

## CALL FOR PAPERS

### Future Generation Computer Systems (FGCS)

The International Journal of eScience

Editor-in-Chief: Prof. Dr. Peter M.A. Sloot

<http://www.elsevier.com/locate/fgcs>

### Special Issue on

## On The Road to Exascale II: Advances in High Performance Computing and Simulations

### 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, in the path toward exascale.

The organizers of the International Conference on High Performance Computing and Simulations (<http://hpcs2018.cisedu.info/>, <http://hpcs2017.cisedu.info/>) are pleased to announce a special journal issue that will be published in Elsevier's *Future Generation Computer Systems*. The special issue, titled "**On The Road to Exascale II: Advances in High Performance Computing and Simulations**," 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.

### Special Issue Topics

This special issue calls for original papers and sufficiently extended versions 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
- Multi-Core Architectures and Support
- Virtualization in High Performance Computing and Simulation
- Compiler Architecture, Design and Optimization for HPC Systems
- Peer-to-Peer Architectures and Networks
- High Performance I/O and Interconnects
- HPC Benchmarking, Monitoring & Instrumentation
- Energy Efficient and Green HPC Systems
- Modeling, Simulation and Evaluation Techniques of HPC Systems
- Large Scale Scientific Computing
- Dynamic Reconfigurable Systems and Networks
- Big Data and HPC Systems
- Service Oriented Architectures
- Enterprise and Federated Architectures
- HPC Systems for Biomedical, Bioinformatics, and Life Sciences
- HPC Systems for AI and Machine Learning
- Architectures for Ubiquitous and Pervasive Computing
- Modeling and Simulation using HPC Systems
- Reliable Parallel and Distributed Algorithms
- HPC Programming Languages, Libraries and Tools
- Security, Authentication and Access Control
- Data Intensive Supercomputing
- Data Analytics and Data Mining
- HPC and Education



## Submission Instructions 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 2017 in Genoa, Italy, July 17-21, 2017 and HPCS2018 in Orleans, France, July 16-20, 2018. 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, summary, 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 make sure to cite it. The abstract should be sent as an email attachment to the Special Issue Guest Editors by **December 31, 2018**. Please include authors biographies. Guest Editors replies to authors will be sent by **January 10, 2019**. Only manuscripts of approved abstracts will be considered. The full manuscript is due by **March 10, 2019**.

Submitted manuscripts must not have been published or simultaneously submitted/be under consideration elsewhere. The submitted papers must represent a substantial extension of work presented at the conference (at least by 40%), 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 5 keywords from the above list of topics and an abstract of no more than 400 words. Please include page numbers on all submissions to make it easier for reviewers to provide helpful comments.

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 soundness and clarity, presentation, language, significance to the readership of the Journal, relevance to the special issue, and quality and significance of research hypothesis, assertions, and conclusions. Requests for additional information should be addressed to the guest editors.

Once approved, please register at the Journal's editorial handling system (EES) <http://ees.elsevier.com/fgcs/>, if you have not yet used the system, select Author Log-in, and upload editable source files for manuscript and figures, mentioning that the paper is part of the special section ***On The Road to Exascale II: Advances in High Performance Computing and Simulations***. Please choose the Article Type "HPCS17/18-SI". The system will then prepare a pdf for approval. When the "approval" button is clicked, the paper will be submitted.

Regarding format: On the journal homepage [www.elsevier.com/locate/fgcs](http://www.elsevier.com/locate/fgcs), there is a *Guide for Authors* providing instructions and requirements for papers. There is no journal template, and we prefer to have no elaborate lay-out as that will be removed anyway. The Journal requires however the submission of author biographies and photographs. An elementary structure of title, author names, affiliations, contact information, abstract, text, references, figure captions, and figures would be sufficient. The number of pages of the submitted paper should be related to the content of the paper: superfluous material is to be avoided. Usually uploading takes less than 10 minutes.

If you encounter any problems in the use of the online system, please do not hesitate to contact [authorsupport@elsevier.com](mailto:authorsupport@elsevier.com). Elsevier support department can also answer e-submission system queries by telephone: For The Americas: +1 888 834 7287 (toll-free for US & Canadian customers); For Asia & Pacific: +81 3 5561 5032; For Europe & rest of the world: +353 61 709190.

### Important Dates (Subject to changes if necessary)

**Abstract Submission:** ----- **December 31, 2018**

**Guest Editors Reply:** ----- **January 10, 2019**

**Paper Submissions (Round 0):** ----- **March 10, 2019**

**Notifications and Reviewers Comments:** ----- **May 10, 2019**

**Revision Submission (Round 1):** ----- **June 10, 2019**

**Notifications and Reviewers Comments:** ----- **July 31, 2019**

**Revision Submission (Round 2):** ----- **September 01, 2019**

**Revised Final Manuscripts:** ----- **October 30, 2019**

Accepted papers are expected to appear in the 4th Quarter of 2019 or early 2020 (Tentative).

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If you have any questions about abstract and paper submission or the special issue, please contact the Guest Editors.