



The Geometry of Minkowski Spacetime: An Introduction to the Mathematics of the Special Theory of Relativity (Paperback)

By Gregory L. Naber

Springer-Verlag New York Inc., United States, 2014. Paperback. Book Condition: New. 2nd ed. 2012. 235 x 155 mm. Language: English Brand New Book ***** Print on Demand *****.This book offers a presentation of the special theory of relativity that is mathematically rigorous and yet spells out in considerable detail the physical significance of the mathematics. It treats, in addition to the usual menu of topics one is accustomed to finding in introductions to special relativity, a wide variety of results of more contemporary origin. These include Zeeman's characterization of the causal automorphisms of Minkowski spacetime, the Penrose theorem on the apparent shape of a relativistically moving sphere, a detailed introduction to the theory of spinors, a Petrov-type classification of electromagnetic fields in both tensor and spinor form, a topology for Minkowski spacetime whose homeomorphism group is essentially the Lorentz group, and a careful discussion of Dirac's famous Scissors Problem and its relation to the notion of a two-valued representation of the Lorentz group. This second edition includes a new chapter on the de Sitter universe which is intended to serve two purposes. The first is to provide a gentle prologue to the steps one must take to move...



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