1.	Record Nr.	UNINA9910768477503321
	Autore	Matias Jose´
	Titolo	Energetic Relaxation to Structured Deformations : A Multiscale Geometrical Basis for Variational Problems in Continuum Mechanics / / Jose´ Matias, Marco Morandotti, and David R. Owen
	Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore Pte Ltd., , [2023] ©2023
	ISBN	981-19-8800-5
	Edizione	[First edition.]
	Descrizione fisica	1 online resource (XII, 152 p. 1 illus.)
	Collana	SpringerBriefs on PDEs and Data Science Series
	Disciplina	620.1123
	Soggetti	Calculus of variations Deformations (Mechanics) Mathematical optimization Mechanics, Applied Deformacions (Mecànica) Mecànica aplicada Optimització matemàtica Càlcul de variacions Llibres electrònics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	1. Introduction -- 2. Mathematical preliminaries -- 3. Energetic relaxation to first-order structured deformations -- 4. Energetic relaxation to second-order structured deformations -- 5. Outlook for future research.
	Sommario/riassunto	This book is the first organized collection of some results that have been obtained by the authors, their collaborators, and other researchers in the variational approach to structured deformations. It sets the basis and makes more accessible the theoretical apparatus for assigning an energy to a structured deformation, thereby providing motivation to researchers in applied mathematics, continuum mechanics, engineering, and materials science to study the deformation of a solid body without committing at the outset to a

specific mechanical theory. Researchers will benefit from an approach in which elastic, plastic, and fracture phenomena can be treated in a unified way. The book is intended for an audience acquainted with measure theory, the theory of functions of bounded variation, and continuum mechanics. Any students in their last years of undergraduate studies, graduate students, and researchers with a background in applied mathematics, the calculus of variations, and continuum mechanics will have the prerequisite to read this book.