

In person (streamed sessions) Program

08:00 08:40 **Formal Opening** - R. Graglia, P. Uslenghi – Chairs of the Conferences

Monday 9

08:00 Hawaii time

Plenary Lectures

08:40 09:40 **Toward Brain-Machine Interfaces for the Treatment of Neurological Injuries and Diseases: Predictive Multiscale Computational Electromagnetic Modeling for Bioelectric Activity and Neuroimplant Design** – G. Lazzi, University of Southern California, United States

10:00 11:00 **Novel Out-of-the-Box Antenna Designs for the Next Generation CubeSats: from Concepts to Missions** - Y. Rahmat-Samii, UCLA, United States

01) Honoring the legacy of Tapan Sarkar: from fundamentals of electromagnetic theory to lasting high-impact applications - ICEAA, Organized by M. Moghaddam

Chairs R.D. Graglia, M. Moghaddam

Monday 9

11:00 Hawaii time

11:00 11:20 **Tapan Sarkar: Losing a Dear Friend and a Wonderful Colleague is Very Painful**

921 Y. Rahmat-Samii, UCLA, United States;

11:20 - 11:40 **Fourier transform, Dirac commutator, energy conservation, and correspondence principle**

927 C.J. Ryu, E. Kudeki, University of Illinois Urbana-Champaign, United States; D.Y. Na, T.E. Roth, Purdue University, United States; W.C. Chew, University of Illinois Urbana-Champaign, United States

11:40 - 12:00 **Computational Electromagnetics in Biomedical Applications: a Tribute to Prof. Tapan Sarkar**

928 G. Lazzi, University of Southern California, United States;

12:00 - 12:20 **The Enduring Legacy of Tapan Sarkar: Colleague, Advocate, and Friend**

925 M. Moghaddam, USC, United States;

02) Natural and stimulated emissions in the ionosphere and magnetosphere - ICEAA, Organized by G. Ganguli

Chairs G. Ganguli, P. Yoon

Monday 9

13:40 Hawaii time

13:40 14:00 **Earth's Magnetosphere: A Cosmic Wave-Particle Laboratory**

126 D. N. Baker, University of Colorado Boulder, United States;

14:00 - 14:20 Electromagnetic Radiations in Space Plasma

627 P. H. Yoon, University of Maryland, United States;

14:20 - 14:40 Particle-In-Cell Simulations of Magnetotail Dipolarizations Guided by Local Plasma Observations and Magnetometer Data Mining

674 M. I. Sitnov, T. Motoba, The Johns Hopkins University , United States; M. Swisdak, University of Maryland, College Park, United States;

14:40 - 15:00 Predicted Effects of Nonlinear Induced Scattering in the SMART Experiment

513 C. Crabtree, G. Ganguli, A. Fletcher, A. S. Richardson, US Naval Research Lab, United States; R. Soto, J. Huba, Syntek Technologies, United States;

15:00 15:20 Lower-hybrid waves coupled to multiple heavy ion ring distributions in the SMART experiment

713 A. Rualdo Soto, Syntek Technologies, Inc, United States; C. Crabtree, G. Ganguli, A. C. Fletcher, Naval Research Laboratory, United States;

15:20 15:40 Magnetotail Convection: from Mesoscales to Microscales

761 A. Ukhorskiy, K. Sorathia, V. Merkin, JHU/APL, United States; C. Crabtree, A. Fletcher, NRL, United States; D. Malaspina, S. Schwartz, University of Colorado, United States;

15:40 - 16:00 Chorus Element Properties: Statistics From Automated Chorus Detection

616 C. A. Kletzing, A. Sen Gupta, I. W. Christopher, R. McCarthy, The University of Iowa, United States;

16:00 - 16:20 Electron Microburst Precipitation in Earth's Magnetosphere

762 R.M.Millan, Dartmouth College, USA; J.G.Sample, Montana State University, USA; T.Sotirelis, Johns Hopkins Applied Physics Lab, USA; L.A.Woodger, Dartmouth College, USA; A.Johnson, Montana State University, USA; D.E.Westphal, K.A.Cantwell, Dartmouth College, USA

16:20 - 16:40 Precursor Magnetosonic Solitons from Moving Charged Objects in the Ionosphere

214 A. Sen, A.Kumar, S.K. Yadav, Institute for Plasma Research, India; G. Ganguli, C. Crabtree, Naval Research Laboratory, United States;

16:40 - 17:00 Plasma Generation by Hypervelocity Impact

422 A. C. Fletcher, C. Crabtree, NRL, United States; S. Close, Stanford University, United States; G. Ganguli, NRL, United States;

