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Soggetti	Microprocessors Computer programming Programming languages (Electronic computers) Logic design Operating systems (Computers) Computer architecture Processor Architectures Programming Techniques Programming Languages, Compilers, Interpreters Logic Design Operating Systems Computer System Implementation
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Nota di contenuto	Performance Methodologies -- FAROS: A Framework To Analyze OpenMP Compilation Through Benchmarking and Compiler Optimization Analysis -- Evaluating the Effciency of OpenMP Tasking for Unbalanced Computation on Diverse CPU Architectures -- Applications -- A Case Study of Porting HPGMG from CUDA to OpenMP Target Offload -- P-Aevol: an OpenMP Parallelization of a Biological Evolution Simulator, Through Decomposition in Multiple Loops --

Evaluating Performance of OpenMP Tasks in a Seismic Stencil Application -- OpenMP Extensions -- Unified Sequential Optimization Directives in OpenMP -- Support Data Shu e Between Threads in OpenMP -- Performance Studies -- Performance Study of SpMV Towards an Auto-tuned and Task-based SpMV (LASs Library) -- A Case Study on Addressing Complex Load Imbalance in OpenMP -- Tools -- On-the- y Data Race Detection with the Enhanced OpenMP Series-Parallel Graph -- AfterOMPT: An OMPT-based tool for ne-Grained Tracing of Tasks and Loops -- Co-designing OpenMP Programming Model Features with OMPT and Simulation -- NUMA -- sOMP: Simulating OpenMP Task-based Applications with NUMA Effects -- Virt ex: Automatic Adaptation to NUMA Topology Change for OpenMP Applications -- Compilation Techniques -- Using OpenMP to Detect and Speculate Dynamic DOALL Loops -- ComPar: Optimized Multi-Compiler for Automatic OpenMP S2S Parallelization -- Heterogeneous Computing -- OpenMP Device Offloading to FPGAs Using the Nymble Infrastructure -- Data Transfer and Reuse Analysis Tool for GPU-offloading Using OpenMP -- Toward Supporting Multi-GPU Targets via Taskloop and User-defined Schedules -- Memory -- Preliminary Experience with OpenMP Management Implementation Memory -- Memory Anomalies in OpenMP.

Sommario/riassunto

This book constitutes the proceedings of the 16th International Workshop on OpenMP, IWOMP 2020, held in Austin, TX, USA, in September 2020. The conference was held virtually due to the COVID-19 pandemic. The 21 full papers presented in this volume were carefully reviewed and selected for inclusion in this book. The papers are organized in topical sections named: performance methodologies; applications; OpenMP extensions; performance studies; tools; NUMA; compilation techniques; heterogeneous computing; and memory. The chapters ‘A Case Study on Addressing Complex Load Imbalance in OpenMP’ and ‘A Study of Memory Anomalies in OpenMP Applications’ are available open access under a Creative Commons Attribution 4.0 License via link.springer.com.