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Nota di contenuto	Overview and Introduction -- Part I: Preliminaries -- Linear Spectral Mixture Analysis -- Finding Endmembers in Hyperspectral Imagery -- Linear Spectral Unmixing with Three Criteria, Least Squares Error, Simplex Volume and Orthogonal Projection -- Hyperspectral Target Detection -- Part II: Sample-wise Sequential Processes for Finding Endmembers -- Abundance-Unconstrained Sequential Endmember Finding Algorithms: Orthogonal Projection -- Fully Abundance-Constrained Sequential Endmember Finding Algorithms: Simplex Volume Analysis -- Partially Abundance Non-Negativity-Constrained Endmember Finding Algorithms: Convex Cone Volume Analysis -- Fully Abundance-Constrained Sequential Linear Spectral Mixture Analysis for Finding Endmembers -- Part III: Sample-Wise Progressive Processes for Finding Endmembers -- Abundance-Unconstrained Progressive

Endmember Finding Algorithms: Orthogonal Projection -- Fully Abundance-Unconstrained Progressive Endmember Finding Algorithms: Simplex Volume Analysis -- Partially Abundance Non-Negativity-Constrained Progressive Endmember Finding Algorithms: Convex Cone Volume Analysis -- Sully Abundance-Constrained Progressive Linear Spectral Mixture Analysis for Finding Endmembers -- Part IV: Sample-Wise Progressive Unsupervised Target Detection -- Progressive Anomaly Detection -- Progressive Adaptive Anomaly Detection -- Progressive Window-Based Anomaly Detection -- Progressive Subpixel Target Detectio n and Classification.

Sommario/riassunto

The book covers the most crucial parts of real-time hyperspectral image processing: causality and real-time capability. Recently, two new concepts of real time hyperspectral image processing, Progressive Hyperspectral Imaging (PHSI) and Recursive Hyperspectral Imaging (RHSI). Both of these can be used to design algorithms and also form an integral part of real time hyperpsectral image processing. This book focuses on progressive nature in algorithms on their real-time and causal processing implementation in two major applications, endmember finding and anomaly detection, both of which are fundamental tasks in hyperspectral imaging but generally not encountered in multispectral imaging. This book is written to particularly address PHSI in real time processing, while a book, Recursive Hyperspectral Sample and Band Processing: Algorithm Architecture and Implementation (Springer 2016) can be considered as its companion book. Includes preliminary background which is essential to those who work in hyperspectral imaging area Develops sequential and progressive algorithms for finding endmembers as they relate to real time hyperspectral image processing Designs algorithms for anomaly detection from causality and real time perspectives and investigates the effects of causality and real-time processing in anomaly detection.