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Multispectral, Hyperspectral, and Ultraspectral Remote Sensing Technology, Techniques, and Applications III

**Allen M. Larar
Hyo-Sang Chung
Makoto Suzuki**
Editors

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Allen M. Larar, NASA Langley Research Center (United States)

Introduction

Accurately calibrated multi-, hyper-, and ultraspectral remote sensing measurement systems are rapidly becoming the instruments of choice for observing a wide variety of geophysical variables from ground-, aircraft-, and satellite-based platforms. New data processing and analysis techniques are emerging for the optimum interpretation of resultant radiance measurements obtained by these spectrometer systems, covering a spectral range from the visible to the far infrared, to enable a wide range of research and operational applications; geophysical applications include, for example, surface and cloud property characterizations along with retrievals of atmospheric state, dynamics, and composition, all at high spatial resolution while simultaneously covering large areas. Geophysical remote sensing data products from multi- to ultraspectral remote sensing systems promise to accelerate scientific research on environmental processes, enable efficient monitoring of environmental variables, and lead to improved predictive capability for such parameters and how they respond to natural and anthropogenic external forcings. New and improved technologies and techniques promise smaller and lighter next-generation sensor systems for enhancing current and enabling new future measurement capabilities.

The conference on Multispectral, Hyperspectral, and Ultraspectral Remote Sensing Technology, Techniques, and Applications III was part of SPIE's Asia-Pacific Remote Sensing symposium held in Incheon, Republic of Korea, 11–14 October 2010. The objective of the conference was to bring together the scientific, engineering, and data user communities to provide an international forum for exchanging information about the development, application of, and experimental results from multi-, hyper- and ultraspectral resolution remote sensing measurement systems. Primary focus areas were associated with the design, development, and implementation of, as well as analysis and usage of data from, such remote sensing systems intended for environmental monitoring applications. The conference was very successful with approximately 45 oral and poster presentations delivered from authors of diverse international affiliations (i.e., United States, Japan, China, Republic of Korea, Malaysia, Taiwan, Russia, and Canada). The conference presentation structure was composed of five oral sessions and one poster session. Several of the oral presentations had different aspects of their topical areas also covered in the poster session. The first oral session of this conference focused on atmospheric sounding, geophysical parameter retrieval methodology, and information content. The second session addressed data processing, compression, and fusion. The third session concentrated on remote sensing air quality applications, while the fourth session addressed calibration and sensor design for future sensors. The fifth and final oral session focused on remote sensing land applications.

We would like to express our sincere appreciation to the program committee and session chairs, to colleagues who participated in the conference, to the SPIE staff, and to all our hosts and meeting sponsors in Incheon whose contributions were all essential to the success of this conference.

Allen M. Larar
Hyo-Sang Chung
Makoto Suzuki