1. Record Nr. UNINA9910964345903321

Autore	Ying Shuh-Jing <1930->
Titolo	Advanced dynamics / / Shuh-Jing (Benjamin) Ying
Pubbl/distr/stampa	Reston, Va., : American Institute of Aeronautics, and Astronautics, c1997
ISBN	1-60086-130-X 1-60086-002-8 1-60119-221-5
Edizione	[1st ed.]
Descrizione fisica	xiii, 370 p. : ill
Collana	AIAA education series
Disciplina	620.1/04
Soggetti	Dynamics Mechanics, Applied
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (p. 365) and index.
Nota di contenuto	Cover -- Title -- Copyright -- Foreword -- Table of Contents -- Review of Fundamental Principles -- Kinematics and Dynamics of a Particle -- Dynamics of a System of Particles -- Lagrange's Equations and the Variational Principle -- Rockets and Space Vehicles -- Matrices, Tensors, Dyadics, and Rotation Operators -- Dynamics of a Rigid Body -- Fundamentals of Small Oscillations -- Vibration of Systems with Multiple Degrees of Freedom -- Special Relativity Theory -- Runge-Kutta Method -- Stoke's Theorem -- Planetary Data -- Determinants and Matrices -- Method of Partial Fractions -- Tables of Fourier and Laplace Transforms -- Contour Integration and Inverse Laplace Transform -- Bessel Functions -- Instructions for Computer Programs -- Further Reading -- Subject Index.
Sommario/riassunto	Advanced dynamics forms the foundation of physical science and is recognized as an important subject of study for all engineering students and professionals in competitive university programmes and throughout the industry. This textbook explains the fundamental laws of motion and goes on to cover topics including gyroscopic effect, missile trajectories, interplanetary mission, multistage rockets and use of numerical methods. In addition, theories such as the rotation operator are developed.