1. Record Nr. UNINA9910787262003321

Autore	Hobbs Bruce
Titolo	The structural geology . Volume I Principles : the mechanics of deforming metamorphic rocks / / Bruce Hobbs, Alison Ord
Pubbl/distr/stampa	Amsterdam, Netherlands ; ; Kidlington, England ; ; Waltham, Massachusetts : , : Elsevier, , 2015 ©2015
ISBN	0-12-407933-4
Descrizione fisica	1 online resource (681 pages)
Disciplina	552.4
Soggetti	Metamorphic rocks Rock deformation Rock mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Geometry : the concept of deformation -- Kinematics : deformation histories -- The balance laws : forces involved in deformation -- Energy flow : thermodynamics -- Constitutive relations -- Nonlinear dynamics -- Brittle flow -- Visco-plastic flow -- Damage evolution -- Transport of heat -- Fluid flow -- Microstructural rearrangements -- Mineral reactions : equilibrium and non-equilibrium aspects -- Models for mineral phase nucleation and growth.
Sommario/riassunto	Structural Geology is a groundbreaking reference that introduces you to the concepts of nonlinear solid mechanics and non-equilibrium thermodynamics in metamorphic geology, offering a fresh perspective on rock structure and its potential for new interpretations of geological evolution. This book stands alone in unifying deformation and metamorphism and the development of the mineralogical fabrics and the structures that we see in the field. This reflects the thermodynamics of systems not at equilibrium within the framework of modern nonlinear solid mechanics. The thermodynamic approach enables the various mechanical, thermal, hydrological and chemical processes to be rigorously coupled through the second law of thermodynamics, invariably leading to nonlinear behavior.