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Nota di contenuto	Conformal Einstein Evolution -- Some Global Results for Asymptotically Simple Space-Times -- Black Holes -- Conformal Geometry, Differential Equations and Associated Transformations -- Twistor Geometry of Conformal Infinity -- Isotropic Cosmological Singularities -- Polyhomogeneous Expansions Close to Null and Spatial Infinity -- Asymptotically Flat and Regular Cauchy Data -- Construction of Hyperboloidal Initial Data -- Exploring the Conformal Constraint Equations -- Criteria for (In)finite Extent of Static Perfect Fluids -- Problems and Successes in the Numerical Approach to the Conformal Field Equations -- Some Aspects of the Numerical Treatment of the Conformal Field Equations -- Data for the Numerical Calculation of the Kruskal Space-Time -- Numerics of the Characteristic Formulation in Bondi Variables. Where We Are and What Lies Ahead -- Numerical Experiments at Null Infinity -- Local Characteristic Algorithms for Relativistic Hydrodynamics -- Simulations of Generic Singularities in Harmonic Coordinates -- Some Mathematical and Numerical Questions Connected with First and Second Order Time-Dependent Systems of Partial Differential Equations.

## Sommario/riassunto

Causal relations, and with them the underlying null cone or conformal structure, form a basic ingredient in all general analytical studies of asymptotically flat space-time. The present book reviews these aspects from the analytical, geometrical and numerical points of view. Care has been taken to present the material in a way that will also be accessible to postgraduate students and nonspecialist reseachers from related fields.

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