National Radio Science Meeting
◆ January 6-9, 2021 ◆ University of Colorado at Boulder
◆ Meeting website: www.nrsmboulder.org
◆ USNC-URSI website: www.usnc-ursi.org

This open scientific meeting is sponsored by the U.S. National Committee (USNC) for the International Union of Radio Science (URSI). The USNC-URSI is appointed by the National Academies of Sciences, Engineering and Medicine, and represents U.S. radio scientists in URSI. Through technical co-sponsorship of the meeting by the IEEE Antennas and Propagation Society, authors will have their choice of submitting one-page abstracts that are not submitted to IEEE Xplore, or two-page summaries that may be submitted to IEEE Xplore. At least one author is required to register for each presented abstract or summary. Papers must be presented for their corresponding summaries to be included in the proceedings and submitted to IEEE Xplore. Abstracts or summaries on any topic in the interest area of a Commission are welcome. Contact the appropriate USNC-URSI Commission Chair listed below or visit the meeting website for further information. An announcement about any COVID-19 related contingency plan will be made by September 1, 2020.

Meeting Plenary Highlights TBD

USNC-URSI Chair: Sembiam R. Rengarajan, (818) 677-3571, srengarajan@csun.edu
USNC-URSI Secretary: Michael H. Newkirk, (240) 228-6976, Michael.Newkirk@jhuapl.edu

COMMISSION A, Electromagnetic Metrology
Jeanne Quimby, 303-497-4217, jeanne.quimby@nist.gov

TOPICS
- Antennas
- Bioeffects and medical applications
- EM-field metrology
- EMC and EM pollution
- Impulse radar
- Interconnect and packaging
- Materials
- Microwave to submillimeter measurements/standards
- Millimeter-wave and sub-mm wave communications
- Noise
- Planar structures and microstrip circuits
- Quantum metrology and fundamental concepts
- Time and frequency
- Time domain metrology

Ultra-wideband electromagnetics
Wireless communications

COMMISSION C, Radio-communication Systems and Signal Processing
Eric L. Mokole, 703-983-3349, eric.mokole@outlook.com

TOPICS
- Addressing digital divide through radiocommunication systems
- Artificial intelligence/Machine learning for RF systems
- Cognitive radio
- Computational imaging and inverse methods
- Computational resource management
- Distributed sensor networks
- Dynamic spectrum networks
- Physics-based signal processing
- Quantum RF theory/Technologies/Applications
- Radar systems
- Radar target detection, localization, and tracking
- RF spectrum convergence/Harmony/Maneuver
- Sensor array processing and calibration
- Signal processing for radar remote sensing
- Software-defined and cognitive radio/Radar/Sensing
- Statistical signal processing of waves in random media
- Synthetic aperture and space-time processing

COMMISSION B, Fields and Waves
Jamesina Simpson, 801-585-6929, jamesina.simpson@utah.edu

TOPICS
- Antenna arrays
- Antenna theory, design and measurements
- Cognitive radio
- Complex media (metamaterials, bandgap structures, biological and geophysical media, and others)
- Educational methods and tools
- Electromagnetic interaction and coupling
- Guided waves and waveguiding structures
- High-frequency techniques
- Inverse scattering and remote sensing
- Microstrip and printed devices and antennas
- Nano-electromagnetics
- Nonlinear electromagnetics
- Numerical methods (differential- and integral-equation based, hybrid and other techniques)
- Propagation phenomena and effects
- Rough surfaces and random media
- Scattering
- Theoretical electromagnetics
- Transient fields, effects, and systems

COMMISSION D, Electronics and Photonics
Negar Ehsan, 301-286-8406, negar.ehsan@nasa.gov

TOPICS
- Electronic devices, circuits, and applications
- Photonic devices, circuits, and applications
- Physics, materials, CAD, technology and reliability of electronic and photonic devices, in radio science and telecommunications
- Wide bandgap materials
- THz electronics
- Reconfigurable RF

Abstract / Summary Submissions and Student Paper Competition Submissions are due by September 20, 2020
This is a FIRM DEADLINE! Please visit www.nrsmboulder.org
COMMISSION E, Electromagnetic Environment and Interference  
Larry Cohen, 202-404-7726, lawrence.cohen@nrl.navy.mil

