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Soggetti	Partial differential equations Applied mathematics Engineering mathematics Probabilities Physics Partial Differential Equations Applications of Mathematics Probability Theory and Stochastic Processes Numerical and Computational Physics, Simulation Mathematical Methods in Physics
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Part I Mini-Courses: C. Bernardin: Diffusion of energy in chains of oscillators with conservative noise -- V. Giovangigli: Dissipative reactive fluid models from the kinetic theory -- Part II Short Papers: D. Bessam: Large deviations in a Gaussian setting: the role of the Cameron-Martin space -- F. Carvalho, J.K. Polewczak and A.J. Soares: Kinetic theory of simple reacting spheres: an application to coloring

processes -- W. De Roeck and F. Huveneers: Can translation invariant systems exhibit a many-body localized phase? -- P. Duarte and M.J. Torres: Stability of non-deterministic systems -- P. Goncalves: Derivation of the Stochastic Burgers equation from the WASEP -- E. Luçon: Large population asymptotics for interacting diffusions in a quenched random environment -- D. Madjarevic: Shock structure and temperature overshoot in macroscopic multi-temperature model of binary mixtures -- A. Nota: Diffusive limit for the random Lorentz gas.- M.J. Oliveira and R.V. Mendes: Fractional Boson gas and fractional Poisson measure in infinite dimensions -- M.P. Ramos, A.J. Soares: Dynamical properties of a cosmological model with diffusion -- S. Simic: The structure of shock waves in dissipative hyperbolic models -- M. Simon: Diffusion coefficient for the disordered harmonic chain perturbed by an energy conserving noise -- G.M. Schütz: Conditioned stochastic particle systems and integrable quantum spin systems.

Sommario/riassunto

This book focuses on mathematical problems concerning different applications in physics, engineering, chemistry and biology. It covers topics ranging from interacting particle systems to partial differential equations (PDEs), statistical mechanics and dynamical systems. The purpose of the second meeting on Particle Systems and PDEs was to bring together renowned researchers working actively in the respective fields, to discuss their topics of expertise and to present recent scientific results in both areas. Further, the meeting was intended to present the subject of interacting particle systems, its roots in and impacts on the field of physics, and its relation with PDEs to a vast and varied public, including young researchers. The book also includes the notes from two mini-courses presented at the conference, allowing readers who are less familiar with these areas of mathematics to more easily approach them. The contributions will be of interest to mathematicians, theoretical physicists and other researchers interested in interacting particle systems, partial differential equations, statistical mechanics, stochastic processes, kinetic theory, dynamical systems and mathematical modeling aspects.
