One-Day Workshop on RFI Mitigation and Characterization (1)

Session Chairs: Richard Bradley, Terence Bullett, virginie deniau, jacob Gavan, Frank Gronwald, Motti Haridim, David Le Vine, Paolo de Matthaeis, Hanna Rothkaehl, Amit Mishra

08:00 EFGHJ0-1 ELECTROMAGNETIC TOPOLOGICAL CONCEPTS FOR MITIGATION OF EM/RFI EFFECTS WITH ILLUSTRATIVE EXAMPLES
D. V. Giri, Pro-Tech, United States

08:20 EFGHJ0-2 EVALUATION OF AN IEEE 802.11N COMMUNICATION SYSTEM IN PRESENCE OF TRANSIENT ELECTROMAGNETIC INTERFERENCES FROM THE PANTOGRAPH-CATENARY CONTACT
G. Romero, F. P. Simon, university of Lille1, France; V. Deniu, C. Gransart, R. Kousri, IFSTTAR, France

08:40 EFGHJ0-3 MACHINE LEARNING FOR AUTOMATED DISCRIMINATION OF SETI SIGNALS FROM RADIO FREQUENCY INTERFERENCE
G. R. Harp, SETI Institute, United States; J. D. Scargle, C. E. Henze, NASA Ames Research Center, United States; B. C. Nelson, CSRA Inc., United States

09:00 EFGHJ0-4 THE DATABASE OF OBSERVED RADIO FREQUENCY INTERFERENCE AND FREQUENCY ALLOCATIONS OF THE IEEE GEOSCIENCE AND REMOTE SENSING SOCIETY
P. de Matthaeis, S. Misra, L. Pierce
1NASA Goddard Space Flight Center, United States; 2IEEE GRSS, United States; 3University of Michigan, United States

One-Day Workshop on RFI Mitigation and Characterization (2)

Session Chairs: Richard Bradley, Terence Bullett, virginie deniau, jacob Gavan, Frank Gronwald, Motti Haridim, David Le Vine, Paolo de Matthaeis, Hanna Rothkaehl, Amit Mishra

09:40 EFGHJ1-1 ANALYSIS OF RADIO FREQUENCY INTERFERENCE SIGNATURES IN UAVSAR POLARIMETRIC DATA
M. Tag, Northwestern Poltechnical University, China (CIE); F. Zhou, Xidian University, China (CIE)

10:00 EFGHJ1-2 CORRECTION OF ULTRA WIDE-BAND RADIO FREQUENCY INTERFERENCE IN SAR DATA USING NONNEGATIVE MATRIX FACTORIZATION
M. Tag, Northwestern Poltechnical University, China (CIE); F. Zhou, Xidian University, China (CIE)

10:20 EFGHJ1-3 RADIO FREQUENCY INTERFERENCE IN ALOS-2 PALSAR-2 INTERFEROGRAM
R. Natsumai, T. Motohka, S. Suzuki, T. Tadono, Japan Aerospace Exploration Agency, Japan

10:40 EFGHJ1-4 DETECTION OF RADIO FREQUENCY INTERFERENCE IN ECOSAR FLIGHT DATA
T. Badlan, B. Osmanoglu, R. Rincon, S. K. Lee, T. Fatoyinbo
1Universities Space Research Association, United States; 2NASA Goddard Space Flight Center, United States

11:00 EFGHJ1-5 A NEW METHOD OF SAR RADIO FREQUENCY INTERFERENCE MITIGATION BASED ON MAXIMUM A POSTERIORI ESTIMATION
F. Zhou, Xidian University, China (CIE)

11:20 EFGHJ1-6 SELECTIVE SUPPRESSION OF IRNSS S-BAND SIGNALS FOR SPECIFIC APPLICATIONS
U. Ghosh, A. D. Sarma, M. Q. Javeed, N. V. K. Rao, Chaitanya Bharathi Institute of Technology, India

One-Day Workshop on RFI Mitigation and Characterization (3)

Session Chairs: Richard Bradley, Terence Bullett, virginie deniau, jacob Gavan, Frank Gronwald, Motti Haridim, David Le Vine, Paolo de Matthaeis, Hanna Rothkaehl, Amit Mishra

11:40 EFGHJ1-7 THE MITIGATION OF RFI IN SPACE BORNE AND GROUND BASED RADIO DIAGNOSTICS
H. Rothkaehl, B. Matyiaska, D. Przepiorka, M. Pozoga, M. Morawski, Space Research Center Polish Academy of Sciences, Poland; J. Yan, L. Wu, National Space Science Centre (NSSC), China

13:40 EFGHJ2-1 SIMULATION OF ±320KV VSC-HVDC CONVERTER VALVE RADIO FREQUENCY INTERFERENCE ON COMMUNICATION SYSTEMS
J. Zhang, W. Zhang, T. Lu, X. Zhang, B. Xu, North China Electric Power University, China (CIE)

14:00 EFGHJ2-2 RFI MITIGATION ON MOBILE BASE STATIONS AROUND FAST
H. Zhang1,2
1National Astronomical Observatories of CAS, China; 2Key Laboratory of Radio Astronomy of CAS, China

14:20 EFGHJ2-3 REAL-TIME RFI MITIGATION FOR THE BEAMFORMER MODE OF THE UPGRADED GMRT
A. Chowdhury, Y. Gupta, National Centre for Radio Astrophysics - TIFR, Pune, India, India

14:40 EFGHJ2-4 RADIO ENVIRONMENT OF NSRT AND RFI MITIGATION
Q. Liu1,2, Y. Liu1, Y. Wang1, L. Yuan1,2, F. Liu1
1Xinjiang Astronomical Observatory, Chinese Academy of Science, China (CIE); 2University of Chinese Academy of Sciences, China (CIE); 3Key Laboratory of Radio Astronomy, Chinese Academy of Sciences, China (CIE)

15:00 EFGHJ2-5 AERONAUTICAL RADIO FREQUENCY INTERFERENCE CHARACTERISATION FOR THE SQUARE KILOMETRE ARRAY
A. J. Ott, R. P. Millenaar, C. Van Der Merwe, T. Abbott, S. Toshogwreni, Square Kilometre Array South Africa, South Africa; A. R. Botha, MEXA Product Solutions, South Africa

15:20 EFGHJ2-6 RFI MITIGATION THROUGH PREDICTION AND AVOIDANCE
B. Indermuehle, L. Harvey-Smith, CSIRO Astronomy and Space Science, Australia

15:40 EFGHJ2-7 TOOLS FOR AVOIDING SATELLITE INTERFERENCE AT THE UPGRADED GMRT
S. N. Kasture, P. A. Raybole, S. K. Rai, S. Nayak, S. Kumar, GMRT-NCRA-TIFR, India

One-Day Workshop on RFI Mitigation and Characterization (4)

Session Chairs: Richard Bradley, Terence Bullett, virginie deniau, jacob Gavan, Frank Gronwald, Motti Haridim, David Le Vine, Paolo de Matthaeis, Hanna Rothkaehl, Amit Mishra

16:20 EFGHJ3-1 COMPUTATIONALLY EFFICIENT NEAR-FIELD RADIO FREQUENCY SOURCE LOCALISATION
J. W. W. Steel1, D. B. Davidson1, S. J. Wijnholds1,2
1Stellenbosch University, South Africa; 2Netherlands Institute for Radio Astronomy, Netherlands

16:40 EFGHJ3-2 METTING RADIO FREQUENCY INTERFERENCE (RFI) CHALLENGES FOR THE UPGRADED GMRT.
P. A. Raybole, S. Sureshkumar, S. Rai, S. Nayak, S. Kumar, GMRT-NCRA-TIFR, India

17:00 EFGHJ3-3 NEW STRATEGIES FOR STATISTICAL RFI DETECTION
L. Waldrop, G. Cucho-Padin, F. Kamalabadi, Arecibo Observatory, United States

17:20 EFGHJ3-4 NEW CHALLENGES IN RFI MITIGATION FOR WIDEFIELD LOW FREQUENCY APERTURE ARRAYS
R. Monroe, G. Hallinan, M. Eastwood, M. Anderson, California Institute of Technology, United States
17:40  EFGHJ3-5 AN RFI MITIGATION PROJECT AT THE ITALIAN RADIO TELESCOPES
A. Zanichelli¹, K.-H. Mack¹, M. B. Bartolini¹, S. Poppi², G. Serra², F. Gaudiomonte², M. De Biaggi¹, F. Cantini³, E. Favero¹, G. Nicotra¹, L. Nicotra¹, S. Righini¹, P. Bolli³, C. Bortolotti³, M. Roma¹, A. Orlati³, F. Bedosti¹
¹INAF - Istituto di Radioastronomia, Italy; ²INAF - Astronomical Observatory of Cagliari, Italy; ³EFPL - Space Engineering Center, Switzerland; ⁴INAF - Astrophysical Observatory of Arcetri, Italy

18:00  EFGHJ3-6 RESULTS OF THE NSF ENHANCING ACCESS TO THE RADIO SPECTRUM SOLICITATION
G. I. Langston, National Science Foundation, United States
Sunday, August 20, 2017

**Session E4**

Short Course on IEMI and Cyber threats for Wireless Communications (1)

Session Chair: Dave Giri

08:00  E4-1 "SMART IEMI" THREATS, CONSIDERED AS CYBER THREATS, FOR WIRELESS COMMUNICATIONS – PART 1

C. Kasmi, FNISA, France; V. Deniau, IFSTTAR, France

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Sunday, August 20, 2017

**Session T1**

ECR Tutorial 1: Pedro Cruz - Mixed-Signal Multi-Domain Characterization Setup for Design and Test of 5G Systems

Session Chair: Stefan Wijnholds

08:00  T1-1 MIXED-SIGNAL MULTI-DOMAIN CHARACTERIZATION SETUP FOR DESIGN AND TEST OF 5G SYSTEMS

P. M. Cruz1,2
1CONTROLAR - Innovating Industry, Portugal; 2Instituto de Telecomunicações - Aveiro, Portugal

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Sunday, August 20, 2017

**Session E5**

Short Course on IEMI and Cyber threats for Wireless Communications (2)

Session Chair: Dave Giri

09:20  E5-1 "SMART IEMI" THREATS, CONSIDERED AS CYBER THREATS, FOR WIRELESS COMMUNICATIONS – PART 2 3 SLOTS BY VIRGINIE DENIAU

V. Deniau, IFSTTAR, France; C. Kasmi, FNISA, France

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Sunday, August 20, 2017

**Session T2**

ECR Tutorial 2: Gabriele Gradoni - Wave Chaos and Complexity in Electromagnetic Environments

Session Chair: Stefan Wijnholds

09:20  T2-1 WAVE CHAOS AND COMPLEXITY IN ELECTROMAGNETIC ENVIRONMENTS

G. Gradoni, University of Nottingham, United Kingdom

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Sunday, August 20, 2017

**Session E6**

Short Course on IEMI and Cyber threats for Wireless Communications (3)

Session Chair: Dave Giri

10:40  E6-1 IEMI THREATS FOR WIRELESS COMMUNICATIONS, DETECTIONS AND PROTECTIONS

V. Deniau, IFSTTAR, France; C. Kasmi, FNISA, France
Monday, August 21, 2017

Commission A Essential Information
Session Chairs: Yasuhiro Koyama, Patrizia Tavella

Monday, August 21, 2017 08:00-08:20

Commission B Essential Information
Session Chairs: Ari Sihvola, Kazuya Kobayashi

Monday, August 21, 2017 08:00-08:20

Commission C Essential Information
Session Chairs: Sana Salous, Amir Zaghloul

Monday, August 21, 2017 08:00-08:20

Commission D Essential Information
Session Chairs: Günter Steinmeyer, Apostolos Georgiadis

Monday, August 21, 2017 08:00-08:20

Commission E Essential Information
Session Chairs: Dave Giri, Frank Gronwald

Monday, August 21, 2017 08:00-08:20

Commission F Essential Information
Session Chairs: Simonetta Paloscia, Chandrasekar V Chandra

Monday, August 21, 2017 08:00-08:20

Commission G Essential Information
Session Chairs: Iwona Stanislawska, Patricia Doherty

Monday, August 21, 2017 08:00-08:20

Commission H Essential Information
Session Chairs: O. Santolik, János Lichtenberger

Monday, August 21, 2017 08:00-08:20

Commission K Essential Information
Session Chairs: Joe Wiart, Samyoung Chung

Monday, August 21, 2017 08:00-08:20

Session A0
Monday, August 21, 2017 08:00-08:20 511AD

Session B0
Monday, August 21, 2017 08:00-08:20 510AC

Session C0
Monday, August 21, 2017 08:00-08:20 513A

Session D0
Monday, August 21, 2017 08:00-08:20 513B

Session E0
Monday, August 21, 2017 08:00-08:20 513C

Session F0
Monday, August 21, 2017 08:00-08:20 510BD

Session G0
Monday, August 21, 2017 08:00-08:20 511BE

Session H0
Monday, August 21, 2017 08:00-08:20 511CF

Session K0
Monday, August 21, 2017 08:00-08:20 516AB

Session A1
Monday, August 21, 2017 08:00-08:20 511AD

Session J1
Monday, August 21, 2017 08:00-09:20 516DE

Receivers and Radiometers: Design & Calibration (1) Plus Essential Information
Session Chairs: Arnold van Ardenne, Roberto Neri, Sivasankaran Srikanth, Richard Bradley, Miroslav Pantaleev

08:00 J1-1 THE MPIFR S-BAND RECEIVER SYSTEM FOR THE SKA PRECURSOR OBSERVATORY MEERKAT - CURRENT STATUS AND OUTLOOK
G. Wieching, C. Kasemann, O. Wucknitz, M. Kramer, Max-Planck Institut für Radioastronomie, Germany

08:20 J1-2 COMPACT CM-WAVE AND MM-WAVE INTEGRATED RECEIVERS
M. A. Morgan, S. D. Wunduke, J. J. Castro, T. A. Boyd, W. M. Groves III, National Radio Astronomy Observatory, United States

08:40 J1-3 AN ULTRA-WIDEBAND CRYOGENIC RECEIVER FOR THE PARKES RADIO TELESCOPE

09:00 J1-4 THE COSMIC TWILIGHT POLARIMETER – AN OVERVIEW
R. F. Bradley, National Radio Astronomy Observatory, United States; B. D. Nhan, J. O. Burns, University of Colorado, United States

Session J2
Monday, August 21, 2017 08:00-09:20 514A

Digital Signal Processing Hardware (1) Plus Essential Information
Session Chairs: Albert Boonstra, Dan Werthimer

08:00 J2-1 UPGRADE TO THE 64-ANTENNA ALMA CORRELATOR
R. J. Lacasse1, R. P. Escoffier1, J. H. Greenberg1, A. F. Saez2, O. Y. Ojeda1, A. Baudry1, J. C. Webber3
1NRAO, United States; 2Associated Universities, Inc., Chile; 3Laboratoire d’Astrophysique de Bordeaux (OASU), France

08:20 J2-2 HIGH-PERFORMANCE HARDWARE PLATFORM FOR THE SQUARE KILOMETRE ARRAY MID CORRELATOR & BEAMFORMER
M. Pleunang, H. Zhang, B. Carlson, R. Webber, D. Chalmers, T. Gunaratne, National Research Council Canada, Canada

08:40 J2-3 GEMINI FPGA HARDWARE PLATFORM FOR THE SKA LOW CORRELATOR AND BEAMFORMER
E. Koopstra1, G. Hampson2, A. Guma1, J. Bunton2, G. Schoonderbeek1, A. Brown2
1ASTRON, Netherlands; 2CSIRO, Australia

09:00 J2-4 DIGITIZATION AND DIGITAL FILTERING FOR 16 GHZ ON-SKY BANDWIDTH ANALYSIS WITH ALMA
B. Quertier, A. Randriamanantena, A. Baudry, S. Gauffre, Univ. Bordeaux, CNRS, France

Session J3
Monday, August 21, 2017 08:00-09:20 515AD

Session J4
Monday, August 21, 2017 08:00-09:20 515BE

Session J5
Monday, August 21, 2017 08:00-09:20 515CF

Session J6
Monday, August 21, 2017 08:00-09:20 515DE

Session J7
Monday, August 21, 2017 08:00-09:20 515EF

Session J8
Monday, August 21, 2017 08:00-09:20 515F0

Session J9
Monday, August 21, 2017 08:00-09:20 515G0

Session J10
Monday, August 21, 2017 08:00-09:20 515H0

Session J11
Monday, August 21, 2017 08:00-09:20 515I0

Session J12
Monday, August 21, 2017 08:00-09:20 515J0

Session J13
Monday, August 21, 2017 08:00-09:20 515K0

Session J14
Monday, August 21, 2017 08:00-09:20 515L0
Monday, August 21, 2017 08:20-09:20 510AC

Session B1

Electromagnetic Theory (1)

Session Chairs: Daniel Sjöberg, Ben Steinberg

08:20 B1-1 ELIMINATION OF THE ILL-POSEDNESS IN THE INVERSE PROBLEM THROUGH USE OF FOCUSING PROPERTIES OF MAXWELL FISH EYE LENS
J. Feng, L. Shafai, V. Okhmato, University of Manitoba, Canada

08:40 B1-2 ON THE ANALYSIS OF THE EXTERIOR CALDERON OPERATOR FOR A NON-SPHERICAL GEOMETRY
G. Kristensen1, J. Stratsis1, N. Wellander1,2, A. Yannacopoulos3
1Lund University, Sweden; 2National and Kapodistrian University of Athens, Greece; 3Swedish Defence Research Agency, Sweden; 4Athens University Economics and Business, Greece

09:00 B1-3 POWER, ENERGY DENSITY, AND GROUP/ENERGY-TRANSPORT VELOCITIES IN SPATIALLY DISPERSIVE MEDIA
A. D. Yaghjian, Electromagnetics Research Consultant, United States

Monday, August 21, 2017 08:20-09:20 513B

Session B1

Monday, August 21, 2017 08:20-09:20 513C

Session B2

Microwave and Millimeter Wave Identification and Sensing (1)

Session Chairs: Ville Viikari, Smail Tedjini, Arnaud Vena

08:20 DB2-1 INTELLIGENT ANTENNA SENSING SYSTEM FOR INTERNET OF THINGS
H. Hung, J. Hung, D. Loomis, Maxim Integrated, United States

08:40 DB2-2 EXPLOITATION OF CHIPLESS RFID TECHNOLOGY FOR HUMIDITY MONITORING
M. Borgese, F. A. Dicandia, F. Costa, S. Genovese, G. Marana, Università di Pisa, Italy

09:00 DB2-3 A BIOPOLYMER-BASED UHF RFID SENSOR FOR HUMIDITY MONITORING
Y. Belaïdi, A. Vena, B. Sorli, F. Bibi, Institut d'Électronique et des Systèmes (IES) Université de Montpellier, France

Monday, August 21, 2017 08:20-09:20 514B

Session F1

Microwave Remote Sensing of the Cryosphere (1)

Session Chairs: Martti Hallikainen, Jiancheng Shi

08:20 F1-1 WHAT CAN SPACEBORNE LOW FREQUENCY MICROWAVE OBSERVATIONS TELL US ABOUT SEA ICE?
G. Heygster, C. Patilea, M. Huntemann, Observatoire de Paris, France

08:40 F1-2 THE ULTRA-WIDEBAND SOFTWARE DEFINED MICROWAVE RADIOMETER (UWRAD) FOR ICE SHEET SUBSURFACE TEMPERATURE SENSING: PROJECT OVERVIEW AND INITIAL CAMPAIGN RESULTS
M. J. Andrews, H. Li, J. Johnson, K. C. Jezek, A. Bringer, C. Yardim, University of Michigan, United States

09:00 F1-3 COMPARISON OF THEORETICAL AND EXPERIMENTAL BRIGHTNESS TEMPERATURES FOR SNOW ON TERRAIN AND SNOW ON LAKE ICE
M. T. Hallikainen, Aalto University, Finland

Monday, August 21, 2017 08:20-09:20 515B

Session D1

Microwave Photonics (1)

Session Chairs: Stavros Iezekiel, Jianping Yao

08:20 D1-1 PHOTONICS FOR BROADBAND MICROWAVE MEASUREMENT
S. Pan, X. Wang, Nanjing University of Aeronautics and Astronautics, China (CIE)

08:40 D1-2 PRECISE CHARACTERIZATION OF OPTO-ELECTRIC DEVICES FOR MICROWAVE PHOTONICS
T. Kawanishi1,2, A. Uno1, K. Inagaki1,2, A. Kanno2, N. Yamamoto2
1Waseda University, Japan; 2National Institute of Information and Communications Technology, Japan

09:00 D1-3 PLASMONIC ORGANIC HYBRID MACH-ZEHNDER MODULATORS: EXPERIMENTAL CHARACTERIZATION OF INTERMODULATION DISTORTIONS
M. Buta1, C. Hoessbacher1, W. Heni1, C. Haffner1, Y. Fedoryshyn1, D. L. Elder2, L. R. Dalton2, J. Leuthold1
1Institute of Electromagnetic Fields, ETH Zurich, Switzerland; 2University of Washington, United States

Monday, August 21, 2017 08:20-09:20 516B

Session FK2

Various Aspects of Body Area Networks (1)

Session Chairs: Slawomir Ambrozio, Luis Correia

08:20 FK2-1 RADIO CHANNEL MEASUREMENTS IN 868 MHZ OFF-BODY COMMUNICATIONS IN A FERRY ENVIRONMENT
K. K. Cwalina, S. Ambrozio, R. Rajchowski, Gdańsk University of Technology, Poland; L. M. Correia, University of Lisbon, Portugal

08:40 FK2-2 RADIO CHANNEL MEASUREMENTS IN OFF-BODY COMMUNICATIONS IN A FERRY PASSENGER CABIN
P. T. Korz, S. Ambrozio, Gdańsk University of Technology, Poland; L. M. Correia, University of Lisbon, Portugal
Monday, August 21, 2017 08:20-09:20 516DE

Session J4

Digital Signal Processing Hardware (2)
Session Chairs: Albert Boonstra, Dan Werthimer

08:20 J4-1 WHAT NEXT FOR CASPER? THE FUTURE OF THE COLLABORATION FOR ASTRONOMY SIGNAL PROCESSING AND ELECTRONICS RESEARCH
J. Hickish, D. Werthimer, UC Berkeley, United States

08:40 J4-2 HERA NODE ARCHITECTURE AND SIGNAL PROCESSING
Z. Abdurashidova, UC Berkeley, United States

09:00 J4-3 THE CHIME GPU CORRELATOR X-ENGINE: CONSTRAINTS, PERFORMANCE, AND OPTIMIZATIONS
N. Denman, University of Toronto, Canada
Session Chairs: Pierre Degauque, Ferran Silva

Monday, August 21, 2017 09:40-10:40 513E

Session E9

Seismo Electromagnetics (Lithosphere-Atmosphere-Ionosphere Coupling) (1)

Session Chairs: Sergey Pulinets, Yasushi Koba, Hanna Rothkaehl

Monday, August 21, 2017 09:40-10:40 513D

Session G2

Data Assimilation Modeling (2)

Session Chairs: Ivan Galkin, Bruno Nava

Monday, August 21, 2017 09:40-10:40 514B

Session FK4

Various Aspects of Body Area Networks (2)

Session Chairs: Slawomir Ambrozia, Luc Correia

Monday, August 21, 2017 09:40-10:40 511B

Session GEH3

Microwave Remote Sensing of the Cryosphere (2)

Session Chairs: Martti Hallikainen, Jiancheng Shi

Monday, August 21, 2017 09:40-10:40 510B

Session D3

Microwave Photonics (2)

Session Chairs: Stavros Iezekiel, Jianping Yao

Monday, August 21, 2017 09:40-10:40 513B

Session DB4

Microwave and Millimeter Wave Identification and Sensing (2)

