

SIGPLAN Workshop on Advances in Message Passing (AMP)
Languages, Compilers, and Run-time Support
at the SIGPLAN 2010 Conference on Programming Language Design and
Implementation
June 5-10, 2010
Toronto, Canada

CALL FOR PAPERS

Submission: March 27, 2010

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<http://www.cs.rochester.edu/u/cding/amp>

As feature sizes in electronics grow smaller, physical issues such as bounds on the speed of light, pin counts and 2-dimensional network layouts threaten to constrain improvements in communication bandwidth and latency even as increasing core counts improve compute performance. The resulting limitations force application and system developers to explicitly optimize communication locality and timing sensitivity by using explicit communication primitives such as point-to-point sends/receives, puts/gets and collective operations such as broadcast. Today message passing is supported by a wide variety of APIs, including run-time libraries such as MPI, network interfaces such as TCP/IP and Internet protocols such as HTTP. However, relatively little attention has been paid to the connection between message-passing runtimes and programming languages and compilers.

Programming a message-passing system involves the fundamental tasks of computation partitioning, data partitioning, and data communication. It poses a distinct set of challenges in the analysis, transformation, and support of such programs. Significant advances have been made in the areas programming languages, compiler support, and run-time systems for message passing programs. Such progress can be accelerated by integrating and sharing ideas, results, and tools, enabling new parallel programming techniques and improving the performance and maintainability of scientific applications as well as collaboration software.

The AMP workshop brings together researchers in academia, industry and government research institutes to discuss the shared challenges and present state-of-art research results. It aims to become a focused forum on subjects in the interaction of programming language, program analysis, and run-time support of message passing systems. The topics of interest include but are not limited to

- algorithms and applications
- parallel languages and programmability studies
- compiler and run-time techniques for improving locality, scalability, and reliability
- performance, testing, and debugging tools
- program analysis tools for message passing programs
- programming constructs to improve the usability of message-passing

AMP is soliciting both position papers (3 pages) and research papers (10 pages) that report previously unpublished work. Papers must be PDF files in ACM proceedings format, printable on US Letter and A4 paper (<http://www.acm.org/sigs/sigplan/authorInformation.htm>, 9 pt template).

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