03) Electromagnetic measurements - ICEAA

Chairs A.M. Holmes, N. O'Gorman

Monday 9

17:00 Hawaii time

17:00 - 17:20 Focus Beam System Biaxial Cross-Polarization 2nd Sample Method

306 N.A. O'Gorman, Air Force Institute of Technology, United States;

17:20 - 17:40 Testing the Resilience of Cryptographic Modules Against Fine-Grained Time- and Frequency-Domain EM Side-Channel Analysis Attacks

552 V.V. Iyer, A. Thimmaiah, A.E. Yilmaz, The University of Texas at Austin, United States;

17:40 - 18:00 Experimental Realization of Topologically Protected Surface Magnon Polaritons on Ceramic YIG Ferrites

682 A.M. Holmes, M. Sabbaghi, S. Poddar, S. Pakniyat, G.W. Hanson, UW Milwaukee, United States;

18:00 - 18:20 On-Body Antenna Radiation Pattern Measurement

209 L. Berkelmann, D. Manteuffel, Leibniz University Hannover , Germany;

04) Antennas and Arrays - ICEAA

Chairs E. Gupta, C. Rappaport

Tuesday 10

08:00 Hawaii time

08:00 - 08:20 Design Improvements and Performance of the Bifocal Microwave Microscope

642 C. Rappaport, A. Morgenthaler, Northeastern University, United States;

08:20 - 08:40 On the Thinning of Small Tightly Coupled Arrays

736 G.R. Friedrichs, M.A. Elmansouri, D.S. Filipovic, University of Colorado Boulder, United States;

08:40 - 09:00 Additively manufactured conformal feeds for passive beamforming

747 K. McParland, Z. Larimore, P. Parsons, A. Good, M. Mirotznik, University of Delaware, United States;

09:00 - 09:20 Fabrication of conformal metasurface RF devices using 6-axis hybrid additive manufacturing

752 E. Gupta, Z. Larimore, M. Mirotznik, The University of Delaware, United States; K. Nicholson, Defence Science and Technology Group, Australia;

09:20 09:40 MATERIALS FOR USE IN THE ADDITIVE MANUFACTURE OF RF COMPONENTS AND DEVICES

749 Z. Larimore, P. Parsons, A. Good, DeLUX Advanced Manufacturing, United States; K. McParland, M. Mirotznik, University of Delaware, United States;

05) Radio astronomy (including SKA) - ICEAA

Chairs E. Gupta, C. Rappaport

Tuesday 10

09:40 Hawaii time

09:40 - 10:00 Foreground and RFI mitigation with the baryon mapping experiment (BMX)

807 B.R.B. Saliwanchik, P. O'Connor, A. Slosar, P. Stankus, Brookhaven NL, USA; M. Harris, Yale Univ, USA; J. Haupt, J. Kuczewski, Brookhaven NL, USA; E.R. Kuhn, L.B. Newburgh, A. Polish, Yale Univ, USA; C.D. Sheehy, Brookhaven NL, USA; G. Troiani, Univ of Missouri, USA; W. Tyndall, Yale Univ, USA

06) Antennas and arrays - IEEE APWC

Chairs E. Gupta, C. Rappaport

Tuesday 10

10:20 Hawaii time

10:20 - 10:40 On the Design and Calibration of a 5G Millimeter-Wave Dual-Polarized Active Phased Array

480 A.J. van den Biggelaar, C.J.C. Vertegaal, Eindhoven University of Technology, Netherlands; M. Geurts, NXP Semiconductors, Netherlands; U. Johannsen, Eindhoven University of Technology, Netherlands; A.B. Smolders, Eindhoven University of Technology, Netherlands

10:40 - 11:00 Design of Helical Antennas for Full-duplex Communication Systems

505 S. Yen, D.S. Filipovic, University of Colorado Boulder, United States;

11:00 - 11:20 A Framework for Design of Multibeam Antenna Systems used for Amplitude-Only Direction Finding Based on Correlation Method

681 T. J. Prince, M. A. Elmansouri, D. S. Filipovic, University of Colorado Boulder, United States;

11:20 - 11:40 Subregion-Based Machine Learning for Wideband Amplitude-Only Direction-Finding Systems

823 G.R. Friedrichs, M.A. Elmansouri, D.S. Filipovic, University of Colorado Boulder, United States;

11:40 12:00 Super Resolution Time Delay Estimation in Multipath Environment using Matrix Pencil Method.

