

Contacts

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Important Dates

- Submission deadline: 28 February 2023
- 1st review: 30 April 2023
- Submission deadline for revised versions of the manuscripts: 31 May 2023
- Final Decision: 30 June 2023
- Electronic Publication: four months after all final papers submitted

Paper submission

Authors are encouraged to submit high-quality original works that has neither appeared in, nor is under consideration by, other journals. The submitted papers must have at least 50% difference from any other published paper.

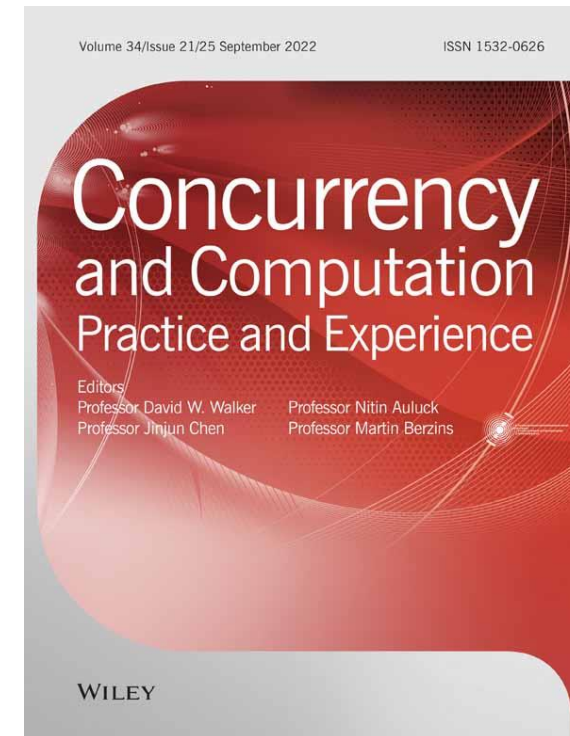
All submitted papers are subject to the same review process as those ones accepted for publication in the regular issues.

Manuscripts must be prepared in accordance with the journal guidelines and submitted through the journal portal

<https://onlinelibrary.wiley.com/journal/15320634>

In the last step of the submission procedure (Additional Information section) please select “special issue” and specify the name of the special issue from the dropdown menu (PNHPC2022).

SPECIAL ISSUE CALL FOR PAPERS



The Pervasive Nature of High-Performance Computing (PN-HPC)

Guest Editors

- Marco Lapegna - University of Naples “Federico II”, ITALY
- Valeria Mele - University of Naples “Federico II”, ITALY
- Raffaele Montella - University of Naples “Parthenope”, ITALY
- Lukasz Szustak - Czestochowa University of Technology, POLAND

Topics

HPC computing is experiencing an exciting season. The Top500 list has crowned the first supercomputer capable of reaching 1 Exaflop, while the European Commission has funded a World-Class Supercomputing Ecosystem in Europe with the European High-Performance Computing Joint Undertaking program. Similar initiatives are underway in other countries in the whole world.

But HPC is not tied only to large infrastructures. Today we see it as a pervasive technology that spans the entire spectrum of Computing Continuum. In the last decade, we have seen the rise of Grid and Cloud Computing environments realized through sophisticated middleware acting as operating systems that oversee the efficient management of resources. More recently, the Internet of Things and Edge Computing environments are aimed at making available in a transparent and friendly way the multitude of low power and heterogeneous HPC resources available everywhere around us.

These environments are very different and require sophisticated programming models to achieve high performance with an ever-increasing focus on energy consumption. This special issue focuses on architectures, methodologies, and algorithms for high-performance computing, with particular attention to all forms of parallelism and their combination in emerging environments. The aim is to constitute a discussion forum on the topic and collect the current state of knowledge in the field.

This Special Issue is open for submission, and includes high-quality papers presented at “6th Workshop on Models, Algorithms and Methodologies for Hybrid Parallelism in new HPC Systems – MAMHYP22” as an event of the PPAM2022 conference, held in Gdansk, Poland, 11-14 September 2022. Authors of selected papers from MAMHYP22 will be invited to submit an extended version of their papers. Other high-quality papers that fit the Special Issue topics are also welcome for submission.

The special issue seeks original papers in the range of topics related to the hybrid forms of parallelism in HPC systems including, but not limited to:

- Heterogeneous algorithms with multiple forms of parallelism
- Adaptive storage system
- Computational and storage malleability
- Osmotic computing
- Auto tuning techniques for heterogeneous and parallel environments
- Synchronization and access to shared resources
- Multi-level cache management
- Task scheduling and load balancing among computing elements
- Fault-tolerant implementations of scientific algorithms
- Performance and scalability models
- Tools and programming environments supporting different forms of parallelism.
- Resources virtualization for High-Performance Computing on low power devices
- Programming environments for high-performance cloud computing with GPGPUs and FPGAs
- Fog computing and computation at the edge
- Solution of real-world applications in new HPC environments