

1. Record Nr.	UNINA9910734331303321
Autore	Smit Jan <1943->
Titolo	Introduction to quantum fields on a lattice : 'a robust mate' // Jan Smit [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2023
ISBN	1-009-40270-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xii, 271 pages) : illustrations (black and white), digital, PDF file(s)
Collana	Cambridge lecture notes in physics ; ; 15
Disciplina	530.143
Soggetti	Lattice field theory Quantum field theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Also issued in print: 2023.
Nota di bibliografia	Includes bibliographical references and index.
Sommario/riassunto	This book provides a concise introduction to quantum fields on a lattice: a precise and non-perturbative definition of quantum field theory obtained by replacing continuous space-time by a discrete set of points on a lattice. The path integral on the lattice is explained in concrete examples using weak and strong coupling expansions. Fundamental concepts such as 'triviality' of Higgs fields and confinement of quarks and gluons into hadrons are described and illustrated with the results of numerical simulations. The book also provides an introduction to chiral symmetry and chiral gauge theory, as well as quantized non-Abelian gauge fields, scaling and universality. Based on the lecture notes of a course given by the author, this book contains many explanatory examples and exercises, and is suitable as a textbook for advanced undergraduate and graduate courses. Originally published in 2002, this title has been reissued as an Open Access publication on Cambridge Core.