# The 5th International Workshop on Performance and Energy Efficiency in Concurrent and Distributed Systems (PECS 2025)

# International Workshop on Performance and Energy Efficiency in Concurrent and Distributed Systems (PECS)

## Workshop Description

Nowadays, concurrent and distributed systems play a role in a variety of computing applications. This is supported by the widespread use of computing architectures based on multi-core processors and distributed computing units, which have become a de facto standard at any system scale.

However, the increasing level of hardware parallelism and heterogeneity has made concurrent and distributed systems even more complex to design, analyze and optimize. In particular, this concerns performance and energy efficiency, which are known to be highly interrelated. Nonetheless, they play a key role, even because of the increasing global electricity demand by the IT sector.

In concurrent and distributed systems, energy efficiency and performance can be affected in a complex way by various factors, such as the concurrent use of computing resources, the distributed communication, the presence of (distributed) data dependencies and, ultimately, the need for synchronization of concurrent threads/processes. However, these and other factors also offer opportunities to be explored in the design of techniques and tools for improving energy efficiency and performance.

PECS aims to establish a venue for both academia and industry to discuss challenges and perspectives, and to explore methods, techniques and tools for energy efficiency and performance analysis and optimization in concurrent and distributed systems.

The fifth edition of the workshop (PECS 2025) was held on August 26 in Dresden, Germany, in conjunction with Euro-Par 2025. The workshop featured an invited talk, followed by three sessions of technical presentations. The program committee (PC) consisted of 18 members with expertise in various aspects of energy efficiency and performance of computer systems. The workshop was well attended, with an average of 30 participants.

PECS 2025 received 16 submissions from different countries. Each article was evaluated by three reviewers. After a thorough peer review process, 8 articles were accepted (with an acceptance rate of 50%).

The accepted articles cover various aspects of energy efficiency, performance and their interrelations in concurrent and/or distributed computing systems. These include methods, techniques and tools for energy efficiency and performance profiling, modeling and optimization. Furthermore, they address different systems and application domains, like HPC, large language models, programming languages, and actor-based applications, as well as astrophysics and microphysics.

The PECS 2025 Organizing Committee would like to thank the Euro-Par Steering Committee, the Euro-Par 2025 Conference and Workshop Chairs, and the members of the PECS 2025 Program Committee for their support and contribution to the growth of PECS.

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