



Deformations of Spacetime Symmetries [Gravity, Group- Valued Momenta, and Non- Commutative Fields /

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<http://id.loc.gov/vocabulary/relators/aut>

Springer Berlin Heidelberg :
Imprint: Springer,
2021.

Monografía

This monograph provides an introduction to deformations of Poincaré symmetries focusing on models with a Lie group momentum space and associated non-commutative space-times. The emphasis is put on the emergence of such structures from quantum gravity, their mathematical features described in terms of Hopf algebras and applications to particle kinematics and field theory. Part I of this work focuses on the link between gravity and deformed symmetries in the case of 2+1 and 3+1 space-time dimensions. Part II is devoted to the description of classical particles with group valued momenta, their phase spaces and kinematics. The last part of these notes provides an introduction to the basic features of classical and quantum field theory on $\hat{\mathbb{R}}^4$ -Minkowski space-time, the prototypical example of non-commutative space-time exhibiting deformed Poincaré symmetry. The text, being the first providing a detailed overview of these topics, is primarily intended for researchers and graduate students interested in non-commutative field theories and quantum gravity phenomenology.

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Título: Deformations of Spacetime Symmetries [electronic resource] : Gravity, Group-Valued Momenta, and Non-Commutative Fields by Michele Arzano, Jerzy Kowalski-Glikman.

Edición: 1st ed. 2021

Editorial: Berlin, Heidelberg Springer Berlin Heidelberg Imprint: Springer 2021.

Descripción física: XIII, 192 p. 10 illus., 8 illus. in color. online resource.

Mención de serie: Lecture Notes in Physics 0075-8450 986

Documento fuente: Springer Nature eBook

Contenido: Invitation: gravity, point particles, and group-valued momenta -- Gravity in 2+1 dimensions as a Chern-Simons theory -- Gravity in 3+1 dimensions, particles and topological limit -- Deformed classical particles: phase space and kinematics -- Hopf algebra relativistic symmetries: the k -Poincaré algebra -- Classical fields, symmetries and conserved charges -- Free quantum fields and discrete symmetries.

ISBN: 9783662630976 978-3-662-63097-6

Materia: Gravitation Elementary particles (Physics) Quantum field theory Physics Mathematical physics Classical and Quantum Gravitation, Relativity Theory Elementary Particles, Quantum Field Theory Mathematical Methods in Physics Mathematical Physics

Autores: Kowalski-Glikman, Jerzy., author. aut. <http://id.loc.gov/vocabulary/relators/aut>

Entidades: SpringerLink (Online service)

Enlace a formato físico adicional: Printed edition 9783662630952 Printed edition 9783662630969

Punto acceso adicional serie-Título: Lecture Notes in Physics 0075-8450 986.

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