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| Titolo | The mathematics of Minkowski space-time : with an introduction to commutative hypercomplex numbers / / Francesco Catoni ... [et al.] |
| Pubbl/distr/stampa | Basel ; ; Boston, : Birkhauser, c2008 |
| ISBN | 1-281-49123-3<br>9786611491239<br>3-7643-8614-2 |
| Edizione | [1st ed. 2008.] |
| Descrizione fisica | 1 online resource (271 p.) |
| Collana | Frontiers in mathematics |
| Altri autori (Persone) | CatoniFrancesco |
| Disciplina | 516.374 |
| Soggetti | Generalized spaces<br>Special relativity (Physics) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | N-Dimensional Commutative Hypercomplex Numbers -- The Geometries Generated by Hypercomplex Numbers -- Trigonometry in the Minkowski Plane -- Uniform and Accelerated Motions in the Minkowski Space-Time (Twin Paradox) -- General Two-Dimensional Hypercomplex Numbers -- Functions of a Hyperbolic Variable -- Hyperbolic Variables on Lorentz Surfaces -- Constant Curvature Lorentz Surfaces -- Generalization of Two-Dimensional Special Relativity (Hyperbolic Transformations and the Equivalence Principle). |
| Sommario/riassunto | Hyperbolic numbers are proposed for a rigorous geometric formalization of the space-time symmetry of two-dimensional Special Relativity. The system of hyperbolic numbers as a simple extension of the field of complex numbers is extensively studied in the book. In particular, an exhaustive solution of the "twin paradox" is given, followed by a detailed exposition of space-time geometry and trigonometry. Finally, an appendix on general properties of commutative hypercomplex systems with four unities is presented. |