The theory of quantum gravity promises a revolutionary new understanding of gravity and spacetime, valid from microscopic to cosmological distances. Research in this field involves an exciting blend of rigorous mathematics and bold speculations, foundational questions and technical issues.

Containing contributions from leading researchers in the field, this book presents the fundamental issues involved in the construction of a quantum theory of gravity and building up a quantum picture of space and time. It introduces the most current approaches to this problem, and reviews their main achievements. Each part ends in questions and answers, in which the contributors explore the merits and problems of the various approaches. This book provides a complete overview of this field from the frontiers of theoretical physics research for graduate students and researchers.

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