages, networking, and software capabilities are leading to a new era of HPC and simulations, with new challenges both in computing and system modeling. Today, this is especially critical and key considering that HPC systems continue to scale up in terms of nodes and cores, on the route toward exascale.

The organizers of the 2016 International Conference on High Performance Computing & Simulation (HPCS 2016) are pleased to announce a special journal issue that will be published in Wiley's *Concurrency and Computation: Practice & Experience* Journal (http://www.cc-pe.net/journalinfo/). The special issue titled "Emerging Trends in High Performance Computing and Simulation" seeks submissions from academia, industry and governmental research labs presenting novel research on all theoretical and practical aspects of high performance and large scale computing systems, their use in modeling and simulation, their design and use, and their impact. The scope of this special issue will be interdisciplinary. It will address topics in the following major areas of interest: architectures and systems, algorithms, software and middleware in HPC systems, applications oriented High Performance systems. We also extend invitation to authors who participated in HPCS 2016 in Innsbruck, Austria, July 18 – 22, 2016.

Interested authors should send a **one-page abstract** with title, authors, affiliations, emails and contact information, and a statement of their intent to submit a new or an extended version of their HPCS 2016 paper to this special issue by the due date. The one page should be sent as an email attachment to the Special Issue Guest Editors by **December 16, 2016**. Guest Editors replies will be sent by **December 30, 2016**.

Topics

This special issue calls for original papers or substantively extended versions of HPCS 2016 manuscripts describing the latest research on HPC and simulations. Its topics include (but are not limited to) the following:

- Exascale Systems and Architectures
- Grid and Cluster Computing
- Cloud Computing & Architectures
- Fine-Grain Parallelism and Architectures
- Scalable Computing
- Distributed Shared Memory
- Peer-to-Peer Architectures and Networks
- High Performance I/O
- Enterprise and Federated Architectures

- HPC Monitoring & Instrumentation
- Energy Efficient and Green HPC Systems
- Modeling, Simulation and Evaluation Techniques of HPC Systems
- Large Scale Scientific Computing
- Multi-Core Architectures and Support
- Big Data and HPC Systems
- Service Oriented Architectures
- Architectures for Ubiquitous and Pervasive Computing
- Modeling and Simulation using HPC Systems
- Reliable Parallel and Distributed Algorithms
- Security, Authentication, Access Control
- Data Intensive Supercomputing
- Big Data for eScience
- Data Analytics and data mining
- Applied Modeling and Simulation
- Large Scale Systems for Computational Sciences
- HPC and Education

Submission and Major Guidelines

This special issue is by invitation *to researchers, designers, educators and interested parties in all related disciplines and specialties, especially those who presented at HPCS 2016* in Innsbruck, Austria, July 18 – 22, 2016. It is also open to other original and relevant contributions.

Interested authors should send a one-page abstract with title, authors, affiliations, emails and contact information, and a statement of their intent to submit a new manuscript or an extended version of their HPCS paper to this special issue by the due date. In case of an extended version, please indicate clearly where the original work was published or presented and what is the new material. The abstract should be sent as an email attachment to the Special Issue Guest Editors by **December 16, 2016**. We do require the submission of authors biographies. The guest editors will reply by December 30, 2016.

Submitted manuscripts must not have been published or simultaneously submitted/under consideration elsewhere. The submitted papers must represent a substantial extension of work presented at HPCS 2016 conference (at least by 50%), and should include previously unpublished material that adds new insight and significant content well beyond that in the published proceedings. Submission should include a cover page with authors' names, affiliation addresses, fax numbers, phone numbers, and authors' email addresses. Please, indicate clearly the corresponding author(s) and include up to 6 keywords from the above list of topics and an abstract of no more than 400 words. There is typically about 25 page max length limit. Please include page numbers on all submissions to make it easier for reviewers to provide helpful comments. Please submit your full paper to **Manuscript Central** (https://mc.manuscriptcentral.com/cpe) as HPCS 2016 special issue by **February 14, 2017**.

Submitted papers will receive thorough reviews and evaluation. All papers will be peer-reviewed by at least three independent reviewers. Papers will be selected based on their originality, contributions, technical clarity and presentation, language, significance to the readership of the Journal, relevance to the special issue and theme, and quality and significance of research hypothesis, assertions, and conclusions. Requests for additional information should be addressed to the guest editors.

Wiley has Latex templates but no special templates for Word. Most papers are submitted in Word. Either Latex or Word will be accepted.

Important Dates *

    Abstract Submission by December 16, 2016
    Guest Editors Reply by December 30, 2016
    Full Paper Submission (Round 0) by February 14, 2017
    First notification and reviews by April 30, 2017
    Revised paper submission (Round 1) by June 15, 2017
    Second notification and reviews by August 01, 2017
    Revised paper submission (Round 2) by September 01, 2017
    Final decision by October 01, 2017

(* Dates are subject to change if necessary but will be adhered to as much as possible.)

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