1. Record Nr. UNINA9910299783803321

Titolo	Sustained Simulation Performance 2014 : Proceedings of the joint Workshop on Sustained Simulation Performance, University of Stuttgart (HLRS) and Tohoku University, 2014 / / edited by Michael M. Resch, Wolfgang Bez, Erich Focht, Hiroaki Kobayashi, Nisarg Patel
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-10626-0
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (242 p.)
Disciplina	003.3 004 510 519 620 620.1064 621.39
Soggetti	Mathematics - Data processing Computer simulation Computer engineering Computer networks Engineering mathematics Engineering - Data processing Fluid mechanics Engineering Computational Science and Engineering Computer Modelling Computer Engineering and Networks Mathematical and Computational Engineering Applications Engineering Fluid Dynamics Technology and Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.

Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Hiroaki Kobayashi: Feasibility study of a future HPC system for memory-intensive applications: Final report -- Brendan M McLaughlin and Connor P Ballance: Petascale computations for Large-scale Atomic and Molecular collisions -- Kentaro Sano: FPGA-based Scalable Custom Computing Accelerator for Computational Fluid Dynamics based on Lattice Boltzmann Method -- Noritaka Hoshi and Shintaro Momose: SX-ACE, the Brand-New Vector Supercomputer for Higher Sustained Performance -- Muneo Hori, Tsuyoshi Ichimura, Maddegedara L. L. Wijerathne, and Kouhei Fujita: Application of HPC to Earthquake Hazard and Disaster Estimation -- Ryusuke Egawa, Kazuhiko Komatsu, and Hiroaki Kobayashi: Designing an HPC Refactoring Catalog Toward the Exa-scale Computing Era -- Alexey Cheptsov and Bastian Koller: Endorsing Supercomputing Applications to Java Language -- Osamu Watanabe, Takashi Soga, Youichi Shimomura, Akihiro Musa: Characteristic Analysis of Applications for Designing a Future HPC System -- Kazuhiko Komatsu, Ryusuke Egawa, Hiroyuki Takizawa, and Hiroaki Kobayashi: Performance Evaluation of an OpenMP Parallelization by Using Automatic Parallelization Information -- Holger Fröning: EXTOLL and Data Movements in Heterogeneous Computing Environments -- Simmendinger, Rahn et Gruenewald: The GASPI API - A Failure Tolerant PGAS API for Asynchronous Dataflow on Heterogeneous Architectures -- Daniel F. Harlacher, Harald Klimach, Sabine Roller: Experiences in Developing HPC Software with Portable Efficiency -- Kentaro Sano: Interconnection Network: Design Space Exploration of Network for Supercomputers -- Jens Aßmann, Alexander Kiontke, Sabine Roller: Requirements for Modern Network Infrastructures -- Nisarg Patel and Uwe Küster: Geometry dependent computational study of patient specific Abdominal Aortic Aneurysm -- Bastian Koller: Extending High Performance Computing with Cloud concepts -- Jose Gracia and Huan Zhou: DASH – A Hierarchical Global Address Space Model Authors -- Shintaro Momose:X-ACE, Brand-New Vector Supercomputer for Higher Sustained Performance.
Sommario/riassunto	This book presents the state of the art in high-performance computing and simulation on modern supercomputer architectures. It covers trends in hardware and software development in general and the future of high-performance systems and heterogeneous architectures in particular. The application-related contributions cover computational fluid dynamics, material science, medical applications and climate research; innovative fields such as coupled multi-physics and multi-scale simulations are highlighted. All papers were chosen from presentations given at the 18th Workshop on Sustained Simulation Performance held at the HLRS, University of Stuttgart, Germany in October 2013 and subsequent Workshop of the same name held at Tohoku University in March 2014. .