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Languages and Compilers for Parallel Computing

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Revised Selected Papers

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Preface

The 18th International Workshop on Languages and Compilers for High-Performance Computing was scheduled to be held in New Orleans, Louisiana, in October 2005. Unfortunately, because of the devastation caused by Hurricane Katrina the meeting needed to be moved. It was held in Hawthorne, New York, thanks to help from IBM. The workshop is an annual forum for leading research groups to present their current research activities and the latest results, covering languages, compiler techniques, runtime environments, and compiler-related performance evaluation for parallel and high-performance computing. Sixty-five researchers from Canada, France, Japan, Korea, P.R. China, Spain, Switzerland, Taiwan, UK, and the USA attended the workshop.

Thirty-four research papers (26 regular papers and eight short papers) were presented at the workshop. These papers were reviewed by the Program Committee; external reviewers were used as needed. The authors then received additional comments during the workshop. The revisions after the workshop are now assembled into these final proceedings.

We thank Siddhartha Chatterjee from the IBM T.J. Watson Research Center for his keynote talk titled "The Changing Landscape of Parallel Computing." The workshop included a special session titled "High-Productivity Languages for HPC: Compiler Challenges" consisting of invited talks on the three languages being developed by the DARPA High-Productivity Computing Systems (HPCS) vendors. The talks were given by Steve Dietz (from Cray on the language Chapel), Vivek Sarkar (from IBM on the language X10), and David Chase (from Sun on the language Fortress). Frederica Darema gave a presentation during the workshop banquet about the proposed Dynamic Data-Driven Applications Systems (DDDAS) program at the US National Science Foundation.

The workshop was sponsored by the US National Science Foundation and by International Business Machines Corporation. Their generous contribution is greatly appreciated. We appreciate the assistance offered by the staff in the Department of Computer Science and Engineering at the Ohio State University and thank Alex Ramirez of Universitat Politécnica de Catalunya (Spain) for generous help with the paper submission and review software. Our special thanks go to the LCPC 2005 Program Committee and the external reviewers for their efforts in reviewing the submissions. Advice and suggestions from both the Steering Committee and the Program Committee are much appreciated. Finally, we wish to thank all the authors and participants for their contributions and lively discussions, which made the workshop a success.

November 2006

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