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	Nota di contenuto	Mathematical and Numerical Techniques in Energy and Environmental Modeling -- Domain Decomposition for Some Transmission Problems in Flow in Porous Media -- Numerical Subgrid Upscaling of Two-Phase Flow in Porous Media -- Numerical Simulation of Multiphase Flow in Fractured Porous Media -- The Modified Method of Characteristics for Compressible Flow in Porous Media -- A Numerical Algorithm for Single Phase Fluid Flow in Elastic Porous Media -- On the Discretization of Interface Problems with Perfect and Imperfect Contact -- Finite

Element Analysis for Pseudo Hyperbolic Integral-Differential Equations -- A CFL-Free Explicit Scheme with Compression for Linear Hyperbolic Equations -- Maximizing Cache Memory Usage for Multigrid Algorithms for Applications of Fluid Flow in Porous Media -- A Locally Conservative Eulerian-Lagrangian Method for Flow in a Porous Medium of a Mixture of Two Components Having Different Densities -- Validation of Non-darcy Well Models Using Direct Numerical Simulation -- Mathematical Treatment of Diffusion Processes of Gases and Fluids in Porous Media -- Implementation of a Locally Conservative Eulerian-Lagrangian Method Applied to Nuclear Contaminant Transport -- Application of a Class of Nonstationary Iterative Methods to Flow Problems -- Reservoir Thermal Recover Simulation on Parallel Computers -- A Class of Lattice Boltzmann Models with the Energy Equation -- Block Implicit Computation of Flow Field in Solid Rocket Ramjets -- Stable Conforming and Nonconforming Finite Element Methods for the Non-newtonian Flow -- Numerical Simulation of Compositional Fluid Flow in Porous Media -- Parallelization of a Compositional Reservoir Simulator -- Relationships among Some Conservative Discretization Methods -- Parallel Methods for Solving Time-Dependent Problems Using the Fourier-Laplace Transformation -- Cascadic Multigrid Methods for Parabolic Pressure Problems -- Estimation in the Presence of Outliers: The Capillary Pressure Case -- A Comparison of ELLAM with ENO/WENO Schemes for Linear Transport Equations -- An Accurate Approximation to Compressible Flow in Porous Media with Wells -- Fast Convergent Algorithms for Solving 2D Integral Equations of the First Kind -- A Two-Grid Finite Difference Method for Nonlinear Parabolic Equations -- A Compact Operator Method for the Omega Equation -- Domain Decomposition Algprithm for a New Characteristic Mixed Finite Element Method for Compressible Miscible Displacement -- A Boundary Element Method for Viscous Flow on Multi-connected Domains -- A Characteristic Difference Method for 2D Nonlinear Convection-Diffusion Problems -- Fractional Step Methods for Compressible Multicomponent Flow in Porous Media -- A Model and Its Solution Method for a Generalized Unsteady Seepage Flow Problem -- Domain Decomposition Preconditioners for Non-selfconjugate Second Order Elliptic Problems -- Performance of MOL for Surface Motion Driven by a Laplacian of Curvature -- A High-Order Upwind Method for Convection-Diffusion Equations with the Newmann Boundary Condition.

Sommario/riassunto	The need to predict, understand, and optimize complex physical and c-mical processes occurring in and around the earth, such as groundwater c- tamination, oil reservoir production, discovering new oil reserves, and ocean hydrodynamics, has been increasingly recognized. Despite their seemingly disparate natures, these geoscience problems have many common mathe- tical and computational characteristics. The techniques used to describe and study them are applicable across a broad range of areas. The study of the above problems through physical experiments, mat- matical theory, and computational techniques requires interdisciplinary col-boration between engineers, mathematicians, computational scientists, and other researchers working in industry, government laboratories, and univ- sities. By bringing together such researchers, meaningful progress can be made in predicting, understanding, and optimizing physical and chemical processes. The International Workshop on Fluid Flow and Transport in Porous - dia was successfully held in Beijing, China, August 2{6, 1999. The aim of this workshop was to bring together applied mathematicians, computational scientists, and engineers working actively in the mathematical and nume- cal

treatment of ?uid ?ow and transport in porous media. A broad range of researchers presented papers and discussed both problems and current, state-of-the-art techniques.