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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	History -- Lagrangian Mechanics -- Hamiltonian Mechanics -- Solid Bodies -- Hamilton-Jacobi Approach -- Complex Systems -- Chaos in Dynamical Systems -- Special Relativity -- Appendices -- Differential of S -- Hamilton-Jacobi Equation -- With Variables p, q, q -- Zero-Component Lemma -- Maxwell Equations from Field Strength Tensor -- Differential Operators -- Answers to Selected Exercises. .
Sommario/riassunto	This advanced undergraduate textbook begins with the Lagrangian formulation of Analytical Mechanics and then passes directly to the Hamiltonian formulation and the canonical equations, with constraints incorporated through Lagrange multipliers. Hamilton's Principle and the canonical equations remain the basis of the remainder of the text. Topics considered for applications include small oscillations, motion in electric and magnetic fields, and rigid body dynamics. The Hamilton-Jacobi approach is developed with special attention to the canonical transformation in order to provide a smooth and logical transition into the study of complex and chaotic systems. Finally the text has a careful treatment of relativistic mechanics and the requirement of Lorentz invariance. The text is enriched with an outline of the history of

mechanics, which particularly outlines the importance of the work of Euler, Lagrange, Hamilton and Jacobi. Numerous exercises with solutions support the exceptionally clear and concise treatment of Analytical Mechanics. .