Session Chairs: Ville Viikari, Smail Tedjini, Arnaud Vena

Monday, August 21, 2017 09:40-10:40 513C

Session E9

EMC in Complex Systems (2)

Session Chairs: Pierre Degauque, Ferran Silva

Monday, August 21, 2017 09:40-10:40 513E

Session G3

Various Aspects of Body Area Networks (2)

Session Chairs: Slawomir Ambrozia, Luc Correia

Monday, August 21, 2017 09:40-10:40 511B

Session GEH3

Microwave Remote Sensing of the Cryosphere (2)

Session Chairs: Martti Hallikainen, Jiancheng Shi

Monday, August 21, 2017 09:40-10:40 510B

Session D3

Microwave Photonics (2)

Session Chairs: Stavros Iezekiel, Jianping Yao

Monday, August 21, 2017 09:40-10:40 513B

Session DB4

Microwave and Millimeter Wave Identification and Sensing (2)

Session Chairs: Ville Viikari, Smail Tedjini, Arnaud Vena

Monday, August 21, 2017 09:40-10:40 513C

Session E9

EMC in Complex Systems (2)

Session Chairs: Pierre Degauque, Ferran Silva

Monday, August 21, 2017 09:40-10:40 513E
Monday, August 21, 2017 09:40-10:40 511CF

Session H2

Wave-Particle Interactions and Their Effects on Planetary Radiation Belts (2)

Session Chairs: Richard Horne, David Shklyar, Craig Kletzing

09:40 H2-1 RECENT RESULTS FROM THE ELECTRIC AND MAGNETIC FIELD INSTRUMENT SUITE AND INTEGRATED SCIENCE (EMFISIS) ON THE VAN ALLEN PROBES

C. Kletzing, University of Iowa, United States

10:00 H2-2 LARGE-AMPLITUDE UPPER-BAND CHORUS EMISSIONS OBSERVED BY VAN ALLEN PROBES

Y. Kubota1,2,3, C. Kletzing2, Y. Omura3, G. Reeves1

1Research Institute for Sustainable Humanosphere, Kyoto University, Japan; 2Department of Physics and Astronomy, University of Iowa, USA; 3Los Alamos National Laboratory, USA

Session H2: Wave-Particle Interactions and Their Effects on Planetary Radiation Belts (2)

Monday, August 21, 2017 10:00-11:00 511DE

Session J5

Receivers and Radiometers: Design & Calibration (3)

Session Chairs: Arnold van Ardenne, Roberto Neri, Sivasankaran Srikanta, Richard Bradley, Miroslav Pantaleev

09:40 J5-1 THE LOW FREQUENCY RECEIVERS FOR SKA1-LOW: DESIGN AND VERIFICATION

P. Benherati,1 M. Gerbers,1 J. G. Bij de Vaate,1 S. Wijnholds,1 J. Bast,2 ASTRON, Netherlands; 1Department of Physics and Astronomy, University of Iowa, USA; 2Department of Electrical and Computer Engineering, University of Colorado Boulder, United States

10:00 J5-2 A 275-500 GHz HETERODYNE RECEIVER WITH HIGH-JC S JUNCTIONS: CONCEPT AND MEASUREMENTS

M. Kroup,1 S. Eraki,1 K. Uemizu,1 T. Booler,1 T. Colgate,1 D. Emrich,1 P. Hall,1 B. Juswardy,1 D. Kenney,1 F. Schlangenhauser,1 M. Sokolowski,1 A. Sutinjo,1 D. Ung,1 R. Wayth,1 A. Williams,1 J. Baker,2 R. Bennett,2 R. Halsall,2 STFC RAL, SCOTLAND; 1Max-Planck-Institute fuer RADIOASTRONOMIE, Germany

Session J5: Receivers and Radiometers: Design & Calibration (3)

Monday, August 21, 2017 10:00-11:00 516DE

Session K2

Biomedical Applications of Low Frequency EMF Including TMS, DBS, MRI and MP (2)

Session Chair: Frank Prato

09:40 K2-1 USING MAGNETOSOME GENES FOR MRI REPORTER GENE EXPRESSION

Q. Sun1,2,3, S. C. Donnelly1, F. S. Prato1,2,3, D. E. Goldhawk1,2,3

1Lawson Health Research Institute, Canada; 2Western University, Canada; 3The University of Tokyo, Japan

10:20 K2-2 QUANTITATIVE ASSESSMENT OF THE FOCALITY OF A DOUBLE-D COIL IN THE HUMAN BRAIN

Y. Kawasaki1,2, K. Hosomi2, K. Yamamoto2, S. Hara1, Y. Abe1, Y. Saitoh1, M. Sekino1

1University of Warmia and Mazury, Poland; 2Space Research Institute of Russian Academy of Sciences, Russia; 3Politecnico University of Cataluna, Spain; 4Space Research Centre, Polish Academy of Sciences, Poland

Session K2: Biomedical Applications of Low Frequency EMF Including TMS, DBS, MRI and MP (2)

Monday, August 21, 2017 10:20-11:20 516AB

Session L0

General Lecture 1: Michael Kramer - 'Exploring Gravity'

11:00 L0-1 EXPLORING GRAVITY AND GRAVITATIONAL WAVES

M. Kramer, Max-Planck-Institut fuer Radioastronomie, Germany

Session L0: General Lecture 1: Michael Kramer - 'Exploring Gravity'

Monday, August 21, 2017 11:00-12:00 517CD

Session A3

Commission A Open Session

Session Chairs: Yasuhiro Koyama, Patrizia Tavella

13:20 A3-1 REFERENCE STANDARD FOR MILLIMETER-WAVE POWER PRIMARY STANDARDS SYSTEM

J.-Y. Kwon1,2, Y.-P. Hong1, D.-J. Lee1,3, N.-W. Kang1

1KRISS, South Korea; 2UST, South Korea

13:40 A3-2 UNCERTAINTY ANALYSIS OF CIRCULAR IRIS WAVEGUIDE VERIFICATION STANDARD FOR VECTOR NETWORK ANALYZERS

N. Shoaib, National University of Sciences and Technology (NUST), Pakistan; S. Shoaib, HITEC University, Pakistan

14:00 A3-3 METHOD FOR AUTOMATICALLY VALIDATING THE SIGNAL WITH PEAK AND OSCILLATION USING FEATURE SELECTION VALIDATION (FSV)

W. Du,1 N. Fang, Y. Xie, Beihang University, China (CIE)

Session A3: Commission A Open Session

Monday, August 21, 2017 13:20-14:20 511AD

Session B3

Electromagnetic Theory (2)

Session Chairs: Daniel Sjöberg, Ben Steinberg

13:20 B3-1 FORCE TRACING AND ITS APPLICATION IN OPTICAL MANIPULATION

A. Akhras,1 FORTH, Greece; C. C. Caloz, Polytechnique Montreal, Canada

13:40 B3-2 EMBEDDED EIGENSTATES AND COHERENT VIRTUAL ABSORPTION IN METAMATERIAL STRUCTURES

A. Alu1,2, D. L. Soum1, F. Monticone1,2, A. Krasnok1

1The University of Texas at Austin, United States; 2Cornell University, United States

14:00 B3-3 METAMATERIAL MEDIATED EM WAVE AMPLIFICATION

R. Seviour, University of Huddersfield, United Kingdom

Session B3: Electromagnetic Theory (2)

Monday, August 21, 2017 13:20-14:20 510AC

Session C3

Enabling Technologies for Smart Cities (1)

Session Chair: Hongjian Sun

13:20 C3-1 SMART PHYSICAL LAYER BASED DIRECTIONAL COMMUNICATION NETWORKING

F. A. Ozturk,1 M. F. Iskander, Z. Yun, G. Sasaki, S. M. M. Islam, University of Hawaii at Manoa, United States

13:40 C3-2 IOT-FFN: AN ENERGY-EFFICIENT PARADIGM FOR IOT USING FEMTOLET BASED FOG NETWORK

A. Mukherjee,1 D. De,2 West Bengal University of Technology, India

13:40 C3-3 A GREEN COST EFFECTIVE HOME AUTOMATION SYSTEM USING IOT-MQTT

D. Guha Roy,1 D. De,2 West Bengal University of Technology, India

Session C3: Enabling Technologies for Smart Cities (1)
Monday, August 21, 2017 13:20-14:20 513C
Session CA4

Channel Measurements, Characterization and Verification through Electromagnetic Metrology and Measurement Post Processing (1)

Session Chairs: Jeanne QUIMBY, Sana Salous

13:20 
CA4-1 AN X-BAND RADIO CHANNEL MODEL FOR PROPAGATION THROUGH THE SOLAR CORONA
A. J. Stockler, D. R. Siddle, E. M. Warrington, University of Leicester, United Kingdom; G. Marotti, D. Silvestri, A. Zepa, P. Tortora, University of Bologna, Italy; A. Argirion, University of Thessaly, Greece; J. De Vicente, R. Abello, M. Mercolino, ESA, Germany

13:40 
CA4-2 CHANNEL MODELING USING SOFTWARE DEFINED RADIO BASED SLIDING CORRELATOR CHANNEL SOUNDER
H.-C. Lu, J.-Y. Lin, Y.-H. Zhang, National Taiwan University of Science and Technology, Taiwan; C. L. Lin, National Chung-Shan Institute of Science and Technology, Taiwan

14:00 
CA4-3 CHANNEL PROPAGATION EXPERIMENTAL MEASUREMENTS AND SIMULATIONS AT 52 GHz
B. Montenegro-Villacieros1, S. Salous1, J. Bishop1, X. Raimundo2
1JRC, Italy; 2University of Durham, United Kingdom

Monday, August 21, 2017 13:20-14:20 513B
Session CA4

Electrical Breakdown Strengths of Various Gases and Gas Mixtures

Session Chairs: Ville Viikari, Smail Tedjini, Arnaud Vena

13:20 
CA4-1 ELECTRICAL BREAKDOWN STRENGTHS OF VARIOUS GASES AND GAS MIXTURES
D. V. Giri, Pro-Tech, United States; V. Carboni, L3 Communications, United States; J. M. Leja, University of New Mexico, United States

13:40 
CA4-2 UPSET MODELING
R. L. Gardner, Consultant, United States

14:00 
CA4-3 RECOMMENDED IMPROVEMENTS FOR MIL-STD-188-125-1
W. A. Radasky, Metatech Corporation, United States; S. N. Longoria, ETS-Lindgren, United States

Monday, August 21, 2017 13:20-14:20 513D
Session GEH4

Microwave Remote Sensing of Vegetation and Terrestrial Snow

Session Chairs: Paolo Pampaloni, Simonetta Paloscia

13:20 
F5-1 MODELING AND MEASUREMENT OF MULTI-FREQUENCY MICROWAVE EMISSION OF SOIL FREEZING AND THAWING PROCESSES
T. Zhao, J. Shi, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China

13:40 
F5-2 MICROWAVE EMISSION ANALYSIS OVER LONG-TERM TIME SERIES OF SNOW DATA COLLECTED IN ITALIAN ALPS
S. Paloscia, E. Santi, P. Pampaloni, S. Pettinato, IFAC/CNR, Italy; X. Chuan, RAD-CAS, China; A. Crepaz, Avalanche Center Arabba, Italy

14:00 
F5-3 CRYORAD: A SPACEBORNE ULTRAWIDEBAND MICROWAVE Radiometer for the Observation of Cryosphere and the Monitoring of Permafrost
G. Macelloni, M. Brogioni, F. Montomoli, M. Leduc-Leballeur, E. Santi, IFAC-CNR, Italy; S. Varchetta, Thales Alenia Space, Italy; J. Johnson, K. Jezek, ElectroScience Laboratory, The Ohio State University, USA

Monday, August 21, 2017 13:20-14:20 513EF
Session D5

D-Tutorial J Leuthold: “The Path towards 100 Gbit/s Wireless Communications”

Session Chair: Günter Steinmeyer

13:20 
E10-1 ELECTRICAL BREAKDOWN STRENGTHS OF VARIOUS GASES AND GAS MIXTURES
D. V. Giri, Pro-Tech, United States; V. Carboni, L3 Communications, United States; J. M. Leja, University of New Mexico, United States

13:40 
E10-2 UPSET MODELING
R. L. Gardner, Consultant, United States

14:00 
E10-3 RECOMMENDED IMPROVEMENTS FOR MIL-STD-188-125-1
W. A. Radasky, Metatech Corporation, United States; S. N. Longoria, ETS-Lindgren, United States

Monday, August 21, 2017 13:20-14:20 513B
Session D5

Microwave and Millimeter Wave Identification and Sensing (3)

Session Chairs: Ville Viikari, Smail Tedjini, Arnaud Vena

13:20 
DB6-1 RADAR CROSS SECTION BASED DUAL-BAND DUAL-POLARIZED HUMIDITY SENSING TAG
R. Raju, G. E. Bridges, University of Manitoba, Manitoba

13:40 
DB6-2 ANTIPODAL FERMI TAPERED SLOT ANTENNA ARRAY WITH SIW-BASED FEEDING NETWORK FOR 60-GHZ POINT TO POINT COMMUNICATIONS
L. M. Mohamed, A. Sekh, Concordia University, Canada

14:00 
DB6-3 WIDE-BAND MILLIMETRE WAVE DOWN-CONVERTER BASED ON SIX-PORT CIRCUIT FOR RADAR AND SENSING APPLICATIONS
H. Arab Salmanabadi, C. Akyel, S. Tatu, INRS, Canada

Monday, August 21, 2017 13:20-14:20 513C
Session DB6

High-Power Electromagnetics (1)

Session Chairs: Robert Gardner, Dave Giri

13:20 
E10-1 ELECTRICAL BREAKDOWN STRENGTHS OF VARIOUS GASSES AND GAS MIXTURES
D. V. Giri, Pro-Tech, United States; V. Carboni, L3 Communications, United States; J. M. Leja, University of New Mexico, United States

13:40 
E10-2 UPSET MODELING
R. L. Gardner, Consultant, United States

14:00 
E10-3 RECOMMENDED IMPROVEMENTS FOR MIL-STD-188-125-1
W. A. Radasky, Metatech Corporation, United States; S. N. Longoria, ETS-Lindgren, United States

Monday, August 21, 2017 13:20-14:20 513D
Session GHS

Plasma Instabilities in the Ionosphere (1)

Session Chairs: Frank Lind, Robert Pfaff

13:20 
GHS-1 MID-LATITUDE E REGION PLASMA IRREGULARITIES OBSERVED DURING STORM AND QUIET CONDITIONS USING MULTI-STATIC, MULTI-FREQUENCY RADAR OBSERVATIONS
J. L. Chan1, J.-P. St. Maurice2, J. P. Vieren1, M. Urciu1
1Leibniz Institute of Atmospheric Physics at the University of Rostock, Germany; 2University of Saskatchewan, Canada

13:40 
GHS-2 THE ICEBEAR RADAR: A NEW FULLY DIGITAL 50-MHZ VHFBISTATIC RADAR FOR E-REGION RADAR OBSERVATIONS AND RESEARCH
G. C. Hussey, D. R. Huyghebaert, K. A. McWilliams, J.-P. St.-Maurice, University of Saskatchewan, Canada

14:00 
GHS-3 MID-LATITUDE E REGION IRREGULARITY EXCITED BY KELVIN HELMHOLTZ INSTABILITY
Y. Liu, C. Zhou, X. Gu, B. Ni, Z. Zhao, Wuhan University, China (CIE)
Wave-Particle Interactions and Their Effects on Planetary Radiation Belts (3)

Session Chairs: Richard Horne, David Shklyar, Craig Kletzing

13:20 JG8-1 METHOD FOR DIRECT DETECTION OF PITCH ANGLE SCATTERING CAUSED BY PLASMA WAVES
M. Krijhaars, Y. Katoh, Tohoku University, Japan

13:40 JG8-2 INITIAL REPORT OF THE PLASMA WAVE EXPERIMENT (PWE) ONBOARD THE ARASE (ERG) SATELLITE
1Kanazawa University, Japan; 2Tohoku University, Japan; 3Kyoto University, Japan; 4Toyama Prefectural University, Japan; 5Nagoya University, Japan; 6ISAS/JAXA, Japan

Monday, August 21, 2017 13:20-14:20 511CF

Session JG8

Ionospheric Models and their Validation (1)

Session Chairs: Stefan Wijnholds, Sean Elvidge

13:20 JG8-3 THE EFFECT OF THE IONOSPHERE ON ASTRONOMICAL OBSERVATIONS BELOW 100 MHZ
F. de Gasperini, M. Mervis1, H. Intema1
1Leiden University, Netherlands; 2ASTRON, Netherlands

Monday, August 21, 2017 13:20-14:20 516DE

Session J7

Receivers and Radiometers: Design & Calibration (4)

Session Chairs: Arnold van Ardenne, Roberto Neri, Sivasankaran Srikanth, Richard Bradley, Miroslav Pantaleev

13:20 J7-2 CALIBRATION OF APERTIF, THE NEW PHASED ARRAY FEED SYSTEM FOR THE WESTERBORK ARRAY
B. Hut, W. A. van Cappellen, ASTRON, Netherlands

14:00 J7-3 FRONT-ENDS AND PHASED ARRAY FEEDS FOR THE SARDINIA RADIO TELESCOPE
A. Navarrini, INAF-Astronomical Observatory of Cagliari, Italy

Monday, August 21, 2017 13:20-14:20 514A

Session C5

Enabling Technologies for Smart Cities (2)

Session Chair: Hongjian Sun

15:00 C5-1 AUCTION BASED QOE AWARE CO-OPERATIVE BANDWIDTH SHARING IN MOBILE CLOUD COMPUTING
B. L. G. Jonsson, S. Shi, L. Wan, KTH Royal Institute of Technology, Sweden

Monday, August 21, 2017 15:00-15:20 513A

Session CA6

Channel Measurements, Characterization and Verification through Electromagnetic Metrology and Measurement Post Processing (2)

Session Chairs: Jeanne Quimby, Sana Salous

15:00 CA6-1 METROLOGY-GRADE CHANNEL SOUNDER VERIFICATION AT MMWAVES FREQUENCIES
J. Quimby, D. Williams, K. Remley, P. Papazian, D. Ribeiro, J. Senic
1NIST, United States; 2University of Aveiro, Portugal

15:20 CA6-2 ANALYSIS AND SELECTION OF PROPAGATION MODELS FOR BROADCAST AND MOBILE SERVICES IN URBAN AREAS IN COLOMBIA
M. Patino, A. Rangel, J. Balbastre, D. Alonzo, J. Lopez, F. Vega, J. Pantoja
1Universidad Nacional de Colombia, Colombia; 2Universitat Politècnica de València, Spain
Monday, August 21, 2017 15:00-16:00 513B

Session D7

Modeling of Electronic, Photonic and Plasmonic Devices (1)

Session Chairs: Ayhan Demircan, Jeremy Gully

15:00 D7-1 ULTRAFAST MECHANISM OF ENERGY-BAND MODIFICATION OF WIDE-BAND-GAP CRYSTALS BY PONDEROMOTIVE POTENTIAL OF GAUSSIAN ULTRASHORT LASER PULSE

V. Grudziev, O. Sergyeva, University of Missouri, United States

15:20 D7-2 SIMULATIONS OF ULTRAFAST LASER-INDUCED EXCITATION AND HEATING OF ELECTRON SUB-SYSTEM OF SEMICONDUCTORS WITH THE VINOGRADOV EQUATION AND MULTI-BAND KELDYSY FORMULA

V. Grudziev1, D. Austin2, O. Sergyeva1, E. Chowdhury2
1University of Missouri, United States; 2The Ohio State University, United States

15:40 D7-3 ULTRAFAST STRONG THZ-FIELD EFFECTS IN SEMICONDUCTORS

M. Kim, University of Michigan, United States; U. Huttner, S. W. Koch, Philippus University Marburg, Germany

Monday, August 21, 2017 15:00-15:20 513EF

Session E11

High-Power Electromagnetics (2)

Session Chairs: Robert Gardner, Dave Giri

15:00 E11-1 AN INTEGRATED DESIGN METHOD FOR FUEL MEASUREMENT SYSTEM AGAINST ELECTROMAGNETIC INTERFERENCE

G. Chen, D. Su, S. Cui, Z. Peng, Beihang University, China (CIE)

Monday, August 21, 2017 15:00-16:00 510BD

Session F6

Millimeter-Wave Propagation and Remote Sensing (1)

Session Chair: Albin Gasiewski

15:00 F6-1 MILLI-METER-WAVE ASTROCLIMATE INVESTIGATIONS ON BADARY OBSERVATORY NEAR BAikal LAKE

G. M. Bul'bus1,2, V. F. Vdovin1,2, V. Y. Bukov1, T. A. Makarov2, G. N. Il’in3, I. I. Zinchenko1
1Institute of Applied Physics RAS, Russian Federation; 2Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Russian Federation; 3Institute of Applied Astronomy RAS, Russian Federation

15:20 F6-2 SUBMILLIMETER-WAVE LIMB SOUNDER, SMILES-2, FOR OBSERVATION OF THE STRATOSPHERE, MESOSPHERE, AND LOWER THERMOSPHERE

1National Institute of Information and Communications Technology, Japan; 2University of Electro-Communications, Japan; 3Institute of Applied Physics RAS, Russian Federation; 4Nagoya University, Japan; 5Kyoto University, Japan

15:40 F6-3 VHF MODULATIONS IN THE WIRELESS SIGNALS ASSOCIATED WITH PRE-EARTHQUAKE PROCESSES

D. Ouroumov1, S. Velichkova-Yotsova2, S. Pulinets3, A. Velez4, N. Hatzopoulos1
1Chapman University, United States; 2LAIMC project, Bulgaria; 3Russian Academy of Sciences, Russia

Monday, August 21, 2017 15:00-16:00 513D

Session GEH6

Seismo Electromagnetics (Lithosphere-Airmosphere-Ionosphere Coupling) (3)

Session Chairs: Sergey Pulinets, Yasuhide Hobara, Hanna Rothkaehl

15:00 GEH6-1 COSEISMIC IONOSPHERIC DISTURBANCES AT MULTIPLE ALTITUDES ASSOCIATED WITH THE FORESHOCK OF TOHOKU EARTHQUAKE OBSERVED BY HF DOPPLER SOUNDING

H. Nakata, K. Takaboshi, T. Takano, Chiba University, Japan; I. Tomizawa, The University of Electro-Communications, Japan

15:20 GEH6-2 CO-VOLCANIC IONOSPHERIC PERTURBATIONS, OBSERVATIONS AND MODELING

E. Astafeva, K. Shults, V. Rakoš, P. Lognonne, IPGP, France

15:40 GEH6-3 VHF MODULATIONS IN THE WIRELESS SIGNALS ASSOCIATED WITH PRE-EARTHQUAKE PROCESSES

D. Ouroumov1, S. Velichkova-Yotsova2, S. Pulinets3, A. Velez4, N. Hatzopoulos1

1Chapman University, United States; 2LAIMC project, Bulgaria; 3Russian Academy of Sciences, Russia

Tuesday, August 21, 2017 15:00-16:00 515ABC

Session GH7

Plasma Instabilities in the Ionosphere (2)

Session Chairs: Frank Lind, Robert Pfaff

15:00 GH7-1 PLASMA INSTABILITY-DRIVEN MID-LATITUDE IONOSPHERIC IRREGULARITIES AND POTENTIAL CONSEQUENCES FOR RADAR AND GPS SCINTILLATION OBSERVATIONS

W. A. Sealey, Virginia Tech, United States

15:20 GH7-2 APPLYING LINEAR AND NONLINEAR E REGION PLASMA INSTABILITY THEORIES TO HIGH LATITUDE OBSERVATIONS.

