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	Titolo	Field Theoretical Tools for Polymer and Particle Physics [[electronic resource] /] / edited by Hildegard Meyer-Ortmanns, Andreas Klümper
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1998
	ISBN	3-540-69747-0
	Edizione	[1st ed. 1998.]
	Descrizione fisica	1 online resource (XVI, 260 p.)
	Collana	Lecture Notes in Physics, , 0075-8450 ; ; 508
	Disciplina	530.4/13
	Soggetti	Algebra
		Chemical engineering
		Physics
		Elementary particles (Physics)
		Quantum field theory
		Industrial Chemistry/Chemical Engineering
		Physics, general
		Mathematical Methods in Physics
		Numerical and Computational Physics, Simulation
		Elementary Particles, Quantum Field Theory
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di contenuto	Random walks in polymer physics -- Random walks in field theory -- Polymer expansion in particle physics -- Polymers, spin models and field theory -- Reaction-diffusion mechanisms and quantum spin systems -- Bosonization in particle physics -- Hadronization in particle physics -- The hybrid monte carlo algorithm for quantum chromodynamics -- The hybrid monte carlo method for polymer chains -- Simulations of toy proteins -- Two lectures on phase mixing: Nucleation and symmetry restoration -- Neural networks and confidence limit estimates -- The gross-neveu model and QCDs chiral phase transition -- The TBA, the gross-neveu model, and polyacetylene -- Solitons in polyacetylene.
	Sommario/riassunto	The book is written for advanced graduate students. The topics have been selected to present methods and models that have applications in

both particle physics and polymer physics. The lectures may serve as a guide through more recent research activities and illustrate the applicability of joint methods in different contexts. The book deals with analytic tools (e.g. random walk models, polymer expansion), numerical tools (e.g. Langevin dynamics), and common models (the three-dimensional Gross-Neveu-Model).