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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 624
Disciplina	533/.2
Soggetti	Statistical physics Dynamical systems Continuum physics Amorphous substances Complex fluids Phase transitions (Statistical physics) Mechanics Mechanics, Applied Complex Systems Classical and Continuum Physics Soft and Granular Matter, Complex Fluids and Microfluidics Phase Transitions and Multiphase Systems Theoretical and Applied Mechanics Statistical Physics and Dynamical Systems
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Nota di contenuto	Part I: Kinetic Theory -- Asymptotic Solutions of the Nonlinear Boltzmann Equation for Dissipative Systems -- The Homogeneous Cooling State Revisited -- The Inelastic Maxwell Model -- Cooling Granular Gases: The Role of Correlations in the Velocity Field -- Self-Similar Asymptotics for the Boltzmann Equation With Inelastic Interactions -- Kinetic Integrals in the Kinetic Theory of Dissipative Gases -- Kinetics of Fragmenting Freely Evolving Granular Gases -- Part II: Granular Hydrodynamics -- Shock Waves in Granular Gases --

	Linearized Boltzmann Equation and Hydrodynamics for Granular Gases -- Development of a Density Invesion in Driven Granular Gases -- Kinetic Theory for Inertia Flows of Dilute Turbulent Gas-Solids Two-Phase Mixtures -- Part III: Driven Gases and Structure Formation -- Driven Granular Gases -- Van der Waals-Like Transition in Fluidized Granular Matter -- Birth and Sudden Death of Granular Cluster -- Vibrated Granular Media as Experimentally Realized Granular Gases.
Sommario/riassunto	While there is not yet any general theory for granular materials, significant progress has been achieved for dilute systems, also called granular gases. The contributions in this book address both the kinetic approach one using the Boltzmann equation for dissipative gases as well as the less established hydrodynamic description. The last part of the book is devoted to driven granular gases and their analogy with molecular fluids. Care has been taken so as to present the material in a pedagogical and self-contained way and this volume will thus be particularly useful to nonspecialists and newcomers to the field.