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2 Corrections to Newtonian Gravity in the Theories with a Weak Unification Scale3 What Constraints are Known up to Date?; 4 Constraints from the Recent Measurement of the Casimir Force Between Gold Coated Lens and Disk; 5 Conclusions and Discussion; References; Finite Action, Holographic Conformal Anomaly and Quantum Brane-Worlds in D5 Gauged Supergravity; 1 Introduction; 2 Holografic Weyl anomaly for gauged supergravity with general dilaton potential; 3 Surface Counterterms and Finite Action; 4 Comparison with other counterterm schemes and holografic RG
5 Dilatonic brane-world inflation induced by quantum effects: Constant bulk potential6 Discussion; Appendix A Remarks on boundary values; References; Quantum Group SUQ(2) and Pairing in Nuclei; 1 Quasi-Spin operators and Seniority Scheme; 2 Nucleon Pairs with q-deformation; 3 RPA with q-deformed nucleon pairs and q-deformed Quasi-particle pairs; 4 Gap equation in qBCS and the Ground State Energy; 5 Acknowledgments; References; Some Topological Considerations about Defects on Nematic Liquid Crystals; 1 INTRODUCTION; 2 AXIAL DISCLINATIONS AND THE MICROSCOPIC NATURE OF THE LIQUID CRYSTALS
3 THE BRANCH-CUT

Sommario/riassunto

This volume presents the following topics: non-Abelian Toda models, brief remarks for physicists on equivariant cohomology and the Duistermaat-Heckman formula, Casimir effect, quantum groups and their application to nuclear physics, quantum field theory, quantum gravity and the theory of extended objects, and black hole physics and cosmology. Contents: Dynamics, Viscous, Self-Screening Hawking Atmosphere (I Brevik); Gravitational Interaction of Higher Spin Massive Fields and String Theory (I L Buchbinder & V D Pershin); Invariants of Chern-Simons Theory Associated with Hyperbolic Manifolds (A