1. Record Nr. UNINA9910257413703321

Titolo	Rotating Objects and Relativistic Physics [[electronic resource]] : Proceedings of the El Escorial Summer School on Gravitation and General Relativity 1992: Rotating Objects and Other Topics Held at El Escorial, Spain, 24–28 August 1992 / / edited by F.J. Chinea, L.M. Gonzales-Romero
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1993
ISBN	3-540-48087-0
Edizione	[1st ed. 1993.]
Descrizione fisica	1 online resource (XII, 308 p. 13 illus.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 423
Disciplina	530.1/1
Soggetti	Gravitation Physics Quantum physics Quantum computers Spintronics Observations, Astronomical Astronomy—Observations Classical and Quantum Gravitation, Relativity Theory Mathematical Methods in Physics Numerical and Computational Physics, Simulation Quantum Physics Quantum Information Technology, Spintronics Astronomy, Observations and Techniques
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Equilibrium configurations of general relativistic rotating stars -- Axisymmetric stationary solutions of Einstein's equations -- The dyadic approach to solutions for rotating rigid bodies -- Stationary and axisymmetric perfect-fluid solutions to Einstein's equations -- Black-Holes in X-Ray Binaries -- General relativistic stationary axisymmetric rotating systems -- The superposition of two Kerr-Newman solutions

-- Stationary black holes rotate differentially -- Differentially rotating perfect fluids -- Rotating barotropes -- Matching of stationary axisymmetric space-times -- Axial symmetry and conformal killings -- Numerical relativistic hydrodynamics -- Singularity-free spacetimes -- On radiative solutions in general relativity -- Application of Wahlquist-Estabrook method to relativity vacuum equations with one Killing vector -- On the regularity of spherically symmetric static spacetimes -- Shock capturing methods in 1D numerical relativity -- Invariance transformations of the class y? = F(x) y N of differential equations arising in general relativity -- Relativistic Kinetic Theory and cosmology -- Colliding gravitational waves with variable polarization -- The monopole — Quadrupole solution of Einstein's equations -- Effective action methods in cosmology: The back-reaction problem -- Quantization in a colliding plane wave spacetime -- Coleman's mechanism in Jordan-Brans-Dicke gravity -- No-boundary condition in multidimensional gravity -- Distance of matter inside an Einstein-Strauss vacuole -- Conformally stationary cosmological models -- L-Rigidity in Newtonian approximation -- Presymplectic manifolds and conservation laws -- On a project for a repetition of the Michelson - Morley experiment -- Nonlinear evolution of cosmological inhomogeneities -- The great attractor and the COBE quadrupole.

Sommario/riassunto

This book addresses physicists working in general relativity, astrophysics and cosmology. The contributions are based on reports given at a summer school the goal of which was to review modern research for students. The school was centered on the study of gravitational fields corresponding to rotating objects of astrophysical interest, under different viewpoints: theoretical, numerical and observational. Special emphasis is put on the analysis of interior and exterior fields of stationary axisymmetric systems. Lectures and contributions, collected here in Part I, ranged from basic information useful to newcomers to technical points pertaining to current research in this area. Part II contains lectures and contributions on other aspects of gravitation theory.