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second preliminary report -- From Lorentzian manifolds to signature-type change with singular transverse metrics -- Constant angle surfaces in I x f R2,1 with a null principal direction -- Vacuum cosmological spacetimes without CMC Cauchy surfaces -- On pseudo-parallel surfaces -- Introduction to Kundt spaces -- Topologies on the future causal completion -- On the application of Lorentz-Finsler geometry to model wave propagation -- The ladder of Finsler-type objects and their variational problems on spacetimes -- Compact plane waves with parallel Weyl curvature -- Author Index.

Sommario/riassunto

This proceedings volume gathers selected, revised papers presented at the XI International Meeting on Lorentzian Geometry (GeLoMer 2024), held at the Autonomous University of Yucatán, Mexico, from January 29 to February 2, 2024. Lorentzian geometry provides the mathematical foundation for Einstein's theory of relativity. It incorporates aspects from different branches of mathematics, such as differential geometry, partial differential equations, and mathematical analysis, to name a few. This volume includes surveys describing the state-of-the-art in specific areas, and a selection of the most relevant results presented at the conference, which is seen as a benchmark for those working in Lorentz geometry due to its relevance. Given its scope, the book will be of interest to both young and experienced mathematicians and physicists whose research involves general relativity and semi-Riemannian geometry.