

Editorial: Meeting the challenges in remote sensing science and technology

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As we move into the modern era of communication, in-depth scientific information for scientists and researchers is delivered at a faster pace than ever before. In order to serve our society well, we must constantly challenge ourselves to provide the most cost-effective and timely delivery of sensitive information that is time-critical and important in decision-making processes.

The new SPIE electronic *Journal of Applied Remote Sensing* (JARS) was conceived to meet these challenges by utilizing evolutionary approaches whereby the revolutionary technology is constantly adapted to optimize the utmost communication of concepts, information, and progress within the remote sensing community.

JARS exists as a forum for authors to present a broad scope of in-depth scientific knowledge and general information to the readers in the most effective, efficient, and accessible way for those interested in wide-ranging or specific topics and issues related to remote sensing .

JARS focuses on the publication of broad areas including, but not limited to:

- Past, current, and future experimental, research, and operational atmospheric, oceanic, ecological, and environmental remote sensing programs and experiments;
- Programs and experimental concepts, planning, implementation, strategic partnership, policy, and measures of success leading to the optimal utilization of remote sensing data;
- Remote sensing science, theory, application, utility training, education, workshops, and public outreach;
- The survey and understanding of remote sensing users' requirements for programs and experiments;
- Multiple interfaces among communities of data providers, algorithm developers, product producers, and end data assimilation, numerical weather prediction, and environmental monitoring users;
- Measurement characterization, specifically the aspects related to methods for solidifying satellite instrument calibration and intercalibration requirements needed to measure small-scale signals associated with long-term global climate change;
- Identification of key satellite remote sensing validation problems/issues and the development of methods for solving these issues;
- Satellite mission requirements and implementation;
- On-board and on-ground data receiving and processing techniques and engineering;
- Systems engineering for data distribution, access, archiving, and integration;
- Pre- and post-launch system and instrument checks, characterization, and calibration techniques and procedures;
- Instrument interface, integration, testing, and packaging;
- Space technology development, technology transfer, and new orbital measurement concepts;
- Remote sensing sensor technology development, technology transfer, and new instrumentation concepts;

- Spacecraft and instrument navigation, coregistration, and measurement stability;
- Ecological remote sensing and coupled numerical modeling;
- Agricultural, forest, and hydrological remote sensing;
- Remote sensing data acquisition, data assimilation, communication, compression, system integration, algorithm development, data processing, target selection, product applications, calibration, validation, information analysis, mining, and management;
- Bidirectional interfaces among remote sensing communities of sensor designers/builders, data providers, algorithm developers, product producers, and end users;
- Remote sensing applications in the atmosphere, oceans, ecosystems, climate, agriculture, forest, land cover/change, space, solar, ice/snow, hazard, fire, pollution, hydrology, and other environmental areas and their related information management, dissemination, and decision making;
- All relevant chains and links that are part of effective end-to-end remote sensing processing systems.

In summary, JARS will include articles that are diverse in formats and types but standard in a consistent style to reach out to readers using innovative ways of communicating the complicated concepts, sensor systems, processing algorithms, interdisciplinary applications, and, most of all, the optimal utility of remote sensing information. Ultimately, JARS is to become the publication of choice for authors and readers as the most cost- and outreach-effective publication using modern visualization and communication technology. JARS also aims to constantly undergo self-review to stay at the forefront of the information highway to reach out to a very broad base of the community with a flexible schedule and highly novel approaches to disseminating high-quality peer-reviewed articles.

JARS is an electronic-only journal. The e-journal format provides numerous advantages, including multimedia (video and audio) content, full-color images, and rapid review and publication. JARS will be published in an “article-at-a-time” mode as an annual volume, rather than in issues, meaning that individual papers will be published online as soon as they are accepted, and the volume will build continuously throughout the year.

On behalf of the editorial board and staff of JARS, we are not only prepared to serve you better, but also strongly encourage you to be part of our publishing family by contributing your insightful and novel ideas periodically.

We are looking forward to serving you for years to come.