This multi-author reference work provides a unique introduction to the currently emerging, highly interdisciplinary field of those transport processes that cannot be described by using standard methods of statistical mechanics. It comprehensively summarizes topics ranging from mathematical foundations of anomalous dynamics to the most recent experiments in this field. In so doing, this monograph extracts and emphasizes common principles and methods from many different disciplines while providing up-to-date coverage of this new field of research, considering such diverse applications as plasma physics, glassy material, cell science, and socio-economic aspects.

The book will be of interest to both theorists and experimentalists in nonlinear dynamics, statistical physics and stochastic processes. It also forms an ideal starting point for graduate students moving into this area. 18 chapters written by internationally recognized experts in this field provide in-depth introductions to fundamental aspects of anomalous transport.

**ABOUT THE AUTHOR**

RAINER KLAGES, lecturer in applied mathematics at the Queen Mary University of London, studied physics and philosophy at the Technical University of Berlin. His research stations were Maryland/USA, Budapest, Brussels, and Dresden and his main research interests are nonlinear dynamics, complex systems, and nonequilibrium statistical mechanics.
GÜNTER RADONS holds the Chair for theoretical physics, complex systems and nonlinear dynamics at the Institute of Physics, Chemnitz University of Technology. His main research interests are theoretical foundations of complex systems, data analysis and modelling, applications in natural sciences and engineering.

IGOR M. SOKOLOV holds the Chair for statistical physics and nonlinear dynamics at the Institute of Physics, Humboldt-University at Berlin. His main research interests cover statistical physics as well as physical chemistry of condensed and soft matter, especially problems regarding disordered systems and polymers.

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