716 V. K. Chandrasegar, G. Park, J. Koh, Gyeongsang National University, Korea, South;

07) MIMO, UWB systems, Channel modelling - IEEE APWC

Chairs H. Chew, S. Pakniyat, S. Saab

Tuesday 10

12:00 Hawaii time

12:00 - 12:20 On the utility of 3D printing for the design of meanderline polarizers

714 S. Yen, G.R. Friedrichs, University of Colorado Boulder, United States; E. Lier, T. Hand, W.N. Kefauver, Lockheed Martin Corporation, United States; D.S. Filipovic, University of Colorado Boulder, United States;

13:40 - 14:00 An empirical characterization of galvanized steel ohmic losses – Application to the modelisation of large resonant structures

707 Y. Berthoud, Schneider Electric, France; J.M. Duchamp, Univ. Grenoble-Alpes, CNRS, Grenoble INP, G2Elab, France; A. Niembro, E. Dreina, Schneider Electric, France; F. Ndagijimana, Univ. Grenoble-Alpes, France;

14:00 14:20 Characteristics of the electromagnetic field in the near- and far-field and their application to interference mitigation

630 H. Chew, E. Petsalis, L. Xu, The Aerospace Corporation, United States;

14:20 - 14:40 Meteorological and Terrain Effects on RF Propagation

632 L. Xu, B.R. Yee, H. Chew, E. Petsalis, The Aerospace Corporation, United States;

14:40 - 15:00 Aerospace Radio Frequency Propagation Tool

631 B.R. Yee, H. Chew, L. Xu, E. Petsalis, The Aerospace Corporation, United States;

15:00 - 15:20 Using Transmit Antenna Pattern for Accurate Propagation Loss Predictions

633 E. Petsalis, L. Xu, B.R. Yee, H. Chew, The Aerospace Corporation, United States;

08) Technologies and modeling in EM - ICEAA

Chairs H. Chew, S. Pakniyat, S. Saab

Tuesday 10

15:20 Hawaii time

15:20 - 15:40 Cross-sectional Equivalence in Dielectric Rod Aerials

553 G.L. Saffold, Georgia Tech Research Institute, United States; T.M. Weller, Oregon State University, United States;

15:40 - 16:00 Surface Plasmon Polariton Properties in Topological Continua under Radial Bias Using a Coordinate Free Dyadic Green's Function

781 S. Pakniyat, A.M. Holmes, G.W. Hanson, University of Wisconsin Milwaukee, United States;

16:00 - 16:20 Tunable Unidirectional Surface Plasmon-Polaritons at the Interface Between Gyrotropic and Isotropic Conductors

841 Y. Liang, West Virginia Univ, Morgantown, USA; S. Pakniyat, Univ of Wisconsin Milwaukee, USA; Y. Xiang, West Virginia Univ, USA; J. Chen, Univ of Pittsburgh, USA; F. Shi, West Virginia Univ, US; G.W. Hanson, Univ of Wisconsin Milwaukee, USA; C. Chen, West Virginia Univ, USA

16:20 - 16:40 Experimental Validation of a Modal Equivalent Circuit for Complex Interconnection Networks in Metallic Enclosures of Arbitrary Shape

244 C. Lange, C. Hamann, M. Leone, Otto-von-Guericke University Magdeburg, Germany;

09) Wireless communications, sensors and energy applications - IEEE APWC

Chairs H. Chew, S. Pakniyat, S. Saab

Tuesday 10

16:40 Hawaii time

16:40 - 17:00 Localization in Distributed Wireless Systems Based on High-Accuracy Microwave Ranging

718 S.M. Mghabghab, J.A. Nanzer, Michigan State University, United States;

17:00 - 17:20 Massive-Beam MIMO for LEO/VLEOVHTS

651 S. Foo, W. Tong, Huawei Technologies Canada, Canada;

17:20 - 17:40 A Novel Antenna Matching Technique for Joint Wireless Communication and Energy Harvesting

329 S. Saab, University of Texas at Austin, United States; A. Mezghani, University of Manitoba, Canada; R.W. Heath Jr., North Carolina State University, United States;

17:40 - 18:00 Focused Radiative Wireless Power Transfer in The Presence of Random Scatterers

757 Z.I. katbay, D. Sounas, M. Ismail, wayne state university, United States;

18:00 - 18:20 On the Flexibility Characteristics of an Array of Resonators for Simultaneous Power and Data Transfer purposes in Inductive Power Transfer Systems

