SPIE. SENSORS+ IMAGING

Conferences: 16 - 19 September 2024
Exhibition: 17–18 September 2024
Edinburgh International Conference Centre
Edinburgh, United Kingdom

Submit abstracts by
7 May 2024

Remote Sensing of the Ocean, Sea Ice, Coastal Waters, and Large Water Regions 2024 (RS102)

Conference Chairs: **Charles R. Bostater Jr.,** Florida Institute of Technology (United States); **Xavier Neyt,** Royal Military Academy (Belgium); **Caroline Nichol,** Univ. of Edinburgh (United Kingdom)

Programme Committee: **Samir Ahmed,** The City College of New York (United States); **Pierre-Yves Foucher,** ONERA (France); **Alexander Gilerson,** The City College of New York (United States); **Rand Ismaeel,** Optoelectronics Research Ctr. (United Kingdom)

Remote sensing science is one of the most modern approaches for studying oceans, littoral regions, seas and large lakes, as well as sea ice covered regions. An important aspect of remote sensing science is the ability to monitor complex environmental media (air, land, water) and their interfaces (water surface wave, air-sea interaction, water-sediment, and internal interfaces). Understanding complex environmental system phenomena is key to scientific understanding of oceans, littoral zones, estuaries, coastal areas, large lakes, ports and waterways as well as sea ice dynamics since remote sensing data provides valuable monitoring information. This information often serves as input to complex numerical models of environmental systems, such as climate change models, coupled oceanic-atmosphere models at the global (planetary) scale as well as at the mesoscale space and time scales. Remote sensing techniques also provide the most valuable tool set and techniques for monitoring and mapping different bottom features in aquatic systems, such as coral reefs, submerged aquatic vegetation and other "targets" of interest to the oceanographic and aquatic community. Also of interest are robotic and mechatronic platforms for in-situ sensing of interfaces and unique sensing systems & platforms for coastal and ocean monitoring and associated data assimilation into predictive models.

There is a need to improve the accuracy and precision of retrieved geophysical parameters from remote sensing data. In this context, it is often necessary to integrate data from different sensors as well as to include the knowledge of different disciplines. This is especially important in remote sensing of water quality, submerged aquatic vegetation and coupled ocean-atmosphere models. From a remote sensing point of view, these data are mainly extracted from active or passive sensor systems, and models of complex phenomena are important

With reference to the above, this conference calls for papers in topics such as:

- ocean, coastal, and large water region remote sensing to support sustainability of aquatic life & marine diversity
- using fiber optics in conjunction with sensing systems for sustaining safe aquatic environments
- detection of coastal & ocean currents, oceanic frontal feature detection and hazardous noxious spills in the ocean
- subsurface sensing using acoustics, optical, laser and magnetic systems, hyperspectral sensors
- ocean sensing techniques, image and signal analysis related to AI enhanced coastal benthic feature detection
- ocean, coastal and aquatic wave measurement systems & analysis
- use of remote sensing data in global and regional ocean observing platforms
- image analysis to support water quality sustainability & coastal lagoon benthic diversity
- coastal ocean, estuarine and large lake water-quality monitoring (suspended sediments, dissolved organic matter, phytoplankton pigments and biomass, submerged aquatic vegetation) using earth sensing systems
- oceanic photochemistry and hyperspectral remote sensing
- coupled oceanic and mesoscale air-sea boundary remote sensing products for model data assimilation
- modeling of spectral signatures
- studies of glaciers, shore-fast ice; polar regions, sea ice prediction monitoring and modeling
- cube sats, international space station (ISS) and multi-satellite sensor configurations
- image reregistration and sensor integration from various platforms aboard low earth orbit platforms
- data fusion, image fusion, deep learning and artificial intelligence used in earth sustainability studies
- sensor calibration and related data analysis to support disaster management assessments
- active-passive (Raman) sensing theory, applications, systems and techniques for cultural heritage applications
- novel use of GNSS signals in large water regions, lakes & coastal regions sensing using deep learning
- operational glacier, sea ice, ice sheets monitoring and system applications (Cryosat, ICEsat, IceBridge, GRACE)
- active and passive remote sensing and techniques for improving underwater imaging of waterways and harbours
- airborne (manned, UAV's, drones) remote sensing missions for observation of oceanic, coastal, sea ice and large water regions, and nearby urban environments; natural disasters; sensor design and calibrations.

SPECIAL SESSIONS AND SESSION CHAIR CALL:

a. hyperspectral sensing, modeling and applications related to breaking waves, foam, whitecaps, bubbles, air-sea gas exchange phenomena.
b. use of AI and automatic feature extraction for detecting climate change and marine environmental quality
c. AI and deep-learning techniques for multispectral satellite missions
d. CubeSats and unmanned aerial vehicles for sustaining safe marine environments
e. Future funding plans for earth remote sensing and UN sustainability goals

Those interested in developing a special session or joint sessions may contact the session chairs, members of the technical committee or contact Charles Bostater at Florida Institute of Technology: bostater@fit.edu.

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ABSTRACT SUBMISSION GUIDELINES

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Below are abstract submission instructions, the accompanying submission agreement, conference presentation guidelines, and guidelines for publishing in the Proceedings of SPIE on the SPIE Digital Library. Submissions subject to chair approval.

Important dates

Abstract submissions due	7 May 2024
Registration opens	17 June 2024
Author notified and programme posts online	24 June 2024
Submission system opens for manuscripts and poster PDFs*	3 July 2024
Poster PDFs due for spie.org preview and publication	21 August 2024
Manuscripts due	28 August 2024
Advance upload deadline for oral presentation slides**	13 September 2024

**Contact author or speaker must register prior to uploading*
***After this date slides must be uploaded onsite at Speaker Check-in*

What you will need to submit

- Title
- Author(s) information
- Speaker biography (1000-character max including spaces)
- Abstract for technical review (200-300 words; text only)
- Summary of abstract for display in the program (50-150 words; text only)
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers for additional requirements (i.e., special abstract requirements or instructions for award competitions)

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

How to submit your abstract

- Visit the conference page: **www.spie.org/rs102call**
- Choose one conference that most closely matches the topics of your abstract. You may submit more than one abstract, but submit each abstract only once
- Click the title of the conference to view the full description
- Sign in to the late submission system (now closed) or create an account if you do not already have one
- Follow the steps in the submission wizard until the submission process is completed

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All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract

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- Obtain funding for registration fees, travel, and accommodations
- Attend the meeting
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Review and program placement

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- Final placement in an oral or poster session is subject to chair discretion

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Contact information

For questions about your presentation, submitting an abstract, or the meeting, contact your Conference Program Coordinator.

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