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Application in High-Performance Computing -- OpenMP Advisor: A Compiler Tool for Heterogeneous Architectures -- Tasking Extensions: Introducing Moldable Task in OpenMP -- Suspending OpenMP Tasks on Asynchronous Events: Extending the Taskwait Construct -- How to Efficiently Parallelize Irregular DOACROSS Loops Using Fine-Grained Granularity and OpenMP Tasks? The mcf Case -- OpenMP Offload Experiences: The Kokkos OpenMPTarget Backend: Implementation and Lessons Learned -- Fine-Grained Parallelism on GPUs Using OpenMP Target Offloading -- Improving a Multigrid Poisson Solver with Peer-to-Peer Communication and Task Dependencies -- Beyond Explicit GPU Support: Multipurpose Cacheing to accelerate OpenMP Target Regions on FPGAs -- GeneralizingHierarchical Parallelism -- Exploring the Limits of Generic Code Execution on GPUs via Direct (OpenMP) Offload -- OpenMP Infrastructure and Evaluation: Improving Simulations of Task-Based Applications on Complex NUMA Architectures -- Experimental Characterization of OpenMP Offloading Memory Operations and Unified Shared Memory Support -- OpenMP Reverse Offloading Using Shared Memory Remote Procedure Calls.

Sommario/riassunto

This book constitutes the proceedings of the 19th International Workshop on OpenMP, IWOMP 2023, held in Bristol, UK, during September 13–15, 2023. The 15 full papers presented in this book were carefully reviewed and selected from 20 submissions. The papers are divided into the following topical sections: OpenMP and AI; Tasking Extensions; OpenMP Offload Experiences; Beyond Explicit GPU Support; and OpenMP Infrastructure and Evaluation.