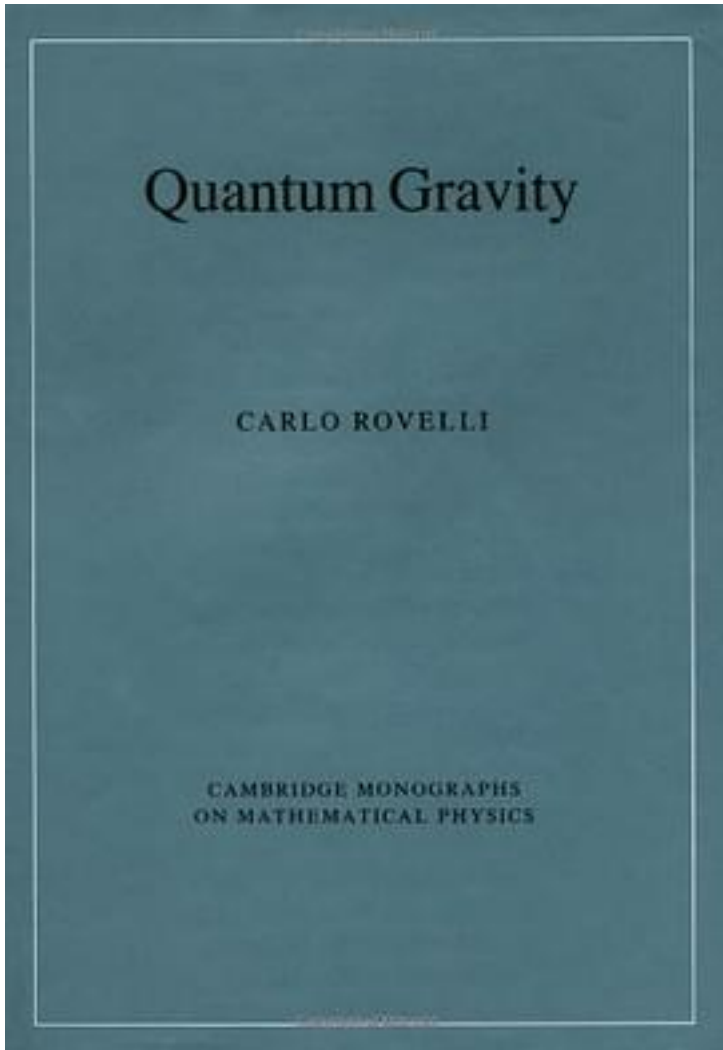


Quantum Gravity



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The relation between quantum theory and the theory of gravitation remains one of the most outstanding unresolved issues of modern physics. According to general expectation, general relativity as well as quantum (field) theory in a fixed background spacetime cannot be fundamentally correct. Hence there should exist a broader theory comprising both in appropriate limits, i.e., quantum gravity. This book gives readers a comprehensive introduction accessible to interested non-experts to the main issues surrounding the search for quantum gravity. These issues relate to fundamental questions concerning the various formalisms of quantization; specific questions concerning concrete processes, like gravitational collapse or black-hole evaporation; and the all important question concerning the possibility of experimental tests of quantum-gravity effects.

"The book contains a wealth of information that is invaluable for any postgraduate students interested in quantum gravity. The inclusion of an experimental section provides more depth to the discussions which is a welcome addition to the rest of the thorough mathematical treatment. It is a timely wake-up call for the budding student that even the theory of quantum gravity can now be aided by experimental evidence." (Contemporary Physics 2004, 45, page 534)

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