413 N. Fontana, D. Brizi, S. Barmada, A. Monorchio, M. Raugi, University of Pisa, Italy

10) URSI Commission H - Waves in Plasmas

Chairs L. Chen, M. Usanova, C. Crabtree

Wednesday 11

08:00 Hawaii time

08:00 - 08:20 Quantifying Radial Transport from High Energy Resolution Electron Flux Measurements in the Earth's Inner Belt and Slot Region

710 S. Lejosne, UCB, SSL, United States;

08:20 - 08:40 Minima in phase space density and how they relate to the multi-MeV electron radiation belt depletions

720 A.Y. Drozdov, UCLA, USA; H. Allison, GFZ German Centre for Geosciences, Germany; Y. Shprits, UCLA, USA; M. Usanova, University of Colorado Boulder, USA; A. Saikin, UCLA, USA

08:40 - 09:00 Wave generation and wave-particle interactions using space-based RF linear electron accelerators

767 G.D. Reeves, Los Alamos National Lab., United States;

09:00 - 09:20 Modeling electron microburst induced by choruswaves

777 L. Chen, The University of Texas at Dallas, United States;

09:20 - 09:40 Analysis of Conjugate Satellite and Ground EMIC Wave Observations

894 M. Usanova, L. Blum, University of Colorado at Boulder, United States;

09:40 - 10:00 New perspectives on radiation belt precipitation from the ELFIN CubeSats

991 D.L. Turner, The Johns Hopkins University Applied Physics Laboratory, MD, USA; V. Angelopoulos, University of California at Los Angeles, CA, USA; W. Li, Boston University, MA, USA; C. Wilkins, University of California at Los Angeles, CA, USA

10:20 - 10:40 Whistler Waves above Lower Hybrid Frequency in the Ionosphere and their Counterpart in the Magnetosphere

815 Z. Xia, L. Chen, The University of Texas at Dallas, United States;

10:40 - 11:00 Neural Network Model for Specification of Radiation Belts Environment

861 D. Kondrashov, A. Drozdov, University of California, Los Angeles, United States; Y. Shprits, GFZ Potsdam, Germany;

11:00 - 11:20 Boundaries and enhancements: ULF wave-driven dynamics of energetic particles in the Van Allen belts

862 A. N. Jaynes, J. Joseph, J. Doucette, The University of Iowa, Iowa, USA; D. N. Baker, X. Li, University of Colorado Boulder, CO, USA; S. G. Kanekal, Goddard Space Center, MA, USA

11) URSI Commissions E, F, K

Chairs S. Can, P.L.E. Uslenghi, J. Volakis

Wednesday 11

11:20 Hawaii time

11:20 11:40 Sensitivity of FDTD modeling of VLF Signals to D-Region Chemistry: Quiescent & Disturbed Conditions

853 C.A. Jeffery, Y.A. Mehta, E.M. Nelson, Los Alamos National Laboratory, United States;

11:40 12:00 Bistatic scattering coefficients of a tree covered mountainside at Lband

903 C. Suer, the George Washington University, United States; D.J. Breton, Cold Regions Research & Engineering Labs, United States; C.E. Haedrich, North Carolina State University, United States; R.H. Lang, the George Washington University, United States;

12) URSI Commissions A, B, C

Chairs S. Can, P.L.E. Uslenghi, J. Volakis

Wednesday 11

12:00 Hawaii time

12:00 - 12:20 Diagnosis of atheromatous Carotid Plaque: Dielectric Constant Measurement Using Microwave Resonant Technique versus Ultrasound B-mode Images

832 R. Shahbaz, F. Deshours, G. Alquie, H. Kokabi, Sorbonne Université, France; F. Koskas, I. Brocheriou, G. Lenaour, Hôpital de la Pitié Salpêtrière, France; C. Hannachi, Sorbonne Université, France; J. Davaine, Hôpital de la Pitié Salpêtrière, France;

13:40 14:00 Invisibility of triangular anti-isorefractive DNG prisms illuminated by multiple incident plane waves

610 P.L.E. Uslenghi, University of Illinois at Chicago, United States;

14:00 14:20 A Field Test for Phaseless Measurements for Nearfield Inspections of Navigation Systems with UAVs

647 R. Geise, A. Weiß, B. Neubauer, A. Akar, TU Braunschweig, Germany;

14:20 - 14:40 Target counting and location detection in electromagnetics using convolutional neural networks

902 M. Sabbaghi, J. Zhang, G. Hanson, University of Wisconsin-Milwaukee, United States;

13) Numerical methods in electromagnetics - ICEAA, Organized by R.D. Graglia, D.R. Wilton