**TOPICS**  
Communication in the presence of noise  
Effects of natural and intentional emissions on system performance  
Electromagnetic compatibility in: computational electromagnetics, education, measurement technologies, standards, and radiation hazards  
High-power electromagnetic effects of transients on electronic systems  
Signal and power integrity  
Spectrum management and utilization

COMMISSION F, Wave Propagation and Remote Sensing  
Kamal Sarabandi, 734-936-1575, saraband@umich.edu

**TOPICS**  
Point-to-point propagation effects:  
Measurements Mobile/fixed paths  
Propagation models Horizontal/slant paths  
Multipath/mitigation Surface/atmosphere interactions  
Land or water paths Numerical weather prediction  
Scattering/diffraction Dispersion/delay  
Indoor/outdoor links Natural/man-made structures  
Microwave remote sensing of the earth:  
Atmospheric sensing Ocean and ice sensing  
Field campaigns Interferometry and SAR  
Subsurface sensing Scattering/diffraction  
Radiation and emission Propagation effects  
Urban environments Soil moisture & terrain  
Propagation and remote sensing in complex and random media

COMMISSION G, Ionospheric Radio and Propagation  
Attila Komjathy, 818-393-6828, attila.komjathy@jpl.nasa.gov

**TOPICS**  
Ionospheric imaging  
Ionospheric morphology  
Ionospheric modeling and data assimilation  
Meteoroids and orbital debris  
Radar and radio techniques for ionospheric diagnostics  
Space weather – radio effects  
Transionospheric radio propagation and systems effects

COMMISSION H, Waves in Plasmas  
Robert C. Moore, 352-392-0634, moore@ece.ufl.edu

**TOPICS**  
Chaos and turbulence in plasmas  
Plasma instabilities  
Spacecraft-plasma interactions  
Solar/planetary-plasma interactions  
Space as a research laboratory  
Space environment modeling and forecasting  
Wave-wave and wave-particle interactions  
Waves in space and laboratory plasmas

COMMISSION J, Radio Astronomy  
Jeff Mangum, 434-296-0347, jman gum@nrao.edu

**TOPICS**  
Next generation very large array (ngVLA)  
The quest for characterizing the low-frequency sky and detecting the epoch of reionization  
Digital signal processing technology for very long baseline interferometry  
New telescopes, techniques, and technology  
Observatory reports  
Timely technical tutorials

COMMISSION K, Electromagnetics in Biology and Medicine  
Majid Manteghi, 540-231-6834, manteghi@vt.edu

**TOPICS**  
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

ERNEST K. SMITH USNC-URSI STUDENT PAPER COMPETITION  
Prizes will be awarded to three student papers. Awards will be made for First Prize in the amount of $1000, Second Prize at $750, and Third Prize at $500. The deadline for submission of full papers on the meeting website is September 20, 2020. Please see www.nrsmboulder.org for additional information, or contact the Student Paper Chair, Prof. Erdem Topsakal, Dept. of ECE, Virginia Commonwealth University, etopsakal@vcu.edu. Student papers and awards will be presented at the Plenary Session on Thursday morning, January 7, 2021. Student Paper Competition participants will have the option of submitting their full papers for publication in a special section of the journal Radio Science.

ABSTRACT AND SUMMARY SUBMISSION  
The organizers of this meeting require the use of electronic submission. Details and instructions may be found at the conference website, www.nrsmboulder.org. Authors may choose to submit to special sessions in addition to the general topics listed above. A list of special sessions will be available on the conference website. All abstracts or summaries must be submitted online by Sunday, September 20, 2020. If you have any questions on abstract/summary submission or the technical program, please direct them to the USNC-URSI Secretary, at Michael.Newkirk@jhuapl.edu. Abstracts must have a minimum of 250 words. You will not be able to submit an abstract that does not meet the minimum length requirements. After abstract or summary submission is complete, please note that registration is required to attend any session of the meeting or to present a paper. More information about USNC-URSI is available at www.usnc-ursi.org.

Questions about the conference: For questions concerning conference logistics, please contact: Christina Patarino, Phone: (303) 492-5151, Fax: (303) 492-5959, E-mail: christina.patarino@colorado.edu