J. P. St-Maurice, S. Chowdhury, Institute of Space and Atmospheric Sciences, Canada (CAN)

15:40 GH7-3 ASYMMETRY IN THE FARLEY-BUNEMAN DISPERSION RELATION CAUSED BY PARALLEL ELECTRIC FIELDS

V. V. Forexie, R. A. Makarevich, University of Alaska Fairbanks, Geophysical Institute, United States

Monday, August 21, 2017 15:00-16:00 511CF

Session H4

Wave-Particle Interactions and Their Effects on Planetary Radiation Belts (4)

Session Chairs: Richard Horne, David Shklyar, Craig Kletzing

15:00 H4-1 INTER-CALIBRATION OF VAP-HOPE PARTICLE DETECTORS TO OBTAIN THE ANISOTROPY OF ELECTRON PITCH ANGLE DISTRIBUTION

I. Kabat1, J. Lichtenberger2, Y. Omura3, R. H. W. Friedel4
1Institute of Geophysics and Earth Sciences, Estros Lorand University, Hungary; 2Geodetic and Geophysical Institute, RCAES, Hungary; 3Research Institute for Sustainable Humano, Kyoto University, Japan; 4Los Alamos National Laboratory National Security Education Center, USA

15:20 H4-2 QUASI-LINEAR DIFFUSION COEFFICIENTS FOR HIGHLY OBlique WHISTLER WAVES

J. M. Albert, Air Force Research Lab, United States

15:40 H4-3 ON THE RESONANT INTERACTION OF RELATIVISTIC ELECTRONS WITH OBlique WHISTLER-MODE WAVES.

I. Kuzichev1, D. Shklyar2
1Space Research Institute, Russian Federation; 2Moscow Institute of Physics and Technology (State University), Russian Federation

Monday, August 21, 2017 15:00-16:00 516DE

Session J9

Receivers and Radiometers: Design & Calibration (5)

Session Chairs: Arnold van Ardenne, Roberto Neri, Sivasankaran Srikanth, Richard Bradley, Miroslav Pantaleev

15:00 J9-1 DESIGN AND LABORATORY TESTING OF THE FIVE HUNDRED METER APERTURE SPHERICAL TELESCOPE (FAST) 19 BEAM L-BAND RECEIVER

A. Dunning1, M. Bowen1,2, S. Castillo1, Y. S. Chung1, P. Doherty1, D. George1, D. B. Havynan1, K. Jeganathan1, H. Kanonik1, S. Mackay1, L. Reilly1, P. Roush1, S. Sever1, R. W. Smart1, R. D. Shaw1, S. L. Smith1, T. Tzioumis1, V.-C. I. Venables1
1CSIRO, Australia; 2SKA Organisation, United Kingdom

15:20 J9-2 REALIZATION OF PHASED ARRAYS FOR REFLECTOR OBSERVING SYSTEMS

L. Liu, K. Grainge, University of Manchester, United Kingdom

15:40 J9-3 R-E TOPOGRAPHIC NANO-ANTENNA OBSERVING SYSTEMS

J. A. Huda, Jagran University, India
Monday, August 21, 2017 15:00-16:00 514A
Session JG10

Ionospheric Models and their Validation (2)
Session Chairs: Stefan Wijnholds, Sean Elvidge

15:00 JG10-1 IONOSPHERIC STUDIES USING MWA AND LOFAR OBSERVATIONS
M. J. Rijn1,2, R. Dodson1, T. Franzen1, G. Heal2
1ICRAR-UWA, Australia; 2CIIRO, Australia; 3Observatorio Astronomico Nacional (OAN), Spain; 4ICRAR-Curtin, Australia

15:20 JG10-2 TRAVELING IONOSPHERIC DISTURBANCES AND IONOSPHERIC PHENOMENA: IMPLICATIONS FOR RADIO ASTRONOMY
A. J. Cowley, MIT Haystack Observatory, United States

15:40 JG10-3 ACCURATELY MODELLING THE IONOSPHERE AT HIGH LATITUDES USING THE ELECTRON DENSITY ASSIMILATIVE MODEL (EDAM)
R. A. Buckland, N. Jackson-Booth, R. Penney, P. Martin, QinetiQ, United Kingdom

Monday, August 21, 2017 16:00-17:40 513B
Session D8

Carbon-Based Photonics and Optoelectronics
Session Chairs: Frank Wang, Fabian Rotermund

16:00 D8-1 OPTICAL NONLINEARITY AND ULTRAFAST LASER APPLICATIONS OF LAYERED MATERIALS BEYOND GRAPHENE
E. Kelleher, Imperial College London, United Kingdom

16:20 D8-2 NONLINEAR OPTICS WITH LOW-DIMENSIONAL NAMOMATERIALS
Z. Sun, Aalto University, Finland

16:40 D8-3 OPTICAL SPECTROSCOPY OF INDIVIDUAL CARBON NANOTUBES
K. Liu, School of Physics, Peking University, China (SR5)

17:00 D8-4 INFRARED FINGERPRINT SPECTROSCOPY OF NANOSCALE MOLECULES WITH GRAPHENE PLASMONS
Q. C. Shang, Z. S. Wu, T. Qu, G. Zhang, School of Physics, Peking University, China (SRS)

17:20 D8-5 ENHANCED GRAPHENE ABSORPTION AND ITS IMPLICATIONS FOR MID-INFRARED COMPONENTS
Z. Liu1, X. Ying1, Y. Pu2, C. Yang3, K. Li1, J. Xu2, Y. Jiang3
1University of Electronic Science and Technology of China, China; 2Brown University, USA

Monday, August 21, 2017 16:00-17:40 511AD
Session A4

Metrology for Wireless Power Transmission Solutions
Session Chairs: Nuno Borges Carvalho, Ke Wu

16:00 A4-1 THE NEW METHOD OF THE MICROSTRIP ANTENNAS DIAGNOSING
I. L. Nowosielski, M. M. Wnuk, Military University of Technology, Poland

16:20 A4-2 COOPERATIVE RADIOFREQUENCY (RF) AND PIEZOELECTRIC ENERGY HARVESTING FOR GLOBAL EFFICIENCY ENHANCEMENT
X. Gu1, S. Hemour2, K. Wu3
1Polytechnique Montreal, Canada; 2University of Bordeaux, France

16:40 A4-3 REACTIVE NONLINEARITY FOR POWER HARVESTING-INSPIRED FREQUENCY DOWNCONVERTER
L. Guo1, S. Hemour2, K. Wu3
1Poly-GRAMES, École Polytechnique Montréal, Canada; 2University of Bordeaux, France

17:00 A4-4 NOISE ANALYSIS OF DIFFERENTIAL WIDEBAND MILLIMETER-WAVE POWER HARVESTER IMPLEMENTED IN 65-NM Bulk CMOS PROCESS
P. Burns, K. Wu, École Polytechnique de Montréal, Canada

17:20 A4-5 SINUSOIDAL WPT SIGNAL INTERFERENCE, A COMMUNICATIONS APPROACH
R. Figueiredo, N. Carvalho, Instituto de Telecomunicações, Portugal

Monday, August 21, 2017 16:00-17:40 510AC
Session B5

Solutions to Canonical Problems
Session Chairs: Andrey Osipov, Paul Smith

16:00 B5-1 WAVES INTERACTION WITH MULTILAYERED CHIRAL SPHERE
Q. C. Shang, Z. S. Wu, T. Qu, G. Zhang, Xidian University, China; L. Gong, Xi'an Technological University, China

16:20 B5-2 BACKSCATTERING FROM ELECTRICALLY LARGE LOW-ABSORPTION SPHERES: AN EXPLANATION OF SOLAR GLORIES
A. V. Osipov, Microwaves and Radar Institute, German Aerospace Center (DLR), Germany

16:40 B5-3 SCATTERING BY AN ELLIPTICAL HALF-CYLINDER LOCATED INSIDE A DIHEDRAL REFLECTOR
D. Errico, F. Farzami, P. L. E. Uslenghi, University of Illinois at Chicago, United States

17:00 B5-4 THE EFFECT OF ROUNDING THE CORNERS OF SCATTERING STRUCTURES: E-POLARISATION CASE
P. D. Smith, A. J. Markowekes, Macquarie University, Australia

17:20 B5-5 DIFFRACTION OF NONSYMMETRIC EIGENMODES BY THE END OF A SEMI-INFINITE OPEN GYROTROPIC CYLINDRICAL WAVEGUIDE
Y. A. Erkin, A. V. Kudrin, University of Nizhny Novgorod, Russian Federation

Monday, August 21, 2017 16:00-17:40 516AB
Session E12

Stochastic/Statistical Techniques in EMC (1)
Session Chairs: Luk Arnaut, Sergio Pignari

16:00 E12-1 ADVANCED ANALYSIS OF THE TRANSIENT IMPEDANCE OF THE HORIZONTAL GROUNDING ELECTRODE: FROM STATISTICS TO SENSITIVITY INDICES
S. Šesnić1, A. Šušnjara1, S. Lalléchère2, D. Poljak3, K. El Khamlichi Drissi1, P. Bonnet2, F. Paladian3
1University of Split, Croatia; 2Université Clermont Auvergne, France

16:20 E12-2 FAST AND ACCURATE STATISTICAL ESTIMATION OF COMMON MODE VOLTAGES AND CURRENTS IN WEAKLY NON-UNIFORM DIFFERENTIAL INTERCONNECTS
X. Wu1, F. Grassi1, P. Manfredi1, G. Spadacin1, D. Vande Grinte2, S. A. Pignari1
1Politecnico di Milano, Italy; 2Ghent University-imec, Belgium

16:40 E12-3 SENSITIVITY CROSSTALK ANALYSIS STUDY FOR AERONAUTICS TEST CASE
C. Jullien, J. Genoulaz, A. Dieudonne, Safran Electrical & Power, France
Session F7
16:00 F7-1 STUDIES OF RAIN FADE SLOPE MODEL AT KA BAND AT AHMEDABAD, AN INDIAN TROPICAL LOCATION
S. Das, Indian Statistical Institute, India; S. Chakraborty, Sikkim Manipal Institute of Technology, India; M. Chakraborty, JIS College of Engineering, India

16:20 F7-2 MILLIPLIER-WAVE CHANNEL MODELS FOR HUMAN PASSING THROUGH A LINE-OF-SIGHT PATH
X. Ye, X. Yin, Tongji University, China; H. Yan, Huawei Technology Company, China; A. P. Young, Technical University of Madrid, Madrid, Spain

16:40 F7-3 DESIGN OF A COMBINED BEACON RECEIVER AND DIGITAL RADIOMETER FOR 40 GHZ PROPAGATION MEASUREMENTS AT THE MADRID DEEP SPACE COMMUNICATIONS DIRECTIVITY
M. J. Zemba, J. A. Nessel, D. D. Morabito, NASA, United States

17:00 F7-4 EXPERIMENTAL STUDY OF THE MICROWAVE RADAR DOPPLER SPECTRUM BACKSCATTERED FROM THE SEA SURFACE AT LOW INCIDENCE ANGLES
M. S. Rybkova, V. V. Karayev, Y. A. Titchenko, E. M. Meshkov, Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation

17:20 F7-5 ROLE OF INDIAN SUMMER MONSOON (ISM) IN EXCHANGE OF MINOR COMPONENTS BETWEEN THE TROPOSPHERE AND THE STRATOSPHERE: OBSERVATIONS INFERRED FROM INDIAN MST RADAR
S. K. V. S. S. Das, Space Physics Laboratory, Vikram Sarabhai Space Centre, India; R. M. Venkat, National Atmospheric Research Laboratory, India

Monday, August 21, 2017 16:00-17:40 510BD

Session GH8
16:00 GH8-1 ORIGIN OF 150-KM RADAR ECHOS FOUND AFTER 50 YEARS?
M. M. Oppenheim, Y. S. Dimant, Boston University, United States

16:20 GH8-2 ON THE ORIGIN OF BOTTOMSIDE SINUSOIDAL IRREGULARITIES BASED ON SWARM OBSERVATIONS, LSSN TEC MEASUREMENTS, AND A NUMERICAL MODEL
C. E. Valladares, University of Texas at Dallas, USA; P. Coïsson, Institute of Physics of the Globe of Paris, France

16:40 GH8-3 WHAT CONTROLS THE EVOLUTION OF THE RAYLEIGH-TAYLOR INSTABILITY INTO PLASMA BUBBLES?
C. Huang, Air Force Research Laboratory, United States

17:00 GH8-4 INCOHERENT SCATTER RADAR AND IN SITU AND CHEMICAL MEASUREMENTS OF SUNSET ELECTRODYNAMICS OF THE EQUATORIAL IONOSPHERE DURING THE NASA EIEVS CAMPAIGN AT KWAJALEIN
E. Kadeki, P. M. Reyes, University of Illinois at Urbana Champaign, United States; R. F. Pfaff, NASA, United States; M. F. Larsen, Clemson University, United States

17:20 GH8-5 C/NOFS OBSERVATIONS OF REVERSED ZONAL E X B DRIFTS BELOW THE EQUATORIAL IONOSPHERIC F-PEAK AT SUNSET AND THEIR IMPLICATIONS FOR THE GENERATION OF LARGE SCALE INSTABILITIES
R. F. Pfaff, NASA/Goddard Space Flight Center, United States

Session GH9
16:00 GH9-1 TOWARD A SELF-CONSISTENT TREATMENT OF RADIATION BELT WAVE-PARTICLE INTERACTIONS
G. L. Delzanno, C. A. Jeffery, V. K. Jordanova, LANL, United States

16:20 GH9-2 ENERGY TRANSFER BETWEEN DIFFERENT-CYCLOTRON-RESONANCE ELECTRONS VIA OBLIQUE WHISTLER-MODE WAVE PACKETS IN THE MAGNETOSPHERE
D. R. Shklyar, Space Research Institute of Russian Academy of Sciences, Russian Federation

16:40 GH9-3 THEORY AND OBSERVATIONS OF ELECTROMAGNETIC OXYGEN CYCLotron HARMONIC WAVES
M. Usanova, CU Boulder, United States; K. Sauer, University of Alberta, Canada

17:00 GH9-4 MODELING OF OBLIQUELY PROPAGATING ELECTROSTATIC WAVES IN THE INNER MAGNETOSPHERE
M. P. Sulzer, COMSATS Institute of Information Technology Lahore, Pakistan; L. Chen, University of Texas at Dallas, 800 W Campbell Rd. MS WT15, Richardson, TX 7508, USA; G. Murtaza, GC University Lahore, Pakistan, Pakistan

17:20 GH9-5 PREDICTION OF ULTRA-RELATIVISTIC ELECTRON FLUX DYNAMICS THROUGH A FUSION OF MACHINE-LEARNING AND PHYSICS-BASED MODELS
J. Bortnik, UCLA, United States

Monday, August 21, 2017 16:00-17:40 516DE

Session J11
16:00 J11-1 IN-SITU CHARACTERIZATION OF INTERNATIONAL LOW-FREQUENCY APERTURE ARRAYS BY MEANS OF AN UAV-BASED SYSTEM
P. Bollì,1 S. J. Wijnholds2, E. de Lera Acedo1, A. Lingua1, J. Monari1, F. Paonessa1, G. Pupillo1, G. Virone2
1INAF, Italy; 2ASTRON, The Netherlands; 3University of Cambridge, UK

16:20 J11-2 CALIBRATING THE CHIME PATHFINDER
J. Mena, McGill University, Canada

Monday, August 21, 2017 16:00-17:40 514A

Session JG12
16:00 JG12-2 Biquadratic-Lorenzian (B-L) FUNCTIONS FOR ANALYTIC SOLUTIONS TO DATA FITTING AND RAY PROPAGATION
P. A. Bernhardt, J. D. Huba, K. F. Dymond, Naval Research Laboratory, United States; J. R. Franz, MIT Lincoln Laboratory, United States; N. Aponte, M. P. Sulzer, Arcacho Observatory, United States; R. B. Langley, University of New Brunswick, Canada; E. B. Shume, A. Komjathy, NASA–JPL, United States
Therapeutic Application of RF EMF

Session Chairs: Lluis Mir, Koichi Ito

16:00 K5-1 NUMERICAL STUDY OF CONTRAST-ENHANCED FOCUSED MICROWAVE THERMAL THERAPY
J. Stang1, S. Love2, M. Moghaddam1
1University of Southern California, United States; 2Dr. Susan Love Research Foundation, United States

16:20 K5-2 A COMPARATIVE STUDY FOR DEVELOPMENT OF MICROWAVE GLUCOSE SENSORS
T. Yilmaz, T. Ozturk, S. Joof, Istanbul Technical University, Turkey

16:40 K5-3 MICROWAVE HYPERHERMIA OF DEEP SEATED TUMOURS: IMPROVED HEAT DELIVERY WITH UWB APPLICATORS
H. Dobsicek Trefna, P. Takook, M. Persson, Chalmers University of Technology, Sweden

17:00 K5-4 A SETUP FOR CELLS EM EXPOSURE DURING COHERENT ANTI-STOKES RAMAN (CARS) IMAGING
C. Merla1, M. Liberti2, P. Marracino2, A. Azan1, F. Apollonio2, L. M. Mir1
1CNRS, France; 2La Sapienza, Italy

17:20 K5-5 TEMPERATURE CALCULATIONS IN BODY DURING THERMAL TREATMENT BY CAPACITIVE HEATING DEVICE
K. Saito, K. Kumagae, K. Ito, Chiba University, Japan
Tuesday, August 22, 2017

**Session B6**

Multiphysics and Multiscale Problems

Session Chairs: Weng Cho Chew, Ping Huo Liu, Levent Gurel

- **08:00** B6-1 THREE RECENT ADVANCES IN ELECTROMAGNETIC MODELING WITH THE FINE-DIFFERENCE TIME-DOMAIN (FDTD) METHOD
  - Z. D. Chen, Dalhousie University, Canada

- **08:20** B6-2 MULTISCALE FORWARD AND INVERSE METHODS FOR MAPPING HYDRAULIC FRACTURES
  - V. Fang, Y. Hu, Q. H. Liu, Duke University, United States

- **08:40** B6-3 SCATTERING FROM INFINITE PERIODIC ARRAYS OF SCATTERERS USING BROADBAND GREEN'S FUNCTION OF INFINITE PERIODIC SCATTERERS
  - S. Tan, L. Tsang, University of Michigan, United States

- **09:00** B6-4 SINGLE AND MULTIPLE ATOMIC DIPOLE RADITORS
  - A. Y. Liu, T. Xia, L. Meng, C. C. Chew, University of Illinois at Urbana Champaign, United States

**Session C7**

Quantum Communications and Networks (1)

Session Chairs: Grace Metcalfe, Amir Zaghhloul

- **08:00** C7-1 NANOPHOTONICS FOR QUANTUM INFORMATION TECHNOLOGIES
  - M. J. Dagenais, National Institute of Standards and Technology, United States

- **08:20** C7-2 SECURE QUANTUM COMMUNICATION OVER LONG DISTANCES
  - L. Li1, S. Murakisharam1, C. L. Zou1, V. V. Albert1, J. Kim2, N. Sadowski3, L. M. Correia3
  - 1ESTSetubal, Polytechnic Institute of Setubal and INESC-ID, Portugal; 2Gdansk University of Technology, Faculty of Electronics, Telecommunications and Informatics, Poland; 3Instituto Superior Tecnico, University of Lisbon and INESC-ID, Portugal

- **08:40** C7-3 COUPLING QUBITS TO PHOTONS VIA DUAL ATOMIC SPECIES
  - L. Li1, S. Muralidharan1, C.-L. Zou1, V. V. Albert1, J. Kim2, N. Lutkenhaus3, L. La Spada, Y. Hao, T. E. Northup1
  - 1University of Innsbruck, Austria; 2Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences, Austria

**Session C8**

Application of Radio Propagation Research Results in Radio System and Signal Design (1)

Session Chairs: Robert Bultitude, Yves Lostanlen

- **08:00** C8-1 MODELLING OF STATISTICAL FADING PARAMETERS IN MARITIME CONTAINER TERMINAL ENVIRONMENTS
  - M. M. Ferreira1, S. J. Ambroziak2, F. D. Cardoso3, L. M. Correia3
  - 1JST, Japan; 2JST, Japan; 3The University of Tokyo, Japan

- **08:20** C8-2 RELATIONSHIPS AMONG STATISTICAL CHANNEL PARAMETERS FOR AN AIR-GROUND CHANNEL: STATIONARITY DISTANCE, RICEAN K-FACTOR, AND RMS DELAY SPREAD
  - D. W. Matolak, University of South Carolina, United States; R. Sun, National Institute of Standards & Technology, United States

- **08:40** C8-3 SIMULTANEOUS OUTDOOR CHANNEL SOUNDING IN THE V AND K BANDS
  - X. Raimundo, A. Cheema, S. El-Faitori, S. Salous, University of Durham, United Kingdom

**Session C9**

Keynote on Gravitational Wave Detection

Session Chairs: Günter Steinmeyer, Roman Schnabel

- **08:00** D9-1 GRAVITATIONAL WAVE DETECTION FROM SPACE WITH LISA
  - K. Danzmann, AEI Hannover, Germany

**Session D9**

Optical Frequency Metrology (1)

Session Chairs: Ekkehard Peik, Yann Le Coq

- **08:00** DA10-1 YTTERBIUM OPTICAL LATTICE CLOCKS AT NIST
  - A. Ludlow1, W. McGrew1, K. Beloy1, R. Fasano1, D. Nicolodi1, X. Zhang1, R. Brown1, M. Schioppo1, G. Milani1, T. H. Yoon2
  - 1National Institute of Standards and Technology, United States; 2University of Colorado, United States; 3Peking University, China; 4Heinrich-Heine-Universität Düsseldorf, Germany; 5Politecnico di Torino, Italy; 6Korea University, Korea

- **08:20** DA10-2 DEVELOPMENT OF CRYOGENIC SR OPTICAL LATTICE CLOCKS AND THEIR APPLICATIONS
  - M. Takamoto1,1,2, I. Ushijima1,1,2, M. Das1,1,2, H. Katori1,1,2
  - 1RIKEN, Japan; 2JST, Japan; 3The University of Tokyo, Japan

**Session E13**

Stochastic/Statistical Techniques in EMC (2)

Session Chairs: Lur Arnaut, Sergio Pignari

- **08:00** E13-1 COPULAS, CORRELATION AND DEPENDENCE IN UNCERTAINTY QUANTIFICATION OF EMC
  - L. R. Arnaut, Queen Mary University London, United Kingdom

Tuesday, August 22, 2017 08:00-09:20 510AC

Tuesday, August 22, 2017 08:00-09:20 514A

Tuesday, August 22, 2017 08:00-09:20 513A

Tuesday, August 22, 2017 08:00-09:20 513B

Tuesday, August 22, 2017 08:00-09:20 517CD

Tuesday, August 22, 2017 08:00-09:20 518AC

Tuesday, August 22, 2017 08:00-09:20 519B

Tuesday, August 22, 2017 08:00-09:20 519C

Tuesday, August 22, 2017 08:00-09:20 519D

Tuesday, August 22, 2017 08:00-09:20 519E

Tuesday, August 22, 2017 08:00-09:20 519F

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Tuesday, August 22, 2017 08:00-09:20 519I

Tuesday, August 22, 2017 08:00-09:20 519J

Tuesday, August 22, 2017 08:00-09:20 519K

Tuesday, August 22, 2017 08:00-09:20 519L

Tuesday, August 22, 2017 08:00-09:20 519M

Tuesday, August 22, 2017 08:00-09:20 519N

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Tuesday, August 22, 2017 08:00-09:20 519X

