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Titolo	Lévy Flights and Related Topics in Physics [[electronic resource]] : Proceedings of the International Workshop Held at Nice, France, 27–30 June 1994 / / edited by Michael F. Shlesinger, George M. Zaslavsky, Uriel Frisch
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Disciplina	530.1/59282
Soggetti	Statistical physics Dynamical systems Thermodynamics Probabilities Physics Complex Systems Probability Theory and Stochastic Processes Mathematical Methods in Physics Numerical and Computational Physics, Simulation Statistical Physics and Dynamical Systems
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Nota di contenuto	Variability of anomalous transport exponents versus different physical situations in geophysical and laboratory turbulence -- Conditionally-averaged dynamics of turbulence, new scaling and stochastic modelling -- Observation of anomalous diffusion and Lévy flights -- Chaotic lagrangian motion on a rotating sphere -- Lévy walks and lattice gas hydrodynamics -- Definition of stable laws, infinitely divisible laws, and Lévy processes -- to fractal sums of pulses -- Time scales in noisy conservative systems -- Geometric constructions in multifractality formalism -- Lévy walks in chaotic systems: Useful formulas and recent applications -- Transport and large scale stochasticity for a nonperiodic generalisation of the standard map -- Blowout

bifurcations: Symmetry breaking of spatially symmetric chaotic states -- Lévy description of anomalous diffusion in dynamical systems -- From Lévy flights to the fractional kinetic equation for dynamical chaos -- More Lévy distributions in physics -- Aspects of Lévy flights in a quenched random force field -- Universality of escape from a half-space for symmetrical random walks -- Derivation of Lévy-type anomalous superdiffusion from generalized statistical mechanics -- A dynamical model leading to the breakdown of the Green-Kubo predictions -- Ultra-slow convergence to a Gaussian: The truncated Lévy flight -- Fractals in physiological control: From heart beat to gait -- Long-range correlations and generalized Lévy walks in DNA sequences.

Sommario/riassunto

P. Lévy's work on random walks with infinite moments, developed more than half a century ago, has now been fully appreciated as a foundation of probabilistic aspects of fractals and chaos as well as scale-invariant processes. This is the first book for physicists devoted to Lévy processes. It includes thorough review articles on applications in fluid and gas dynamics, in dynamical systems including anomalous diffusion and in statistical mechanics. Various articles approach mathematical problems and finally the volume addresses problems in theoretical biology. The book is introduced by a personal recollection of P. Lévy written by B. Mandelbrot.