1. Record Nr. UNINA9910780017203321

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Titolo	Advanced Engineering Dynamics [[electronic resource]]
Pubbl/distr/stampa	Burlington, : Elsevier Science, 1997
ISBN	1-281-04706-6 9786611047061 0-08-052335-8
Descrizione fisica	1 online resource (315 p.)
Altri autori (Persone)	NettletonT
Disciplina	620.1/04 21 620.104
Soggetti	Dynamics Dynamics. Mechanics, Applied Mechanics, Applied Civil & Environmental Engineering Engineering & Applied Sciences Civil Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Front Cover; Advanced Engineering Dynamics; Copyright Page; Contents; Preface; Chapter 1. Newtonian Mechanics; 1.1 Introduction; 1.2 Fundamentals; 1.3 Space and time; 1.4 Mass; 1.5 Force; 1.6 Work and power; 1.7 Kinematics of a point; 1.8 Kinetics of a particle; 1.9 Impulse; 1.10 Kinetic energy; 1.11 Potential energy; 1.12 Coriolis's theorem; 1.13 Newton's laws for a group of particles; 1.14 Conservation of momentum; 1.15 Energy for a group of particles; 1.16 The principle of virtual work; 1.17 D' Alembert's principle; Chapter 2. Lagrange's Equations; 2.1 Introduction 2.2 Generalized co-ordinates2.3 Proof of Lagrange's equations; 2.4 The dissipation function; 2.5 Kinetic energy; 2.6 Conservation laws; 2.7 Hamilton's equations; 2.8 Rotating frame of reference and velocity-dependent potentials; 2.9 Moving co-ordinates; 2.10 Non-holonomic systems; 2.11 Lagrange's equations for impulsive forces; Chapter 3. Hamilton's Principle; 3.1 Introduction; 3.2 Derivation of Hamilton's

principle; 3.3 Application of Hamilton's principle; 3.4 Lagrange's equations derived from Hamilton's principle; 3.5 Illustrative example; Chapter 4. Rigid Body Motion in Three Dimensions
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6.12 Waves in a uniform beam6.13 Waves in periodic structures; 6.14 Waves in a helical spring; Chapter 7. Waves in a Three-Dimensional Elastic Solid; 7.1 Introduction; 7.2 Strain; 7.3 Stress; 7.4 Elastic constants; 7.5 Equations of motion; 7.6 Wave equation for an elastic solid; 7.7 Plane strain; 7.8 Reflection at a plane surface; 7.9 Surface waves (Rayleigh waves); 7.10 Conclusion; Chapter 8. Robot Arm Dynamics; 8.1 Introduction; 8.2 Typical arrangements; 8.3 Kinematics of robot arms; 8.4 Kinetics of a robot arm; Chapter 9. Relativity; 9.1 Introduction
9.2 The foundations of the special theory of relativity

Sommario/riassunto

'Advanced Engineering Dynamics' bridges the gap between elementary dynamics and advanced specialist applications in engineering.It begins with a reappraisal of Newtonian principles before expanding into analytical dynamics typified by the methods of Lagrange and by Hamilton's Principle and rigid body dynamics. Four distinct vehicle types (satellites, rockets, aircraft and cars) are examined highlighting different aspects of dynamics in each case. Emphasis is placed on impact and one dimensional wave propagation before extending the study into three dimensions. Robotics is then looked a