

Special issue on

# “Hyperspectral Remote Sensing and Imaging Spectroscopy”

Hyperspectral remote sensing has started to move from a largely airborne to a fully spaceborne capability with the development of a number of satellite spectrometers, which will be launched in the next few years. Nevertheless, we find an increasing number of airborne and UAV-based systems in the research community with many new possible and necessary signal interpretation techniques, processing strategies and various applications. At the same time the latest imaging spectrometers measure not just the traditional visible and near-infrared regions, but now also cover fluorescence and the thermal- and mid-infrared regions. These technical developments have fostered a number of ground-breaking research fields.

Papers for the special issue must address relevant topics in hyperspectral remote sensing and imaging spectroscopy and include sound implementation and validation procedures. The technical topics of interest include (but are not limited to)

- New and innovative hyperspectral sensor systems
  - Visible, near-, mid- and thermal infrared spectral and multi-angular measurements including fluorescence
  - Hyperspectral images from ground, drone, airborne and satellite platforms
- Advances in hyperspectral remote sensing data processing
  - Unmixing, source separation, endmember extraction
  - Segmentation, classification, dimension reduction, and target detection
  - Noise estimation and reduction
  - Hyperspectral pansharpener and image fusion, multitemporal data analysis
  - High performance computing and compression
  - Data processing algorithms, data mining and data assimilation
  - Sensor calibration, atmospheric correction and product validation
  - Synergies of hyperspectral data with the Sentinels, i.e. with advanced multi-spectral and microwave sensors
- Research and applications of imaging spectroscopy
  - Vegetation biophysical properties, processes and functions, as well as plant species, plant stress and disease
  - Agriculture, forestry, rangeland and wetland management
  - Minerals, rocks, soils, and artificial materials
  - Urban studies
  - Coastal and inland waters
  - Land use change
  - Chemistry and biomedical imagery
  - Defense and industrial application
  - Astrophysics

The special issue follows the EARSeL SIG-IS 2015 workshop in Luxembourg (<http://www.earsel2015.com/overview/about-the-workshop>) and the WHISPERS 2015 workshop in Tokyo, Japan (<http://www.ieee-whispers.com>) workshops, but submission is not restricted to EARSeL and WHISPERS contributors and attendees. The papers will be judged only by their quality.

### **Format and preliminary schedule**

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars> using the Manuscript Central interface and select the "Hyperspectral Remote Sensing and Imaging Spectroscopy" special issue manuscript type. Prospective authors should consult the site <http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=4609443> for guidelines and information on paper submission. Please note that IEEE JSTARS applies a mandatory page over length charge of \$200 per page (beginning with page 7 and beyond). Please note that this journal submission should NOT be your conference paper. A typically 2 to 3 times longer paper is expected, with a more in depth presentation of the work, a more complete experimental study, a more detailed state of the art etc.

### **Schedule**

**September 15, 2015**                      Full paper submission deadline

June 2016                                      Publication date

### **Guest editors**

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