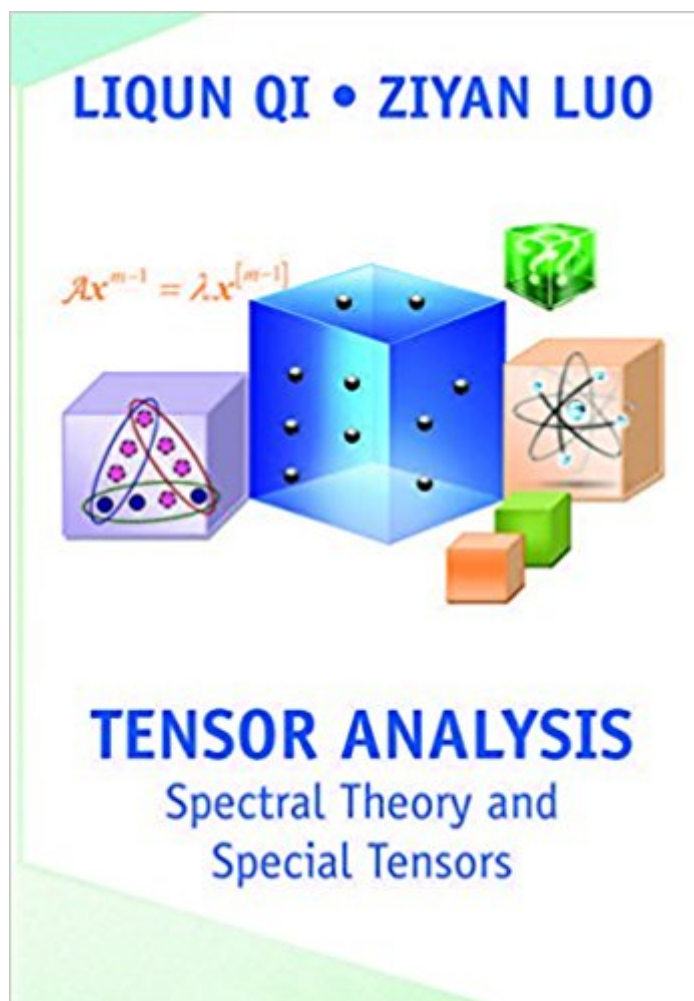


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Tensor Analysis: Spectral Theory And Special Tensors



Synopsis

Tensors, or hypermatrices, are multi-arrays with more than two indices. In the last decade or so, many concepts and results in matrix theory - some of which are nontrivial - have been extended to tensors and have a wide range of applications (for example, spectral hypergraph theory, higher order Markov chains, polynomial optimization, magnetic resonance imaging, automatic control, and quantum entanglement problems). The authors provide a comprehensive discussion of this new theory of tensors. Tensor Analysis is unique in that it is the first book to cover these three subject areas: the spectral theory of tensors; the theory of special tensors, including nonnegative tensors, positive semidefinite tensors, completely positive tensors, and copositive tensors; and the spectral hypergraph theory via tensors. Audience: The intended audience is researchers and graduate students. Contents: List of Figures; List of Algorithms; Chapter 1: Introduction; Chapter 2: Eigenvalues of Tensors; Chapter 3: Nonnegative Tensors; Chapter 4: Spectral Hypergraph Theory via Tensors; Chapter 5: Positive Semidefinite Tensors; Chapter 6: Completely Positive Tensors and Copositive Tensors; Bibliography; Index.

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