1. Record Nr. UNISA996503549703316

Autore	Banica Teo
Titolo	Introduction to Quantum Groups [[electronic resource] /] / by Teo Banica
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2022
ISBN	9783031238178 9783031238161
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (428 pages)
Disciplina	512.55
Soggetti	Mathematics Operator theory Operator Theory Grups quàntics Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I. Quantum groups -- Chapter 1. Quantum spaces -- Chapter 2. Quantum groups -- Chapter 3. Representation theory -- Chapter 4. Tannakian duality -- Part II. Quantum rotations -- Chapter 5. Free rotations -- Chapter 6. Unitary groups -- Chapter 7. Easiness, twisting -- Chapter 8. Probabilistic aspects -- Part III. Quantum permutations -- Chapter 9. Quantum permutations -- Chapter 10. Quantum reflections -- Chapter 11. Classification results -- Chapter 12. The standard cube -- Part IV. Advanced topics -- Chapter 13. Toral subgroups -- Chapter 14. Amenability, growth -- Chapter 15. Homogeneous spaces -- Chapter 16. Modelling questions -- Bibliography -- Index.
Sommario/riassunto	This book introduces the reader to quantum groups, focusing on the simplest ones, namely the closed subgroups of the free unitary group. Although such quantum groups are quite easy to understand mathematically, interesting examples abound, including all classical Lie groups, their free versions, half-liberations, other intermediate liberations, anticommutation twists, the duals of finitely generated discrete groups, quantum permutation groups, quantum reflection

groups, quantum symmetry groups of finite graphs, and more. The book is written in textbook style, with its contents roughly covering a one-year graduate course. Besides exercises, the author has included many remarks, comments and pieces of advice with the lone reader in mind. The prerequisites are basic algebra, analysis and probability, and a certain familiarity with complex analysis and measure theory. Organized in four parts, the book begins with the foundations of the theory, due to Woronowicz, comprising axioms, Haar measure, Peter–Weyl theory, Tannakian duality and basic Brauer theorems. The core of the book, its second and third parts, focus on the main examples, first in the continuous case, and then in the discrete case. The fourth and last part is an introduction to selected research topics, such as toral subgroups, homogeneous spaces and matrix models. Introduction to Quantum Groups offers a compelling introduction to quantum groups, from the simplest examples to research level topics.