Topic 1
Support Tools and Environments

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Topic Chairs

Due to the diversity of parallel and distributed computing infrastructures and programming models, and the complexity of issues involved in the design and development of parallel programs, the creation of tools and environments to support the broad range of parallel system and software functionality has been widely recognized as a difficult challenge.

Current research in this topic continues to address individual tools for supporting correctness and performance issues in parallel program development. However, standalone tools are sometimes insufficient to cover the rich diversity of tasks found in the design, implementation and production phases of the parallel software life-cycle. This has motivated interest in interoperable tools, as well as solutions to ease their integration into unified development and execution environments.

Modern cluster and grid computing systems with possibly larger numbers of nodes and several degrees of heterogeneity are posing new challenges to the tool designers, developers, and users. Such environments require increased flexibility in the individual tools, and in the support for tool interaction and composition. Concurrently, the dynamic nature of modern computing applications requires new solutions for dynamic and adaptive tools and environments. Capabilities such as computational steering and dynamic performance tuning are growing in interest and necessity.

This year 27 papers were submitted to this topic area. Overall, they illustrate the current importance of tools and environments for supporting the development of parallel programs, as well as the continued efforts in the search for improved concepts and solutions. Among the submissions, 9 papers were accepted as full papers for the conference (33%). These papers address a diversity of issues and approaches, including instrumentation and monitoring support techniques, and management of large traces, performance evaluation and optimization issues, correctness support tools for concurrent programs, and integrated environments for dynamic performance tuning, and for steering of parallel simulations.