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Titolo	Modeling, Analysis, and Visualization of Anisotropy // edited by Thomas Schultz, Evren Özarslan, Ingrid Hotz
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Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (X, 407 p. 150 illus. in color.)
Collana	Mathematics and Visualization, , 1612-3786
Disciplina	530
Soggetti	Matrix theory Algebra Computer mathematics Mathematics Visualization Optical data processing Linear and Multilinear Algebras, Matrix Theory Computational Science and Engineering Image Processing and Computer Vision
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I: Features and Visualization -- Part II: Image Processing and Analysis -- Part III: Diffusion Modeling and Microstructure -- Part IV: Tractography -- Part V: Machine Learning Approaches.
Sommario/riassunto	This book focuses on the modeling, processing and visualization of anisotropy, irrespective of the context in which it emerges, using state-of-the-art mathematical tools. As such, it differs substantially from conventional reference works, which are centered on a particular application. It covers the following topics: (i) the geometric structure of tensors, (ii) statistical methods for tensor field processing, (iii) challenges in mapping neural connectivity and structural mechanics, (iv) processing of uncertainty, and (v) visualizing higher-order representations. In addition to original research contributions, it provides insightful reviews. This multidisciplinary book is the sixth in a

series that aims to foster scientific exchange between communities employing tensors and other higher-order representations of directionally dependent data. A significant number of the chapters were co-authored by the participants of the workshop titled Multidisciplinary Approaches to Multivalued Data: Modeling, Visualization, Analysis, which was held in Dagstuhl, Germany in April 2016. It offers a valuable resource for those working in the field of multi-directional data, vital inspirations for the development of new models, and essential analysis and visualization techniques, thus furthering the state-of-the-art in studies involving anisotropy.

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