1. Record Nr. UNISA996518464603316

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| Titolo | Einstein equations : local energy, self-force, and fields in general relativity / / Sergio Luigi Cacciatori and Alexander Kamenshchik, editors |
| Pubbl/distr/stampa | Cham, Switzerland : , : Birkhauser, , [2022]<br>©2022 |
| ISBN | 3-031-21845-0 |
| Edizione | [1st ed. 2022.] |
| Descrizione fisica | 1 online resource (261 pages) |
| Collana | Tutorials, Schools, and Workshops in the Mathematical Sciences |
| Disciplina | 530.11 |
| Soggetti | General relativity (Physics)<br>Equacions de camp d'Einstein<br>Relativitat general (Física)<br>Congressos<br>Llibres electrònics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | Part I. Main Lectures -- Introduction to the Wang-Yau quasi-local energy -- Gravitational self-force in the Schwarzschild spacetime -- Geometry and analysis in black hole spacetimes -- Study of fundamental laws with Antimatter -- Part II. Proceedings -- Quantum Ergosphere and Brick Wall -- Geodesic structure and linear instability of some wormholes -- New trends in the general relativistic Poynting-Robertson effect modeling -- Brief Overview of Numerical Relativity -- Length-contraction in curved spacetime -- Exact solutions of Einstein-Maxwell(-dilation) equations with discrete translational symmetry -- Exact solutions of the Einstein equations for an infinite slab with constant energy density -- Emergence of classicality from an inhomogeneous universe. |
| Sommario/riassunto | This volume guides early-career researchers through recent breakthroughs in mathematics and physics as related to general relativity. Chapters are based on courses and lectures given at the July 2019 Domoschool, International Alpine School in Mathematics and Physics, held in Domodossola, Italy, which was titled “Einstein |

Equations: Physical and Mathematical Aspects of General Relativity". Structured in two parts, the first features four courses from prominent experts on topics such as local energy in general relativity, geometry and analysis in black hole spacetimes, and antimatter gravity. The second part features a variety of papers based on talks given at the summer school, including topics like: Quantum ergosphere General relativistic Poynting-Robertson effect modelling Numerical relativity Length-contraction in curved spacetime Classicality from an inhomogeneous universe Einstein Equations: Local Energy, Self-Force, and Fields in General Relativity will be a valuable resource for students and researchers in mathematics and physicists interested in exploring how their disciplines connect to general relativity.