

Topic 2

Performance Evaluation, Analysis and Optimization

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Performance is the key to parallel computing. Seymore Cray went so far as to say that it was more important to get the result fast than to get it correct, and David Dewitt has commented that “...first you do performance debugging, then you do correctness tuning.”

There are several crucial aspects to achieve high-performance. These aspects include algorithm design, analytic modeling, simulation, measurement, and tuning. While there has been significant previous research in each of these areas, there continues to be a strong need for new techniques and tools that increase our understanding of performance limitations and opportunities and simplify the task of the programmer. Experience has shown us that when a team pays serious attention to any of these aspects, programs run faster or more efficiently.

Out of 18 submitted papers to this topic, 4 have been accepted as regular papers (22%), 3 as short papers (17%), and 11 contributions have been rejected (61%). In total, 79 reviews have been received, in average more than 4 reviews per paper.

The papers presented this year cover the spectrum of approaches to high performance in parallel computing and present valuable insights and experiences. The papers, and the resulting discussions, should continue the important progress in this area