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Titolo	Recent Developments in Pseudo-Riemannian Geometry [[electronic resource] /] / Dmitri V. Alekseevsky, Helga Baum
Pubbl/distr/stampa	Zuerich, Switzerland, : European Mathematical Society Publishing House, 2008
ISBN	3-03719-551-7
Descrizione fisica	1 online resource (549 pages)
Collana	ESI Lectures in Mathematics and Physics (ESI)
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Soggetti	Differential & Riemannian geometry Differential geometry
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	The classification problem for pseudo-Riemannian symmetric spaces / Ines Kath, Martin Olbrich -- Holonomy groups of Lorentzian manifolds: classification, examples, and applications / Anton Galaev, Thomas Leistner -- Hypersymplectic manifolds / Andrew Dancer, Andrew Swann -- Anti-self-dual conformal structures in neutral signature / Maciej Dunajski, Simon West -- A neutral Kahler surface with applications in geometric optics / Brendan Guilfoyle, Wilhelm Klingenberg -- A primer on the $(2 + 1)$ Einstein universe / Thierry Barbot, Todd A. Drumm, Virginie Charette, William M. Goldman, Karin Melnick -- Essential conformal structures in Riemannian and Lorentzian geometry / Charles Frances -- Conformal transformations of pseudo-Riemannian manifolds / Wolfgang Kuhnel, Hans-Bert Rademacher -- The causal hierarchy of spacetimes / Ettore Minguzzi, Miguel Sanchez Caja -- Geodesics in semi-Riemannian manifolds: geometric properties and variational tools / Anna Maria Candela, Miguel Sanchez Caja -- Lorentzian symmetric spaces in supergravity / Jose Miguel Figueroa-O'Farrill -- Metric bundles of split signature and type II supergravity / Frederik Witt -- Einstein metrics with 2-dimensional Killing leaves and their physical interpretation / Gaetano Vilasi.
Sommario/riassunto	This book provides an introduction to and survey of recent developments in pseudo-Riemannian geometry, including applications in mathematical physics, by leading experts in the field. Topics

covered are: Classification of pseudo-Riemannian symmetric spaces  
Holonomy groups of Lorentzian and pseudo-Riemannian manifolds  
Hypersymplectic manifolds Anti-self-dual conformal structures in  
neutral signature and integrable systems Neutral Kahler surfaces and  
geometric optics Geometry and dynamics of the Einstein universe  
Essential conformal structures and conformal transformations in  
pseudo-Riemannian geometry The causal hierarchy of spacetimes  
Geodesics in pseudo-Riemannian manifolds Lorentzian symmetric  
spaces in supergravity Generalized geometries in supergravity Einstein  
metrics with Killing leaves The book is addressed to advanced  
students as well as to researchers in differential geometry, global  
analysis, general relativity and string theory. It shows essential  
differences between the geometry on manifolds with positive definite  
metrics and on those with indefinite metrics, and highlights the  
interesting new geometric phenomena, which naturally arise in the  
indefinite metric case. The reader finds a description of the present  
state of art in the field as well as open problems, which can stimulate  
further research.

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