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| Autore | Tsamparlis Michael |
| Titolo | Special Relativity : An Introduction with 200 Problems and Solutions / / by Michael Tsamparlis |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019 |
| ISBN | 3-030-27347-4 |
| Edizione | [2nd ed. 2019.] |
| Descrizione fisica | 1 online resource (xxv, 815 pages) : illustrations (some color) |
| Collana | Undergraduate Lecture Notes in Physics, , 2192-4805 |
| Disciplina | 530.11 |
| Soggetti | Gravitation<br>Cosmology<br>Mathematical physics<br>Classical and Quantum Gravity<br>Mathematical Physics<br>Relativitat especial (Física)<br>Física matemàtica<br>Educació superior<br>Problemes i exercicis<br>Llibres electrònics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index |
| Nota di contenuto | Mathematical Part -- The Structure of the Theories of Physics -- Newtonian Physics -- The Foundation of Special Relativity -- The Physics of the Position Four-Vector -- Relativistic Kinematics -- Four-Acceleration -- Paradoxes -- Mass – Four-Momentum -- Relativistic Reactions -- Four-Force -- Irreducible Decompositions -- The Electromagnetic Field -- Relativistic Angular Momentum -- The Covariant Lorentz Transformation -- Geometric Description of Relativistic Interactions. |
| Sommario/riassunto | This textbook develops Special Relativity in a systematic way and offers the unique feature of having more than 200 problems with detailed solutions to empower students to gain a real understanding of this core subject in physics. This new edition has been thoroughly updated and has new sections on relativistic fluids, relativistic kinematics and on |

four-acceleration. The problems and solution section has been significantly expanded and short history sections have been included throughout the book. The approach is structural in the sense that it develops Special Relativity in Minkowski space following the parallel steps as the development of Newtonian Physics in Euclidian space. A second characteristic of the book is that it discusses the mathematics of the theory independently of the physical principles, so that the reader will appreciate their role in the development of the physical theory. The book is intended to be used both as a textbook for an advanced undergraduate teaching course in Special Relativity but also as a reference book for the future.