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Titolo	Low-Dimensional Models in Statistical Physics and Quantum Field Theory [[electronic resource]] : Proceedings of the 34. Internationale Universitätswochen für Kern- und Teilchenphysik Schladming, Austria, March 4–11, 1995 // edited by Harald Grosse, Ludwig Pittner
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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 469
Disciplina	530.12
Soggetti	Quantum physics Quantum computers Spintronics Elementary particles (Physics) Quantum field theory Statistical physics Dynamical systems Quantum Physics Quantum Information Technology, Spintronics Elementary Particles, Quantum Field Theory Complex Systems Statistical Physics and Dynamical Systems
Lingua di pubblicazione	Inglese
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Nota di contenuto	The chern-simons theory and quantized moduli spaces of flat connections -- Comments about higgs fields, noncommutative geometry, and the standard model -- Large new applications of Bethe Ansatz -- University in turbulence: An exactly solvable model -- to integrable models of statistical physics -- Yang-Baxter equation and reflection equations in integrable models -- Scattering matrices and affine Hecke algebras -- Some algebraic and analytic structures in integrable systems -- Monodromy representation of the mapping class

group B_n for the $su(2)$ Knizhnik-Zamolodchikov equation -- What are the quantum mechanical Lyapunov exponents? -- Area-preserving structure of massless matter-gravity fields in 1+1 dimensions -- Solitons in the Calogero-Sutherland collective field model -- $W_{1+\infty}$ minimal models and the hierarchy of the quantum hall effect -- Creation and annihilation operators for b^2/c systems on general algebraic curves -- Interacting electrons and localized spins: Exact results from conformal field theory -- On the $U(1)$ -Problem of QED2 -- The finite Gauge model on the truncated sphere -- Local operators in massive quantum field theories -- On anomalies and noncommutative geometry -- Quantum deformations of space-time symmetries with fundamental mass parameter -- Magnetic field-induced 2D wigner solid versus incompressible quantum liquid -- Random Walks over Wilson loop space -- Polynomial identities on Reflection Equation Algebra -- to Poisson τ -models -- On solution of self-duality equation in quantum-group Gauge theory.

Sommario/riassunto

This book contains thoroughly written reviews of modern developments in low-dimensional modelling of statistical mechanics and quantum systems. It addresses students as well as researchers. The main items can be grouped into integrable (quantum) spin systems, which lead in the continuum limit to (conformal invariant) quantum field theory models and their algebraic structures, ranging from the Yang-Baxter equation and quantum groups to noncommutative geometry.
