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A Study on Eigencalues of Higher-Order Tensors and Related Polynomial Op timization Problems

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2015. Soft cover. Book Condition: New. 1st Edition. Chapter 1 Introduction 1.1Eigenvalues problems of higher order tensors 1.2Related polynomial optimization problems 1.3Applications 1.4Spectral properties and algorithms: a literature review 1.5The organization of this book Chapter 2 Spectral Properties of H-eigenvalue Problems of a Nonnegative Square Tensor 2.1Introduction 2.2From nonnegative matrices to nonnegative tensors 2.3Nonnegative irreducible tensors and primitive tensors 2.4Perron-Frobenius theorem for nonnegative tensors and related results 2.5Geometric simplicity 2.6The Collatz-Wielandt formula 2.7Other related results 2.8Some properties for nonnegative weakly irreducible tensors 2.8.1Weak irreducibility 2.8.2Generalization from nonnegative irreducible tensors to nonnegative weakly irreducible tensors Chapter 3 Algorithms for Finding the Largest H-eigenvalue of a Nonnegative Square Tensor 3.1Introduction 3.2A polynomial-time approach for computing the spectral radius 3.3Two algorithms and convergence analysis 3.3.1An inexact power-type algorithm 3.3.2A one-step inner iteration power-type algorithm 3.4Numerical experiments 3.4.1Experiments on the polynomial-time approach 3.4.2Experiments on the inexact algorithms Chapter 4 Spectral Properties and Algorithms of H-singular Value Problems of a Nonnegative Rectangular Tensor 4.1Introduction 4.2Preliminaries 4.3Some conclusions concerning the singular value of a nonnegative rectangular tensor 4.4Primitivity and the convergence of the CQZ method for