

<<时空的大尺度结构>>

图书基本信息

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内容概要

Starting with a precise formulation of the theory and an account of the necessary background of the theory and an account of the necessary background of differential geometry, the significance of space-time curvature is discussed and the global properties of a number of exact solutions of Einstein ' s field equations are examined. The theory of the causal structure of a general spacetime is developed, and is used to study black holes and to prove a number of theorems establishing the inevitability of singularities under certain conditions. These conditions are shown to be satisfied in the vicinity of stars of more than twice the solar mass near the endpoint of their nuclear evolution, and in a time-reversed sense for the universe as a whole. In the first case, the singularity is inside a black hole, and in the second case, it is the initial singularity in our past. A discussion of the Cauchy problem for General Relativity is also included in the book.

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书籍目录

preface1 The role of gravity2 Differential geometry 2.1 Manifolds 2.2 Vectors and geometry 2.3 Maps of manifolds 2.4 Exterior differentiation and the Lie derivative 2.5 Covariant differentiation and the curvature tensor 2.6 The metric 2.7 Hypersurfaces 2.8 The volume element and Gauss' theorem 2.9 Fibre bundles3 General Relativity 3.1 The space-time manifold 3.2 The matter fields 3.3 Lagrangian formulation 3.4 The field equations4 The physical significance of curvature 4.1 Timelike curves 4.2 Null curves 4.3 Energy conditions 4.4 Conjugate points 4.5 Variation of arc-length5 Exact solutions 5.1 Minkowski space-time 5.2 De Sitter and anti-de Sitter space-times 5.3 Robertson-Walker spaces 5.4 Spatially homogeneous cosmological models 5.5 The Schwarzschild and Reissner-Nordström solutions 5.6 The Kerr solution 5.7 Gödel's universe 5.8 Taub-NUT space 5.9 Further exact solutions6 Causal structure 6.1 orientability 6.2 Causal curves 6.3 Achronal boundaries 6.4 Causality conditions 6.5 Cauchy developments 6.6 Global hyperbolicity 6.7 The existence of geodesics 6.8 The causal boundary of space-time 6.9 Asymptotically simple spaces7 The Cauchy problem in General Relativity 7.1 The nature of the problem 7.2 The reduced Einstein equations 7.3 The initial data 7.4 Second order hyperbolic equations 7.5 The existence and uniqueness of developments for the empty space Einstein equations 7.6 The maximal development and stability 7.7 The Einstein equations with matter8 Space-time singularities 8.1 The definition of singularities 8.2 Singularity theorems 8.3 The description of singularities 8.4 The character of the singularities 8.5 Imprisoned incompleteness9 Gravitational collapse and black holes 9.1 Stellar collapse 9.2 Black holes 9.3 The final state of black holes10 The initial singularity in the universeReferencesNotationIndex

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