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Disciplina	004
Soggetti	Mathematics - Data processing Computer simulation Computer engineering Computer networks Engineering mathematics Engineering - Data processing Computers Computational Science and Engineering Computer Modelling Computer Engineering and Networks Mathematical and Computational Engineering Applications Hardware Performance and Reliability
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Part 1: Exploitation of Existing HPC Systems: Potentiality, Performance and Productivity -- Chapter 1. Parallel Algorithms: Theory, Practice and Education -- Chapter 2. High Performance Computing and High Performance Data Analytics – What is the missing link? -- Chapter 3. A Use Case of a Code Transformation Rule Generator for Data Layout Optimization -- Chapter 4. APES on SX-ACE -- Chapter 5. Dealing with non-linear terms in a modal High-Order Discontinuous Galerkin Method.

The book presents the state of the art in high-performance computing and simulation on modern supercomputer architectures. It explores general trends in hardware and software development, and then focuses specifically on the future of high-performance systems and heterogeneous architectures. It also covers applications such as computational fluid dynamics, material science, medical applications and climate research and discusses innovative fields like coupled multi-physics or multi-scale simulations. The papers included were selected from the presentations given at the 20th Workshop on Sustained Simulation Performance at the HLRS, University of Stuttgart, Germany in December 2015, and the subsequent Workshop on Sustained Simulation Performance at Tohoku University in February 2016.