Tuesday, August 22, 2017 08:00-09:20 519Y

Tuesday, August 22, 2017 08:00-09:20 519Z

Tuesday, August 22, 2017 08:00-09:20 519AA

Tuesday, August 22, 2017 08:00-09:20 519AB
Tuesday, August 22, 2017 08:00-09:20 510BD
Session F8
Remote Sensing Measurements of Precipitation (1)
Session Chairs: Chandrasekar V Chandra, Luca Baldini
08:00 F8-1 PRECIPITATION EXPERIMENT WITH A PROTOTYPE DUAL-POLARIZATION WEATHER RADAR FOR CIVIL AIRCRAFT
L. Baldini1, F. Berizzi2, A. Coccia2, F. Cuccoli2, M. D’Amico1, S. Lisci1, A. Lupidi2, F. Milan1
1CNR - Institute of Atmospheric Sciences and Climate, Italy; 2Rass-CNIT, Galleria G.B. Gerace 18, , Italy, Italy; 1Metasensing BV, The Netherlands; 4Politecnico di Milano, Milano, Italy; 5IDS, Ingegneria dei Sistemi, Italy
08:20 F8-2 PARAMETERIZED RAIN DROP SIZE PROFILES FROM RAIN RATE DISTRIBUTIONS USING ERLANG-K PROBABILITY APPROXIMATIONS
A. A. Alonge1, T. J. Afule1, University of KwaZulu-Natal, Durban, South Africa
08:40 F8-3 A DATA FUSION SYSTEM FOR ACCURATE PRECIPITATION ESTIMATION USING SATELLITE AND GROUND RADAR OBSERVATIONS: URBAN SCALE APPLICATION IN DALLAS-FORT WORTH METROPOLIS
H. Chen1, V. Chandrasekar1, R. Cifelli1, P. Xie1, H. Tan1
1Colorado State University, United States; 2NOAA/Earth System Research Laboratory, United States; 3NOAA/Climate Prediction Center, United States
09:00 F8-4 A MACHINE LEARNING SYSTEM FOR RAINFALL ESTIMATION FROM SPACEBORNE AND GROUND RADARS
V. Chandrasekar, H. Tan, H. Chen, Colorado State University, United States
Tuesday, August 22, 2017 08:00-09:20 513C
Session FB9
Electromagnetic Problems Involving Volume Scattering (1)
Session Chairs: Ari Sihvola, Cuong Nguyen
08:00 FB9-1 ON THE FULL-WAVE SOLUTION FOR ELECTROMAGNETIC SCATTERING FROM SNOW-PACKS
M. Zaky, K. Sarabandi, University of Michigan, United States
08:20 FB9-2 MODELING OF THE SLIPI TECHNIQUE WITH THE LARGE SCATTERER APPROXIMATION OF THE RTE
E. Kristensson, G. Kristensson, Lund University, Sweden
08:40 FB9-3 BOUNDARY LAYER ANOMALIES OBSERVED FROM RADIOMETRIC OBSERVATIONS DURING CONVECTIVE RAIN
R. Chakrabarti, A. Maitra, University of Calcutta, India
09:00 FB9-4 ALIASING EFFECT DUE TO CONVEX RAIN RADAR REFLECTIVITY PROFILE AT A TROPICAL LOCATION
S. Jang, A. Maitra, University of Calcutta, India
Tuesday, August 22, 2017 08:00-09:20 511BE
Session G9
Advances in Irregularities and Scintillation Studies (1)
Session Chairs: Emanoel Costa, Archana Bhattacharyya
08:00 G9-1 SPECTRAL ANALYSIS OF EQUATORIAL PLASMA BUBBLES OBTAINED BY HIGH-RESOLUTION BUBBLE MODEL AND C/NOFS SATELLITE
T. Yokoyama, National Institute of Information and Communications Technology, Japan; C. L. Rino, C. S. Carrano, K. M. Groves, Boston College, USA; P. A. Roddy, Air Force Research Laboratory, USA
08:20 G9-2 IRREGULARITIES AND SCINTILLATIONS, END-TO-END FROM SWARM TO THE GROUND
S. Asl1, S. C. Bacher1, E. Jura1, E. van Groningen1
1Mbarara University of Science and Technology, Uganda; 2Swedish Institute of Space Physics, Sweden; 3Uppsala University, Sweden
08:40 G9-3 IMPACT AND MITIGATION OF IONOSPHERIC SCINTILLATION EFFECTS ON GNSS RECEIVER PERFORMANCE
M. H. O. Aoun1, S. Veetil1, University of Nottingham, United Kingdom
09:00 G9-4 A COMPARATIVE STUDY OF IONOSPHERE SCINTILLATIONS AT LOW AND HIGH LATITUDES
Y. Beniguel, IEEA, France
Tuesday, August 22, 2017 08:00-09:20 514B
Session GF10
Radio Studies on Polar Aeronomy (1)
Session Chairs: Giorgiana De Franceschi, Chandrasekar V Chandra, Luca Baldini
08:00 GF10-1 GENERATION, DYNAMICS, AND DECAY OF A POLAR CAP PATCH
J. P. Thayyil1, K. Hosokawa2, K. Shiokawa2, D. R. Themens1, P. Prikey1
1University of New Brunswick, Canada; 2University of Electro-communications, Japan; 3Nagoya University, Japan
08:20 GF10-2 A STUDY OF TRAVELING IONOSPHERIC DISTURBANCES AND THEIR ASSOCIATED SCINTILLATION BEHAVIORS AT SOUTH POLE S. Privadarsii, Q. Q-H. Zhang, Institute of Space Sciences, Shandong University, Weihai China, China (CIE); E. G. Thomas, Thayer School of Engineering, Dartmouth College, Hanover, New Hampshire, USA; USA; L. Spogli, C. Cesaroni, Istituto Nazionale di Geofisica e Vulcanologia Rome, Italy, Italy
08:40 GF10-3 ANALYSIS OF THE IONOSPHERIC SCINTILLATIONS DURING 20-21 JANUARY 2016 FROM SANAE BY MEANS OF THE DEMOGRAPA SCINTILLATION RECEIVERS
J. Stephenson1, P. J. Ciilier1,2, L. Alfonso1, L. Spogli1,2,3, D. De Franceschi1, V. Romano1, I. Hunstad4, N. Linty6, O. Terzo1, F. Dovis1, J. Ward1, C. Cesaroni1
1University of KwaZulu-Natal, South Africa, South Africa; 2South African National Space Agency (SANSA), South Africa; 3University of Cape Town, South Africa; 4Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy; 5SPACEARTH Technology, Italy; 6Politecnico di Torino, Italy; Istituto Superiore Mario Boella (ISMB), Italy
09:00 GF10-4 AN INTERNATIONAL INITIATIVE FOR ATMOSPHERIC RESEARCH AT THE POLES
L. Alfonso, Istituto Nazionale di Geofisica e Vulcanologia, Italy; N. Bergeot, Royal Observatory of Belgium, Belgium

Tuesday, August 22, 2017 08:00-09:20 511CF
Session H6
Wave-Particle Interactions and Their Effects on Planetary Radiation Belts (6)
Session Chairs: Richard Horne, David Shklyar, Craig Kletzing
08:00 H6-1 TWO-DIMENSIONAL PARTICLE SIMULATIONS OF WHISTLER-MODE WAVE PARTICLE INTERACTION
T. Nogi, Y. Omura, Reserch Institute for Sustainable Humansphere, Kyoto University, Japan
08:20 H6-2 COMBINING SELF-CONSISTENT AND TEST-PARTICLE SIMULATIONS TO UNDERSTAND WAVE-PARTICLE INTERACTIONS BETWEEN CHORUS AND RADIATION BELT ELECTRONS
C. L. da Silva, R. E. Denton, M. K. Hudson, R. M. Millan, Dartmouth College, United States
08:40 H6-3 NONLINEAR GENERATION MECHANISM OF EMIC FALLING TONE EMISSIONS
M. Shoji, Nagoya University, Japan; Y. Omura, Kyoto University, Japan
09:00 H6-4 DRIFT INSTABILITY OF ALFVENIC MODES IN LOW BETA ANISOTROPIC PLASMAS
G. Martore, GC University Lahore Pakistan, Pakistan; M. F. Bashir, COMSATs Institute of Information Technology, Pakistan

Tuesday, August 22, 2017 08:00-09:20 513D
Session HG7
Radio Science for Space Weather (1)
Session Chairs: Mauro Messerotti, Viviane Pierrard
08:00 HG7-1 RADIO OBSERVATIONS AND SPACE WEATHER
J. Magdalenic, Royal Observatory of Belgium, Belgium
Tuesday, August 22, 2017 08:00-09:15 515ABC

Session J14

Latest News and Observatory Reports (1)

Session Chairs: Richard Bradley, Willem Baan

08:00 J14-1 PRESENT STATUS AND FUTURE DIRECTIONS OF ONSALA SPACE OBSERVATORY, SWEDEN
M. Lindqvist, Onsala Space Observatory, Sweden

08:15 J14-2 GREEN BANK OBSERVATORY - CURRENT STATUS
K. O'Neil, Green Bank Observatory, United States

08:30 J14-3 ENHANCING THE RADIO ASTRONOMY CAPABILITIES AT NASA'S DEEP SPACE NETWORK
J. Lazio1, T. Kuiper1, M. M. Franco1, C. Garcia-Miro2, S. Horiuichi1, C. Jacobs1, C. Nandet1, L. Teltelbaum1
1Jet Propulsion Laboratory, California Institute of Technology, United States; 2Madrid Deep Space Communications Complex, Spain; 3CSIRO Astronomy and Space Science, Canberra Deep Space Communications Complex, Australia

08:45 J14-4 HI SCIENCE WITH THE SKA PATHFINDERS KAT-7 & MEERKAT
C. Carignan, University of Cape Town, South Africa

09:00 J14-5 THE NEXT GENERATION VERY LARGE ARRAY
M. McKimmon, B. Butler, C. Carrilí, S. Durand, W. Grammer, E. Murphy, R. Selina, S. Srikanth, NRAO, United States

Tuesday, August 22, 2017 08:00-09:20 516AB

Session K6

EMF Standards and Health Protection

Session Chairs: Akimasa Hirata, Kenneth Foster

08:00 K6-1 SAFETY CODE 6: RECOMMENDED HUMAN EXPOSURE LIMITS TO RF-EMF IN CANADA
J. P. McNamee, Health Canada, Canada

08:20 K6-2 THERMAL MODELING FOR THE NEXT GENERATION OF RADIOFREQUENCY EXPOSURE LIMITS
K. R. Foster, University of Pennsylvania, United States; M. C. Ziskin, Temple University Medical School, United States; Q. Balzano, University of Maryland, United States

08:40 K6-3 RELATIONSHIP OF INCIDENT POWER DENSITY AVERAGED OVER AREA AND SKIN TEMPERATURE ELEVATION
A. Hirata, D. Funahashi, Y. Hashimoto, Nagoya Institute of Technology, Japan; T. Laakso, Aalto University; T. Miyagi, University of Electro-Communications, Japan; K. B. Foster, University of Pennsylvania, USA

09:00 K6-4 AN EFFECT OF SKIN MODELING ON TEMPERATURE ELEVATION BY MILLIMETER-WAVE AND TERAHERTZ-WAVE EXPOSURE USING A TWO-DIMENSIONAL FOREARM MODEL
K. Sasaki, S. Watanabe, National Institute of Information and Communications Technology, Japan
Tuesday, August 22, 2017 09:40-11:00 510BD

Session F10

Remote Sensing Measurements of Precipitation (2)
Session Chairs: Chandrasekar V Chandra, Luca Baldini

09:40 F10-1 CHARACTERIZATION OF HIGH ICE WATER CONTENT CELLS IN TROPICAL CLOUDS USING IN-SITU AND MULTI-FREQUENCY REMOTE SENSING MEASUREMENTS
M. Wolde, C. Nguyen, K. Balbakov, National Research Council Canada, Canada; A. Koelke, Environment and Climate Change Canada, Canada; P. Gabriel, Horizon Science and Technology, Canada

10:00 F10-2 OBSERVATIONS AND PERFORMANCE OF THE NASA DUAL-FREQUENCY DUAL-POLARIZATION DOPPLER RADAR (D3R) FROM FIVE YEARS OF OPERATION
V. Chandrasekar1, H. Chen1, M. Vega1,2, R. M. Beauchamp1, M. Kumar1, S. Joshi1, W. A. Petersen2, D. Woff1, M. Schwaller2
1Colorado State University, United States; 2NASA Marshall Space Flight Center, United States; 3NASA Wallops Flight Facility, United States

10:20 F10-3 USING GROUND-BASED Ku-/Ka-BAND SCANNING RADAR OBSERVATIONS TO QUANTIFY PRECIPITATION VARIABILITY ACROSS SATELLITE FIELD-OF-VIEWS
C. R. Williams, University of Colorado Boulder, United States; C. V. Chandrasekar, Colorado State University, United States

10:40 F10-4 POLARIMETRIC RADAR CHARACTERISTICS OF SIMULATED AND OBSERVED CONVECTIVE CORES BETWEEN MC3E AND TWP-ICE
T. Matsui, T. Iguchi, S. Lang, W.-K. Tao, NASA GSFC, United States; B. Dolan, J. Barnum, S. Ratledge, Colorado State University, United States

Tuesday, August 22, 2017 09:40-11:00 513C

Session FB11

Electromagnetic Problems Involving Volume Scattering (2)
Session Chairs: Ari Sihvola, Cuong Nguyen

09:40 FB11-1 CHARACTERISTICS OF HIGH VELOCITY SMALL DROPS IN TROPICAL CONVECTIVE RAIN
T. Sarkar, A. Maitra, University of Calcutta, India

10:00 FB11-2 APPLICATION OF MICROWAVE REMOTE SENSING IN CHARACTERIZATION OF TROPICAL CONVECTION
R. Ramachandran Pillai, FSSC, ISRO, India

10:20 FB11-3 ENSEMBLE DETECTION ANALYSIS IN SPACE-BORNE DOPPLER MEASUREMENTS
M. Aksoy, University of Maryland Baltimore County, United States; P. E. Racette, L. Li, NASA Goddard Space Flight Center, United States

10:40 FB11-4 OBSERVATIONS AND ANALYSIS OF TORNADOES ON 15 JANUARY 2017 IN DALLAS-FORT WORTH CASA RADAR NETWORK
S. S. Joshi, V. Chandrasekar, Colorado State University, United States

Tuesday, August 22, 2017 09:40-11:00 511BE

Session G11

Advances in Irregularities and Scintillation Studies (2)
Session Chairs: Emanoel Costa, Archana Bhattacharyya

09:40 G11-1 SUB-SECOND VARIATIONS IN AURORAL REGION TOTAL ELECTRON CONTENT
A. M. McCaffrey, P. T. Jayachandran, University of New Brunswick, Canada

10:00 G11-2 APPLICATION OF IRREGULARITY PARAMETER ESTIMATION FOR INTERPRETING STRUCTURE AT DIFFERENT ALTITUDES WITHIN AN EQUATORIAL PLASMA BUBBLE
C. S. Carrano, C. L. Rino, K. M. Groves, Boston College, United States; A. Bhattacharyya, Indian Institute of Geomagnetism, India

10:20 G11-3 SATELLITE-BEACON IONOSPHERIC-SCINTILLATION GLOBAL MODEL OF THE UPPER ATMOSPHERE (SIGMA): ENHANCEMENTS AND GPS SIGNAL PROPAGATION MODELING
J. P. Conroy, Virginia Polytechnic Institute and State University, United States; K. Deshpande, Embry-Riddle Aeronautical University, United States

10:40 G11-4 SOME CONSEQUENCES OF THE DIMENSIONAL REDUCTION 3D/2D ON THE NUMERICAL PREDICTION OF IONOSPHERIC

Tuesday, August 22, 2017 09:40-11:00 517CD

Session GF12

Radio Studies on Polar Aneomery (2)
Session Chairs: Giorgia De Franceschi, Chandrasekar V Chandra, Luca Baldini

09:40 GF12-1 DAILY SENSITIVITY OF THE LOWER IONOSPHERE TO SOLAR X-RAY FLARES EVALUATED FROM VLF SIGNAL MEASUREMENTS
E. L. Macotela1, J.-P. Rautil1, J. Manninen2, E. Correia3, T. Turunen4
1University of Oulu, Finland; 2Universidade Presbiteriana Mackenzie, Brazil; 3National Institute for Space Research, Brazil

10:00 GF12-2 GPS PHASE SCINTILLATION AND AURORAL ELECTROJET CURRENTS DURING GEOMAGNETIC STORMS OF MARCH 17, 2013 AND 2015
1University of New Brunswick, Canada; 2Natural Resources Canada, Canada; 3Finnish Meteorological Institute, Finland; 4University of California, USA; 5Virginia Tech, USA; 6Dartmouth College, USA; 7Athabasca University, Canada; 8University of Nottingham, UK; 9South African National Space Agency, South Africa; 10Chinese Academy of Sciences, China; 11University of Bath, UK; 12Istituto Nazionale di Geofisica e Vulcanologia, Italy; 13SpacEarth Technology, Italy; 14Bureau of Meteorology, Australia; 15Siena College, USA

10:20 GF12-3 GEOSPHERE ENVIRONMENT MONITORING AT THE PRINCESS ELISABETH ANTARCTIC (PEA) STATION: INSTRUMENTATION AND FIRST RESULTS
N. Berge1, J.-M. Chevalier1, F. Darrouzet1, J. Rasson1, J. Lichtenberger1, C. Bruyninx1
1Royal Observatory of Belgium, Belgium; 2Royal Belgian Institute for Space Aeronomy, Belgium; 3Royal Institute of Meteorology, Belgium; 4Eotvos University, Hungary; 5Research Center for Astronomy and Earth Sciences, Hungary

10:40 GF12-4 GREENLAB: AUTONOMOUS LOW POWER SYSTEM EXTENDING MULTI-CONSTELLATION GNSS ACQUISITION IN ANTARCTICA
L. Moscuca1, L. Pileux1, P. Rain1,2, G. Giordano1,2, S. Ciccia1,2, G. Vecchi1,2, O. Terzo1,2, V. Romano1,2, L. Spogli1,2, C. Cesaroni2, I. Hunst1, A. Serratore2
1Istituto Superiore Mario Boella, Italy; 2Politecnico di Torino, Italy; 3Istituto Nazionale di Geofisica e Vulcanologia, Italy; 4SpacEarth Technology, Italy

Tuesday, August 22, 2017 09:40-11:00 511CF

Session H8

Drivers, Detection, and Ionospheric Impacts of Precipitation from the Radiation Belts (1)
Session Chairs: Craig Rodger, Christopher Cully

09:40 H8-1 OBSERVATIONS DIRECTLY LINKING CHORUS TO RELATIVISTIC MICROBURSTS: VAN ALLEN PROBES EFW AND FIREBIRD II
A. Breneman1, A. Crew2, J. Sample3, D. Klumpar1, M. Shumko2, O. Agapitov2, A. Johnson1, J. Wygant1, B. Blake2, D. Turner3
1School of Physics and Astronomy/The University of Minnesota, United States; 2Goddard Space Flight Center, United States; 3Montana State University, United States; 4University of California Berkeley, United States; 5Aerospace Corporation, United States

10:00 H8-2 OCCURRENCE CHARACTERISTICS OF RELATIVISTIC ELECTRON MICROBURSTS FROM SAMPEX OBSERVATIONS
E. Douma, C. J. Rodger, University of Otago, New Zealand, L. W. Blum, NASA Goddard Space Flight Center, USA; M. A. Clilverd, British Antarctic Survey (NERC), United Kingdom
Tuesday, August 22, 2017  09:40-10:40  516AB

**Session K7**

**Electromagnetic Biomedical Imaging (1)**

Session Chairs: Milica Popovic, Joe LoVetri

09:40  **K7-1 MICROWAVE DOSIMETRY AND MEDICAL IMAGING: A FRUITFUL ROUND-TRIP STORY**

J-C. Bolomey, Paris Sud University, France

10:00  **K7-2 TERAHERTZ IMAGING OF FRESHLY EXCISED INVASIVE DUCTAL CARCINOMA BREAST TUMORS**

T. Bowman, K. Bailey, M. El-Shenawee

University of Arkansas, United States; 1University of California, United States

1National University of Ireland Galway, Ireland; 2University of Calgary, Canada

10:40  **K7-4 SUPPORT VECTOR MACHINES TO AID BREAST CANCER DIAGNOSIS USING A MICROWAVE RADAR PROTOTYPE**

R. C. Conceicao, D. M. Godinho, Instituto de Biofisica e Engenharia Biomédica, Portugal; D. Byrne, I. Craddock, Department of Electrical & Electronic Engineering, United Kingdom

Tuesday, August 22, 2017  11:00-12:00  511AD

**Session A6**

**Metrological Analysis of Material Properties**

Session Chairs: Nosherwan Shoaib, Imran Shoaib

11:00  **A6-1 MODEL-ASSISTED NDT FOR SUB-MM SURFACE-BREAKING CRACK DETECTION IN ALLOYS**

Y. P. Bu, C. Lane, Y. Zhong, Y. L. Hor, C. E. Png

1A*STAR Institute of High Performance Computing (IHPC), Singapore; 2A*STAR Advanced Remanufacturing and Technology Centre (ARTC), Singapore

11:20  **A6-2 ANALYSIS OF THE COMPOSITE EXIT-HOLE EFFECT ON THE SEAWATER DIELECTRIC MEASUREMENTS**

Y. Zhou, R. H. Lang, The George Washington University, United States

11:40  **A6-3 THE REFLECTION COEFFICIENT OF THE CORUNDUM-BASED MATERIAL IN X BAND**

M. Vakhitov, D. Klygach, South Ural State University (national research university), Russian Federation

Tuesday, August 22, 2017  11:00-12:00  510AC

**Session B10**

**Advanced Algorithms in Computational Electromagnetics (2)**

Session Chairs: Vladimir Okhmatovskii, Pasi Ylä-Oijala

11:00  **B10-1 EFFICIENT ANALYSIS OF STRUCTURES IN LAYERED MEDIA USING THE MPIE METHOD**

D. Li, D. P. Wilton, D. R. Jackson, J. Chen, University of Houston, United States

11:20  **B10-2 EFFICIENT AND ACCURATE ELECTROMAGNETIC SCATTERING COMPUTATIONS BASED ON HIGHER ORDER METHOD OF MOMENTS SURFACE INTEGRAL EQUATION MODELING**

B. M. Notaros, A. P. Smull, S. B. Manic, N. Moin, Colorado State University, United States

11:40  **B10-3 PHYSICAL INSIGHT OF THE CHARACTERISTIC MODES AND LONGITUDINAL VECTOR POTENTIAL ANALYSIS IN POTENTIAL-BASED INTEGRAL EQUATION**

Q. S. Liu, S. Sun, Q. I. Dai, W. C. Chew, L. J. Jiang

1The University of Hong Kong, Hong Kong; 2University of Electronic Science and Technology of China, China; 3University of Illinois at Urbana-Champaign, United States
Tuesday, August 22, 2017 11:00-12:00 514A

Metasurface Engineering (3)

Session Chairs: Tie Jun Cui, Anthony Grbic, Stefano Maci

11:00 B11-1 APERTURE SYNTHESIS WITH METASURFACE-BASED RADIAL WAVEGUIDES  
J. D. Heeb
t, A. Grbic, University of Michigan, United States

11:20 B11-2 ULTRA-BROADBAND WIDE-ANGLE POLARIZATION-INDEPENDENT DIFFUSION USING PARABOLIC-PHASED METASURFACE  
H.-X. Xu, State Key Laboratory of Surface Physics, Fudan University/Air and Missile Defense College, Air Force Engineering University, China (CIE)

11:40 B11-3 CONFORMAL ANISOTROPIC METASURFACES FOR CONTROLLING SCATTERING, GUIDANCE, AND RADIATION OF ELECTROMAGNETIC WAVES  
Z.-H. Jiang, Southeast University, China (CIE); D. H. Werner, The Pennsylvania State University, United States of America

