

Preliminary Call for Papers and Participation

The 2015 International Conference on High Performance Computing & Simulation (HPCS 2015)

July 20 – 24, 2015

The Hilton Amsterdam Hotel
Amsterdam, The Netherlands

<http://hpcs2015.cisedu.info> or <http://cisedu.us/rp/hpcs15>

In Cooperation with the ACM, IEEE, IFIP

Co-Sponsored by IEEE Benelux Section, IEEE Dayton Section, ASIM, EUROSIM, CASS, JSST, LSS,
PTSK, TSS, SURFSara Dutch Supercomputing Centre, eScience National Center, University of
Amsterdam, the Netherlands
(Pending)

(Main Track Paper Submission Deadline: March 23, 2015 - Extended)

Invitation:

You are cordially invited to participate in and attend the 2015 International Conference on High Performance Computing & Simulation to be held in Amsterdam, the Netherlands, July 20 – 24, 2015). The conference is to address, explore and exchange information on the state-of-the-art in high performance and large scale computing systems, their use in modeling and simulation, their design, performance and use, and their impact. Participation is extended to researchers, designers, educators and interested parties in all related disciplines and specialties.

Purpose:

The conference will include invited presentations by experts from academia, industry, and government as well as contributed paper presentations describing original work on the current state of research in HPC & simulation technologies and systems and related issues.

Topics include (but are not limited to):

• **Architectures and Systems Track**

- Grid and Cluster Computing
- Cloud Computing & Architectures
- Fine-Grain Parallelism and Architectures
- Network, Cell and Security Processors
- Scalable Computing
- Distributed Shared Memory
- Peer-to-Peer Architectures and Networks
- High Performance Interconnection Networks
- High Performance I/O
- Enterprise and Federated Architectures
- HPC Monitoring & Instrumentation
- Energy/Power Aware HPC Systems
- Energy Efficient HPC Systems
- Multi-Core Architectures and Support
- Service Oriented Architectures
- Instruction-, Data-, Thread- and Memory-Level Parallelism
- Embedded and Application-Specific Architectures
- Reconfigurable Computing & FPGA Based Architectures
- Mobile and Wireless Architectures and Networks
- Sensor, Broadband and High Performance Networks
- Warehousing and Storage
- Architectures for Ubiquitous and Pervasive Computing
- Nature Inspired HPC Architectures
- Innovative HPC (Autonomic, Affective, Quantum, ...)
- Architectures for Green Computing
- Exascale Systems

• **Algorithms Track**

- Modeling, Simulation and Evaluation Techniques of High Performance Computing Systems
- Modeling and Simulation using HPC Systems
- Partitioning, Mapping, and Scheduling
- Reliable, Parallel and Distributed Algorithms
- Routing, Synchronization, Consistency

- Load Balancing and Sharing
- Mutual Exclusion, Deadlock Detection
- Causality and Time
- Network Flow and Congestion
- Message Passing
- Query Processing and Information Retrieval
- Learning and Intelligence Algorithms
- Resource Allocation, Sharing and Management
- Coordination, Consensus, and Agreement
- Fault Tolerance, Replication
- Network and Systems Protocols
- HLA, InfiniBand and Other Related Standards
- Data Mining and Searching
- Security, Authentication, Access Control

• **Software and Middleware in HPC Systems Track**

- Operating Systems and Compilers
- Operating Systems Support
- Name Services and Naming
- Interprocess Communication
- Transaction and Concurrency Control
- Brokering Middleware
- Enterprise Based Technologies
- Benchmarking and Assessment
- Web Semantics and Ontologies
- Open CL Platforms and Developments
- Virtualization and Virtual Machines
- Languages
- Libraries and Programming Environments
- File Systems
- Distributed Objects and Remote Invocation
- Object Oriented Programming & Design
- Software Development Tools and Support
- Markup Languages and their Applications
- Software Monitoring and Measurement
- Web 2.0 Infrastructure

• **Applications Oriented High Performance Track**

- General-Purpose computation on Graphics Processing Units (GPGPU)
- Parallelization of Simulation
- Bioinformatics and Biocomputing
- Internet and Web Computing
- Federated and Legacy Applications
- e-Commerce, e-Business, e-Learning
- Autonomous Vehicles and Robotics Systems
- Knowledge Based Systems
- Agent and Multi Agent Based Applications
- Neural, Fuzzy, and Rough Sets in HPC
- Large Scale Scientific Computing
- HPC and Education
- Service Oriented Applications
- Applied Modeling and Simulation
- Large Scale Systems for Computational Sciences (Biological, Chemical, Physical, Bioinformatics, Environmental, Transportation, Agriculture, etc.)
- Cloud Computing and Applications
- Big Data and Data Intensive Supercomputing
- Real-time and embedded P & D Applications
- Distributed Multimedia Systems
- Web Services and Applications
- P & D Industrial and Manufacturing Applications
- Databases, Repositories and Their Applications
- Mobile and Wireless Applications
- Cooperative Information Systems and Applications
- Computer Supported Decision Making
- Granular Computing and its Applications
- HPC in Digital Signal and Image Processing and Vision
- e-Sciences
- Vision, Image Processing, and Pattern Recognition
- Machine Learning and Business Intelligence Applications

Submission of Papers:

Papers reporting original and unpublished research results on above and related HPC topics are solicited. Please submit an electronic copy of your **full manuscript** (not to exceed 8 double-column IEEE formatted pages, including figures, tables, and references). Additional pages will be charged additional fee. Please clearly indicate the corresponding author and include emails for all co-authors of the papers. Include up to 6 keywords from the above list and an abstract of no more than 400 words. Papers must be submitted in .pdf format only at the following conference website: <http://hpcs15.cis.edu.info/> (Upload link <http://cis.edu.us/cis/hpcs/15/users/upload.jsp>). More detailed submission procedures will be available on this website. If accepted, the final camera-ready manuscript will follow the format posted, which will be made available to all authors.

