

CALL FOR PAPERS

ICASSP-2023 Workshop on Signal Processing for Synthetic Apertures

Synthetic aperture (SA) systems are deployed in a variety of applications to create high-resolution spatial or temporal measurements with hardware that is inherently capable of much lower resolution. Examples include synthetic aperture radar (SAR), Fourier ptychography in optics, channel sounders in 5G/6G communications, magnetic resonance imaging (MRI), ultrasound, radiometry, synthetic aperture sonar (SAS), distributed radio telescopes in astronomy and many more. This workshop at ICASSP-2023 (<https://2023.ieeeicassp.org/>) in Rhodes, Greece will highlight recent advances in the signal processing and image formation aspects of synthetic apertures. Authors are invited to submit high-quality manuscripts that describe new engineering or theoretical approaches used with classical synthetic apertures (such as radar), or novel techniques intended for quantum synthetic apertures. Topics of interest include but are not limited to:

- Quantum apertures based on atomic sensors that measure electric fields
- Wideband automotive SAR, mmWave and THz SAR, polarimetric SAR
- Phase retrieval
- Fast Fourier ptychography
- Over-the-air calibration using SAs
- Light-field imaging and computational imaging techniques for optical SAs
- High-accuracy geolocation
- MIMO antenna testbeds
- Testbeds for Intelligent Reflecting Surfaces (IRSs)
- Radiometry and remote sensing
- Tensor processing for high-dimensional SA data
- Hardware de-embedding approaches for wideband signal regimes
- Filtered back-projection techniques
- Inverse problems, deconvolution, denoising, and scene reconstruction
- Wideband interference cancelation
- Position uncertainty analysis
- Microwave power beaming
- Wideband experimental demonstrations and prototypes
- Flow estimation in ultrasound
- Optimized front-end probes for SAs
- Wideband SAS
- Micronavigation for SAS
- Machine learning techniques for image formation
- Synthetic aperture magnetometry, MRI, CT, k-space image reconstruction
- Quantum information engineering for SAR
- Sparse sampling

We also welcome creative papers outside the areas listed above but related to the overall scope of the workshop. Prospective authors should visit <https://sagroups.ieee.org/sps-sasc/icassp-2023-workshop/> for more details on the workshop and to submit manuscripts. All manuscripts must adhere to ICASSP formatting guidelines and accepted papers will appear in IEEEXplore. ICASSP-2023 and this workshop will be in-person events and authors must attend to present their papers live at the venue. The workshop will be free for attendees also registered for the main conference, while a reduced registration fee will be charged to workshop-only attendees. For additional questions, please contact the co-chairs, Kumar Vijay Mishra (kvm@ieee.org) or Peter Vouras (synthetic_aperture_twg@ieee.org).

Important Dates

Submissions due: *February 24, 2023*
Acceptance notification: *April 14, 2023*
Camera-ready version due: *April 28, 2023*