Chairs R.D. Graglia, D.R. Wilton

Wednesday 11

14:40 Hawaii time

14:40 15:00 New Simplified Analytic Expressions for Matrix Elements of the Asymptotic Part of the Layered Medium Green Function in Mixed Potential Formulation

409 E. Bleszynski, M. Bleszynski, T. Jaroszewicz, Monopole Research, United States; W.A. Johnson, consultant, United States; J. Riviero, F. Vipiana, Politecnico di Torino, Italy; D. Wilton, University of Houston, United States;

15:00 - 15:20 Modeling Coupling through an Electromagnetically Deep Slot Aperture

783 V.Q. Dang, R.A. Pfeiffer, L.K. Warne, W.A. Johnson, J.D. Kotulski, J.W. Wallace, A.R. Pack, A.M. Krueger, B. Zinser, W.L. Langston, Sandia National Laboratories, United States;

15:20 15:40 Relative impact of singular edge and corner basis functions on the capacitance of parallel-plate capacitors

765 A. F. Peterson, Georgia Institute of Technology, United States; R.D. Graglia, Torino Polytechnic, Italy;

15:40 - 16:00 Analytic Extension of Eigenvalues for Fast Frequency Sweep Analysis of RF Circuits

784 H.L. Li, J.M. Jin, University of Illinois at Urbana-Champaign, United States; D.R. Jachowski, R.B. Hammond, Resonant Inc., United States;

16:00 - 16:20 6-D MoM Reaction Integrals Evaluated via the Divergence Theorem

288 J. Rivero, F. Vipiana, Politecnico di Torino, Italy; D. R. Wilton, University of Houston, United States; W. A. Johnson, Consultant, United States;

16:20 - 16:40 Development of a sparse direct solver for antenna array analysis

769 K. Sewraj, M.M. Botha, Stellenbosch University, South Africa;

16:40 17:00 A Fast Quasi-Conformal Mapping Preconditioner for Electromagnetic Integral Equations

990 D. Consoli, Politecnico di Torino, Italy; A. Merlini, IMT Atlantique, France; F.P. Andriulli, Politecnico di Torino, Italy

14) Recent advances in electromagnetics for MRI - ICEAA, Organized by D. Erricolo; G. Carluccio; R. Lattanzi

Chairs D. Erricolo; G. Carluccio; R. Lattanzi

Wednesday 11

17:00 Hawaii time

17:00 17:20 Elastically stretchable and flexible RF receive coil arrays for magnetic resonance imaging

799 J.M. Vincent, J.V. Rispoli, M. Gim, Purdue University, United States;

17:20 17:40 Vacuum formed coils for magnetic resonance imaging

811 K. Gopalan, J. Maravilla, J. Mendelsohn, A.C. Arias, M. Lustig, University of California, Berkeley, United States;

17:40 - 18:00 Facilitation of MRI Detection at 3 Tesla by Engineering the Electromagnetic Properties of a Metamaterial Slab Employed as a Receive Array

740 A. Maunder, A.K. Iyer, N. De Zanche, University of Alberta, Canada;

18:00 - 18:20 Determination of the Larmor Frequency for Highest Transmit Efficiency in the Head

864 G. Carluccio, C. Collins, New York University, United States;

15) Simulation and diagnostics of space plasma-wave interactions in the laboratory - ICEAA, Organized by W.E. Amatucci; E. Scime

Chairs W.E. Amatucci; E. Scime

Thursday 12

08:00 Hawaii time

08:00 08:20 Development of a High-Time Resolution Impedance Probe for Measurements in Space and Laboratory Plasmas

405 A.M. DuBois, E.M. Tejero, G.R. Gatling, W.E. Amattuci, U.S. Naval Research Laboratory, United States;

08:20 - 08:40 NRL SPADE plasma impedance probe experiments on the International Space Station*

388 B. Amatucci, E. Tejero, G. Gatling, D. Blackwell, Naval Research Laboratory, United States;

08:40 - 09:00 Impact of charged dust on the propagation of driven low frequency, electrostatic fluctuations in a magnetized plasma

626 E. Thomas, W. L. Burdett, S. Williams, B. Doyle, U. Konopka, Auburn University, United States; R. L. Merlino, University of Iowa, United States; M. Rosenberg, UCSD, United States;

09:00 - 09:20 Overview of plasma wave studies using the Basic Plasma Science Facility

929 T.A. Carter, G. Bal, J. Larson, UCLA, United States; B. Van Compernelle, General Atomics, United States; S. Vincena, P. Pribyl, UCLA, United States;

09:20 - 09:40 Analysis of the Anomalous Response of Double Probe Electric Field Sensors on the Van Allen Probes EFW Instrument