Session Chairs: Julien de Rosny, Florian Monsef

Tuesday, August 22, 2017 11:00-12:00 514A

Ultra-High Bit Rate Radio Communications Engineering at Tera Hertz (1)

Session Chairs: Claudio Balocco, Andrew Gallant

11:00 C12-1 CHARACTERIZATION OF DISPERSION CODE MULTIPLEXING (DCM) IN INCOHERENT RADIO CHANNELS  
E. Zou, C. Caloz, Ecole Polytechnique de Montreal, QC

11:20 C12-2 MULTILEVEL MODULATION IN TERAHERTZ BANDS BY PHOTONICS TECHNOLOGIES  
A. Kanoh, N. Sekine, A. Kasamatsu, N. Yamamoto, National Institute of Information and Communications Technology, Japan; T. Kawanishi, Waseda University, Japan

11:40 C12-3 MICROMACHINED AND MILLED COMPONENTS FOR THz BEAM MANIPULATION  
M. Haji, C. Hill, J. Hammer, D. Wood, D. Zeze, C. Balocco, A. Gallant, Durham University, United Kingdom

Tuesday, August 22, 2017 11:00-12:00 513B

Terahertz Generation and Applications (2)

Session Chairs: Christoph Hauri, Mona Jarrahi

11:00 D13-1 INTENSE TERAHERTZ SOURCES FOR NONLINEAR INTERACTIONS  
J. A. Fulop1,2, J. Palafalvi1, J. Hebling1,2  
1MTA-PTE High-Field Terahertz Research Group, Hungary; 2University of Pécs, Hungary; 3ELI-ALPS, Hungary

11:20 D13-2 INTENSE THz-COHERENT TRANSITION RADIATION FROM LASER SOLID PLASMA INTERACTION  
W. J. Ding, Institute of High Performance Computing, Agency for Science Technology and Research (A*STAR), Singapore

11:40 D13-3 A DUAL-POLARIZED MICROMACHINED BEAM-STEERING RADAR AT 240 GHz FOR COLLISION AVOIDANCE APPLICATIONS  
A. Janq, J. East, K. Sarabandi, University of Michigan, MI

Tuesday, August 22, 2017 11:00-12:20 513EF

Time Reversal in Electromagnetics

Session Chairs: Julien de Rosny, Florian Monsef

11:00 E15-1 SPATIOTEMPORAL WAVE FRONT SHAPING USING SPATIAL-MICROWAVE-MODULATORS: A POSSIBLE ALTERNATIVE TO TIME REVERSAL  
P. del Hougne, F. Lemoult, M. Fink, G. Lerosey, Institut Langevin, ESPCI Paris, France

11:20 E15-2 REAL-TIME PASSIVE COHERENT MICROWAVE IMAGING SYSTEM USING A DISORDERED CAVITY  
A. C. Tondo Yoya, B. Fuchs, M. Davy, Institute of Electronics and Telecommunications of Rennes, France

11:40 E15-3 APPLICATION OF DORT AND PULSE INVERSION TO DETECTION AND SELECTIVE ELECTROMAGNETIC FOCUSING OF NONLINEAR ELEMENTS  
S. K. Hong, J. M. Faia, K. W. McClintick, Rose-Hulman Institute of Technology, United States

12:00 E15-4 TIME REVERSAL OF ELECTROMAGNETIC WAVES ON GRAPHS WITH AND WITHOUT TIME-REVERSAL INVARIANCE  
S. M. Anlage, University of Maryland, United States

Tuesday, August 22, 2017 11:00-11:40 510BD

Remote Sensing Measurements of Precipitation (3)

Session Chairs: Chandrasekar V Chandra, Luca Baldini

11:00 F12-1 RAIN PREDICTION USING RADIOMETRIC OBSERVATIONS AT A TROPICAL LOCATION  
A. Maita, R. Chakraborty, University of Calcutta, India

11:20 F12-2 THE NEFOCAST PROJECT: A NOWCASTING WEATHER PLATFORM BASED ON DUAL-FREQUENCY INTERACTIVE SATELLITE TERMINALS  
G. Bacci1, F. Brinaglia1, L. Facheris1, D. V. Finocchiaro2, F. Giannetti1, M. Moretti5, A. Ortolani1, A. Petrolo1, R. Reggiannini1, A. Vaccaro1,  
1MBI srl, Italy; 2Pro.Ge.Com. srl, Italy; 3Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNI); 4Eutelsat S.A., France; 5University of Pisa, Italy; 4Istituto di Biometeorologia (IBIMET), Italy

Tuesday, August 22, 2017 11:00-11:20 513C

Electromagnetic Problems Involving Volume Scattering (3)

Session Chairs: Ari Sihvola, Cuong Nguyen

11:00 FB13-1 EXPLOITING SATELLITE KA AND KU LINKS FOR THE REAL-TIME ESTIMATION OF RAIN INTENSITY  
F. A. S. Rodri
guez, L. Facheris1, A. Petrolo1, F. Giannetti1, R. Reggiannini1, M. Moretti3, S. Scarfone1, S. Melani2, F. Collard5, G. Bacci1,  
1Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNI), Italy; 2University of Pisa, Italy; 3Istituto di Biometeorologia (IBIMET), Italy; 4University of Calcutta, India; 5Eutelsat S.A., France

Tuesday, August 22, 2017 11:00-12:00 511BE

Advances in Irregularities and Scintillation Studies (3)

Session Chairs: Emanoel Costa, Archana Bhattacharyya

11:00 G13-1 ON EXTENSION OF THE HYBRID SCINTILLATION PROPAGATION MODEL FOR SIGNALS IN TRANSIONOSPHERIC STOCHASTIC CHANNELS  
V. E. Gherm, N. N. Zernov, The University of St. Petersburg, Russian Federation

11:20 G13-2 IONOSPHERIC EFFECTS ON A WIDE BANDWIDTH CHIRP RADAR SIGNAL  
D. L. Kneep, NorthWest Research Associates, California

11:40 G13-3 SCINTILLATION EFFECTS ON VHF/UHF SATELLITE COMMUNICATIONS AND MITIGATION TECHNIQUES  
C. Huang, R. G. Caton, R. T. Parris, J. M. Holmes, Air Force Research Laboratory, United States
Tuesday, August 22, 2017  11:00-12:00  517CD

Session GF14

Radio Studies on Polar Aeronomy (3)

Session Chairs: Giorgiana De Franceschi, Chandrasekar V Chandra, Luca Baldini

11:00  GF14-1 FIELD DEPLOYMENT OF TWO GNSS IN COLLABORATION WITH THE ISINGLASS SOUNDING ROCKET MISSION IN ALASKA
A. J. Coster, MIT Haystack Observatory, United States; D. Hampton, University of Alaska, United States; K. Lynch, Dartmouth College, United States; S. Skone, University of Calgary, Canada

11:20  GF14-2 FROM SOLAR CYCLE 23 TO SOLAR CYCLE 24: TWELVE YEARS OF IONOSPHERIC SCINTILLATIONS MEASUREMENTS AT NY-ÅLESUND (SVALBARD ISLAND)
C. Cesaroni, L. Spogli, V. Romano, L. Alfonsi, I. Hunstad, G. De Franceschi, INGV, Italy

11:40  GF14-3 TEC DATA INGESTION INTO IRI AND NEQUICK OVER THE ANTARCTIC
B. Nava1, K. Alazo-Cuartz1, Y. Migoya-Ouue1, A. Kashcheyev1, M. Pietrella2, C. Scotto3, M. Pezziopane4, S. M. Radicella1
1The Abdus Salam International Centre for Theoretical Physics, Italy; 2Istituto Nazionale di Geofisica e Vulcanologia, Italy

Tuesday, August 22, 2017  11:00-12:00  511CF

Session H10

Drivers, Detection, and Ionospheric Impacts of Precipitation from the Radiation Belts (2)

Session Chairs: Craig Rodger, Christopher Cully

11:00  H10-1 NONRESONANT INTERACTIONS OF ELECTROMAGNETIC CYCLOTRON WAVES WITH RELATIVISTIC ELECTRONS
L. Chen, University of Texas, Dallas, United States

11:20  H10-2 MONTE CARLO SIMULATION OF ENERGETIC ELECTRON PRECIPITATION
W. Xu, R. A. Marshall, X. Fang, University of Colorado Boulder, United States

11:40  H10-3 ELECTRON PRECIPITATION FROM EMIC WAVES: EVIDENCE OF SUB-MEV EMIC-DRIVEN PRECIPITATION
C. J. Rodgers, A. T. Hendry, University of Otago, New Zealand; M. A. Clilverd, British Antarctic Survey (NERC), United Kingdom; M. J. Engebretson, Augsburg College, USA; C. A. Kletzing, University of Iowa, USA; I. R. Mann, University of Alberta, Canada; M. R. Lessard, University of New Hampshire, USA

Tuesday, August 22, 2017  11:00-12:00  516DE

Session J17

J-Tutorial Lars-Ake Nyman: "The Atacama Large Millimeter Array (ALMA)"

Session Chairs: Willem Baan, Richard Bradley

11:00  J17-1 THE ATACAMA LARGE MILLIMETER/SUBMILLIMETER ARRAY (ALMA)
L. A. Nyman, Joint ALMA Observatory, Chile

Tuesday, August 22, 2017  11:00-12:00  516AB

Session K8

Electromagnetic Biomedical Imaging (2)

Session Chairs: Milica Popovic, Joe LoVetri

11:00  K8-1 PHASE UNWRAPPING THROUGH INCREMENTAL COMPARISONS BETWEEN PHANTOM LAYERS
T. Rydholm1, A. Fagher1, M. Persson1, P. M. Meany1,2
1Chalmers University of Technology, Sweden; 2Dartmouth College, USA

11:20  K8-2 IMMERSION MEDIUM INDEPENDENT MICROWAVE BREAST IMAGING
A. Baran1, J. LoVetri, University of Manitoba, Canada; D. Kurrant, E. Fear, University of Calgary, Canada

11:40  K8-3 ANALYSIS OF OPTIMAL MICROWAVE IMAGING SYSTEM AND ALGORITHM PARAMETERS FOR 3D RECONSTRUCTIONS OF BREAST TISSUES
A. Baran1, D. Kurrant2, E. Fear2, J. LoVetri1
1University of Manitoba, Canada; 2University of Calgary, Canada

Tuesday, August 22, 2017  13:40-14:40  511AD

Session A7

Space Metrology (1)

Session Chairs: Liu Min, Pedro Cruz

13:40  A7-1 DISCUSSION ON THE DEFINITION OF BASIC PHYSICAL UNITS IN SPACE METROLOGY
L. Min, L. Biye, Beijing Orient Institute of Measurement & Test, China (CIE)

14:20  A7-2 TESTING OF A POSSIBLE RF-GENERATOR FOR A SPACE BASED AOTF APPLICATION IN THE FRAME OF AN ESA SPACE MISSION
J. A. Vanhame1, S. Berkenbosch1, E. Dekemper1, P. Leroux2, E. Neef1, E. Vanlil1
1Belgian Institute for Space Aeronomy, Belgium; 2European Space Agency, Italy

Tuesday, August 22, 2017  13:40-14:40  510AC

Session B12

Integral Equation, Hybrid, and Fast Methods (1)

Session Chairs: Thomas Eibert, Francesco Andriulli

13:40  B12-1 NOVEL SINGLE SOURCE INTEGRAL EQUATION FOR SOLUTION OF SCATTERING PROBLEMS ON 3D IMPERFECTLY CONDUCTING OBJECTS
F. Lori Sheikh Hossieni1, A. Menshov1, O. Goni1, A. Aljamal1, V. Okhmatovski1
1Farhad Sheikh Hossieni, Canada; 2University of Texas at Austin, USA

14:00  B12-2 ON THE RESONANCES OF CHARACTERISTIC MODES
P. Ylä-Oijala, I. Lappalainen, D. Tzarouchis, A. Sihvola, Aalto University, Finland

14:20  B12-3 AN EXPLICIT TIME MARCHING SCHEME FOR SOLVING SURFACE INTEGRAL EQUATIONS OF ACOUSTICS
R. Chen, N. Alharthi, S. B. Sayed, H. Bagei, D. Keyes, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Tuesday, August 22, 2017  13:40-14:40  513C

Session B13

Inverse Scattering and Imaging (1)

Session Chairs: Matteo Pastorino, Linian Li

13:40  B13-1 STUDY OF THE IMPACT OF NOISE ON TWO REAL-TIME MICROWAVE INVERSION METHODS
D. Tujik, D. S. Shumakov, N. K. Nikolova, McMaster University, Canada

14:00  B13-2 SINGLE-SENSOR MICROWAVE IMAGER USING 1-BIT PROGRAMMABLE CODING METASURFACE
L. Li, Peking University, China (CIE); T. Cui, Southeast University, China (CIE)

14:20  B13-3 A NON-ITERATIVE EIGENFUNCTION-BASED INVERSE SOLVER FOR PEC-ENCLOSED ELECTROMAGNETIC IMAGING
N. Abdollahi, I. Jeffrey, J. LoVetri, University of Manitoba, Canada

Tuesday, August 22, 2017  13:40-14:40  514B

Session C13

Ultra-High Bit Rate Radio Communications Engineering at Terra Hertz (2)

Session Chairs: Claudio Balocco, Andrew Gallant

13:40  C13-1 EXTREME WIDEBAND ARBITRARY WAVEFORM GENERATOR BASED ON FREQUENCY MULTIPLEXING
A. Czylwik, S. Bieder, M. Sichma, University Duisburg-Essen, Germany

14:00  C13-2 COHERENT DETECTION OF WIDEBAND TERAHERTZ PULSES VIA CMOS-COMPATIBLE SOLID-STATE DEVICES
A. Tomasino1, A. Mazarhorová1, M. Clerici1, M. Peccianti1, S.-P. Ho2,4, Y. Jestin1, A. Pasquazi2, A. Markov2, X. Jin2, R. Piccoli1, S. Delprat1, M. Chaker1, A. Busacca1, A. Tomasino1, R. Razzari1, R. Morandotti1
1University of Padova, Italy; 2Istituto Nazionale di Geofisica e Vulcanologia, Italy; 3Politecnico di Torino, Italy; 4King Abdullah University of Science and Technology (KAUST), Saudi Arabia
Tuesday, August 22, 2017 13:40-14:40 513B
Session D14
Material and Metamaterials for Microwave to Optical Wave Applications (1)
Session Chairs: Tatsuo Itoh, Benjamin Williams
13:40 D14-1 ON THE CIRCUIT MODELING OF STACKED CLOSELY SPACED APERTURE-LIKE FSSS
F. Medina, C. Moleró, R. Rodríguez-Berral, F. Mesa, University of Sevilla, Spain
14:00 D14-2 MICROWAVE CLOAKS FOR INVISIBILITY AND ILLUSIONS
A. Sanada, Osaka University, Japan
14:20 D14-3 RECENT PROGRESS ON NONRECIPROCAL CRLH METAMATERIALS FOR ANTENNA APPLICATIONS
T. Ueda, Kyoto Institute of Technology, Japan

Tuesday, August 22, 2017 13:40-14:40 513EF
Session E16
EMC for PCB and Package
Session Chairs: Christopher Holloway, ERPING LI
13:40 E16-1 A FIRST PRINCIPLES, MULTIPOLAR-BASED CABLE BRAID ELECTROMAGNETIC PENETRATION MODEL
S. Campione, L. K. Warne, W. L. Langston, W. A. Johnson, R. S. Coats, L. I. Basilio, Sandia National Laboratories, United States
14:00 E16-2 EFFICIENT CHARACTERIZATION OF INTERFERENCE PROPAGATION IN MULTILAYERED SUBSTRATES WITH MULTIPLE-STAGE OPEN DISCONTINUITIES
M. Grau Novellas, R. Serra, Eindhoven University of Technology, Netherlands; M. Rose, NXP Semiconductors, Netherlands
14:20 E16-3 A SYSTEM AND SOURCE JOINT ESTIMATION METHOD FOR EM EMISSION MODELING OF CLOCK CIRCUITS
X. Hao, S. Xie, W. Zhang, Beihang University, China

Tuesday, August 22, 2017 13:40-14:40 510BD
Session F14
Microwave Sensing of Soil Moisture (1)
Session Chairs: Y. Kerr, Simon Yueh, David Le Vine
13:40 F14-1 FULL-WAVE SIMULATIONS OF ELECTROMAGNETIC SCATTERING BY VEGETATION FOR MICROWAVE REMOTE SENSING BASED ON NUMERICAL 3D SOLUTIONS OF MAXWELL EQUATIONS
H. Huang, L. Tsang, University of Michigan, United States; T.-H. Liao, E. Njoku, A. Colliander, Jet Propulsion Laboratory, California Institute of Technology, United States; K.-H. Ding, Air Force Research Laboratory, Wright-Patterson AFB, United States
14:00 F14-2 SNOW FROM SOIL MOISTURE TO CLIMATE MONITORING AND APPLICATIONS
Y. H. Kerr1, J.-P. Wignerou2, A. Mahmodi3, A. Al Bitar4, A. Al-Yaari5, S. Bircher1, P. Ferrazolli1, A. Miallon1, P. Parrens1, P. Richaume1, N. Rodriguez2, C. Vittucci3, S. Mecklenburg3
14:20 F14-3 DEVELOPMENT OF AN INTEGRATED SOIL MOISTURE DATA RECORD USING SMAP AND SSMOS DATA
S. Chan, NASA Jet Propulsion Laboratory, United States; R. Bindlish, P. O’Neill, NIST Goddard Space Flight Center, United States; T. Jackson, USDA ARS Hydrology and Remote Sensing Laboratory, United States; Y. Kerr, CESBIO-CNRS, France

Session H11
H-Tutorial Craig Rodger: “Drivers, Detection, and Wider Significance of Precipitation from the Radiation Belts”
Session Chair: O. Santolik
13:40 H11-1 DRIVERS, DETECTION, AND WIDER SIGNIFICANCE OF PRECIPITATION FROM THE RADIATION BELTS
C. J. Rodger, University of Otago, New Zealand
Tuesday, August 22, 2017 13:40-14:20 516DE

Session J18

Millimeter/Submillimeter Arrays (3)

Session Chairs: Lars Nyman, Jongsoo Kim

13:40 J18-1 THE CURRENT STATUS AND FUTURE PLAN OF MM/SUB-MM MIXERS IN ASIAA
M. J. Wang, Academia Sinica, China (SR5)

14:00 J18-2 DESIGN OF AN OPTICAL BEAM COMBINER FOR DUAL BAND OBSERVATION WITH ALMA
D. Montfort1, A. Baryshev1,2, P. Mena1, R. Hesper1
1Kapteyn Institute, Netherlands; 2SRON, Netherlands; 3Department of Electrical Engineering, Chile

Tuesday, August 22, 2017 13:40-14:40 514A

Session J19

Recent and Future Space Missions (1)

Session Chairs: Fabrice Herpin, Martin Giard

13:40 J19-1 THE FIRST DETECTION OF A SOLAR BURST AT 3 AND 7 THZ
P. Kaufmann1,2, J.-P. Raufin1, R. Marcon1,2, A. S. Kudaka1, R. F. Hidalgo Ramirez1
1Universidade Presbiteriana Mackenzie, Brazil; 2UNICAMP, Brazil; 3Instituto de Astronomia, Astrofisica e Geofisica, Brazil

14:00 J19-2 THE NETHERLANDS - CHINA LOW FREQUENCY EXPLORER

14:20 J19-3 THE HERSCHEL SPACE MISSION
F. Herpin, Laboratoire d'Astrophysique de Bordeaux, France; E. Caux, IRAP, France; L. Pagani, LERMA, Observatoire de Paris, France

Tuesday, August 22, 2017 13:40-14:40 516AB

Session K9

Electromagnetic Biomedical Imaging (3)

Session Chairs: Milica Popovic, Joe LoVetri

13:40 K9-1 SPATIAL FIELD INTENSITY SHAPING VIA OPTIMIZED MULTI TARGET TIME REVERSAL
G. G. Bellizzi1,2, L. Crocco2, T. Isernia1,2
1Università Mediterranea di Reggio Calabria, Italy; 2CNR-IREA, Consiglio Nazionale delle Ricerche, Italy

14:00 K9-2 MICROWAVE IMAGING WITH A TIME-DOMAIN RECONSTRUCTION ALGORITHM
A. Flager, M. Persson, Chalmers University of Technology, Sweden

14:20 K9-3 EVALUATION OF A FACETED PEC AIR-BASED BREAST IMAGING SYSTEM
J. Lo Vetri, A. Baran, M. Asefi, K. Nemez, I. Jeffrey, University of Manitoba, Canada

Tuesday, August 22, 2017 13:40-14:40 511A

Session A8

Space Metrology (2)

Session Chairs: Liu Min, Pedro Cruz

14:40 A8-1 COMPACT-FIBERED OPTICAL FREQUENCY STANDARD AT 1542 NM STABILIZED ON IOIDINE HYPERFINE LINE IN THE 10-15 RANGE FOR SPACE APPLICATIONS
C. Phillips1, R. Le Targat1, D. Holleveille1, M. Lours1, T. Leveque2, R. Le Goff2, P. Wolf2, D. Acef2
1SYRTE / CNRS / Observatoire de Paris, France; 2CNES, France; 3SODERN, France

15:00 A8-2 THE TDOA AND FDOA ALGORITHM OF COMMUNICATION SIGNAL BASED ON FINE CLASSIFICATION AND COMBINATION
S. Liu1, Beijing Institute of Spacecraft System Engineering, China (CIE); H. Wang, Harbin Institute of Technology, China

15:20 A8-3 AN IMPLEMENTATION METHOD OF ELECTRICAL REFERENCE STANDARDS FOR PERMANENT LUNAR BASES
Y. Li, L. Min, W. Yan, Beijing Orient Institute of Measurement and Test, China (CIE)

Tuesday, August 22, 2017 14:40-15:40 510AC

Session B14

Integral Equation, Hybrid, and Fast Methods (2)

Session Chairs: Thomas Elbert, Francesco Andriulli

14:40 B14-1 FAST NEAR-FIELD ITERATION BASED ON STATIC AND DYNAMIC GREEN'S FUNCTIONS
S. Karki, C. Rancy, C. Craeye, Universite catholique de Louvain, Belgium

15:00 B14-2 ANALYSIS AND SYNTHESIS OF FIELDS IN MODULATED METASURFACES
G. Minatti1, F. Caminita1, E. Martini1, S. Menci1
1University of Siena, Italy; 2Wave-Up Srl, Italy

15:20 B14-3 SOMMERFELD INTEGRALS FOR MULTI-LAYER, GROUNDED DIELECTRIC SUBSTRATES: A COMPARATIVE NUMERICAL ANALYSIS OF EXACT AND ASYMPTOTIC METHODS
K. C. Durghbakula, D. Chatterjee, A. H. Hassan, University of Missouri Kansas City, United States; M. S. Klufkes, Naval Research Laboratory, United States

Tuesday, August 22, 2017 14:40-15:40 513C

Session B15

Inverse Scattering and Imaging (2)

Session Chairs: Matteo Pastorino, Linlian Li

14:40 B15-1 AN INVERSE SCATTERING PROCEDURE IN LEBESGUE SPACES WITH NON-CONSTANT EXPONENTS
C. Estatico, A. Fedeli, M. Pastorino, A. Randazzo, University of Genoa, Italy

15:00 B15-2 ON THE SCATTERING BY A PULSED SOURCE WITH THE CWA
C. Ponti, M. Santarsiero, G. Schettini, Roma Tre University, Italy

15:20 B15-3 A PERFORMANCE ANALYSIS OF TYPICAL IMAGING ALGORITHMS IN GROUND-BASED SYNTHETIC APERTURE RADAR
C. Hu, Q. He, W. Tian, Y. Deng, Beijing Institute of Technology, China (CIE)

