

**H.-O. Georgii**, University of Munich

## **Gibbs Measures and Phase Transitions**

1988. XIV, 525 pages. Cloth DM 178.- ISBN 3 11 010455 5

(de Gruyter Studies in Mathematics, Volume 9. Editors: Heinz Bauer and Peter Gabriel)

The concept of a Gibbs measure was introduced in the late 1960s by Drobushin, Lanford and Ruelle as a natural mathematical object describing an equilibrium state of a physical system consisting of a very large number of interacting components. In probabilistic terms, a Gibbs measure is simply the distribution of a countably infinite family of random variables admitting prescribed conditional probabilities of a particular type. This book provides a systematic and carefully motivated introduction to the general theory of Gibbs measures which is also referred to as classical equilibrium statistical mechanics of infinite lattice systems. A central theme is the phenomenon of non-uniqueness of Gibbs measures since it reflects the physical phenomenon of phase transition. The book is primarily addressed to probabilists and mathematical physicists; familiarity with statistical physics is not required.

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#### **Phase transitions in reflection positive models:**

Reflection positivity · Low energy oceans and discrete symmetry breaking · Phase transitions without symmetry breaking · Continuous symmetry breaking in  $N$ -vector models

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P. Breitenlohner, D. Maison, K. Sibold (Eds.)

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Proceedings of a Workshop, Ringberg Castle, Tegernsee, FRG, February 16–20, 1987

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**Contents:** Non-linear Field Transformation in Four Dimensions: Contributions by P. Breitenlohner, R. Collina, D. Maison, O. Piguet, R. Sencor, K. Sibold. – Non-linear  $O$ -Models: Contributions by C. Becchi, A. Biagi, G. Bonneau, H. Dorn, R. Flume, P. Mitter, D. Olivier, C. Pope, K. Stelle, G. Valent. – Cohomological and Geometrical Methods, Relation to String Theory: Contributions by L. Bonora, M. Bregola, P. Cotta-Ramusino, K. Lechner, P. Pasti, M. Rinaldi, R. Stora, M. Tonin.

Volume 302

Francois Gieres

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M. Month, S. Turner (Eds.)

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Proceedings of a Topical Course held by the Joint US-CERN School on Particle Accelerators at South Padre Island, Texas, October 23–29, 1986

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K. T. Hecht

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R. Alicki, K. Lendi

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# Mathematik für Physiker und Ingenieure

Herausgeber: H. Neunzert, Universität Kaiserslautern

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