

# Lecture Notes in Physics

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Volume 214

## Classical, Discrete Spin Models:

**Symmetry, Duality and Renormalization**

1984. VII, 251 pages. Soft cover DM 32,-. ISBN 3-540-13896-X

The purpose of this book is to present three aspects of the statistical mechanical theory of discrete, classical spin systems:

- The largely mathematical theory of the possible (finite) symmetry groups of spin models and their classification.
- The theory of the duality transformation.
- The theory of the renormalization of fields and interactions on recursively defined sequences of graphs developed from a new point of view.

Volume 212

## Gravitation, Geometry and Relativistic Physics

Proceedings of the "Journées Relativistes"

Held at Aussois, France, May 2-5, 1984

1984. VI, 336 pages. Soft cover DM 52,-. ISBN 3-540-13880-3

Contents: General Relativity. - Theoretical Physics and Geometry. - Experimental Relativity and Gravitation. - Astrophysics and Cosmology.

Volume 211

## Resonances - Models and Phenomena

Proceedings of a Workshop

Held at the Centre for Interdisciplinary Research

Bielefeld University, Bielefeld, Germany, April 9-14, 1984

1984. VI, 359 pages. Soft cover DM 52,-. ISBN 3-540-13880-3

This book presents a study of resonances as a phenomenon in physical and chemical systems and their mathematical description.

Volume 210

## Cellular Structures in Instabilities

Proceedings of the Meeting "Structures cellulaires dans les instabilités-périodicité, défauts, turbulence de phase", Held at Gif-sur-Yvette, France, June 20-22, 1983

1984. VI, 389 pages. Soft cover DM 52,-. ISBN 3-540-13879-X

This book reviews some recent experimental and theoretical work on cellular structures in systems such as Rayleigh-Bénard convection, hydrodynamic and mechanical instabilities, and in the case of extended geometries.

Volume 205

## Solutions of Einstein's Equations: Techniques and Results

Proceedings of the International Seminar on Exact Solutions of Einstein's Equations

Held at Retzbach, Germany, November 14-18, 1983

1984. VI, 439 pages. Soft cover DM 59,-. ISBN 3-540-13366-6

These proceedings are an introduction to the techniques for generating solutions of nonlinear differential equations. The methods presented are self-contained and represent the state of the art.

Volume 201

## Group Theoretical Methods in Physics

Proceedings of the XIIth International Colloquium

Held at the International Centre for Theoretical Physics, Trieste, Italy, September 5-11, 1983

1984. XXVII, 518 pages. Soft cover DM 63,-. ISBN 3-540-13335-6

Contents: Group Representations, Group Extensions, Contractions and Bifurcations. - Completely Integrable Systems. - Elementary Particles and Gauge Theories. - Supersymmetry and Supergravity. - Atomic and Nuclear Physics. - Symmetries in Condensed Matter Physics and Statistical Mechanics. - Canonical Transformations and Quantum Mechanics.

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