Tuesday, August 22, 2017 14:40-15:40 514B

Session CDB14

Exploitation of Non-Lineairities for Passive Wireless Sensors (1)

Session Chairs: Yvan Duroc, Ville Viikari, Ke Wu

14:40 CDB14-1 EXPLOITATION OF HARMONIC SIGNALS GENERATED BY THE UHF RFID CHIPS: NEW PROMISES FOR THE RADIO FREQUENCY IDENTIFICATION TECHNOLOGY
G. Andia Vera1, D. Allane1, Y. Duroc3, S. Tedjini1
1Grenoble-INP, University Grenoble-Alpes, France; 2University Claude Bernard Lyon 1, University of Lyon, France; 3University of Sciences and Technology Houari Boumediene, Algérie

15:00 CDB14-2 SHAPING MICROWAVE FIELDS USING NON-LINEAR UNSOLICITED FEEDBACK: APPLICATION TO ENERGY HARVESTING
P. del Hougne, M. Fink, L. Lemoulh, G. Leroisy, Institut Langevin, ESPCI Paris, France

15:20 CDB14-3 MILLIMETER-WAVE SOURCELESS RECEIVER ARRAY
R. Liu, K. Wu, Polytechnique Montréal, Canada

Tuesday, August 22, 2017 14:40-15:40 513B

Session D15

Material and Metamaterials for Microwave to Optical Wave Applications (2)

Session Chairs: Tatsuio Itoh, Benjamin Williams

14:40 D15-1 PHOTOLUMINESCENCE ENGINEERING USING III-V DIELECTRIC METAMATERIALS
S. Liu1, S. Addamane2, M. B. Sinclair1, G. A. Keeler1, G. Balakrishnan2, I. Brener1
1Sandia National Labs, United States; 2University of New Mexico, United States
Tuesday, August 22, 2017 14:40-15:40 513D
Session E17
Lightning and Related Phenomena (1)
Session Chairs: Vladimir A. Rakov, Satoru Yoshida
14:40 E17-1 A NUMERICAL STUDY OF SITE ERRORS IN MAGNETIC DIRECTION FINDING OF LIGHTNING
S. Araki, Y. Baba, Doshisha University, Japan; V. A. Rakov, University of Florida, USA
15:00 E17-2 A DUAL BAND 3D LIGHTNING LOCATING SYSTEM
H. Liu, W. Dong, Laboratory of Lightning Physics and Protection Engineering, State Key Laboratory of Severe Weather, China; L. Li, Chongqing Meteorological Bureau, China
15:20 E17-3 MODELING NARROW BIPOLAR PULSES USING NUMERICAL SOLUTION TO FREDHOLM EQUATION
S. Karunarathne, Baptist College of Health Sciences, United States; N. Karunarathne, T. Marshall, M. Steinzenburg, University of Mississippi, United States

Tuesday, August 22, 2017 14:40-15:40 510BD
Session F16
Microwave Sensing of Soil Moisture (2)
Session Chairs: Y. Kerr, Simon Yueh, David Le Vine
14:40 F16-1 RELATION BETWEEN SMOS OPTICAL THICKNESS AND PANTROPICAL BIOMASS
C. Vinti, P. Ferrazzoli, L. Guarinoro, Tor Vergata University, Italy; Y. Kerr, P. Richaume, CESBIO, France; G. Vaglio Laurin, Tuscia University, Italy
15:00 F16-2 HIGH-RESOLUTION ENHANCED PRODUCT BASED ON SMAP ACTIVE-PASSIVE APPROACH USING SENTINEL-1A AND 1B SAR DATA N. Nookala1, J. Lee2, Y. Liu3, M. Tymchenko4, G. Boehn5, M.-C. Amann6, O. Wolf7, J. L. Reno7, I. Brener8, A. Alu8, M.A. Belkin9
1 Indian Institute of Geomagnetism, India; 2South African National Space Agency, South Africa; 3Lancaster University, United Kingdom; 4ASIAA, Taiwan; 5Canberra, Australia; 6INM, Moscow, Russia; 7University of Tel Aviv, Israel; 8Tel Aviv University, Israel; 9The University of Texas at Austin, United States; 4Technical University of Munich, Germany; 3Sandia National Laboratories, United States
15:20 F16-3 INTEGRATION OF SMAP, AMSR2 AND SENTINEL-1 DATA FOR SOIL MOISTURE MONITORING
S. Paloscia1, E. Santi2, P. Pampaloni2, S. Pettinato, IFAC/CNR, Italy; L. Brocca, L. Ciabatta, IRPI-CNR, Italy; D. Entekhabi, MIT, USA

Tuesday, August 22, 2017 14:40-15:40 513D
Session FB17
EM Modeling and Applications of Underground Imaging (2)
Session Chairs: Lorenzo Capineri, Motoyuki Sato
14:40 FB17-1 GROUND PENETRATING RADAR WITH CONTACT HORN ANTENNAS
M. Pierroncini, N. Rognoni, L. Muccini, University of Florence, Italy
15:00 FB17-2 FIELD MEASUREMENT OF PERMITTIVITY, ELECTRICAL CONDUCTIVITY, MAGNETIC SUSCEPTIBILITY, AND TOPOGRAPHIC RELIEF OF SOILS IN DONBASS, UKRAINE FOR ROBOTIC, MULTI-SENSOR, HUMANARIAN DEMINING SYSTEM DESIGN
G. Pochanina, V. Ruban, L. Varantyas-Roschupkina, O. Olenko, I. Pochanina, Dept.of Radiophysics and Electronics, Ukraine; S. Truskavetsky, K. Viatkin, A. Sherstyuk, Nat. Scientific Center, Inst. for Soil Science and Agrochemistry Research named after O.N. Sokolovskij, Ukraine; L. Capineri, P. Falorni, Università degli Studi di Firenze, Italy; T. Bechtel, L. Houser, Dept. of Earth & Environment, Franklin & Marshall College, USA
15:20 FB17-3 TESTING INNOVATIVE GPR SYSTEMS FOR CROP ROOT PHENOTYPING AND SOIL ORGANIC CARBON QUANTIFICATION
A. Novo, E. Eoi, IDS North America, United States; D. B. Hays, A. Delgado, Texas A&M University, United States

Tuesday, August 22, 2017 14:40-15:40 511CF
Session H12
Drivers, Detection, and Ionospheric Impacts of Precipitation from the Radiation Belts (3)
Session Chairs: Craig Rodger, Christopher Cully
14:40 H12-1 ENERGETIC ELECTRON PRECIPITATION INTO THE MIDDLE ATMOSPHERE; CHORUS-WAVE PARTICLE INTERACTIONS
1 Nagoya University, Japan; 2JAXA, Japan; 3University of Tokyo, Japan; 4ASIAA, Taiwan; 5Kanazawa University, Japan; 6Tohoku University, Japan; 7Kyoto University, Japan; 8The University of Electro-Communications, Japan; 9NIPR, Japan
15:00 H12-2 WHAT FRACTION OF THE OUTER RADIATION BELT ELECTRON FLUX WAS LOST TO THE ATMOSPHERE DURING THE DROPOUT EVENT ON THE ST PATRICK’S DAY STORM OF 2015?
S. A. Gokani1, M. Kosch12, M. Clifford13, C. Rodger13, R. Singh14, D. Danskin15, S. Marple15
1 Indian Institute of Geomagnetism, India; 2South African National Space Agency, South Africa; 1Lancaster University, United Kingdom; 13British Antarctic Survey, United Kingdom; 12University of Otago, New Zealand; 14Dr. KSK Geomagnetic Research Laboratory, India; 15Natural Resources Canada, Canada
Tuesday, August 22, 2017 14:40-15:40 514A

Session K10

Electromagnetic Biomedical Imaging (4)
Session Chairs: Milica Popovic, Joe Lovetri

14:40 K10-1 STRATEGIES FOR INTEGRATING ULTRASOUND AND ELECTROMAGNETIC MICROWAVE DATA FOR IMPROVED BREAST IMAGING
E. Fear, M. Omer, D. Kurran, University of Calgary, Canada; A. Baran, J. Lovetri, P. Mojabi, University of Manitoba, Canada

15:00 K10-2 STUDY OF THE ACCURACY OF FORWARD MODELING IN ELECTRICAL IMPEDANCE TOMOGRAPHY FOR THORAX IMAGING
K. Zhang, M. Li, F. Yang, S. Xu, Tsinghua University, China (CIE); A. Babakar, Schlumberger, USA

15:20 K10-3 REAL-TIME TRACKING OF METALLIC TREATMENT PROBE IN INTERSTITIAL THERMAL THERAPY
G. Chen, J. Stang, M. Moghaddam, University of Southern California, United States

Tuesday, August 22, 2017 16:00-16:40 514B

Session CDB15

Exploitation of Non-Linearities for Passive Wireless Sensors (2)
Session Chairs: Yvan Duroc, Ville Viikari, Ke Wu

16:00 CDB15-1 TRANSPONDER UTILIZING THE MODULATED RE-SCATTERING COMMUNICATION PRINCIPLE
T. A. Siddiqui, M. M. Islam, K. Rasilainen, V. Viikari, Aalto University, Finland

16:20 CDB15-2 STUDY ON NON-LINEAR EFFECTS OF TWO COUPLED ULF-BAND RFID TAGS
L. Holopainen, X. Gao, V. Viikari, Aalto University School of Electrical Engineering, Finland

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session A3P

POSTERS - Commission A Open Session
Session Chairs: Yasuhiro Koyama, Patrizia Tavella

A3P-1 METHOD FOR AC CURRENT MEASUREMENT BASED ON DIGITAL SAMPLING TECHNOLOGY
S. Chen, X. Huang, W. Sun, H. Wang, Beijing Orient Institute of Measurement and Test, China (CIE)

A3P-2 ENSEMBLE DETECTION ANALYSIS FOR CHARACTERIZING NON-STATIONARY PROCESSES
M. Aksoy, University of Maryland Baltimore County, United States; P. E. Racette, NASA Goddard Space Flight Center, United States

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session A5P

POSTERS - Advances in Sensor Development and Applications
Session Chairs: Chouki Zerrouki, Andon Lazarov

A5P-1 A HIGH PRECISION SIGNAL ANALYSIS SYSTEM BASED ON SOC
B. Li, J. Song, M. Zhang, Beijing Oriental Institute of Measurement and Test, China (CIE)

A5P-2 SURFACE ACOUSTIC WAVE SENSORS: FROM DESIGN TO CHEMICAL AND BIOLOGICAL APPLICATIONS
N. Fourati, C. Zerrouki, Conservatoire National des Arts et métiers, France

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session A6P

POSTERS - Metrological Analysis of Material Properties
Session Chair: Nosherwan Shoabi

A6P-1 COMPLEX PERMITTIVITY MEASUREMENT OF LIQUIDS USING A 7-MM OPEN-CIRCUITTED COAXIAL LINE SAMPLE HOLDER AT MOBILE TELECOMMUNICATION FREQUENCIES
T.-W. Kang, J.-H. Kim, J.-Y. Kwon, N.-W. Kang, Korea Research Institute of Standards and Science, South Korea

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session AE10P

POSTERS - SI Units
Session Chairs: Felicitas Arias, Carl Williams

AE10P-1 RECENT PROGRESS ON MICROWAVE POWER STANDARDS IN BIRM
W. He,1,2,3, W. Zhang,2,3, C. Cheng,2,3, C. Yang,2,3, H. Yin1
1The Graduate School of The Second Academy of China, China (CIE); 2Nation Key Laboratory of Metrology and Calibration Technology, China (CIE); 3State Key Laboratory of Metrology and Measurement, China (CIE)

AE10P-2 A NEW METHOD FOR EVALUATING MEASUREMENT UNCERTAINTY OF AC IMPEDANCE
Y. Li, X. J. Yan, L. You, K. Wu, Beijing Orient Institute of Measurement & Test, China (CIE)

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session B1P

POSTERS - Electromagnetic Theory
Session Chair: Daniel Sjöberg

B1P-1 REALIZABILITY OF STRUCTURES FOR DUAL BAND COMPLEMENTARY REFLECTION/TRANSMISSION USING A CONVEX OPTIMIZATION APPROACH
D. Sjöberg, Lund University, Sweden

B1P-3 ELECTRIC POLARIZABILITY ESTIMATION FOR PLANAR FREQUENCY SELECTIVE ARRAYS
A. Ludygin-Chipov, B. L. G. Jonsson, KTH Royal Institute of Technology, Sweden

B1P-4 CAVITY MODEL ANALYSIS OF SPHERICAL-RECTANGULAR PRINTED ANTENNAS BY EMPLOYING BASIC SPHERICAL VECTOR TRANSFORMATION TECHNIQUES
D. Demir, Axelsson Inc., Turkey; G. Dural, METU, Turkey

B1P-5 AN APPROACH TO THE DIELECTRIC RELAXATION SPECTRUM AS A CONTINUOUS DISTRIBUTION OF DEBYE PROCESSES
T. P. Iglesias, University of Vigo, Spain; G. Villio, Instituto Superior de Engenharia do Porto, Portugal; 1. C. R. Reis, Universidad de Lisboa, Portugal

B1P-6 RADIATION ENERGY OF ANTENNA FIELDS: CRITIQUE AND A SOLUTION THROUGH RECOVERABLE ENERGY
S. M. Mikis, University of New Haven, USA; A. M. Alzahed, Y. M. M. Antar, Royal Military College of Canada, Canada

B1P-7 Poincaré Waves and Their Applications to Gaussian Beam Summation
E. Gorodnitskiy, M. Perel, Saint Petersburg State University, Russian Federation
**B1P-8** ANALYSIS OF A PERFORATED SIW STRUCTURE WITH A RECTANGULAR AIR BOX AND ITS APPLICATION TO THE DESIGN OF A STEP-IMPEDANCE MICROWAVE FILTER

A. Coves, G. Torregrosa, G. Vicent, E. Bronchalo, A. A. San Blas, Universidad Miguel Hernández de Elche (UMH), Spain; M. Bozzi, University of Pavia, Italy

**B1P-9** ELECTROMAGNETIC SCATTERING OF A LAGUERRE-GAUSSIAN VORTEX BEAM BY UNIAXIAL ANISOTROPIC BIPHASES

T. Gu1, Z. S. Wu1, J. J. Wu1, Q. C. Shang1, G. Jeon2,3, Z. J. Li1

1Xi'an University, China; 2Incheon National University, Korea

**B1P-10** IRREGULAR-GRID-BASED PARTICLE-IN-CELL SIMULATIONS OF RESONANT ELECTRON DISCHARGES IN PROBABILISTIC SECONDARY ELECTRON EMISSION MODEL

D.-Y. Na1, Y. A. Omelchenko1, F. L. Teixeira2

1The Ohio State University, United States; 2Trinum Research Inc., United States

**B1P-11** ON THE EXACT SOLUTION FOR THE EIGENMODES OF THE TAPE HELIX

M. Novarini, KTH Royal Institute of Technology, Sweden

**B1P-12** FIELD DISTRIBUTIONS OF THE HYBRID MODES IN RECTANGULAR WAVEGUIDES FILLED WITH UNIAXIAL MEDIA WITH TILTED OPTIC AXIS LYING IN SIDEWALL PLANES

K. Sung, J. K. Lee, J. W. Graham, Syracuse University, United States

**B1P-13** PASSIVE APPROXIMATION AND OPTIMIZATION WITH B-SPLINES

Y. Ivanenko, S. Nordebo, Linnaeus University, Sweden

**B1P-14** TRACING OF METASURFACE WAVES

C. Della Giovannapala1, M. Mencagl1, E. Martini1, M. Albarani1, S. M. Mikki2

1University of Siena, Italy; 2University of Pennsylvania, USA

**B1P-15** ON THE ACCURACY OF FRIS’S TRANSMISSION FORMULA AT SHORT RANGE

O. Breinbjerg, K. Kaslis, Technical University of Denmark, Denmark

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**B6P-1** BACK RADIATION SUPPRESSION THROUGH A SEMITRANSPARENT ROUND ground PLANE FOR MM-WAVE OMnidIRECTIONAL ANTENNAS

K. Klimovski, M. F. Farooqui, A. Shamim, King Abdullah University of Science and Technology, Saudi Arabia

**B6P-2** A NOVEL SELF-PACKAGED MICROSTRIP LINE

K. Zhang, X. Zhang, A. A. Kishk, Concordia University, Canada

**B6P-3** A NOVEL SINGLE LAYER PARTIALLY REFLECTION SURFACE FOR BROADBAND FABRY–PEROT RESONATOR ANTENNA

F. Meng, Y. Liu, University of Electronic Science and Technology of China, China (CIE); S. K. Satish, San Diego State University, USA

**B6P-4** A COMPACT DUAL-BAND AND DUAL-POLARIZED ELECTROMAGNETIC BAND-GAP STRUCTURE

F. Meng, Y. Liu, University of Electronic Science and Technology of China, China (CIE); S. K. Satish, San Diego State University, USA

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**B7P-1** BACK RADIATION SUPPRESSION THROUGH A SEMITRANSPARENT ROUND ground PLANE FOR MM-WAVE OMnidIRECTIONAL ANTENNAS

M. A. Hassan, A. A. Kishk, Concordia University, Canada

**B7P-2** WIDEBAND ELECTROMAGNETIC SCATTERING COMPUTATIONS FOR SMOOTH CONDUCTING 2D CYLINDERS USING THE RAS-AWE METHOD

M. A. Hassan, A. A. Kishk, Concordia University, Canada

**B7P-3** FAST AND ACCURATE EXTRACTING SURFACE AND LEAKY WAVE POLES FOR MULTILAYERED STRUCTURES BASED ON GPU/CPU HETEROGENEOUS PLATFORM

Z. Song, X.-W. Zhu, L. Tian, P. Miao, Southeast University, China (CIE)

**B7P-4** PRECISE ANALYSIS OF NEAR-FIELD LIGHT USING FAST INVERSE LAPLACE TRANSFORM

S. Ohnuki, D. Wu, S. Watanabe, R. Takahashi, Nihon University, Japan; T. Yamaguchi, Tokyo Metropolitan Industrial Technology Research Institute, Japan

**B7P-5** SPECTRAL ANALYSIS OF FINITE DIFFERENCE MODELS OF OPEN STRUCTURES IN TIME AND FREQUENCY DOMAIN

P. Jorkowski, L. Kuen, R. Schuhmann, Technische Universität Berlin, Germany

**B7P-6** LEBEDEV FDTD METHOD FOR ELECTROMAGNETIC SIMULATIONS OF ANISOTROPIC MATERIALS

M. Salmassi, M. Potter, University of Calgary, Canada

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**B8P-1** GPGPU FDTD: OUTPUT OF DATA

F. Costen1,2, L. Xanthos1,3, R. Himeno2,3, H. Yokota3

1The University of Manchester, United Kingdom; 2RIKEN, Japan

**B8P-2** WIDEBAND ELECTROMAGNETIC SCATTERING COMPUTATIONS FOR SMOOTH CONDUCTING 2D CYLINDERS USING THE RAS-AWE METHOD

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**B8P-6** LEBEDEV FDTD METHOD FOR ELECTROMAGNETIC SIMULATIONS OF ANISOTROPIC MATERIALS

M. Salmassi, M. Potter, University of Calgary, Canada

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**Tuesday, August 22, 2017 16:00-19:00** Poster Room

Session B6P

**POSTERS - Multiphysics and Multiscale Problems**

Session Chairs: Weng Cho Chew, Qing Huo Liu, Levent Gurel

**B6P-1** TRANSIENT ANALYSIS OF ELECTROMAGNETIC WAVE INTERACTIONS ON MAGNETIZED FERRITES USING LANDAU-LIFSHITZ-GILBERT AND VOLUME INTEGRAL EQUATIONS

S. B. Sayevi1, H. Arda Ulku2, H. Bagci1

1King Abdullah University of Science and Technology (KAUST), Saudi Arabia; 2Gebze Technical University, Turkey

**B6P-2** UNSTRUCTURED BLOCK MESHING IN TIME-DOMAIN TLM METHOD WITH LOCAL TIME-STEP

A. A. Ijjeh, G. Behera1, S. M. Mikki2, Y. M. M. Antar1

1The Ohio State University, United States; 2Trinum Research Inc., United States

**B6P-3** DESIGN OF CNT-BASED PERFECT ABSORBERS OVER SWIR TO LWIR FREQUENCIES FOR SENSING APPLICATIONS.

G. Behera1, S. M. Mikki2, Y. M. M. Antar1

1Royal Military College of Canada, Canada; 2University of New Haven, USA

**B6P-4** ANALYSIS OF MULTILAYER INTERCONNECTS DISTRIBUTED ENERGY-PER-BIT AND POWER INTEGRITY WITH KRON-BRANIN FORMALISM

Z. Xu, Y. Liu, B. Ravelo, O. Maurice, ESIGELEC, France

**B6P-5** NON-CONFORMAL IE-PE USING REVERSED OPERATION SELF-CONSISTENT EVALUATION

M. Jiang, J. Hu, Z. Nie, University of Electronic Science and Technology of China, China (CIE)

**B6P-6** DISCRETIZATION OF MAXWELL-VLASOV EQUATIONS BASED ON DISCRETE EXTERIOR CALCULUS

D.-Y. Na1, Y. A. Omelchenko1, B.-H. V. Borges2, F. L. Teixeira1

1The Ohio State University, United States; 2University of Sao Paulo, Brazil

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**Tuesday, August 22, 2017 16:00-19:00** Poster Room

Session B8P

**POSTERS - Advanced Algorithms in Computational Electromagnetics**

Session Chairs: Vladimir Okhatovskii, Pasi Ylä-Oijala

**B8P-1** GPGPU FDTD: OUTPUT OF DATA

F. Costen1,2, L. Xanthos1,3, R. Himeno2,3, H. Yokota3

1The University of Manchester, United Kingdom; 2RIKEN, Japan

**B8P-2** WIDEBAND ELECTROMAGNETIC SCATTERING COMPUTATIONS FOR SMOOTH CONDUCTING 2D CYLINDERS USING THE RAS-AWE METHOD

M. A. Hassan, A. A. Kishk, Concordia University, Canada

**B8P-3** FAST AND ACCURATE EXTRACTING SURFACE AND LEAKY WAVE POLES FOR MULTILAYERED STRUCTURES BASED ON GPU/CPU HETEROGENEOUS PLATFORM

Z. Song, X.-W. Zhu, L. Tian, P. Miao, Southeast University, China (CIE)

**B8P-4** PRECISE ANALYSIS OF NEAR-FIELD LIGHT USING FAST INVERSE LAPLACE TRANSFORM

S. Ohnuki, D. Wu, S. Watanabe, R. Takahashi, Nihon University, Japan; T. Yamaguchi, Tokyo Metropolitan Industrial Technology Research Institute, Japan

**B8P-5** SPECTRAL ANALYSIS OF FINITE DIFFERENCE MODELS OF OPEN STRUCTURES IN TIME AND FREQUENCY DOMAIN

P. Jorkowski, L. Kuen, R. Schuhmann, Technische Universität Berlin, Germany

**B8P-6** LEBEDEV FDTD METHOD FOR ELECTROMAGNETIC SIMULATIONS OF ANISOTROPIC MATERIALS

M. Salmassi, M. Potter, University of Calgary, Canada

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**Tuesday, August 22, 2017 16:00-19:00** Poster Room

