

Contents

Part I Spatial Statistics and Point Processes

Basic Ideas of Spatial Statistics

Dietrich Stoyan 3

Stationary Models in Stochastic Geometry – Palm Distributions as Distributions of Typical Elements. An Approach Without Limits

Werner Nagel 22

Statistical Analysis of Large-Scale Structure in the Universe

Martin Kerscher 36

Dynamics of Structure Formation in Thin Liquid Films: A Special Spatial Analysis

Karin Jacobs, Ralf Seemann, Klaus Mecke 72

Part II Integral Geometry and Morphology of Patterns

Mixed Measures and Inhomogeneous Boolean Models

Wolfgang Weil 95

Additivity, Convexity, and Beyond: Applications of Minkowski Functionals in Statistical Physics

Klaus R. Mecke 111

Considerations About the Estimation of the Size Distribution in Wicksell's Corpuscle Problem

Joachim Ohser, Konrad Sandau 185

Local Porosity Theory and Stochastic Reconstruction for Porous Media

Rudolf Hilfer 203

Stochastic Models as Tools for the Analysis of Decomposition and Crystallisation Phenomena in Solids

Helmut Hermann 242

**Part III Phase Transitions and Simulations
of Hard Particles**

Phase Transition and Percolation in Gibbsian Particle Models

Hans-Otto Georgii 267

Fun with Hard Spheres

Hartmut Löwen 295

Finite Packings and Parametric Density

Jörg M. Wills 332

A Primer on Perfect Simulation

Elke Thönnies 349

**Grand Canonical Simulations of Hard-Disk Systems
by Simulated Tempering**

Gunter Döge 379

Dynamic Triangulations for Granular Media Simulations

Jean-Albert Ferrez, Thomas M. Lieblich, Didier Müller 394

Index 411