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Nota di contenuto	Contents; Preface; 1. Introduction; 1.1 Plasticity; 1.1.1 Mechanical properties of solids; 1.1.2 Microscopic mechanisms; Elastic behaviour; Plastic behaviour; 1.2 Organization and contents of the chapters; 1.3 General References; 2. The structure of crystalline solids; 2.1 Introduction; 2.2 Crystal geometry; 2.2.1 Ideal crystal; 2.3 Bravais lattices; 2.3.1 Definition; 2.3.2 Properties; Non-unicity of the generating translations; Lattice planes and rows; Symmetry of the Bravais lattice; Constraints on the rotation angles; 2.4 Unit cells; 2.4.1 Primitive unit cells 2.4.2 Conventional unit cells 2.4.3 Classification of the Bravais lattices. Cubic lattices; a) Simple cubic lattice (abbreviated as SC); b) Body centered cubic lattice (abbreviated as BCC); c) Face centered cubic lattice (abbreviated as FCC); 2.5 Examples of crystal structures; 2.5.1 Simple monoatomic structure packings; Cubic close-packing; Hexagonal close-packing; Relationship between close-packings; Body centered cubic packing; 2.5.2 Physical realizations in metals; Metallic alloys; 2.5.3 Simple covalent structures; 2.6 Non-crystalline solids; 3. Mechanics of deformable solids 3.1 Introduction 3.2 Fundamental tensors; 3.2.1 Strain and stress; 3.2.2

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Description of the elastic model
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Sommario/riassunto

This book introduces the physical mechanism of the plastic deformation of solids, which relies essentially on the occurrence and motion of dislocations. These are linear defects, specific of crystalline solids whose motion under external stresses explains the relative ease by which solids (metals in particular) can be deformed in order to give them desired shapes. The objective is to introduce the topic to undergraduate students, restricting to the main ideas and showing their relevance in interpreting phenomena well known to everyone (e.g. why are certain metals harder than others?), and fina
