1. Record Nr. UNINA9910337876103321

Autore	Kuntz Iberê
Titolo	Gravitational Theories Beyond General Relativity / / by Iberê Kuntz
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-21197-5
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (88 pages)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	530.11015153 530.1
Soggetti	Gravitation Cosmology Elementary particles (Physics) Quantum field theory Classical and Quantum Gravitation, Relativity Theory Elementary Particles, Quantum Field Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Equivalence between dark matter and modied gravity -- Gravitational waves in quantum gravity -- Backreaction of quantum gravitational modes -- Higgs-Starobinsky ination -- Vacuum stability during ination -- Conclusions -- Appendix.
Sommario/riassunto	Despite the success of general relativity in explaining classical gravitational phenomena, several problems at the interface between gravitation and high energy physics still remain open. The purpose of this thesis is to explore quantum gravity and its phenomenological consequences for dark matter, gravitational waves and inflation. A new formalism to classify gravitational theories based on their degrees of freedom is introduced and, in light of this classification, it is argued that dark matter is no different from modified gravity. Gravitational waves are shown to be damped due to quantum degrees of freedom. The consequences for gravitational wave events are also discussed. The non-minimal coupling of the Higgs boson to gravity is studied in connection with Starobinsky inflation and its implications for the

vacuum instability problem is analyzed.