1. Record Nr. UNINA9910383831003321

Autore	Chruciel Piotr T
Titolo	Elements of General Relativity / / by Piotr T. Chruciel
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Birkhäuser, , 2019
ISBN	9783030284169 3030284166
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (IX, 283 p. 53 illus., 46 illus. in color.)
Collana	Compact Textbooks in Mathematics, , 2296-455X
Disciplina	530.11
Soggetti	Geometry, Differential Gravitation Differential Geometry Classical and Quantum Gravity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to tensor calculus and Riemannian geometry -- Curved space-time -- The Schwarzschild metric -- Weak fields, gravitational waves -- Stars -- Cosmology.
Sommario/riassunto	This book provides an introduction to the mathematics and physics of general relativity, its basic physical concepts, its observational implications, and the new insights obtained into the nature of space-time and the structure of the universe. It introduces some of the most striking aspects of Einstein's theory of gravitation: black holes, gravitational waves, stellar models, and cosmology. It contains a self-contained introduction to tensor calculus and Riemannian geometry, using in parallel the language of modern differential geometry and the coordinate notation, more familiar to physicists. The author has strived to achieve mathematical rigour, with all notions given careful mathematical meaning, while trying to maintain the formalism to the minimum fit-for-purpose. Familiarity with special relativity is assumed. The overall aim is to convey some of the main physical and geometrical properties of Einstein's theory of gravitation, providing a solid entry point to further studies of the mathematics and physics of Einstein equations.