Consistent with standard practice, each submitted paper will receive a minimum of three reviews. Papers will be selected based on their originality, contributions and significance, timeliness, relevance, and clarity of presentation. Initial selection will be based on full papers. Submission implies the intent and willingness of at least one of the authors to register and present the paper, if accepted. All accepted papers in the conference are required to be presented and will be included in the conference proceedings. Manuscripts submitted should not be under simultaneous consideration by any other conference or venues. People with a submission for the purpose of obtaining reviews only will be cited.

For information about the HPCS 2015 conference in general, please contact the conference organizers or consult the conference web site.

Important Dates:

Main Track Full Paper Submission Deadline ----- March 23, 2015 - Extended
Notification of Acceptance ----- April 20, 2015
Registration & Camera-Ready Manuscripts Due ----- May 08, 2015
Conference Dates ----- July 20 - 24, 2015

Journals Opportunities

Plans are underway to have the best accepted papers be selected for publication in some journal special issue(s). Detailed information will soon be announced, and will be made available on the official conference website.

Tracks, Symposia, Workshops and Special Sessions

Tracks, Symposia, Workshops and Special Sessions on HPCS related topics are welcomed. A workshop or a special session proposal should include a title, topics covered by the workshop, organizers information, submission instructions, review process, important dates, total number of expected accepted papers, and any other information for the authors. Proposals for tracks, symposia, workshops and special sessions should be submitted by **January 30, 2015** as a Word file email attachment. See *Tracks, Symposia, Workshops and Special Sessions* web page for more information.

Tutorials

The conference will offer tutorials (typically 2-4 -hours) on state-of-the-art topics in HPCS. Each tutorial proposal should provide a title, topics to be covered, targeted audience, prerequisites, and a brief biography and qualifications of the instructor. All proposals should be submitted to Tutorials Chairs by **March 15, 2015**. See *Tutorials* web page for more information.

Panels and Forums

Panel sessions and forums will examine innovative, promising, or controversial HPCS issues today. They will also address HPCS challenges and future prospects. Audience participation will be welcomed. If you have ideas or questions concerning Conference's panels and forums, please contact Panels Chairs. Proposals are welcomed and should be submitted by **March 15, 2015**. See *Panels* web page for more information.

Posters

Posters addressing preliminary results, innovative ideas, work in progress, late-breaking results, HPC tools, platforms and products, and other work not suitable for a formal paper and best presented in an interactive setting are solicited. Posters will be held in a special session where presenters will demonstrate their work directly to conference attendees. Proposals for posters are welcomed and should be submitted to Posters Co-Chairs by **March 23, 2015**. See *Posters* web page for more information.

Demonstrations

Demos and experiential showcases of HPC and large scale computing environments and tools are highly encouraged. These may include any of the themes outlined in the conference topics. If you have any questions, please contact Demos Chairs. Proposals for demos are welcomed and should be submitted by **March 15, 2015**. See *Demos* web page for more information.

Doctoral Dissertation Colloquium

The HPCS Doctoral Colloquium is intended to bring together PhD students working on HPCS related topics, to provide them a friendly forum and an opportunity to present, discuss and illustrate their ongoing research in a constructively critical and informal atmosphere, to obtain valuable feedback from conference attendees, particularly senior researchers and experts in the field. Additionally, the colloquium is meant to facilitate the interaction and collaboration with other researchers. Doctoral students who have not defended their thesis prior to HPCS 2015 are

invited to participate in the HPCS Doctoral Colloquium. Proposals for the Doctoral Colloquium are welcomed and should be submitted by **March 23, 2015**. See *DDC* web page for more information.

Exhibits

Exhibit booths will be available to display your newest products and technologies. Make plans now to take advantage of this prime advertising opportunity. If you have any questions, please contact Exhibits Chairs. Proposals are welcomed and should be submitted by **March 30, 2015**. See *Exhibits* web page for more information.

Sponsorship and Industry Liaison

The HPCS 2015 Conference seeks interested Industry Partners who would be willing to sponsor conference events or social activities (e.g., exhibits reception, speaker sponsorship, registration handout packets, special break snacks, etc.). If an industry representative is interested in becoming an HPCS 2015 Industry Partner or would like to propose an event or activity at the conference, please contact the Industry Liaison Chairs. See *Sponsorships* web page for more information.

For further information or questions about the HPCS 2015 conference, please consult the web site at URL: <http://hpcs2015.cisedu.info/> or <http://cisedu.us/rp/hpcs15>.