1.	Record Nr.	UNISA996465932303316
	Titolo	Applied Parallel Computing. Large Scale Scientific and Industrial Problems [[electronic resource]] : 4th International Workshop, PARA'98, Umea, Sweden, June 14-17, 1998, Proceedings / / edited by Bo Kagström, Jack Dongarra, Erik Elmroth, Jerzy Wasniewski
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1998
	ISBN	3-540-49261-5
	Edizione	[1st ed. 1998.]
	Descrizione fisica	1 online resource (XIV, 598 p.)
	Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1541
	Disciplina	004/.35
	Soggetti	Architecture, Computer
		Software engineering
		Algorithms
		Computer science—Mathematics
		Computer mathematics
		Computational complexity
		Computer System Implementation
		Software Engineering/Programming and Operating Systems
		Algorithm Analysis and Problem Complexity
		Mathematics of Computing
		Computational Mathematics and Numerical Analysis
		Complexity
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di contenuto	Communications latency hiding techniques for a reconfigurable optical interconnect: Benchmark studies -- Multifrontal solvers within the PARASOL environment -- Parallelization of a 3D FD-TD code for the Maxwell equations using MPI -- Advanced calculations and visualization of enzymatic reactions with the combined quantum classical molecular dynamics code -- Memory access profiling tools for alpha-based architectures -- Parallelized block-structured Newton-type methods in dynamic process simulation -- Tuning the

performance of parallel programs on NOW's using performance analysis tool -- Numerical simulation of 3D fully nonlinear water waves on parallel computers -- Fluctuations in the defect creation by ion beam irradiation -- Parallelisation of an industrial hydrodynamics application using the PINEAPL library -- Hyper-rectangle selection strategy for parallel adaptive numerical integration -- Parallilising fuzzy queries for spatial data modelling on a cray T3D -- Hyper-systolic implementation of BLAS-3 routines on the APE100/Quadrics machine -- Resource management for ultra-scale computational grid applications -- A ScaLAPACK-style algorithm for reducing a regular matrix pair to block Hessenberg-triangular form -- Parallel tight-binding molecular dynamics code based on integration of HPF and optimized parallel libraries -- Parallel computation of multidimensional scattering wavefunctions for Helmholtz/Schroedinger equations -- New serial and parallel recursive QR factorization algorithms for SMP systems -- Visualization of CFD computations -- Improving the performance of scientific parallel applications in a cluster of workstations -- On the parallelisation of non-linear optimisation algorithms for ophthalmical lens design -- Modelica—A language for equation-based physical modeling and high performance simulation -- Distributed georeferring of remotely sensed Landsat-TM imagery using MPI -- Parallel test pattern generation using circuit partitioning in a shared-memory multiprocessor -- Parallel adaptive mesh refinement for large eddy simulation using the finite element method -- WSSMP: A high-performance serial and parallel symmetric sparse linear solver -- Recursive blocked data formats and BLAS's for dense linear algebra algorithms -- Superscalar GEMM-based level 3 BLAS—The on-going evolution of a portable and high-performance library -- Parallel solution of some large-scale eigenvalue problems arising in chemistry and physics -- An embarrassingly parallel ab initio MD method for liquids -- A new parallel preconditioner for the Euler equations -- Partitioning sparse rectangular matrices for parallel computations of Ax and A T v -- NetLink: A modern data distribution approach applied to transparent access of high performance software libraries -- Modernization of legacy application software -- Parallel methods for fluid-structure interaction -- Parallel computing tests on large-scale convex optimization -- Parallel sparse matrix computations in the industrial strength PINEAPL library -- Massively parallel linear stability analysis with P_ARPACK for 3D fluid flow modeled with MPSalsa -- Parallel molecular dynamics simulations of biomolecular systems -- A parallel solver for animal genetics -- Scheduling of a parallel workload: Implementation and use of the argonne easy scheduler at PDC -- An algorithm to evaluate spectral densities of high-dimensional stationary diffusion stochastic processes with non-linear coefficients: The general scheme and issues on implementation with PVM -- High-performance simulation of evolutionary aspects of epidemics -- A parallel algorithm for computing the extremal eigenvalues of very large sparse matrices -- Technologies for teracomputing: A European option -- High Performance Fortran: Status and prospects -- PAVOR—Parallel adaptive volume rendering system -- Simulation steering with SCIRun in a distributed environment -- Addressing the requirements of ASCI-class systems -- A parallel genetic algorithm for the graphs mapping problem -- Parallel wavelet transforms -- Writing a multigrid solver using co-array fortran -- Exploiting visualization and direct manipulation to make parallel tools more communicative -- Deploying fault-tolerance and task migration with NetSolve -- Comparison of implicit and explicit parallel programming models for a finite element simulation algorithm -- Parallel algorithms for triangular sylvester

equations: Design, scheduling and scalability issues -- Fast and quantitative analysis of 4D cardiac images using a SMP architecture -- Ab initio electronic structure methods in parallel computers -- Iterative solution of dense linear systems arising from integral equations -- Comparison of partitioning strategies for PDE solvers on multiblock grids -- Ship design optimization -- parallelization strategies for the VMEC Program -- Rational Krylov algorithms for eigenvalue computation and model reduction -- Solution of distributed sparse linear systems using PSPARSLIB -- Parallelization of the DAO atmospheric general circulation model -- Dynamic performance callstack sampling: Merging TAU and DAQV -- A parallel rational Krylov algorithm for eigenvalue computations -- Portable implementation of real-time signal processing benchmarks on HPC platforms -- Large scale active networks simulation -- Forward dependence folding as a method of communication optimization in SPMD Programs -- A parallel genetic clustering for inverse problems -- A parallel hierarchical solver for finite element applications -- Parallel computation and visualization of 3D, time-dependent, thermal convective flows -- Recursive formulation of Cholesky algorithm in Fortran 90 -- High performance linear algebra package for FORTRAN 90.

Sommario/riassunto	This book constitutes the carefully refereed proceedings of the 4th International Workshop on Applied Parallel Computing, PARA'98, held in Umea, Sweden, in June 1998. The 75 revised papers presented were carefully reviewed and selected for inclusion in the book. The papers address a variety of topics in large scale scientific and industrial-strength computing, in particular high-performance computing and networking; tools, languages, and environments for parallel processing; scientific visualization and virtual reality; and future directions in high-performance computing and communication.