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	Nota di contenuto	A supercomputing performance evaluation plan -- A perspective on parallel processing -- Parallel multigrid methods: Implementation on SUPRENUM-like architectures and applications -- Using memory in the Cedar system -- Another combining scheme to reduce hot spot contention in large scale shared memory parallel computers -- Applications environment for the IBM Research Parallel Processor Prototype (RP3) -- High speed interconnection using the clos network -- Multipath hierarchies in interconnection networks -- Performance analysis of multi-buffered packet-switching networks in multiprocessor systems -- Analysis of interprocedural side effects in a parallel programming environment -- Design and rationale for MUPPET a programming environment for message based multiprocessors -- An overview of the PTRAN analysis system for multiprocessing -- Tools for performance evaluation of parallel machines -- Strategies for cache and local memory management by global program transformation -- Advanced loop optimizations for parallel computers -- MIMD-

parallelization for SUPRENUM -- Loop quantization or unwinding done right -- Vector optimization vs. vectorization -- The performance of software-managed multiprocessor caches on parallel numerical programs -- Realization of a knowledge-based parallelization tool in a programming environment -- Incremental performance contributions of hardware concurrency extraction techniques -- Access patterns: A usefull concept in vector programming -- Scheduling sequential loops on parallel processors -- Management of PDE-software for supercomputing -- Implementing codes on a SIMD/SPMD architecture application to a subset of eispack -- Supercomputing about physical objects -- The LINPACK Benchmark: An explanation -- Cluster-partitioning approaches to mapping parallel programs onto a hypercube -- A parallel graph partitioning algorithm for a message-passing multiprocessor -- The mapping of applications to multiple bus and Banyan interconnected multiprocessor systems: A case study -- Communication and control costs of domain decomposition on loosely coupled multiprocessors -- Half-dynamic scheduling with data-flow control -- A parallel block cyclic reduction algorithm for the fast solution of elliptic equations -- Parallel LU-factorization algorithms for dense matrices -- A group explicit solution scheme for non-linear parabolic PDES on MIMD parallel systems -- Gaussian elimination on message passing architecture -- Basic linear algebra computations on the Sperry ISP -- Future scientific programming on parallel machines -- Design and scheduling of mesh array of hardware unifiers for large-scale unification -- A systolic array structure for matrix multiplication in the residue number system -- VLSI arrays with reconfigurable buses -- A Wavefront Array Processor using dataflow processing elements -- Finite element methods on parallel and vector computers application in fluid dynamics -- LU factorization with maximum performances on FPS architectures 38/64 bit -- MSC/NASTRAN on amdahl vector processors: Adaptation and performance -- Parallel systolic LU factorization for simplex updates -- Solving elliptic problems by the domain decomposition method using preconditioning matrices derived by multilevel splittings of the finite element matrix -- Major research activities in parallel processing in Japan -- A high resolution parallel Legendre transform algorithm -- Parallelization of a reservoir simulator -- A computer graphics rendering algorithm for use on a SIMD machine -- Benchmark of the extended Basic Linear Algebra Subprograms on the NEC SX-2 supercomputer -- Least-squares iterative solution on a fixed-size VLSI architecture -- Parallel matrix factorizations on a shared memory MIMD computer -- Fast parallel algorithms for processing of joins -- Performance analysis for a join processor -- Parallel algorithms for parenthesis matching and generation of random balanced sequences of parentheses -- Superlinear speedup for parallel backtracking -- On the processing time of a parallel linear system solver -- A RISC-type structural design of the Hermes multiprocessor kernel -- Supercomputing in Europe—1987 -- Domain decomposition in distributed and shared memory environments -- A technique for compiling execution graph expressions for restricted and-parallelism in logic programs.

| Sommario/riassunto | The 1st International Conference on Supercomputing took place in Athens, Greece, June 8-12, 1987. The purpose of this conference was to bring together researchers from universities, industrial laboratories, and other research institutions with common interests in architectures and hardware technology, software, and applications for supercomputers. Authors from 12 countries submitted 107 papers, from which 52 were accepted and presented at the conference. In addition, 15 distinguished researchers presented invited papers. The |

papers from these presentations make up the current proceedings volume. Based on the quality of the papers presented and the response and excitement of the participants, the Program Committee has decided to hold annual meetings on the subject of supercomputing.