Signal and Image Processing for Remote Sensing, Second Edition PDF
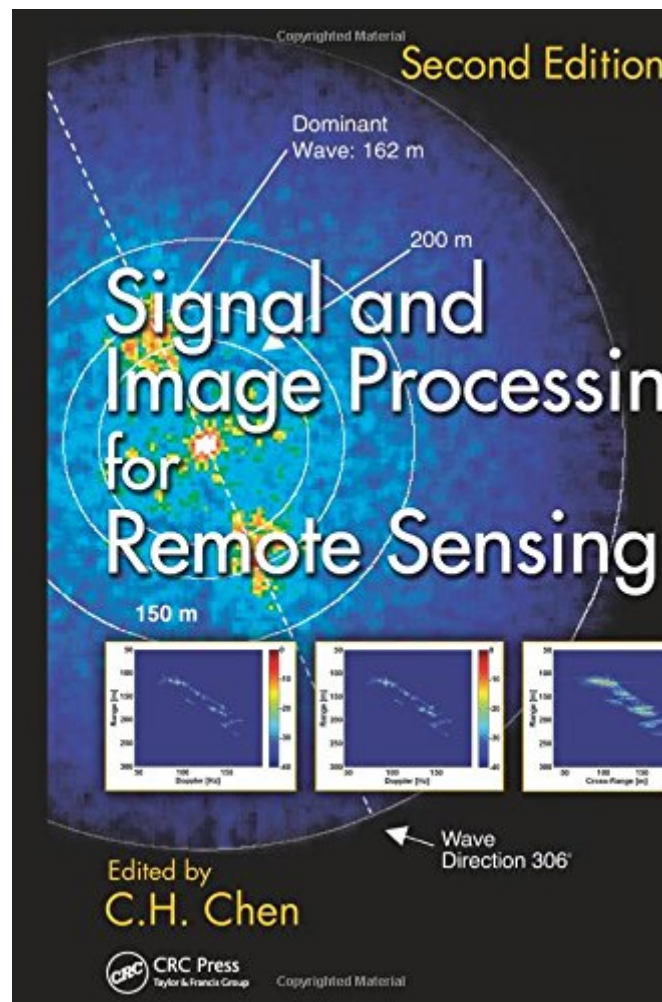

Signal and Image Processing for Remote Sensing, Second Edition by C.H. Chen ISBN 143985596X

Continuing in the footsteps of the pioneering first edition, **Signal and Image Processing for Remote Sensing, Second Edition** explores the most up-to-date signal and image processing methods for dealing with remote sensing problems. Although most data from satellites are in image form, signal processing can contribute significantly in extracting information from remotely sensed waveforms or time series data. This book combines both, providing a unique balance between the role of signal processing and image processing.

Featuring contributions from worldwide experts, this book continues to emphasize mathematical

approaches. Not limited to satellite data, it also considers signals and images from hydroacoustic, seismic, microwave, and other sensors. Chapters cover important topics in signal and image processing and discuss techniques for dealing with remote sensing problems. Each chapter offers an introduction to the topic before delving into research results, making the book accessible to a broad audience.

This second edition reflects the considerable advances that have occurred in the field, with 23 of 27 chapters being new or entirely rewritten. Coverage includes new mathematical developments such as compressive sensing, empirical mode decomposition, and sparse representation, as well as new component analysis methods such as non-negative matrix and tensor factorization. The book also presents new experimental results on SAR and hyperspectral image processing.

The emphasis is on mathematical techniques that will far outlast the rapidly changing sensor, software, and hardware technologies. Written for industrial and academic researchers and graduate students alike, this book helps readers connect the "dots" in image and signal processing.

New in This Edition

The second edition includes four chapters from the first edition, plus 23 new or entirely rewritten chapters, and 190 new figures. New topics covered include:

- Compressive sensing
- The mixed pixel problem with hyperspectral images
- Hyperspectral image (HSI) target detection and classification based on sparse representation
- An ISAR technique for refocusing moving targets in SAR images
- Empirical mode decomposition for signal processing
- Feature extraction for classification of remote sensing signals and images
- Active learning methods in classification of remote sensing images
- Signal subspace identification of hyperspectral data
- Wavelet-based multi/hyperspectral image restoration and fusion

The second edition is not intended to replace the first edition entirely and readers are encouraged to read both editions of the book for a more complete picture of signal and image processing in remote sensing. See *Signal and Image Processing for Remote Sensing* (CRC Press 2006).

Signal and Image Processing for Remote Sensing, Second Edition Review

This Signal and Image Processing for Remote Sensing, Second Edition book is not really ordinary book, you have it then the world is in your hands. The benefit you get by reading this book is actually information inside this reserve incredible fresh, you will get information which is getting deeper an individual read a lot of information you will get. This kind of Signal and Image Processing for Remote Sensing, Second Edition without we recognize teach the one who looking at it become critical in imagining and analyzing. Don't be worry Signal and Image Processing for Remote Sensing, Second Edition can bring any time you are and not make your tote space or bookshelves' grow to be full because you can have it inside your lovely laptop even cell phone. This Signal and Image Processing for Remote Sensing, Second Edition having great arrangement in word and layout, so you will not really feel uninterested in reading.