

Topic 9

Parallel and Distributed Programming

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Topic Chairs

Developing parallel or distributed applications is a hard task and it requires advanced algorithms, realistic modeling, efficient design tools, high performance languages and libraries, and experimental evaluation. This topic provides a forum for presentation of new results and practical experience in this domain. It emphasizes research that facilitates the design and development of correct, high-performance, portable, and scalable parallel programs.

We received 24 papers and accepted 7.

“Delayed Side-Effects Ease Multi-Core Programming” and “MCSTL: The Multi-Core Standard Template Library” deal with multi-core programming which is one of the hot topics in parallel programming. The first paper is focused on language while the other is focused on library.

The library approach is also used in the paper “Library Support for Parallel Sorting in Scientific Computations” while the compilation approach is applied in the paper “Nested Parallelism in the OMPi OpenMP/C Compiler”.

Other approaches such as skeleton have been proposed for parallel programming. This approach serves as the basis of two papers in this session: “Domain-Specific Optimization Strategy for Skeleton Programs” and “Management in Distributed Systems: a Semi-Formal Approach”.

Finally, such a topic would not be complete without an “application” paper. “Efficient Parallel Simulation of Large-Scale Neuronal Networks on Clusters of Multiprocessor Computers” presents an innovative way to parallelize biological neural networks.