763 J.W. Bonnell, K. Goodrich, University of California, Berkeley, United States;

09:40 - 10:00 First Results from the Phase Space Mapping Experiment

153 E.E. Scime, C. Beatty, D. Caron, T. Gilbert, A. Jemiolo, R. John, M. Lazo, J. McKee, M. Moran, R. S. Nirwan, M. Paul, E. E. Scime, P. Shi, P. Srivastava, T. Steinberger, K. Stevenson, West Virginia University, USA

16) Recent Advances in Slot Array Antennas - ICEAA, Organized by S.R. Rengarajan, M. Albani

Chairs S.R. Rengarajan, P.L.E. Uslenghi

Thursday 12

10:20 Hawaii time

10:20 - 10:40 Waveguide-Fed Slot Arrays in Space Application: A Review

846 S.R. Rengarajan, California State University, Northridge, United States; R. E. Hodges, Jet Propulsion Laboratory, United States;

17) Mathematical Advances in Electromagnetics - ICEAA, Organized by J. Arnold, P. Smith, E. Vinogradova

Chairs S.R. Rengarajan, P.L.E. Uslenghi

Thursday 12

10:40 Hawaii time

10:40 - 11:00 Radiation pattern synthesis for a prolate spheroidal antenna

635 M.D. Poort, Google Inc., United States; P.L.E. Uslenghi, University of Illinois at Chicago, United States;

18) Recent Advancement of Electromagnetic Theory - ICEAA, Organized by H. Shirai

Chairs S.R. Rengarajan, P.L.E. Uslenghi

Thursday 12

11:00 Hawaii time

11:00 - 11:20 Diffraction by a Finite Parallel-Plate Waveguide with Sinusoidal Wall Corrugation

667 T. Eizawa, K. Kobayashi, Chuo University, Japan;

19) Modern problems of mathematical and computational electromagnetics and their advanced applications - ICEAA

Chairs S.R. Rengarajan, P.L.E. Uslenghi

Thursday 12

11:20 Hawaii time

11:20 - 11:40 Trade-off between spatial resolution and sensitivity of magnetoelectric magnetic field sensors

548 M.Ö. Özden, M. Gerken, Kiel University, Germany;

20) Novel material platforms for advanced radiation; propagation and scattering phenomena - ICEAA, Organized by S. Arslanagic

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

11:40 Hawaii time

11:40 - 12:00 Investigation of Overcoming the Chu Lower Bound on Quality Factor for Antennas Tuned with Highly Dispersive Lossy Material

524 Y. Radi, A. Alu, ASRC CUNY, United States;

12:00 - 12:20 Graphene-Metasurface Structures for Low-Terahertz Applications

623 H. M. Bernety, University of Utah, United States; A. B. Yakovlev, University of Mississippi, United States;

21) Innovative antenna technologies and wide/multi band antennas - IEEE APWC, Organized by H. Nakano

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

13:40 Hawaii time

13:40 - 14:00 Reconfigurable surface wave fluid antenna for spatial MIMO applications

760 Y. Shen, K. Tong, K. Wong, University College London, United Kingdom;

14:00 - 14:20 Novel Design of Rectenna Array Using Metasurface for IoT

816 T. Maruyama, M. Nakatsugawa, National Institute of Technology, Hakodate College, Japan; N. Suematsu, M. Motoyoshi, Q. Chen, H. Sato, Tohoku University, Japan; M. Omiya, Hokkaido University, Japan;

14:20 - 14:40 Design of a linearly dual-polarized dual-band and wideband multi-ring microstrip antenna with a via fed by two L-probes

652 Y. Kimura, S. Saito, Y. Kimura, Saitama University, Japan; M. Tatematsu, TDK Co., Japan;

14:40 15:00 Metallic Pattern Prediction For Surface Wave Antennas Using Bidirectional Gated Recurrent Unit Neural Network

640 J. Yang, K.F. Tong, University College London, United Kingdom;

22) Full duplex applications - IEEE APWC, Organized by D. Erricolo; Z. Zhang

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

15:00 Hawaii time

15:00 - 15:20 Many-antenna full-duplex with fully digital and hybrid beamforming radios

296 G. Megson, E. Aryafar, Portland State University, United States;

15:20 - 15:40 MmWave full-duplex wireless communication: TX-RX self-interference reduction through passive cancellation techniques

427 A. K. Oladeinde, E. Aryafar, B. Pejcinovic, Portland State University, United States;

23) Simultaneous Transmit and Receive RF Front-Ends - IEEE APWC, Organized by J.L. Volakis, S.B. Venkatakrisnan

