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Nota di contenuto	Performance tuning on IBM RS/6000 POWER2 systems -- Digital image processing: A 1996 review -- Use of parallel computations for account of options by Monte Carlo method -- Wavelets and differential equations -- From first principles to industrial applications -- Parallel implementation of a Schwarz domain decomposition algorithm -- Practical experience in the dangers of heterogeneous computing -- Coupling the advection and the chemical parts of large air pollution models -- Advanced optimizations for parallel irregular out-of-core

programs -- A software architecture for massively parallel input-output -- Spatial genetic algorithm and its parallel implementation -- Addressing algebra as a tool for parallel program development -- Optimizing the NAS parallel BT application for the POWER CHALLENGEarray -- Providing access to high performance computing technologies -- Parallel object-oriented library of genetic algorithms -- Monitoring of performance of PVM applications on virtual network computer -- A parallel version of the Quasi-Minimal Residual method based on coupled two-term recurrences -- A proposal for parallel sparse BLAS -- Parallel search-based methods in optimization -- An hierarchical approach for performance analysis of ScaLAPACK-based routines using the distributed linear algebra machine -- MeDLey: An abstract approach to message passing -- ScaLAPACK tutorial -- Bulk Synchronous Parallelisation of Genetic Programming -- Frontal software for the solution of sparse linear equations -- Parallel heuristics for bandwidth reduction of sparse matrices with IBM SP2 and Cray T3D -- Parallel libraries on distributed memory architectures: The IBM Parallel ESSL -- Parallel least squares estimates of 2-D SPECT image reconstructions on the SGI power challenge -- The prospect for parallel computing in the oil industry -- Performance evaluation and modeling of reduction operations on the IBM RS/6000 SP parallel computer -- A vectorization technique for a family of finite difference formulae and its performance evaluation -- Parallel simulation of finishing hot strip mills -- PEPE: A trace-driven simulator to evaluate reconfigurable multicomputer architectures -- Data acquisition and management in BEPC -- First graph partitioning and its application in sparse matrix ordering -- The design, implementation, and evaluation of a banded linear solver for distributed-memory parallel computers -- A new parallel algorithm for tridiagonal symmetric positive definite systems of equations -- An environment for the parallel solution of coupled problems on structured grids -- PARSMI, a parallel revised simplex algorithm incorporating minor iterations and Devex pricing -- Parallel optimization of interplanetary trajectories -- Filter model of reduced-rank noise reduction -- On the crossover points for dynamic load balancing of long-chained molecules -- Parallel computation of spectral portrait of large matrices -- Computer parallel modular algebra -- Parallel operating system for MPP system: Design and implementation -- New graph model and its routing algorithm for rearrangeable networks -- Modified Dorn's algorithm with improved speed-up -- Comparison of two short-range molecular dynamics algorithms for parallel computing -- Parallelising large applications -- High Performance Fortran interfacing to ScaLAPACK -- Partitioning an array onto a mesh of processors -- P_ARPACK: An efficient portable large scale eigenvalue package for distributed memory parallel architectures -- Parallel distributed representation of sparse grids using process arrays -- Optimal scheduling, decomposition and parallelisation -- An implementation of a tree-based N-body algorithm on message-passing architectures -- A quantitative approach for architecture-invariant parallel workload characterization -- Parallel mapping of program graphs into parallel computers by self-organization algorithm -- PARA'96 conference dinner talk 1996 August 20 -- Compiler optimizations for red-black HPF codes -- Parallelization of a local area ocean model -- Parallel solution of sparse problems by using a sequence of large dense blocks -- The parallel surrogate constraint approach to the linear feasibility problem -- A parallel GRASP for MAX-SAT problems -- Applications of HPCN in manufacturing industry -- An effective model to decompose Linear Programs for parallel solution -- Numerical libraries on shared memory

computers -- Linear algebra subprograms on shared memory computers: Beyond LAPACK -- Integration of partitioned stiff systems of ordinary differential equations -- Direct and large eddy simulations of thermo-convective flows -- Multi-tasking method on parallel computers which combines a contiguous and a non-contiguous processor partitioning algorithm -- A highly parallel explicitly restarted Lanczos algorithm -- Dynamic systems and software -- Parallel implementations of classical optimization methods -- Computer engineering of complex physical and chemical systems by Parallel Molecular Dynamics computations -- A parallelizable and fast algorithm for very large generalized eigenproblems -- Parallelization of a code for animation of multi-object system -- Parallel inner product-free algorithm for least squares problems.

Sommario/riassunto

This book constitutes the refereed proceedings of the Third International Workshop on Applied Parallel Computing, PARA'96, held in Lyngby, Denmark, in August 1996. The volume presents revised full versions of 45 carefully selected contributed papers together with 31 invited presentations. The papers address all current aspects of applied parallel computing relevant for industrial computations. The invited papers review the most important numerical algorithms and scientific applications on several types of parallel machines.