



# Hyperspectral Remote Sensing: Principles and Applications (Remote Sensing Applications Series)

By Marcus Borengasser, William S. Hungate, Russell Watkins

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Land management issues, such as mapping tree species, recognizing invasive plants, and identifying key geologic features, require an understanding of complex technical issues before the best decisions can be made. Hyperspectral remote sensing is one of the technologies that can help with reliable detection and identification. Presenting the fundamentals of remote sensing at an introductory level, **Hyperspectral Remote Sensing: Principles and Applications** explores all major aspects of hyperspectral image acquisition, exploitation, interpretation, and applications.

The book begins with several chapters on the basic concepts and underlying principles of remote sensing images. It introduces spectral radiometry concepts, such as radiance, irradiance, flux, and blackbody radiation; covers imaging spectrometers, examining spectral range, full width half maximum (FWHM), resolution, sampling, signal-to-noise ratio (SNR), and multispectral and hyperspectral sensor systems; and addresses atmospheric interactions. The book then discusses information extraction, with chapters covering the underlying physics principles that lead to the creation of an image and the interpretation of the image's information. The final chapters describe case studies that illustrate the use of hyperspectral remote sensing in agriculture, environmental monitoring, forestry, and geology.

After reading this book, you will have a better understanding of how to evaluate different approaches to hyperspectral analyses and to determine which approaches will work for your applications.

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