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

15:40 Hawaii time

15:40 - 16:00 Adaptive Self-interference Cancellation with a Lossless N-Tap Transversal Filter

863 K. Bhakta, L.K. Yeung, Y.E. Wang, UCLA, United States;

16:00 - 16:20 Ultra-Wide Band Circulators for STAR Communications through Sequentially Switched Delayed Lines towards low losses

835 Y. Li, J.P. Santos, Y.E. Wang, UCLA, United States;

24) Electromagnetic applications to biomedicine - ICEAA

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

16:20 Hawaii time

16:20 - 16:40 Non-invasive BSL Estimation by Spatial Sparsity

820 T. Lam, M. Fowler, Binghamton University, United States;

25) Biomedical electromagnetics: future directions of nervous system stimulation - ICEAA, Organized by A. Paffi, G. Bonmassar

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

16:40 Hawaii time

16:40 - 17:00 A numerical study of the Figure-8 uMS coil configuration for Vagus Nerve Stimulation

534 H. Jeong, G. Bonmassar, Harvard Medical School, United States;

26) Microwave and mmWave Sensors in Advanced Applications - ICEAA, Organized by C. Baer

Chairs C. Baer, Y. Radi, A. Yakovlev

Thursday 12

17:00 Hawaii time

17:00 - 17:20 Applications for broadband scattering parameter measurements using THz time-domain spectrometry

727 M. Mueh, C. Damm, Ulm University, Germany;

17:20 - 17:40 Mode Pattern Investigation using Field Illustration Microwave Thermography

138 C. Baer, K. Orend, B. Hattenhorst, T. Musch, Ruhr University Bochum, Germany;

17:40 - 18:00 Long Range In-Well Radar Measurements utilizing Higher-order Propagation Modes

911 C. Schulz, M. Gerding, T. Neumann, Ruhr University Bochum, Germany; D. Shepherd, K. Gardiner, S. Littleford, Welldata Subsurface Surveillance Systems Ltd., United Kingdom;

18:00 - 18:20 Low-loss 3D-coplanar line structure for millimeter wave applications using laser direct structuring technology

378 S Seewald, D Manteuffel, Leibniz University Hannover, Germany; M Wolf, M Barth, W Eberhardt, Hahn-Schickard, Germany; A Zimmermann, University of Stuttgart, Germany;

27) Materials, metamaterials and metasurfaces - ICEAA

Chairs S. Pakniyat, J. Kelley

Friday 13

08:00 Hawaii time

08:00 - 08:20 Reflectionless Plasmonic Right-Angled Waveguide Bend and Divider Using Graphene and Transformation Optics

770 S. Pakniyat, University of Wisconsin Milwaukee, United States; S. Jam, A. Yahaghi, Shiraz University, Iran; G.W. Hanson, University of Wisconsin Milwaukee, United States;

08:20 - 08:40 Coaxial Probe-based Measurements of Biological Tissues: Inaccuracies in Sensing Volume when Calculated from Sensing Radius and Sensing Depth

502 A. Farshkaran, E. Porter, University of Texas at Austin, United States;

08:40 - 09:00 Electromagnetic response from acoustic resonance in indium antimonide

873 H. Salehi Najafabadi, M.A. Meier, University of Houston, United States; G.A. Hallock, University of Texas at Austin, United States;

09:00 09:20 Near Field Dipole-Dipole Coupling Near Conductive Plate In The Microwave Range: An RF Analogue To Förster Resonance Energy Transfer In Optics

878 K. Lezhennikova, UNIVERSITE AIX-MARSEILLE, France; S. Glybovski, ITMO University, Russia; R. Abdeddaim, K. Rustomji, J. Wenger, UNIVERSITE AIX-MARSEILLE, France; C. M. Sterke, University of Sydney, Australia; S. Enoch, UNIVERSITE AIX-MARSEILLE, France;

28) Electromagnetic theory and EMC/EMI/EMP - ICEAA

Chairs S. Pakniyat, J. Kelley

Friday 13

09:20 Hawaii time

09:20 09:40 Trends of IEMI Induced Upset on Different Microcontroller Devices

684 D.S. Guillette, University of New Mexico, United States; T.J. Clarke, Air Force Research Lab, United States; C.G. Christodoulou, University of New Mexico, United States;

09:40 10:00 A Monte Carlo Analysis of the Impact of Material Parameter Uncertainty on RCS Predictions

