

1. Record Nr.	UNINA9910784047203321
Autore	Crowell Lawrence B
Titolo	Quantum fluctuations of spacetime [[electronic resource] /] / Lawrence B. Crowell
Pubbl/distr/stampa	New Jersey ; ; London, : World Scientific, 2005
ISBN	1-281-89918-6 9786611899189 981-270-321-7
Descrizione fisica	1 online resource (386 p.)
Collana	World Scientific series in contemporary chemical physics ; ; v. 25
Disciplina	530.12
Soggetti	Quantum theory Space and time
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Contents; Chapter 1 Why Quantum Fluctuations of Spacetime?; Chapter 2 Quantum Fluctuations and Spacetime; Chapter 3 Detection of Quantum Gravity Fluctuations; Chapter 4: Quantum Gravity Fluctuations, Strings and Two Dimensional D-Branes; Chapter 5 Topology, Extra Large Dimensions and the Higgs Field; Chapter 6 Zeta Functions, Topological Quantum Numbers and M-Theory; Chapter 7 The Generalized Uncertainty Principle; Chapter 8 Octonionic Quantum Gravity; Chapter 9 Physical Law from No Law; Index
Sommario/riassunto	Three key aspects of quantum gravity are considered in this book: phenomenology, potential experimental aspects and foundational theory. The phenomenology is the treatment of metric quantum fluctuations as torsional curves that deviate from classical expectations. This leads to possible experimental configurations that may detect such fluctuations. Most of these proposed experiments are quantum optical measurements of subtle quantum gravity effects in the interaction of photons and atoms. The foundational discussions attempt to find an substratum to string theories, which are motivated by the