ISC High Performance
The HPC Event.

ISC 2019 CALL FOR RESEARCH PAPERS: SUBMISSION ENDS DECEMBER 12, 2018

The ISC research paper sessions provide world-class opportunities for engineers and scientists in academia, industry and government to present and discuss issues, trends and results that will shape the future of **HPC, Networking, Storage and AI/Machine Learning**. Submissions will be accepted through December 12, 2018. The research paper sessions will be held from Monday, June 17 through Wednesday, June 19, 2019. ISC High Performance (ISC 2019) will be hosted in Frankfurt, Germany.

Submitted research papers will be peer-reviewed double-blind by at least four reviewers. This year's Research Papers Committee is headed by Dr. - Ing. Carsten Trinitis, TU Munich, as Chair and Saday Sadayappan, Ohio State University, as Deputy Chair as well as Dr. Michèle Weiland, EPCC, as Proceedings Chair and Guido Juckeland, Helmholtz-Zentrum Dresden-Rossendorf, as Proceedings Deputy Chair.

PUBLICATION

All accepted research papers will be published in the Springer's Lecture Notes in Computer Science (LNCS) series. For the camera-ready version, authors are automatically granted one extra page to incorporate reviewer comments. The publication is free of charge and the published papers can be downloaded from Springer's website for a limited time after the conference. The proceedings are indexed in the ISI Conference Proceedings Citation Index - Science (CPCI-S), included in ISI Web of Science, EI Engineering Index (Compendex and Inspec databases), ACM Digital Library, DBLP, Google Scholar, IO-Port, MathSciNet, Scopus and Zentralblatt MATH.

Free conference pass for presenter on the day of presentation!

AREAS OF INTEREST

The Research Papers Committee encourages the submission of high-quality papers reporting original work in theoretical, experimental and industrial research and development. The ISC submission process will be divided into eight tracks this year.

Architectures, Networks & Infrastructure
- Future design concepts of HPC systems
- Multi-core & many-core systems
- Heterogeneous systems
- Other paradigms (including data flow computing, FPGAs, etc.)
- Network technology
- Domain-specific architectures
- Memory technologies
- Trends in the HPC chip market
- Exascale computing

HPC Applications
- Highly scalable applications
- Convergence of simulations & big data
- Scalability on future architectures
- Workflow management
- Coupled simulations
- Industrial simulations
- Implementations on GPUs & other accelerators

HPC Algorithms
- Innovative algorithms, discrete or continuous
- Algorithmic- based fault tolerance
- Communication & synchronization-reducing algorithms
- Time-space trade-offs in algorithms
- Energy-efficient algorithms

Programming Models & Systems Software
- Parallel programming paradigms
- Tools and libraries for performance and productivity
- Job management
- Monitoring & administration tools
- Productivity improvement
- Power & energy management & scheduling
- Resilience

Artificial Intelligence & Machine Learning
- Neural networks & HPC
- Machine learning & HPC
- AI & machine learning-oriented hardware
- Devising benchmarks for machine learning
- Use cases

Performance Modeling & Measurement
- Performance models
- Performance prediction & engineering
- Performance measurement
- Power consumption
- Energy measurement & modelling

Data, Storage & Visualization
- From big data to smart data
- Memory systems for HPC & big data
- File systems & tape libraries
- Data-intensive applications
- Databases
- Visual analytics
- In-situ analytics

Emerging Technologies
- Quantum computing architecture
- Software for quantum computing
- Quantum algorithms
- Quantum annealing

NOTE:
Submissions on other innovative aspects of high performance computing are also welcome. You will be asked to pick a primary and a secondary track from the eight above for your submission.

Please refer to **www.isc-hpc.com/research-papers-2019.html** for full submission guidelines. Furthermore all terms & conditions stated on the website apply to submissions.

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AWARDS

The ISC organizers as well as the German Gauss Center for Supercomputing will again sponsor the call for research papers with two awards for outstanding research papers: the Hans Meuer Award and the GCS Award.

IMPORTANT DATES

Submission Deadline	Wednesday, December 12, 2018
Author Rebuttals	Monday, February 11 – Thursday, February 14, 2019
Notification of Acceptance	Wednesday, February 27, 2019
Camera-Ready Submission	Monday, March 25, 2019
Research Paper Sessions	Monday, June 17 – Wednesday, June 19, 2019
Final Presentation Slides in PDF due	Friday, June 21, 2019

OTHER SUBMISSION OPPORTUNITIES

Calls are also open for:
- Research Posters
- PhD Forum
- Project Posters
- Tutorials

- Workshops
- Birds-of-a-Feather Sessions
- Student Volunteer Program

Please refer to **www.isc-hpc.com/overview.html** for details.

TRACK CHAIRS

Architectures, Networks & Infrastructure | Antonino Tumeo, Pacific Northwest National Laboratory, United States of America

Data, Storage & Visualization | Kathryn Mohror, Lawrence Livermore National Laboratory, United States of America

HPC Applications | Srinivas Aluru, Georgia Institute of Technology, United States of America

HPC Algorithms | Didem Unat, Koç Universitesi, Turkey

Programming Models & Systems Software | Brad Chamberlain, Cray, United States of America

Artificial Intelligence & Machine Learning | Xipeng Shen, North Carolina State University, United States of America Performance
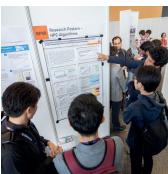
Modeling & Measurement | Bernd Mohr, Juelich Supercomputing Centre, Germany

Emerging Technologies | Damian Steiger, Huawei Technologies, Switzerland

IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CONTACT:

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