554 J.T. Kelley, The University of Texas at Austin, United States; C.C. Courtney, D.A. Chamulak, Lockheed Martin Aeronautics, United States; A.E. Yilmaz, The University of Texas at Austin, United States;

29) Radio telescopes and radio astronomy systems - ICEAA, Organized by D. de Villiers, E. de Lera Acedo, S. Srikanth

Chairs D. de Villiers, S. Srikanth

Friday 13

10:20 Hawaii time

10:20 - 10:40 Fast Surrogate-Based Optimization of Wideband Quad-Ridge Flared Horn Feeds for SKA and ngVLA

702 F.T.T. Mokhupuki, D.I.L De Villiers, Stellenbosch University, South Africa

10:40 11:00 An Examination of Radio Telescope Parameters and their Significance

683 S. Srikanth, National Radio Astronomy Observatory, United States;

11:00 11:20 A tolerance study of the 18 m offset Gregorian dual reflector antenna for the ngVLA

191 R. Lehmensiek, EMSS Antennas, South Africa; D.I.L. de Villiers, University of Stellenbosch, South Africa;

30) EMERALD - Electromagnetic imaging for a novel generation of medical devices - ICEAA, Organized by F. Vipiana, L. Crocco

Chairs E. Razzicchia, M. Wang

Friday 13

11:20 Hawaii time

11:20 - 11:40 Dielectric Properties Model of the Left Atrium and Left Atrial Appendage for Applications in Cardiac Ablation

624 N. Ištuk, National University of Ireland Galway, Ireland; E. Porter, The University of Texas at Austin, United States; D. O'Loughlin, Trinity College Dublin, Ireland; M. O'Halloran, National University of Ireland Galway, Ireland;

11:40 - 12:00 Comparison of measurement scenarios suitable for microwave chemotherapy treatment monitoring

284 A. Janjic, M. Cayoren, I. Akduman, Istanbul Technical University, Turkey;

12:00 - 12:20 Benefits of Employing Metasurfaces on the Design of a Microwave Brain Imaging Scanner

609 E. Razzicchia, N. Ghavami, King's College London, United Kingdom; D. O. Rodriguez-Duarte, J. A. Tobon Vasquez, F. Vipiana, Politecnico di Torino, Italy; P. Kosmas, King's College London, United Kingdom;

31) Finite and hybrid methods - ICEAA

Chairs S. Pakniyat, J. Kelley

Friday 13

13:40 Hawaii time

13:40 - 14:00 Solving Time Domain Electromagnetic Forward and Inverse Problems using a Differentiable Programming Platform

688 Y. Hu, Y. Jin, X. Wu, J. Chen, University of Houston, United States;

32) Radar technologies and Inverse scattering - ICEAA

Chairs S. Pakniyat, J. Kelley

Friday 13

14:00 Hawaii time

14:00 - 14:20 Wideband Analysis of Imaging of Dielectric-Covered Curved Surfaces for Millimeter-Wave Security Scanning

685 E. Wig, C. Rappaport, Northeastern University, United States;

14:20 - 14:40 Initial Investigation of a GNSS-R Multiscale Rough Surface Forward Model at San Luis Valley Calibration/Validation Sites

347 J.D. Campbell, A. Melebari, E. Hodges, University of Southern California at Los Angeles, CA, USA; R. Akbar, Massachusetts Institute of Technology, MA, USA; M. Moghaddam, University of Southern California at Los Angeles, CA, USA

14:40 - 15:00 Multistatic versus multi-monostatic nearfield millimeter-wave imaging of dielectrics on ground planes for body scanning security sensing

486 A. Morgenthaler, C. Rappaport, Northeastern, United States;

15:00 - 15:20 Improving accuracy of hand gesture recognition using recurrent neural networks

844 G. Park, V.K. Chandrasegar, J. Koh, Gyeongsang National University, Korea, South;

15:20 - 15:40 Range Resolution Enhancement in Linear Frequency Modulated SAR Imaging

556 E. Shareef, M. Dawood, New Mexico State University, NM, USA

15:40 16:00 Baseline sensitivity for 2-D magnetoquasistatic through-the-wall position sensing

608 N. Peng, D. Arumugam, J. Bush, B. Feyissa, Jet Propulsion Laboratory, United States;

16:00 16:20 Root-Zone Soil Moisture Retrieval from CYGNSS Over-Land Observations via Bistatic Vegetation Scattering model and Hybrid Global and Local Optimization Scheme

203 A. Azemati, University of Southern California, CA, USA; A. Etminan, Stanford University, CA, USA; A. Melebari, J.D. Campbell, E. Hodges, M. Moghaddam, University of Southern California, CA, USA