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| Titolo | Renormalization of Quantum Field Theories with Non-linear Field Transformations [[electronic resource] ] : Proceedings of a Workshop, Held at Ringberg Castle Tegernsee, FRG, February 16–20, 1987 / / edited by Peter Breitenlohner, Dieter Maison, Klaus Sibold |
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| Descrizione fisica | 1 online resource (VI, 242 p. 11 illus.) |
| Collana | Lecture Notes in Physics, , 0075-8450 ; ; 303 |
| Disciplina | 539.72 |
| Soggetti | Elementary particles (Physics)<br>Quantum field theory<br>Quantum computers<br>Spintronics<br>Quantum physics<br>Manifolds (Mathematics)<br>Complex manifolds<br>Elementary Particles, Quantum Field Theory<br>Quantum Information Technology, Spintronics<br>Quantum Physics<br>Manifolds and Cell Complexes (incl. Diff.Topology) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Bibliographic Level Mode of Issuance: Monograph |
| Nota di contenuto | Renormalization theory, a short account of results and problems -- Some remarks for the construction of yang-mills field theories -- Non-linear field transformations simple examples and general remarks -- Superspace renormalization of N = 1, d = 4 supersymmetric gauge theories -- N= 2 Supersymmetric Yang-Mills Theories in the Wess-Zumino Gauge -- Radiative mass generation in scale invariant systems with spontaneous symmetry breakdown -- Discussion session on part I: Non-linear field transformations in 4 dimensions -- The non-linear sigma model -- B.R.S. renormalization of B(n+1) non linear ?-model -- Renormalization of bosonic non-linear ?-models built on compact |

homogeneous manifolds -- Nonlinear field renormalizations in the background field method -- Kahler geometry and supersymmetric non-linear ?-models: An introduction -- Methods in hyperkähler ? models building -- Sigma model ?-functions at all loop orders -- The d=2 conformally invariant SU(2) ?-model with wess-zumino term and related critical theories+) -- The two-dimensional 0(n) nonlinear ?-model from a wilson renormalization group viewpoint -- Nonlinear ?-models with boundary and open strings -- Discussion session on part II: Non-linear ?-models -- Remarks on slavnov symmetries -- Supersymmetric properties of field theories in 10-D -- Generalized wess-zumino terms.

Sommario/riassunto

The characteristic feature of many models for field theories based on concepts of differential geometry is their nonlinearity. In this book a systematic exposition of nonlinear transformations in quantum field theory is given. The book starts with a short account of the renormalization theory with examples which can be handled successfully in four space-time dimensions. The second part is devoted to nonlinear sigma-models and their constructions in two dimensions. In the final section geometrical and cohomological methods and the relations to string theory are treated. This book is an important contribution towards rigorous definitions, and the mastering of nonlinear reparametrizations in agreement with the principles of quantum field theory will help to deal with anomalies, geometry and the like consistently and thus to understand better their implications for physics. The collection of papers addresses researchers and graduate students as well and will stimulate further work on the foundations of quantum field theory.