



## Call for Papers

# URSI combined AT-AP-RASC 2022

## May 29 – June 3, 2022

### ExpoMeloneras Convention Centre, Gran Canaria

The triennial URSI Atlantic Radio Science Conference (URSI AT-RASC) is one of the URSI flagship conferences besides the URSI General Assembly and Scientific Symposium and the AP-RASC conference (Asia-Pacific Radio Science Conference).



Due to the COVID-19 pandemic, this 3<sup>rd</sup> URSI AT-RASC was moved from 2021 to 2022 and URSI AP-RASC (the Asia-Pacific Radio Science Conference) cannot be held in Australia as planned due to current travel restrictions.

The combined 2022 AT-AP-RASC event, hosted in Gran Canaria, will offer a hybrid format, offering on-site as well as online participation and aims to receive submissions from worldwide within the domains covered by all ten Commissions of URSI.

*NEW !! In addition to the topics covered by the URSI commissions, this 2022 AT-AP-RASC will have a plenary focus session on “Artificial Intelligence for Radioscience” and a dedicated General Lecture as part of the scientific program of the conference*

**Paper submission deadline: January 15, 2022**

Detailed information on paper submission as well as travel information will become available through the website: [www.at-rasc.org](http://www.at-rasc.org). Authors can opt to submit papers presented at this 3<sup>rd</sup> URSI AT-RASC to IEEE Xplore and can take advantage of reduced page charges when submitting the papers to Radio Science Letters. In addition, there will be special programs for young scientists, a student paper competition and programs for accompanying persons.

Technical Programme Committee  
Co-Chairs:

Prof. Willem Baan  
Prof. Kazuya Kobayashi  
Prof. Ondrej Santolik  
Prof. Ari Sihvola  
Prof. Smail Tedjini

Organizing Committee:

Prof. Peter Van Daele

Publication Chair:

Dr. W.Ross Stone

#### Important deadlines

Paper submission  
January 15, 2022

Notification  
February 23, 2022

Early bird & Author  
registration  
March 28, 2022

Conference start  
May 29, 2022

Please consult  
[www.at-rasc.org](http://www.at-rasc.org)





# Topics of Interest



## Commission A – Electromagnetic Metrology

Antennas, Atomic-based mechatronics, Bioeffects and medical applications, EMC and EM metrology, High-frequency and millimeter wireless metrology, Impulse radar, Interconnect and packaging, Materials,

Measurements and calibration in propagation, Microwave to submillimeter measurements/standards, Noise, Quantum metrology and fundamental concepts, Space plasma characterization, Techniques for remote sensing, Test facilities, THz metrology, Time and frequency, Time-domain metrology and other topics of interest.

## Commission B – Fields and Waves

Antenna arrays, Antennas: recent advances and future outlook, Antenna theory, design and measurements, Cognitive radio, Complex media (bandgap structures, biological and geophysical media, metamaterials, and others), Educational methods and tools,

Electromagnetic interaction and coupling, Guided waves and waveguiding structures, High-frequency techniques, Imaging, inverse scattering and remote sensing, Mathematical modeling of electromagnetic problems, Microstrip antennas and printed devices,



Multiphysics electromagnetics, Nanoscale electromagnetics, Nonlinear electromagnetics, Numerical methods (differential- and integral-equation based, hybrid and other techniques), Optical phenomena, Optimization techniques in electromagnetics, Propagation phenomena and effects, Rough surfaces and random media, Scattering and diffraction, Theoretical electromagnetics, THz antennas and propagation, Transient fields, effects, and systems, Ultra-wideband electromagnetics, Wireless communications and other topics of interest.

## Commission C – Radiocommunication Systems and Signal Processing



Cognitive radio and software defined radio, Distributed sensor networks and sensors array processing, Energy-efficient (“green”) communications, Information theory, coding, modulation and detection, MIMO and MISO systems, Novel radio communication systems, Physics-based signal

processing, Radar target detection, localization, and tracking, Radio localization and positioning, Signal and image processing, Spectrum and medium utilization, Statistical signal processing of waves in random media, Synthetic aperture and space-time processing, Wireless networking and other topics of interest.

## Commission D – Electronics and Photonics

Broadband ubiquitous network, Energy harvesting in wireless systems, Fiber lasers and solid state lasers, Graphene nanoelectronics applications, Multi-physics modeling in radio frequency nanoelectronics, Optical sensors and biosensors, Plasmonics, RF MEMS and NEMS, Signal processing antennas, 60 GHz electronics, Trends in RFID for identification and sensing, Trends in THz communications and other topics of interest.



## Commission E – Electromagnetic Environment and Interference



Communication in the presence of noise, Crosstalk, Electromagnetic compatibility education, Electromagnetic compatibility measurements and standards, Electromagnetic noise of natural origin, Electromagnetic radiation hazards, High-power effects of transients on electronic systems, Spectrum management and utilization and other topics of interest.

## Commission F – Wave Propagation and Remote Sensing

Propagation measurements/models for fixed and mobile links, Measurements of fixed and mobile channels, Propagation models, Multipath/mitigation, Fixed terrestrial links: measurements and design strategies, Surface/atmosphere interaction, Dispersion/delay, Effects of natural/man-made structures, Outdoor to indoor propagation, Multi link MIMO channels, UWB channel characteristics, Small cell



propagation, Remote sensing of the Earth/planets by radio waves, Passive sensing at millimeter wavelengths, Interferometry and SAR, Sensing of snow in open and forested environments, Remote sensing of precipitation, Atmospheric sensing, Sensing of soil moisture and biomass, Ocean and ice sensing, Urban environments, Radio Frequency Interference (RFI), Underground imaging, Propagation and remote sensing in complex and random media and other topics of interest.

## Commission G – Ionospheric Radio and Propagation

Ionospheric imaging, Ionospheric morphology, Ionospheric modeling and data assimilation, Radar and radio techniques for ionospheric diagnostics, Space weather – radio effects, Transionospheric radio propagation and systems effects and other topics of interest.



## Commission H – Waves in Plasma

Chaos and turbulence in plasma, Plasma instabilities and wave propagation, Spacecraft-plasma interactions, Solar/planetary plasma interactions, Wave-wave and wave-particle interactions, Waves in laboratory plasmas and other topics of interest.



## Commission J – Radio Astronomy

Detection of short-duration transients, Developments in array technology for radio astronomy, New telescopes, techniques, and observations, Radio frequency interference mitigation and spectrum usage, SKA, Timely technical tutorials and other topics of interest.



## Commission K – Electromagnetics in Biology and Medicine

Biological effects, Dosimetry and exposure assessment, Electromagnetic imaging and sensing applications, Human body interactions with antennas and other electromagnetic devices, Therapeutic, rehabilitative, and other biomedical applications and other topics of interest.

