

<<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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