Numerical Integration of Differential Equations and Large Linear Systems

By J. Hinze

Springer Dez 1982, 1982. Taschenbuch. Book Condition: Neu. 235x155x22 mm. This item is printed on demand - Print on Demand Titel. Neuware - An overview of the techniques in use for solving the coupled equations of scattering theory.- Weyl's theory for second order differential equations and its application to some problems in quantum chemistry.- The discretization of continuous infinite sets of coupled ordinary linear differential equations: Application to the collision-induced dissociation of a diatomic molecule by an atom.- Extraction of continuum properties from L2 basis set matrix representations of the schrödinger equation: the sturm sequence polynomials and gauss quadrature.- Approximate solution of schrödinger's equation for atoms.- Numerical integration of linear inhomogeneous ordinary differential equations appearing in the nonadiabatic theory of small molecules.- Computation of solenoidal (divergence-free) vector fields.- Efficient solution of a nonlinear heat conduction problem by use of fast elliptic reduction and multigrid methods.- Are the numerical methods and software satisfactory for chemical kinetics .- Optimization of nonlinear kinetic equation computation.- Automatic detection and treatment of oscillatory and/or stiff ordinary differential equations.- Characterization of non-linearly stable implicit Runge-Kutta methods.- Compact deferred correction formulas.- Solving odes in quasi steady state.- A singular perturbations approach to reduced-order modeling and decoupling for...

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