

<<欧几里德量子引力学EUCLIDEAN QUANTUM GRAVITY>>

图书基本信息

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内容概要

Euclidean approach to quantum gravity was initiated in the seventies in an attempt to understand the difficulties raised by the spacetime singularities of classical general relativity which arise in the gravitational collapse of stars to form black holes and the entire universe in the big bang. An important motivation was to develop an approach capable of dealing with the nonlinear, nonperturbative aspects of quantum gravity due to topologically nontrivial spacetimes. There are important links with Riemannian geometry: Since its inception, the theory has been applied to a number of important physical problems including the thermodynamic properties of black holes, quantum cosmology and the problem of the cosmological constant. This volume is a selection of some of the most influential and important papers on the Euclidean approach to quantum gravity, in which one expresses the Feynman path integral as a sum over Riemannian metrics. It contains sections on the general formalism, black holes, quantum cosmology, wormholes, and gravitational instantons. Compiled by two of the leading proponents of Euclidean quantum gravity, Stephen Hawking and Gary Gibbons, this book should serve as an essential reference as well as an important document of the exciting progress in this area of research.

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