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Autore	Catlin, Warren B.
Titolo	The Progress of Economics : a History of Economic Thought / Warren B. Catlin
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Autore	Lubliner Jacob
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Nota di contenuto	Cover; Title Page; Copyright Page; Preface to the Dover Edition; Preface; Contents; Chapter 1: Introduction to Continuum Thermomechanics; Section 1.1 Mathematical Fundamentals; 1.1.1 Notation; 1.1.2 Cartesian Tensors; 1.1.3 Vector and Tensor Calculus; 1.1.4 Curvilinear Coordinates; Section 1.2 Continuum Deformation; 1.2.1 Displacement; 1.2.2 Strain; 1.2.3 Principal Strains; 1.2.4 Compatibility Conditions; Section 1.3 Mechanics of Continuous Bodies; 1.3.1 Introduction; 1.3.2 Stress; 1.3.3 Mohr's Circle; 1.3.4 Plane Stress; 1.3.5 Boundary-Value Problems Section 1.4 Constitutive Relations: Elastic1.4.1 Energy and Thermoelasticity; 1.4.2 Linear Elasticity; 1.4.3 Energy Principles; Section 1.5 Constitutive Relations: Inelastic; 1.5.1 Inelasticity; 1.5.2 Linear Viscoelasticity; 1.5.3 Internal Variables: General Theory; 1.5.4 Flow Law and Flow Potential; Chapter 2: The Physics of Plasticity; Section 2.1 Phenomenology of Plastic Deformation; 2.1.1 Experimental Stress-Strain Relations; 2.1.2 Plastic Deformation; 2.1.3 Temperature and Rate Dependence; Section 2.2 Crystal Plasticity; 2.2.1 Crystals and Slip; 2.2.2 Dislocations and Crystal Plasticity 2.2.3 Dislocation Models of Plastic PhenomenaSection 2.3 Plasticity of Soils, Rocks and Concrete; 2.3.1 Plasticity of Soil; 2.3.2 "Plasticity" of Rock and Concrete; Chapter 3: Constitutive Theory; Section 3.1 Viscoplasticity; 3.1.1 Internal-Variable Theory of Viscoplasticity; 3.1.2 Transition to Rate-Independent Plasticity; 3.1.3 Viscoplasticity Without a Yield Surface; Section 3.2 Rate-Independent Plasticity; 3.2.1 Flow Rule and Work-Hardening; 3.2.2 Maximum-Dissipation Postulate and Normality; 3.2.3 Strain-Space Plasticity; Section 3.3 Yield Criteria, Flow Rules and Hardening Rules 3.3.1 Introduction3.3.2 Yield Criteria Independent of the Mean Stress; 3.3.3 Yield Criteria Dependent on the Mean Stress; 3.3.4 Yield Criteria Under Special States of Stress or Deformation; 3.3.5 Hardening Rules; Section 3.4 Uniqueness and Extremum Theorems; 3.4.1 Uniqueness Theorems; 3.4.2 Extremum and Variational Principles; 3.4.3 Rigid-Plastic Materials; Section 3.5 Limit-Analysis and Shakedown Theorems; 3.5.1 Standard Limit-Analysis Theorems; 3.5.2 Nonstandard Limit-Analysis Theorems; 3.5.3 Shakedown Theorems; Chapter 4: Problems in Contained Plastic Deformation Section 4.1 Elementary Problems4.1.1 Introduction: Statically Determinate Problems; 4.1.2 Thin-Walled Circular Tube in Torsion and Extension; 4.1.3 Thin-Walled Cylinder Under Pressure and Axial Force; 4.1.4 Statically Indeterminate Problems; Section 4.2 Elastic-Plastic Torsion; 4.2.1 The Torsion Problem; 4.2.2 Elastic Torsion; 4.2.3 Plastic Torsion; Section 4.3 The Thick-Walled Hollow Sphere and Cylinder; 4.3.1 Elastic Hollow Sphere Under Internal and External Pressure; 4.3.2 Elastic-Plastic Hollow Sphere Under Internal Pressure; 4.3.3 Thermal Stresses in an Elastic-Plastic Hollow Sphere 4.3.4 Hollow Cylinder: Elastic Solution and Initial Yield Pressure
Sommario/riassunto	The aim of Plasticity Theory is to provide a comprehensive introduction to the contemporary state of knowledge in basic plasticity theory and to its applications. It treats several areas not commonly found between the covers of a single book: the physics of plasticity, constitutive theory, dynamic plasticity, large-deformation plasticity, and numerical methods, in addition to a representative survey of problems treated by classical methods, such as elastic-plastic problems, plane plastic flow, and limit analysis; the problem discussed come from areas of interest to mechanical, structural, and