

Gravity In Braneworld Rironkon

This book arises from the INdAM Meeting "Complex and Symplectic Geometry", which was held in Cortona in June 2016. Several leading specialists, including young researchers, in the field of complex and symplectic geometry, present the state of the art of their research on topics such as the cohomology of complex manifolds; analytic techniques in Kähler and non-Kähler geometry; almost-complex and symplectic structures; special structures on complex manifolds; and deformations of complex objects. The work is intended for researchers in these areas. In this brilliant exploration of our cosmic environment, the renowned particle physicist and New York Times bestselling author of *Warped Passages* and *Knocking on Heaven's Door* uses her research into dark matter to illuminate the startling connections between the furthest reaches of space and life here on Earth. Sixty-six million years ago, an object the size of a city descended from space to crash into Earth, creating a devastating cataclysm that killed off the dinosaurs, along with three-quarters of the other species on the planet. What was its origin? In *Dark Matter and the Dinosaurs*, Lisa Randall proposes it was a comet that was dislodged from its orbit as the Solar System passed through a disk of dark matter embedded in the Milky Way. In a sense, it might have been dark matter that killed the dinosaurs. Working through the background and consequences of this proposal, Randall shares with us the latest findings—established and speculative—regarding the nature and role of dark matter and the origin of the Universe, our galaxy, our Solar System, and life, along with the process by which scientists explore new concepts. In *Dark Matter and the Dinosaurs*, Randall tells a breathtaking story that weaves together the cosmos' history and our own, illuminating the deep relationships that are critical to our world and the astonishing beauty inherent in the most familiar things.

Two contributions on closely related subjects: the theory of linear algebraic groups and invariant theory, by well-known experts in the fields. The book will be very useful as a reference and research guide to graduate students and researchers in mathematics and theoretical physics.

The lectures that four authors present in this volume investigate core topics related to the accelerated expansion of the Universe. Accelerated expansion occurred in the very early Universe – an exponential expansion in the inflationary period 10^{-36} s after the Big Bang. This well-established theoretical concept had first been proposed in 1980 by Alan Guth to account for the homogeneity and isotropy of the observable universe, and simultaneously by Alexei Starobinski, and has since then been developed by many authors in great theoretical detail. An accelerated expansion of the late Universe at redshifts z

'Light on Dark Matter', held from 10-14 June 1985 in the Dutch seaside resort of Noordwijk, was the first international conference devoted to the results of the all-sky survey by the US-Dutch-UK Infra-Red Astronomical Satellite (IRAS). As such, it was a homage to the scientists, engineers and technicians who conceived, built and operated this extremely successful satellite. That this was generally felt to be the case, was proven by the large number of participants (over 200 from seventeen different nations), the lively discussions, and the great variety of topics presented during the meeting. All this notwithstanding a typical Dutch summer: gale-force winds, heavy cloud cover, and meter-high surf crashing onto a beach on which only the hardy ventured. Most participants contented themselves by watching the lonely seagulls patrolling the North Sea coastline through the panoramic windows of the conference center. Parallel to the IRAS Conference, a Workshop on Infrared Properties of Interstellar Grains was organized by J. M. Greenberg of the Leiden Laboratory Astrophysics Group: a busy shuttling of participants between the Workshop room and the Main Conference Hall showed that many found it hard to choose. A large number of people were involved in making the Conference a success: in the first place the scientific organizers with their valuable advice and the conference speakers, among which I would like to mention Dr. J. H.

This book provides a comprehensive overview of developments in the field of holographic entanglement entropy. Within the context of the AdS/CFT correspondence, it is shown how quantum entanglement is computed by the area of certain extremal surfaces. The general lessons one can learn from this connection are drawn out for quantum field theories, many-body physics, and quantum gravity. An overview of the necessary background material is provided together with a flavor of the exciting open questions that are currently being discussed. The book is divided into four main parts. In the first part, the concept of entanglement, and methods for computing it, in quantum field theories is reviewed. In the second part, an overview of the AdS/CFT correspondence is given and the holographic entanglement entropy prescription is explained. In the third part, the time-dependence of entanglement entropy in out-of-equilibrium systems, and applications to many body physics are explored using holographic methods. The last part focuses on the connection between entanglement and geometry. Known constraints on the holographic map, as well as, elaboration of entanglement being a fundamental building block of geometry are explained. The book is a useful resource for researchers and graduate students interested in string theory and holography, condensed matter and quantum information, as it tries to connect these different subjects linked by the common theme of quantum entanglement. Beginning with basic facts about the observable universe, this book reviews the complete range of topics that make up a degree course in cosmology and particle astrophysics. The book is self-contained - no specialised knowledge is required on the part of the reader, apart from undergraduate math and physics. This paperback edition targets students of physics, astrophysics and cosmology from advanced undergraduate to early graduate level.

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