Session B13P

**POSTERS - Inverse Scattering and Imaging**

Session Chairs: Lianlin Li, Matteo Pastorino

**B13P-1** ELECTROMAGNETIC BIOMEDICAL IMAGING IN BANACH SPACES: A NUMERICAL CASE STUDY

A. Fedeli, M. Pastorino, A. Randazzo, University of Siena, Italy

**B13P-2** DESIGN OF AN UWB POWER SPLITTER OF ARBITRARY SPLIT RATIO USING ASYMMETRICAL DOUBLE RIDGE WAVEGUIDE

M. A. Nasr, A. A. Kishk, Concordia University, Canada

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<td>D. Zhu, T. Du, S. Pan, Nanjing University of Aeronautics and Astronautics, China (CIE)</td>
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<td>FEC IMPROVEMENT OF TRANSMISSION PERFORMANCE IN DIGITAL RADIO ON RADIO</td>
<td>K. Tsukamoto, K. Kumamoto, T. Nakamura, T. Mochii, Osaka Institute of Technology, Japan</td>
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<td>Y. Ting, K.-L. Lee, C. Lim, A. Nirmalathas, University of Melbourne, Australia</td>
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<td>Y. Galvev, Kotel'nikov Institute of Radio-engineering and Electronics RAS, Russian Federation</td>
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<td>DEVELOPMENT OF PASSIVE UHF RFID TAG ON FLEXIBLE FOIL FOR SPORT BALLS PRESSURE MONITORING</td>
<td>A. Remann, A. Abdelnour, D. Kaddour, R. Touhami, S. Tedjini 1University of Sciences and Technology Houari Boumediene (USTHB), Algeria; 2University Grenoble Alpes/LCIS, France; 3Centre de Développement des Energies Renouvelables, CDER, Algeria</td>
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<td>COMPACT W-BAND ANTENNA FOR POLARIZATION DIVERSITY APPLICATIONS</td>
<td>A. B. Numan, J.-F. Frigon, J.-J. Laurin, Polytechnique Montreal, Canada</td>
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<td>J. Pourahmadian, T. Denidi, National Institute of Scientific Research (INRS), Centre for Energy, Materials and Telecommunication, Canada</td>
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<td>BROADBAND ULTRAFAST CARRIER DYNAMICS OF SINGLE-WALL CARBON NANOTUBES</td>
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<td>E. Peik, D.-M. Meier, J. Thielking, P. Glowacki, M. Okhapkin, PTB, Germany</td>
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<td>D10P-1</td>
<td>A COMPACT LIGHT SOURCE AT 399 NM USING A PERIODICALLY POLED LINBO3 WAVEGUIDE FOR LASER COOLING YTTERBIUM</td>
<td>T. Kobayashi, D. Akamatsu, Y. Nishida, T. Tanabe, M. Yasuda, F.-L. Hong, K. Hosaka 1National Metrology Institute of Japan, Japan; 2NTT Electronics Corporation, Japan; 3Yokohama National University, Japan</td>
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<td>D11P-1</td>
<td>TERAHERTZ GYROTRONS WITH QUASI-REGULAR CAVITIES</td>
<td>I. V. Osharig, I. V. Bandurkin, Y. K. Kalynov, A. V. Savlom, Institute of Applied Physics, Russian Academy of Sciences (IAP RAS), Russian Federation</td>
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<td>D18P-1</td>
<td>A NOVEL SINGLE CONDUCTOR ANTENNA FOR MOBILE HANDSETS</td>
<td>M. Haridim, M. Bank, Y. Shalit, J. Gavan, HIT-Holon Institute of Technology, Israel</td>
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<td>Z. Su, R. M. Bilal, A. Shami, King Abdullah University of Science and Technology, Saudi Arabia</td>
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<td>A QUASI BUTLER MATRIX WITH 6×6 BEAM-FORMING CAPACITY USING 3×3 HYBRID COUPLERS</td>
<td>K. Ding, J. Bai, A. Kashk 1Concordia University, Canada; 2Beihang University, China</td>
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<td>D21P-1</td>
<td>IMAGING OF ELECTRODELESS DISCHARGE LAMP WITH ATOMIC OPTICAL FILTER</td>
<td>L. Yin, B. Luo, J. Li, D. Han, G. Wu, H. Guo 1Beijing University of Posts and Telecommunications, China (CIE); 2Peking University, China (CIE)</td>
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<td>ON-CHIP MINIATURIZED BROADBAND POWER DIVIDER USING SPUR-LINE</td>
<td>M. Ma, J. Wan, X. Liang, Institute of Microelectronics of Chinese Academy of Sciences, China (CIE)</td>
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<td>E8P-1</td>
<td>IMPACT OF AN ARC TRACKING BETWEEN DC WIRES ON THE POWER LINE COMMUNICATION CHANNEL CHARACTERISTICS</td>
<td>V. Degardin, P. Laly, L. Kone, F. Valeros, M. Lienard, P. Degardin 1University of Lille, France; 2University of Toulouse, France</td>
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<td>E8P-2</td>
<td>RADIATION EFFICIENCY OF AN INDIVIDUAL ANTENNA IN A SYSTEM OF MULTIPLE NON-IDENTICAL ANTENNAS</td>
<td>S. De Silva, L. Belostotski, M. Okoniewski, University of Calgary, Canada</td>
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<td>Session E14P</td>
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<td>POSTERS - Geomagnetic Disturbances (GMD) and Effects</td>
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<td>Session Chair: William Radasky</td>
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<td>E14P-1 ESTIMATING EQUATORIAL DAYTIME VERTICAL E×B DRIFT VELOCITIES FROM MAGNETIC FIELD VARIATIONS</td>
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<td>K. A. A. Diaib, K. O. Obrou, Université Félix Houphouët-Boigny, Cote d'Ivoire</td>
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<td>POSTERS - Time Reversal in Electromagnetics</td>
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<td>Session Chairs: Julien de Rosny, Florian Monsef</td>
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<td>E15P-1 BREAKING PARITY TIME REVERSAL SYMMETRY IN FILTERS</td>
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<td>R. L. Gardner, Consultant, United States</td>
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<td>POSTERS - Lightning and Related Phenomena</td>
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<td>Session Chairs: Vladimir A. Rakov, Satoru Yoshida</td>
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<td>E17P-1 SIMULATION ANALYSIS ON OVERVOLTAGE OF WIND TURBINES BY LIGHTNING STROKE</td>
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<td>D. Xu, M. J. Zhen, Y. H. Jin, Xi’an Jiaotong University, Shaanxi, China (SBS)</td>
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<td>POSTERS - Measurement Techniques</td>
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<td>Session Chairs: Ramiro Serra, Christophe Lemoine</td>
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<td>E21P-1 SHELDING EFFECTIVENESS MEASUREMENT FOR PHYSICALLY SMALL ENCLOSURE IN FAST TELESCOPE</td>
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<td>H. Gao, H. Zhang, Y. Yao, H. Hu, S. Huang, J. Song, J. Sun, H. Liu, C. Jin</td>
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<tr>
<td>1National Astronomical Observatories, Chinese Academy of Sciences, China (CIE); 2Key Laboratory of Radio Astronomy, Chinese Academy of Sciences, China (CIE)</td>
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<td>Session Chairs: Martti Hallikainen, Jiancheng Shi</td>
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<td>F1P-1 PRECIPITABLE WATER RETRIEVAL OVER ANTARCTICA FROM SATELLITE MICROWAVE HUMIDITY SOUNDERS</td>
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<tr>
<td>G. Heyes, C. Melsheimer, A. Trana Gomez, G. Spreen, University of Bremen, Germany; M. Negusini, Institute of Radio Astronomy, Italy; B. H. Petkov, C. Tomasini, Institute of Atmospheric Sciences and Climate, Italy</td>
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<td>POSTERS - Propagation Modeling for Aerospace Applications</td>
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<td>Session Chairs: Carlo Capsoni, Animesh Maitra</td>
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<td>F22P-1 GRAVITY WAVE STUDIES OVER A TROPICAL LOCATION USING RADIO OCCULTATION AND RADIOSONDE MEASUREMENTS</td>
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<td>G. Bakshe, A. Maitra, University of Calcutta, India</td>
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Session G1P

POSTERS - Data Assimilation Modeling
Session Chairs: Ivan Galkin, Bruno Nava

G1P-1 ON CHARACTERIZING OF IONOSPHERIC HOLES MADE BY NORTH KOREA BALLISTIC MISSILES USING 4D-VAR
N. Neussamang, Y. H. Kim, Chungnam National University, South Korea

G1P-2 ASSIMILATION OF THERMOSPHERIC WIND DATA FOR GLOBAL ESTIMATION OF IONOSPHERIC DRIVERS
D. S. Miladinovich, S. Datta-Banerjee, Illinois Institute of Technology, United States; G. S. Bust, Johns Hopkins University Applied Physics Laboratory, United States

G1P-3 EFFECTIVE SOLAR INDICES FOR IONOSPHERIC MODELING: A PROPOSAL FOR A REAL TIME IRI
A. Pignatelli, M. Pezzopane, I. Galkin, R. Rizzi
1University of Bologna, Italy; 2Istituto Nazionale di Geofisica e Vulcanologia, Italy; 3University of Massachusetts, USA

G1P-4 A REVISED MODEL OF STATISTICAL IONOSPHERIC CONVECTION USING MIDLATITUDE AND POLAR CAP SUPERDARN RADARS
E. G. Thomas, S. G. Shepherd, Dartmouth College, United States

G1P-5 DEVELOPMENTS IN AN HF NOWCASTING MODEL FOR TRANS-POLAR AIRLINE ROUTES
H. A. H. AL-Beahadi, E. M. Warrington, A. J. Stocker, D. R. Siddle, University of Leicester, United Kingdom; T. Honary, N. C. Rogers, Lancaster University, United Kingdom; N. Y. Zaalov, Saint Petersburg State University, Russia; D. H. Boteler, D. W. Danskin, Natural Resources Canada, Canada

G1P-6 ENOI APPROACH TO THERMOSPHERIC DATA ASSIMILATION
E. M. Henley, Met Office, United Kingdom

Tuesday, August 22, 2017 16:00-19:00  Poster Room

Session GEH3P

POSTERS - Seismo Electromagnetics (Lithosphere-Airmosphere-Ionosphere Coupling)
Session Chairs: Sergey Pulinets, Yasuhide Hobara, Hanna Rothkaehl

GEH3P-1 D-REGION IONOSPHERIC OSCILLATIONS MEASURED BY LF TRANSMITTER SIGNALS AFTER THE 2011 OFF THE PACIFIC COAST OF TOHOKU EARTHQUAKE
1Chiba University, Japan; 2Tohoku University, Japan; 3National Institute of Information and Communications Technology, Japan; 4Nagoya University, Japan

GEH3P-2 STUDY OF THE ANOMALIES IN CRITICAL FREQUENCY OF F2 LAYER PRIOR TO EARTHQUAKES IN SOUTH AMERICAN REGION
1Indian Centre for Space Physics, India; 2University of Calcutta, India; 3S. N. Bose National Centre for Basic Sciences, India

GEH3P-3 AN INVESTIGATION ON THE ELECTRIC FIELD PENETRATION FOR SEISMO-IONOSPHERIC RESEARCH
C. Zhou, Y. Liu, Wuhan University, China (CIE)

GEH3P-4 EXCITATION MECHANISM AND BEHAVIORS OF CO-SEISMIC ELECTROMAGNETIC WAVES
M. Tsutsumi, Kyoto Sangyo University, Japan

GEH3P-5 PRE-SEISMIC SIGNATURES AS OBSERVED FROM ANOMALIES IN OUTGOING LONGWAVE RADIATION (OLR) AND ATMOSPHERIC GRAVITY WAVES (AGW) FOR THE NEPAL 2015 EARTHQUAKE
S. Chakraborty, S. Sasmal, S. K. Chakrabarti
1Indian Centre for Space Physics, India; 2S. N. Bose National Centre for Basic Sciences, India

GEH3P-6 DEPENDENCE OF SUB-IONOSPHERIC VERY LOW FREQUENCY (VLF) SIGNAL PROPAGATION CHARACTERISTICS ON LOWER IONOSPHERIC PARAMETERS DURING NEPAL EARTHQUAKE IN MAY 2015
1Indian Centre for Space Physics, India; 2S. N. Bose National Centre for Basic Sciences, India

GEH3P-7 POSSIBLE CORRELATION OF VLF SIGNAL ANOMALIES WITH SEISMICITY
S. Ray, S. K. Chakrabarti
1Gobardanga Hindu College, India; 2Indian Centre for Space Physics, India; 3S. N. Bose National Centre for Basic Sciences, India

GEH3P-8 IONOSPHERIC DISTURBANCES ASSOCIATED WITH VOLCANIC ERUPTIONS OBSERVED BY GPS-TEC AND HF DOPPLER SOUNDERING
A. Cheman, H. Nakata, H. Ohya, T. Takano, Chiba University, Japan; I. Tomizawa, The University of Electro-Communications, Japan; T. Tsuchiya, M. Nishikawa, National Institute of Information and Communications Technology, Japan

Tuesday, August 22, 2017 16:00-19:00  Poster Room

Session G9P

POSTERS - Advances in Irregularities and Scintillation Studies
Session Chair: Archana Bhattacharyya

G9P-1 THE IONOSPHERIC SCINTILLATION STUDY BASED ON THE OBSERVATION OF GPS SCINTILLATION MONITOR AFFILIATED TO CHINA MERIDIAN PROJECT
D. Zhang, Y. Hao, Z. Xiao, Department of Geophysics, Peking University, China

G9P-2 A METHOD TO OBTAIN THE VELOCITY OF F-REGION IRREGULARITIES FROM SPACED GPS-TEC
J. Li, G. Ma, Q. Wan, National Astronomical Observatories, Chinese Academy of Sciences, China

G9P-3 IONOSPHERIC RESPONSES TO PROLONGED SOUTHWARD IMF ON 4-5 APRIL 2006
G. Ma, Q. Wan, J. Li, X. Wang, T. Maruyama
1National Astronomical Observatories, CAS, China (CIE); 2National Institute of Information and Communications Technology, Japan

G9P-4 ASYMMETRY OF IONOSPHERIC SCINTILLATIONS FROM CONJUGATE SITES AS A CONSEQUENCE OF THE MAGNETOSPHERE CONFIGURATION
L. Alfonsi, G. D’Angelo, M. Piersons, L. Spogli
1Istituto Nazionale di Geofisica e Vulcanologia, Italy; 2Università degli Studi “Roma Tre”, Italy; 3University of L'Aquila, Italy; 4SpaceEarth Technology, Italy

G9P-5 IONOSPHERIC EFFECTS ON COMMUNICATION SIGNALS IN THE V AND W BANDS
A. J. Teruzzi, D. Smith, P. Collins, J. Fee, J. Petrosky, C. Yardim, IEEE, United States

G9P-6 FRESH DEVELOPMENT OF EQUATORIAL PLASMA BUBBLES AROUND THE MIDNIGHT HOURS OF JUNE SOLSTICE
K. K. Ajith, S. Tulasiram, Indian Institute of Geomagnetism, India; M. Yamamoto, Research Institute for Sustainable Humanosphere, Japan; Y. Otsuka, Institute for Space-Earth Environment Research, Japan

G9P-7 CHARACTERISTICS OF FRESHLY GENERATED EQUATORIAL PLASMA BUBBLES (EPBS) OVER INDIAN LONGITUDE
P. Gurram, B. Kakad, V. Yadav, A. Bhattacharyya, Indian Institute of Geomagnetism (IIG), India

G9P-8 ON WIDTHS AND SEPARATIONS OF EQUATORIAL PLASMA DEPLETIONS OBSERVED BY THE C/NOFS PLANAR LANGMUIR PROBE
E. P. O. Costa, CETUC PUC-Rio, Brazil; P. A. Reddy, J. O. Ballenthin, Air Force Research Laboratory, USA; K. M. Groves, Boston College, USA

G9P-9 MONITORING HELIOSPERIC SCINTILLATION WITH LOFAR
M. Grzesiak, M. Pozoga, B. Matyjasiek, D. Przepiorka, H. Rothkaehl, R. Wronowski, Space Research Center Polish Academy of Sciences, Poland

G9P-10 IONIC NETWORK BASED ON A LOW COST SCINTILLATION MONITOR FOR CONTINUOUS MONITORING OF IONOSPHERE
E. R. de Paula, National Institute for Space Research-INPE, Brazil; A. O. Mares, Aeronomics and Space Institute (IAE), São José dos Campos, SP, Brazil; Brazil; B. Yani, J. F. G. Monaco, São Paulo State University (UNESP), Presidente Prudente, SP, Brazil, Brazil

G9P-11 OBSERVATIONS OF IONOSPHERIC SCINTILLATION IMPACTS ON WIDEBAND CHANNLES
R. G. Caton, C. Huang, R. T. Parris, J. M. Holmes, Air Force Research Laboratory, United States

G9P-12 CLIMATOLOGY OF SMALL-MEDIUM SCALE IONOSPHERIC PLASMA IRREGULARITIES OBSERVED BY FORMOSAT-3/COSMIC GNSS RADIO OCCULTATION RECEIVERS
C. Watson, N. Pedatella, University Corporation for Atmospheric Research, United States
Tuesday, August 22, 2017 16:00-19:00 Poster Room
Session G15P

POSTERS - Incoherent Scatter Radar
Session Chairs: Ingrid Mann, Emma Spanswick, Mike Kosch

G15P-1 MONTE-CARLO SIMULATIONS OF ION VELOCITY DISTRIBUTIONS AND RESULTING INCOLHERENT RADAR SPECTRA UNDER STRONG ION FRICTIONAL HEATING CONDITIONS
L. V. Goodwin1, J.-P. St-Maurice1, H. Akbari2, J. R. Spitler1
1University of Saskatchewan, Canada; 2Boston University, USA

Tuesday, August 22, 2017 16:00-19:00 Poster Room
Session GH19P

POSTERS - Meteors, collisional EMPs, and other Highly-Transient Space Plasma Events
Session Chairs: John Mathews, Asta Pellinen-Wannberg, Margaret Campbell-Brown

GH19P-1 TRANSIENT ES-LAYERS 2013-2014
K. Yusupov1, T. Maruyama2, A. Akchurin1, O. Shersykov1
1Kazan Federal University, Russian Federation; 2National Institute of Information and Communications Technology, Japan

Tuesday, August 22, 2017 16:00-19:00 Poster Room
Session GH120P

POSTERS - Workshop on Extreme Space Weather Environments
Session Chairs: Mike Hapgood, Terrance Onsager

GH120P-1 INVESTIGATION OF THE EXTREME SOLAR PROTON FLUXES AT HIGH LATITUDES WITH USE OF HEO-3 SATELLITE DATA
L. Nikitina, L. Treichchenko, D. Danskin, Natural Resources Canada, Canada

GH120P-2 A GLOBAL SCINTILLATION OCCURRENCE PROBABILITY MODEL CONSTRUCTED BY USING FORMOSAT-3/COSMIC-S4 INDEX DATA
Y. Li, S.-P. Chen, National Central University, China (SRS)

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Session G23P

POSTERS - Science with Modern Ionosondes and Associated Instrumentation and Models
Session Chairs: Ivan Galkin, Anna Belahaki, John Bosco Habarulema

G23P-1 THE DST GROUP HIGH-FIDELITY, MULTI-CHANNEL OBLIQUE INCIDENCE IONOSONDE
A. J. Heitmann, R. S. Gardiner-Garden, Defence Science and Technology Group, Australia

G23P-2 A SOFTWARE TOOL FOR AUTOMATIC SCALING OF IONOGRAMS
L. S. Kim, K. Papathanassian, S. Hata, German Aerospace Center, Germany

G23P-3 A WARNING SYSTEM FOR TRAVELLING IONOSPHERIC DISTURBANCES USING SKYWAVE DOPPLER FREQUENCY AND ANGLE-OF-ARRIVAL MEASUREMENTS
A. Belahaki, National Observatory of Athens, Greece; B. Reinsich, Lowell Digisonde International, LLC, USA; I. Galkin, University of Massachusetts Lowell, Space Science Laboratory, USA

G23P-4 STUDYING THE PARAMETERS OF FREQUENCY DISPERSION FOR RADIO LINKS OF DIFFERENT LENGTH USING SDR BASED SOUNDING SYSTEM
V. Ivanov1, D. Ivanov2, N. Ryabova3, M. Ryabova4, A. Chernov1, V. Ovechinnikov1
1Volga State University of Technology, Russian Federation; 2Bauman Moscow State Technical University, Russian Federation

G23P-5 IONOSPHERIC VERTICAL DRIFTS OBTAINED BY DIGISONDE DPS4D AND OTHER DIFFERENT TECHNIQUES.
J. Boska, D. Kouba, Institute of Atmospheric physics ASCR, Czech Republic
G23P-7 DETECTION OF COSEISMIC IONOSPHERIC DISTURBANCES BY HIGH LATITUDE IONOSONDE AT A GREAT DISTANCE FROM EPICENTER

T. Manysama, H. Shimagawa, National Institute of Information and Communications Technology, Japan; K. Yusupov, A. Akchurin, Kazan Federal University, Russian Federation

G23P-8 INTERFEROMETRY METHOD TO CONVENTIONAL IONOSONDE DATA IN SUPPORT OF A PILOT NETWORK FOR IDENTIFICATION OF TRAVELLING IONOSPHERIC DISTURBANCES

D. Alkadil1, E. Blanch1, V. Puznukov2, J. M. Juan1, A. Belebaki1, T. Verjux1, I. Galkin1, B. Reinsch1, D. Buresova1, J. Miellich3, M. Parkinson3, J. Sanz3

1Observatori de l'Ebre (OE); Universitat Ramon Llull - CSIC, Spain; 2Institute for Scientific Research, Boston College, USA; 3GAGE, Universitat Politècnica de Catalunya, Spain; 3National Observatory of Athens, IAAARS, Greece; 4Royal Meteorological Institute (RMD), Belgium; 5Space Science Laboratory, UMass, USA; 6LowellDigisonde International, USA; 7Institute of Atmospheric Research, Academy of Sciences of Czech Republic, Czech Republic; 8Leibniz-Institute of Atmospheric Physics, Germany; 9Space Weather Services, Australian Bureau of Meteorology, Australia

G23P-9 IONOGRAM GENERATION BY USING 3-D RAY TRACING AND HF CHANNEL MODEL

M. Kabasakal, C. Toker, Hacettepe University, Turkey

G23P-10 MSTID EXTRACTION FROM MORE FREQUENT IONOGRAMS

A. Akchurin, G. Smirnov, Kazan Federal University, Russian Federation

G23P-11 THE ASSIMILATION OF FORWARD OBOLIQUE IONOSONDE PROFILES INTO THE ELECTRON DENSITY ASSIMILATIVE MODEL (EDAM)

P. L. Martin, N. K. Jackson-Both, R. W. Penney, R. A. Buckland, Qin@Q, United Kingdom

G23P-12 UNUSUAL POST-MIDNIGHT EQUATORIAL IONOGRAM GENERATION BY USING 3-D RAY TRACING AND HF

A. Kolchev1,2, I. Egoshin2, A. Akchurin1

1Kazan Federal University, Russian Federation; 2Mari State University, Russian Federation

G23P-13 USE OF THE HOUTH TRANSFORM FOR THE PROPAGATION MODE EXTRATION

A. Kolche1,2, I. Egoskin1, A. Akchurin1

1Kazan Federal University, Russian Federation; 2Mari State University, Russian Federation

G23P-14 THE APPLICATION OF DYNAMIC TIME WARPING TO UNDERSTAND CORRELATION DISTANCES IN THE IONOSPHERE

N. V. Rankov, C. Mitchell, University of Bath, United Kingdom; G. Bust, E. Miller, The Johns Hopkins University Applied Physics Laboratory, USA; W. Liles, Independent Consultant, USA; J. Doyle, U.S. Naval Research Laboratory, USA; J. Deike, MITRE, USA

