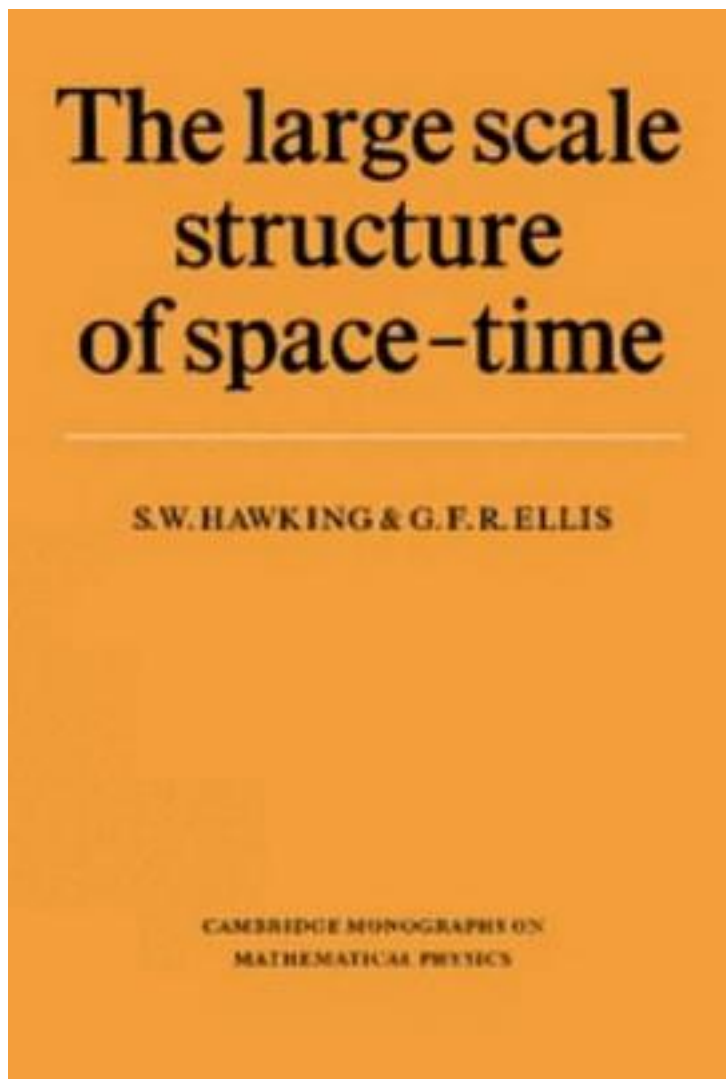


The Large Scale Structure of Space-Time



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Einstein's General Theory of Relativity leads to two remarkable predictions: first, that the ultimate destiny of many massive stars is to undergo gravitational collapse and to disappear from view, leaving behind a 'black hole' in space; and secondly, that there will exist singularities in space-time itself. These singularities are places where space-time begins or ends, and the presently known laws of physics break down. They will occur inside black holes, and in the past are what might be construed as the beginning of the universe. To show how these predictions arise, the authors discuss the General Theory of Relativity in the large. Starting with a precise formulation 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 space-time is developed, and is used to study black holes and to prove a number of theorems establishing the inevitability of singularities under certain conditions. A discussion of the Cauchy problem for General Relativity is also included in this 1973 book.

作者介绍:

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微分几何

广义相对论

霍金

Generalrelativity

评论

看了這麼久……可算讀完了……_

時空的大尺度結構呀，算是寫的貴宇宙的古怪性質都一絲不掛了，真·大尺度。

都说大牛，但我看不懂，所以后来果断转行了

EXCELLENT BUT EXTREMELY BEGINNER-UNFRIENDLY BOOK! Extremely unfriendly to beginners! This book is one of the first book I tried in my attempt to learn General Relativity and IT JUST KEEP BEATING THE HELL OUT OF ME! TOO MATHEMATICAL! But having tried more than 5 times I managed to extract something out of it and found it strangely attractive.

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书评

霍金說1973年他和喬治·埃利斯合作出版了這本兒書之後，他一度感到有些無所事事了。他的研究工作證明了廣義相對論在奇點處崩潰，所以，很明顯下一步是將非常大的理論（廣義相對論）和非常小的理論（量子論）結合起來。他本人特別想知道，可以存在一個這樣的原子嗎？它的核是在...

本书的一个亮点就是数学水平低了你看不懂· · · · · . 这是唯一的一点促使他成为专业化的专业书· · · · · .

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