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Nota di contenuto	to quantum groups -- Mathematical guide to quantum groups -- A q-boson realization of the quantum group $SU_q(2)$ and the theory of q-tensor operators -- Polynomial basis for $SU(2)_q$ and Clebsch-Gordan coefficients -- $U_q(\mathfrak{sl}(2))$ Invariant operators and reduced polynomial identities -- Classification and characters of $U_q(\mathfrak{sl}(3, \mathbb{C}))$ representations -- Extremal projectors for quantized kac-moody superalgebras and some of their applications -- Yang-Baxter algebras, integrable theories and Betre Ansatz -- Yang-Baxter algebra — Bethe Ansatz — conformal quantum field theories — quantum groups -- Classical Yang-Baxter equations and quantum integrable systems (Gaudin models) -- Quantum groups as symmetries of chiral conformal algebras -- Comments on rational conformal field theory, quantum groups and tower of algebras -- Chern-Simons field theory and quantum groups -- Quantum symmetry associated with braid group statistics -- Sum rules for spins in $(2 + 1)$ -dimensional quantum field theory -- Anomalies from the phenomenological and geometrical points of view -- KMS states, cyclic cohomology and supersymmetry --

Gauge theories based on a non-commutative geometry -- Algebras symmetries spaces.

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Sommario/riassunto

A thorough analysis of exactly soluble models in nonlinear classical systems and in quantum systems as well as recent studies in conformal quantum field theory have revealed the structure of quantum groups to be an interesting and rich framework for mathematical and physical problems. In this book, for the first time, authors from different schools review in an intelligible way the various competing approaches: inverse scattering methods, 2-dimensional statistical models, Yang-Baxter algebras, the Bethe ansatz, conformal quantum field theory, representations, braid group statistics, noncommutative geometry, and harmonic analysis.

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