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Descrizione fisica	1 online resource (XIV, 1309 p. 359 illus., 100 illus. in color.)
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Disciplina	629.41
Soggetti	Aerospace engineering Astronautics Mechanics Space sciences Aerospace Technology and Astronautics Classical Mechanics Space Sciences (including Extraterrestrial Physics, Space Exploration and Astronautics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Chapter 1: The two-body problem -- Chapter 2: Orbit determination from observations -- Chapter 3: The central gravitational force and its perturbations -- Chapter 4: Impulsive orbital manoeuvres -- Chapter 5: Interplanetary trajectories -- Chapter 6: Numerical integration of the equations of motion -- Chapter 7: Dynamics of rigid bodies -- Chapter 8: Instruments for aerospace navigation -- Chapter 9: Attitude stabilisation and control of Earth satellites -- Chapter 10: Dynamics of spinning rockets -- Chapter 11: Performance and optimisation of rockets.
Sommario/riassunto	This modern textbook guides the reader through the theory and practice of the motion and attitude control of space vehicles. It first presents the fundamental principles of spaceflight mechanics and then addresses more complex concepts and applications of perturbation theory, orbit determination and refinement, space propulsion, orbital maneuvers, interplanetary trajectories, gyroscope dynamics, attitude control, and rocket performance. Many algorithms used in the modern

practice of trajectory computation are also provided. The numerical treatment of the equations of motion, the related methods, and the tables needed to use them receive particular emphasis. A large collection of bibliographical references (including books, articles, and items from the "gray literature") is provided at the end of each chapter, and attention is drawn to many internet resources available to the reader. The book will be of particular value to undergraduate and graduate students in aerospace engineering.

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