Contents

Applications

PAGANtec: OpenMP Parallel Error Correction for Next-Generation Sequencing Data ........................................................................... 3
  Markus Joppich, Dirk Schmidl, Anthony M. Bolger, Torsten Kuhlen,
  and Björn Usadel

Composing Low-Overhead Scheduling Strategies for Improving Performance of Scientific Applications ........................................... 18
  Vivek Kale and William D. Gropp

Exploiting Fine- and Coarse-Grained Parallelism Using a Directive Based Approach ................................................................. 30
  Arpith C. Jacob, Ravi Nair, Alexandre E. Eichenberger,
  Samuel F. Antao, Carlo Bertolli, Tong Chen, Zehra Sura,
  Kevin O’Brien, and Michael Wong

Accelerator Applications

Experiences of Using the OpenMP Accelerator Model to Port DOE Stencil Applications .............................................................. 45
  Pei-Hung Lin, Chunhua Liao, Daniel J. Quinlan, and Stephen Guzik

Evaluating the Impact of OpenMP 4.0 Extensions on Relevant Parallel Workloads ................................................................. 60
  Raul Vidal, Marc Casas, Miquel Moretò, Dimitrios Chasapis,
  Roger Ferrer, Xavier Martorell, Eduard Ayguadé, Jesús Labarta,
  and Mateo Valero

First Experiences Porting a Parallel Application to a Hybrid Supercomputer with OpenMP 4.0 Device Constructs ..................... 73
  Alistair Hart

Tools

Lessons Learned from Implementing OMPD: A Debugging Interface for OpenMP ............................................................ 89
  Joachim Protze, Ignacio Laguna, Dong H. Ahn, John DelSignore,
  Ariel Burton, Martin Schulz, and Matthias S. Müller
False Sharing Detection in OpenMP Applications Using OMPT API
   Millad Ghane, Abid M. Malik, Barbara Chapman, and Ahmad Qawasmeh

Exception Handling with OpenMP in Object-Oriented Languages
   Xing Fan, Mostafa Mehrabi, Oliver Sinnen, and Nasser Giacaman

Extensions

On the Algorithmic Aspects of Using OpenMP Synchronization
Mechanisms II: User-Guided Speculative Locks
   Barna L. Bihari, Hansang Bae, James Cownie, Michael Klemm, Christian Terboven, and Lori Diachin

Using Transactional Memory to Avoid Blocking in OpenMP
Synchronization Directives: Don’t Wait, Speculate!
   Lars Bonnichsen and Artur Podobas

A Case Study of OpenMP Applied to Map/Reduce-Style Computations
   Mahwish Arif and Hans Vandierendonck

Compiler and Runtime

Enabling Region Merging Optimizations in OpenMP
   Thomas R.W. Scogland, John Gyllenhaal, Jeff Keasler, Rich Hornung, and Bronis R. de Supinski

Towards Task-Parallel Reductions in OpenMP
   Jan Ciesko, Sergi Mateo, Xavier Teruel, Xavier Martorell, Eduard Ayguadé, Jesús Labarta, Alex Durán, Bronis R. de Supinski, Stephen Olivier, Kelvin Li, and Alexandre E. Eichenberger

OpenMP 4.0 Device Support in the OMPi Compiler
   Alexandros Papadogiannakis, Spiros N. Agathos, and Vassilios V. Dimakopoulos

Energy

Application-Level Energy Awareness for OpenMP
   Ferdinando Alessi, Peter Thoman, Giorgis Georgakoudis, Thomas Fahringer, and Dimitrios S. Nikolopoulos

Evaluating the Energy Consumption of OpenMP Applications on Haswell Processors
   Bo Wang, Dirk Schmidl, and Matthias S. Müller
Parallelization Methods for Hierarchical SMP Systems

Larry Meadows, Jeongnim Kim, and Alex Wells

Supporting Indirect Data Mapping in OpenMP


Author Index
OpenMP: Heterogenous Execution and Data Movements
11th International Workshop on OpenMP, IWOMP 2015, Aachen, Germany, October 1-2, 2015, Proceedings
Terboven, C.; de Supinski, B.R.; Reble, P.; Chapman, B.M.; Müller, M.S. (Eds.)
2015, XI, 274 p. 146 illus. in color., Softcover
ISBN: 978-3-319-24594-2