

# **PROPER 2009: Workshop on Productivity and Performance – Tools for HPC Application Development**

The PROPER workshop addresses the need for productivity and performance in high performance computing. Productivity is an important objective during the development phase of HPC applications and their later production phase. Paying attention to the performance is important to achieve efficient usage of HPC machines. At the same time it is needed for scalability, which is crucial in two ways: Firstly, to use higher degrees of parallelism to reduce the wall clock time, i.e. the response time for the user. And secondly, to cope with the next bigger problem, which requires more CPUs, memory, etc. to be able to compute it at all.

Support for the user via specialized tools is essential for productivity and performance. Therefore, the workshop covers tools and tool approaches for parallel program development and analysis, for debugging and correctness checking, and for performance measurement and evaluation. Furthermore, it provides an opportunity to report successful optimization strategies with respect to scalability and performance.

All of this year's successful contributions focus on performance analysis tools and new ideas for their design. They can be divided into the two traditional and fundamental methods, profile accumulation and event-trace recording. Yet, all contributions indicate a trend of convergence between both methods. On the one hand, sophisticated reduction of event traces allows higher scalability while keeping the high level of detail event tracing is known for. On the other hand, enhancement of the profiling concept allows to provide more fine grained performance data or specific information that is not delivered by traditional profiling tools. This increases the level of detail while retaining the inherently good scalability. Even though profiling and tracing are generally seen as complementary methods, the paper by Furlinger et. al. goes so far as to attempt a synthesis of both.

We would like to thank all the authors for their very interesting contributions and their presentations during the workshop. And furthermore, we would like to thank the EuroPar 2009 organizers for their support and for the chance to offer the PROPER workshop in conjunction with this attractive conference.

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