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4.2 D'Alembert's Principle and Newton-Euler Equations
 4.3 Constrained Dynamics; 4.4 Augmented Formulation; 4.5 Lagrange Multipliers; 4.6 Elimination of the Dependent Accelerations; 4.7 Embedding Technique; 4.8 Amalgamated Formulation; 4.9 Open-Chain Systems; 4.10 Closed-Chain Systems; 4.11 Concluding Remarks; Problems; 5 VIRTUAL WORK AND LAGRANGIAN DYNAMICS; 5.1 Virtual Displacements; 5.2 Kinematic Constraints and Coordinate Partitioning; 5.3 Virtual Work; 5.4 Examples of Force Elements; 5.5 Workless Constraints; 5.6 Principle of Virtual Work in Statics
 5.7 Principle of Virtual Work in Dynamics
 5.8 Lagrange's Equation; 5.9 Gibbs-Appel Equation; *5.10 Hamiltonian Formulation; 5.11 Relationship between Virtual Work and Gaussian Elimination; Problems; 6 CONSTRAINED DYNAMICS; 6.1 Generalized Inertia; 6.2 Mass Matrix and Centrifugal Forces; 6.3 Equations of Motion; 6.4 System of Rigid Bodies; 6.5 Elimination of the Constraint Forces; 6.6 Lagrange Multipliers; 6.7 Constrained Dynamic Equations; 6.8 Joint Reaction Forces; 6.9 Elimination of Lagrange Multipliers; 6.10 State Space Representation; 6.11 Numerical Integration
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 8 SPECIAL TOPICS IN DYNAMICS

Sommario/riassunto

Computational Dynamics, 3rd edition, thoroughly revised and updated, provides logical coverage of both theory and numerical computation techniques for practical applications. The author introduces students to this advanced topic covering the concepts, definitions and techniques used in multi-body system dynamics including essential coverage of kinematics and dynamics of motion in three dimensions. He uses analytical tools including Lagrangian and Hamiltonian methods as well as Newton-Euler Equations. An educational version of multibody computer code is now included in this new editi