Topic 4
Compilers for High Performance

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Every new generation of computer architectures designed with high-performance microprocessors offers new potential gains in performance over the previous generation. The overall complexity of high-performance systems increases with every new generation. This makes it increasingly difficult to realize the full potential of a high-performance system and produce efficient code. Compilers play a pivotal role in addressing this critical issue.

Therefore we need to deal with all subjects concerning the automatic parallelization and the compilation of programs, from general-purpose platforms to specific hardware accelerators. This includes language aspects, program analysis, program transformations and optimizations for all resource utilizations.

The papers presented this year cover the spectrum of approaches to compilation for high performance with contributions to parallelization, vectorization, cache optimization, and classic compiler optimizations. The authors present valuable insights and experiences, and the resulting discussions should continue the important progress in this area.

Out of 12 submitted papers to this topic, 6 have been accepted as regular papers (50%), 2 as short papers (17%), and 4 contributions have been rejected (33%). For every paper 4 reviews have been received, in total 48 reviews.

We would like to take the opportunity of thanking all contributing authors as well as all reviewers for their work.

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