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Descrizione fisica	1 online resource (xix, 255 pages) : color illustrations
Collana	Gale eBooks
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Soggetti	Lagrange equations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Lagrangian Dynamics -- Preliminaries -- Lagrangian Dynamics -- Quasi-Coordinates, and Quasi-Velocities -- Conclusions.
Sommario/riassunto	This volume provides a short summary of the essentials of Lagrangian dynamics for practicing engineers and students of physics and engineering. It examines a range of phenomena and techniques in a style that is compact and succinct, while remaining comprehensive. The book provides a review of classical mechanics and coverage of critical topics including holonomic and non-holonomic systems, virtual work, the principle of d'Alembert for dynamical systems, the mathematics of conservative forces, the extended Hamilton's principle, Lagrange's equations and Lagrangian dynamics, a systematic procedure for generalized forces, quasi-coordinates, and quasi-velocities, Lagrangian dynamics with quasi-coordinates, Professor Ranjan Vepa's approach and the Hamiltonian formulation. Adopting a step-by-step approach with examples throughout the book, this ready reference completely develops all of the relevant equations and is ideal for practicing mechanical, aeronautical, and civil engineers, physicists, and graduate/upper-level undergraduate students. Explains in detail the development of the theory behind Lagrangian dynamics in a practical fashion; Discusses virtual work, generalized forces, conservative forces, constraints, Extended Hamilton's Principle and the Hamiltonian formulation; Presents two different approaches to the quasi-velocity method for non-holonomic constraints; Reinforces concepts presented

with illustrative examples; Includes comprehensive coverage of the important topics of classical mechanics.

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