G23P-15 CHARACTERISATION OF EQUATORIAL SPREAD-F AND VERTICAL DRIFT VELOCITY OF THE F2 LAYER

J. O. Ademiyi, G. O. Agunbiade, University of Ilorin, Nigeria

G23P-16 ADAPTATION OF THE LOWER IONOSPHERE IRI MODEL TO VERTICAL SOUNDING DATA

O. A. Malaya, P. F. Denisenko, V. V. Sotsky, Institute of Physics Southern Federal University, Russian Federation

Tuesday, August 22, 2017 16:00-19:00 Poster Room

Session H1P

POSTERS - Drivers, Detection, and Ionospheric Impacts of Precipitation from the Radiation Belts

Session Chairs: Craig Rodger

H8P-1 ON THE CHARACTERISTICS OF DAY SIDE PRECIPITATION OF 100s OF KEV ELECTRONS AT L=5. A STATISTICAL STUDY


H8P-2 CHARACTERISTICS OF SUBIONOSPHERIC VL/SIGNAL PROPAGATION DURING ENERGETIC ELECTRON INJECTIONS

R. Ghaffari1, C. M. Cully1, D. L. Turner2, G. D. Reeves1,2,4

1University of Calgary, Canada; 2Aerospace Corporation, USA; 3Los Alamos National Laboratory, USA; 4The New Mexico Consortium, USA

H8P-3 THREE-DIMENSIONAL FORWARD MODELING OF LIGHTNING-INDUCED ELECTRON PRECIPITATION FROM THE RADIATION BELTS

A. P. Sousa, Stanford University, United States; R. A. Marshall, University of Colorado, Boulder, United States

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Session HG13P

POSTERS - Active Experiments and Radio Sounding

Session Chairs: Vikas Sonwalkar, Robert Moore, Natasha Jackson-Booth, Todd Pedersen

H1G3P-1 NUMERICAL STUDY OF ARTIFICIAL GENERATION AND PROPAGATION OF ULF WAVES IN THE IONOSPHERIC F REGION AT DIFFERENT LATITUDES

X. Xu, C. Zhou, R. Shi, B. Ni, Z. Zhao, Y. Zhang, Ionospheric Lab of Wuhan University, China (CIE)

H1G3P-2 AN INTEGRATED MESOSPHERIC AND IONOSPHERIC SOUNDING SYSTEM

Z. Zhao, G. Yang, C. Zhou, C. Jiang, X. Gu, Wuhan University, China (CIE)

H1G3P-3 DESIGN AND VERIFICATION OF SYNCHRONIZATION ANTENNA FOR SPACE-BORNE INTERFEROMETRIC SAR SYSTEMS

F. Zhu, R. Bo, R. Li, J. Zhang, The 14th Research Institute, CETC, China; S. Gao, University of Kent, UK
Tuesday, August 22, 2017 16:00-19:00 Poster Room

**Session K4P**

**POSTERS - Latest Development in Measurement and Applications of Dielectric Spectroscopy**

Session Chairs: Theodoros Samaras, Niels Kuster

**K4P-1** MICROWAVE SENSING APPROACHES TO MONITORING PHYSIOLOGICAL RESPONSES
D. C. Garrett, J. Boungui, E. C. Fear, University of Calgary, Canada

**K4P-2** DIELECTRIC STUDY OF BIOLOGICAL PHENOMENA AT THE SINGLE CELL LEVEL: ELECTROPORATION AND STABILIZATION
E. Salimi, S. Afshar, K. Braasch, M. Butler, D. Thomson, G. Bridges, University of Manitoba, Canada

Tuesday, August 22, 2017 16:00-19:00 Poster Room

**Session K6P**

**POSTERS - EMF Standards and Health Protection**

Session Chairs: Kenneth Foster, Akimasa Hirata

**K6P-1** SAFETY ASSESSMENT OF ULTRA-HIGH VOLTAGE TRANSMISSION POWER LINES WITH AC-750 KV
M. Lu, Lanzhou Jiaotong University, China (CIE); S. Ueno, Kyushu University, Japan

**K6P-2** OCCUPATIONAL EXPOSURE TO MAGNETIC FIELDS FROM MEDICAL SOURCES
R. Stam, National Institute for Public Health and the Environment, Netherlands

Tuesday, August 22, 2017 16:00-19:00 Poster Room

**Session K7P**

**POSTERS - Electromagnetic Biomedical Imaging**

Session Chairs: Milica Popovic, Joe LoVetri

**K7P-1** CROSS-SECTIONAL THERMOACOUSTIC IMAGING USING MULTI-LAYER CYLINDRICAL MEDIA
D. Elmas, B. Uzan, Isik University, TURKEY; M. Idenen, M. Karaman, Istanbul Technical University, TURKEY

**K7P-2** MICROWAVE BASED MEDICAL IMAGING
J. Vrba, Czech Technical University in Prague, Czech Republic

**K7P-3** MICROWAVE BASED MEDICAL IMAGING
J. Vrba Jr., Czech Technical University in Prague, Czech Republic

**K7P-4** MULTI-SENSOR CARDIO-PULMONARY STETHOSCOPE FOR QUANTITATIVE LUNG WATER MEASUREMENT
R. G. Perren, M. F. Iskander, T. B. Seto, F. A. Qazi, D. A. Bibb, E. Lim

**K7P-5** DATA PRECONDITIONING WITH GABOR NONSTATIONARY DECONVOLUTION FOR RADAR IMAGING OF HIGHLY DISPISSATIVE AND DISPERSIVE MEDIA
E. Fear, M. Potter, Y. Liu, University of Calgary, Canada

**K7P-6** TERAHERTZ IMAGING AND SEGMENTATION OF FRESHLY EXCISED XENOGRAFT MOUSE TUMORS
T. Bowman, N. Rajaram, A. Chakraborty, K. Bailey, M. El-Shenawee

**Tuesday, August 22, 2017 16:00-19:00 Poster Room**

**Session K11P**

**POSTERS - Biological Effects and Related Mechanisms of EMF Exposure**

Session Chairs: Guglielmo Dinzeo, Alexandre Legros, Guglielmo d'Inzeo

**K11P-1** EFFECTS OF TIME-VARYING MAGNETIC FIELDS ON COGNITION AND BALANCE AFTER LEAVING A MAGNETIC FIELD
L. D. Evans, M. A. Fuentes, S. A. Palmasano, S. J. Wilson, S. Crozier, R. Croft

**K11P-2** EFFECTS OF LONG-TERM EXPOSURE TO 0.3 THz IN HUMAN KERATINOCYTE CELLS

**K11P-3** STUDY ON NON-HEAT EFFECTS OF EXPOSURE TO 0.07-0.6 THz RADIATION TO CULTURED CELLS
N. Yaekishi, S. Otsuki, S. Hayashi, K. Kawase

**K11P-4** ENZYMATIC, GENETIC AND MORPHOLOGICAL ALTERATION IN DIFFERENT ORGANELLES OF RAT EXPOSED TO LOW LEVEL MICROWAVE RADIATION
P. Rajamani, R. Gautam, K. V. Singh, J. Narula, S. Pandhiya, Jawaharlal Nehru University, India; J. Behari, Amity University, India

**K11P-5** THE INFLUENCE OF WEAK EMF AT THE SCHUMANN RESONANCE FREQUENCY ON RAT CARDIAC CELL CULTURE
G. Elhalel, G. Price, A. Shainberg, Tel Aviv University, Israel

**K11P-6** MODULATORY ROLE OF MANGANESE DIOXIDE NANOPARTICLES IN 3G MOBILE PHONE FREQUENCY EXPOSED MALE WISTAR RATS
S. Parhiya, R. Gautam, V. Singh, J. P. Narula, P. Rajamani, Jawaharlal Nehru University, India

**K11P-7** MOBILE PHONE RADIATION: EFFECTS ON REPRODUCTIVE SYSTEM OF MALE WISTAR RAT
R. Gautam, K. V. Singh, S. Parhiya, J. P. Narula, P. Rajamani, Jawaharlal Nehru University, India

**K11P-8** EFFECTS OF LONG-TERM EXPOSURE TO 0.3 THz IN HUMAN KERATINOCYTE CELLS

**K11P-9** MONITORING THE MOLECULAR COMPOSITION OF LIVE CELLS EXPOSED TO PULSED ELECTRIC FIELDS BASED ON TERAHERTZ MEASUREMENTS
A. Azan, M. Grogpot, L. Descamps, G. Galliot, L. M. Mir, CNRS, France

**K11P-10** VERSATILE EXPOSURE SYSTEM FOR LABORATORY EXPERIMENTS FINALIZED TO THERAPEUTIC APPLICATIONS IN THE IF RANGE
E. della Valle, F. Camera, A. Paffi, S. Petralito, V. Roncecè, C. Burattini, G. Aicardi, M. Liberti, F. Apollonio

**K11P-11** A STUDY SARS FOR SMART-WATCH MODEL WITH MONOPOLE ANTENNA
S.-E. Hong, J.-H. Kwon, H.-D. Choi, ETRI, South Korea

**K11P-12** EFFECTS OF INTERMEDIATE FREQUENCY MAGNETIC FIELD EXPOSURE AT 85 KHz ON OXIDATIVE STRESS IN MICE

**K11P-13** MOBILE PHONE RADIATION EXPOSURE: OXIDATIVE STRESS INDUCED CYTOMORPHIC CHANGES IN HIPPOCAMPUS AND CONSEQUENTIAL EFFECT ON CONTEXTUAL FEAR MEMORY
K. V. Singh, R. Gautam, S. Pandhiya, P. Rajamani, Jawaharlal Nehru University, India

**K11P-14** ANALYSIS OF TIME TREND IN INCIDENCE OF BRAIN TUMORS USING MULTISTAGE CARCINOGENESIS MODEL ASSUMING POSSIBLE ASSOCIATION BETWEEN MOBILE PHONE USE AND BRAIN TUMOR INCIDENCE
M. Hagihara, M. Taki, Tokyo Metropolitan University, Japan; Y. Satoh, N. Koizumara, N. Yamaguchi, Tokyo Women's Medical University, Japan; K. Wake, National Institute of Information and Communications Technology, Japan
Biological Effects and Related Mechanisms of EMF Exposure (1)

Session Chairs: Guglielmo Dinzeo, Alexandre Legros, Guglielmo d'Inzeo

08:00 K11-1 ACUTE NEUROPHYSIOLOGICAL RESPONSE TO ELF MF EXPOSURE IN HUMAN


1Imaging Program, Lawson Health Research Institute, Canada; 2INSERM, Université de Rennes 1, France; 3Western University, Canada; 4Hydro-Québec, Canada; 5EDF, France; 6RTE, France

08:20 K11-2 RESISTANCE OF ELECTRONIC MEDICAL IMPLANTS TO 50-60 HZ ELECTRIC AND MAGNETIC FIELDS

G. Ostiguy, M. Plante, Hydro-Québec, Canada; D-H. Nguyen, A. Turgeon, Institut de recherche électrique du Québec, Canada; K. Dyda, Montreal Heart Institute, Canada

08:40 K11-3 ACTIVATION THRESHOLDS FOR ELECTROSTIMULATION BY TMS AND DCS: BRAIN MAPPING VIA MULTISCALE MODEL

J. Gomez-Tames, S. Aonuma, T. Kutsuna, A. Hirata, Nagoya Institute of Technology, Japan

09:00 K11-4 POWER-FREQUENCY MAGNETIC FIELD AND HEALTH

M. Plante, G. Ostiguy, Hydro-Québec, Canada

SI Units

Session Chairs: Felicitas Arias, Carl Williams

09:40 AE10-1 THE REALIZATION AND CALIBRATION OF ACTIVE SIMULATION IMPEDANCE

Y. J. Yan, Y. L. Li, K. Wu, L. You, Beijing Orient Institute of Measurement & Test, China (CIE)

10:00 AE10-2 ROADMAP FOR THE REDEFINITION OF THE SI SECOND

E. F. Arias, BIPM, France

10:20 AE10-3 CALIBRATION SYSTEM FOR LOW-CURRENT TRANSISTANCE AMPLIFIERS WITH A LOW-FREQUENCY SINEWAVE SOURCE

I. Finardi1,2, L. Callegaro1

1Istituto Nazionale di Ricerca Metrologica, Italy; 2Politecnico di Torino, Italy

Lightning and Related Phenomena (3)

Session Chairs: Vladimir A. Rakov, Satoru Yoshida

09:40 E19-1 A SEMI-ANALYTICAL SIMPLIFIED APPROACH TO COMPUTE LIGHTNING RADIATED ELECTRIC FIELDS AT LONG DISTANCES TAKING INTO ACCOUNT IONOSPHERIC REFLECTION

M. Azadifar1, D. Li2, M. Rubinstein3, F. Rachidi4

1Swiss Federal Institute of Technology (EPFL), Switzerland; 2Nanjing University of Information Science and Technology, China; 3University of Applied Sciences of Western Switzerland, Switzerland

10:00 E19-2 LIGHTNING/IONOSPHERE INTERACTIONS AND EXPERIMENTAL OBSERVATIONS

R. C. Moore, A. J. Erdman, D. A. Kotsyvos, University of Florida, United States

10:20 E19-3 SUB-MICROSECOND RADIO EMISSION FROM THUNDERCLOUDS

A. N. Karashin1, Y. V. Shlyugaev2, A. A. Bulatov2, O. S. Karashina3, F. A. Kuterin4, P. A. Mikryukov4

1Radiophysical Research Institute, Nichny Novgorod State University, Russian Federation; 2The Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation

Microwave Remote Sensing of Vegetation (2)

Session Chairs: Simona Paloscia, Mehmet Kurum

09:40 F20-1 USE OF MICROWAVE SIGNALS OF OPPORTUNITY FOR ROOT ZONE SOIL MOISTURE RETRIEVAL

M. Moghaddam, A. Azemati, University of Southern California, United States

10:00 F20-2 ESTIMATION OF FOREST BIOMASS AND CANOPY HEIGHT USING PASSIVE OPTICAL REMOTE SENSING AND RADAR WITH LIMITED LIDAR DATA

M. L. Benson, L. E. Pierce, K. Bergen, K. Sarabandi, University of Michigan, United States of America
Wednesday, August 23, 2017 09:40-10:20 513D

Session FC21

Multi-Parameter Radars and Wave Propagation for Remote Sensing and Disaster Management (2)

Session Chairs: Madhu Chandra, Tullio Tanzi, Eric Mokole

09:40 FC21-1 POLARIMETRIC SAR URBAN DAMAGE LEVEL MAPPING BASED ON POLARIMETRIC COHERENCE PATTERN
S.-W. Chen1, Y.-Z. Li1, X.-S. Wang1
1National University of Defense Technology, China; 2Central South University, China

10:00 FC21-2 PROPAGATION MODELLING TOWARDS THE DESIGN OF DRONE-BORNE GPR FOR HUMANITARIAN APPLICATIONS
M. Chandra, Technische Universität Chemnitz, Germany; T. J. Tanzi, Institut Mines-Telecom, Telecom ParisTech, France

Wednesday, August 23, 2017 09:40-10:40 511CF

Session J23

Single Dish Instruments (2)

Session Chairs: Karen O'Neil, Ettore Carretti, Zhi-Qiang Shen

09:40 J23-1 SHANGHAI 65M TIANMA RADIO TELESCOPE
Z.-Q. Shen, Shanghai Astronomical Observatory, China (CIE)

10:00 J23-2 FUTURE PLANS FOR THE PARKES RADIO TELESCOPE IN THE ERA OF THE SKA
J. A. Green, CSIRO Astronomy and Space Science, Australia

10:20 J23-3 THE SARDINIA RADIO TELESCOPE (SRT)
E. Carretti, INAF, Italy

Wednesday, August 23, 2017 09:40-10:40 516DE

Session K12

Biological Effects and Related Mechanisms of EMF Exposure (2)

Session Chairs: Alexandre Legros, Guglielmo Dinzeo, Guglielmo d'Inzeo

09:40 K12-1 PERSONALIZATION OF HUMAN COMPUTATIONAL ANATOMICAL MODELS
A. Alaai1, B. A. Lloyd1, N. Kuster1,2
1IT’IS Foundation, Schweiz; 2ETH Zurich, Switzerland

10:00 K12-2 MAGNETIC MOLECULAR DYNAMICS SIMULATIONS WITH VELOCITY VERLET ALGORITHM
E. della Valle1, P. Marraccino1, S. Setti2, R. Cadosi2, M. Liberti2, F. Apolloni2
1Sapienza, University of Rome, Italy; 2IIGEA SpA, Italy

10:20 K12-3 CONFOCAL RAMAN MICROSCOPE TO INVESTIGATE THE INTERACTION BETWEEN PULSED ELECTRIC FIELDS AND LIVE CELLS
A. Azar1, V. Untereiner2, C. Gobinet1, O. Piot3, M. Breton1, L. M. Mir1
1CNRS, France; 2University of Reims Champagne-Ardenne, France

Wednesday, August 23, 2017 09:40-10:40 511CF

Session HG15

Active Experiments and Radio Sounding (2)

Session Chairs: Vikas Sonwalkar, Robert Moore, Natasha Jackson-Booth, Todd Pedersen

09:40 HG15-1 HF RAY TRACING OF THE ARTIFICIALLY DISTURBED IONOSPHERE ABOVE SURA HEATING FACILITY
E. S. Andreeva1, V. L. Frolov1,2, A. M. Padokin1, C. L. Siefring1, G. James1
1Lomonosov-Moscow State University, Russian Federation; 2Lobachevsky University, Russian Federation; 3Kazan Federal University, Russian Federation; 4Naval Research Laboratory, US; 5The University of Calgary, Canada

10:00 HG15-2 ARECIBO - HF FACILITY
F. Nossa1, M. P. Sulzer1, A. Sontoli1, J. P. Perillat1, N. Aponte1, C. G. M. Brum1
1Areco Observatory - SRL, United States; 2Areco Observatory - USRA, United States
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<tr>
<th>Session</th>
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<td><strong>11:00-12:00</strong></td>
<td><strong>517CD</strong></td>
<td><strong>Session L1</strong></td>
<td>General Lecture 2: Steven A. Cummer - 'Transient Luminous Events and Terrestrial Gamma Ray Flashes'</td>
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<tr>
<td><strong>11:00</strong></td>
<td>A11-1 THZ METROLOGY AT PTB</td>
<td>A. Steiger, PTB, Germany</td>
<td><strong>Session A11</strong></td>
<td>Metrology in the THz Region (1)</td>
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<tr>
<td><strong>11:40</strong></td>
<td>A11-2 INTENSE TERA-PHOTONICS SOURCE AND POWER CALIBRATION</td>
<td>H. Minamide, Y. Takida, RIKEN, Japan</td>
<td><strong>Session A11</strong></td>
<td>Metrology in the THz Region (1)</td>
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<tr>
<td><strong>12:00</strong></td>
<td>A11-3 ABSOLUTE FREQUENCY MEASUREMENT USING TERAHERTZ FREQUENCY COMB</td>
<td>T. Minamikawa, T. Yasui, Tokushima University, Japan</td>
<td><strong>Session A11</strong></td>
<td>Metrology in the THz Region (1)</td>
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<tr>
<td><strong>14:00</strong></td>
<td><strong>12:00-13:00</strong></td>
<td><strong>517CD</strong></td>
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<td><strong>13:40</strong></td>
<td><strong>13:40-14:40</strong></td>
<td><strong>511AD</strong></td>
<td><strong>Session A11</strong></td>
<td>Metrology in the THz Region (1)</td>
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<td><strong>14:00</strong></td>
<td>B20-1 DYNAMIC METASURFACE ANTENNAS FOR MICROWAVE COMPUTATIONAL IMAGING</td>
<td>M. F. Imani, T. Sleasman, M. Boyarsky, L. Pulido-Mancera, J. Gollub, D. Smith, Duke University, United States</td>
<td><strong>Session B20</strong></td>
<td>Metasurface Engineering (4)</td>
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<td><strong>14:20</strong></td>
<td>B20-3 PERFECT ANOMALOUS REFLECTION WITH AN AGGRESSIVELY DISCRETIZED HUYGENS' METASURFACE</td>
<td>A. M. H. Wong, G. V. Eleftheriades, University of Toronto, Canada</td>
<td><strong>Session B20</strong></td>
<td>Metasurface Engineering (4)</td>
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<td><strong>14:00</strong></td>
<td>D18-2 TIME-DEPENDENT IONIZATION MODELING FOR MAXWELL SOLVERS: APPLICATION TO THE NONLINEAR FEIT-FOOTH LASER PROPAGATION IN DIELECTRICS</td>
<td>G. Duchateau, E. Smetanina, B. Chimier, R. Nater, A. Bourgeade, CELIA, France</td>
<td><strong>Session D18</strong></td>
<td>Modeling of Electronic, Photonic and Plasmonic Devices (2)</td>
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<td><strong>14:20</strong></td>
<td>D18-3 COMPREHENSIVE MODELING OF NONLINEAR ULTRASHORT-LASER INDUCED PHENOMENA IN DIELECTRIC TARGETS</td>
<td>A. Rudenko, J.-P. Colombier, T. E. Itina, Lyon University, France</td>
<td><strong>Session D18</strong></td>
<td>Modeling of Electronic, Photonic and Plasmonic Devices (2)</td>
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<td><strong>13:40</strong></td>
<td>DA19-1 OPTICAL FREQUENCY REFERENCES FOR SPACE APPLICATIONS</td>
<td>A. Resch1, T. Schuldt1, M. Oswald2, K. Döringshoff1, L. Wörner1, K. Abich1, J. Sanjuan1, M. Gohlke1, E. Kovalchuk1, A. Peters1, C. Braxmaier1</td>
<td><strong>Session DA19</strong></td>
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<td><strong>14:00</strong></td>
<td>DA19-2 ACOUSTO-OPTIC FREQUENCY COMBS FOR HETERODYNE -AND YTTERBIUM OPTICAL LATTICE CLOCKS</td>
<td>T. Kobayashi1,2, H. Inaba1,2, D. Akamatsu1, S. Okubo1,2, K. Hosaka1,2</td>
<td><strong>Session DA19</strong></td>
<td>Optical Frequency Metrology (3)</td>
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<td><strong>13:40</strong></td>
<td>E20-1 HIGH AMPLITUDE RADIO EMISSIONS FROM THUNDERSTORMS</td>
<td>A. Nag, Florida Institute of Technology, United States</td>
<td><strong>Session E19</strong></td>
<td>Lightning and Related Phenomena (4)</td>
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<td><strong>14:00</strong></td>
<td>E20-2 LOW FREQUENCY INTERFEROGRAM IMAGING OF LIGHTNING</td>
<td>M. Stock, S. Heckman, Earth Networks, United States; T. Ushio, Osaka University, Japan</td>
<td><strong>Session E19</strong></td>
<td>Lightning and Related Phenomena (4)</td>
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Session F22

Propagation Modeling for Aerospace Applications (1)

Session Chairs: Carlo Capsoni, Animesh Maitra

13:40 F22-1 RADIOMETRIC MEASUREMENTS OF CLOUD ATTENUATION OVER EARTH-SPACE PATH AT A TROPICAL LOCATION
A. De, R. Chakraborty, A. Maitra, INSTITUTE OF RADIO PHYSICS & ELECTRONICS, India

14:00 F22-2 FIRST RESULTS OF TOTAL ATTENUATION DISTRIBUTIONS AND FADE DYNAMICS FROM THE ALPHA SAT PROPAGATION EXPERIMENT IN MADRID
D. Pimenta-del-Valle, A. Benarroch, J. M. Riera, P. Garcia-del-Pino, Universidad Politecnica de Madrid, Spain

14:20 F22-3 USE OF WRF TO GENERATE SITE DIVERSITY STATISTICS IN SOUTH OF FRANCE
G. Fayon1, L. Fera2, L. Castanel1, N. Jeannin1, X. Boulanger1
1GERA - The French Aerospace Lab, France; 2Federal University of Toulouse, France

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Session G23

Science with Modern Ionosondes and Associated Instrumentation and Models (1)

Session Chairs: Ivan Galkin, Anna Belehaki, John Bosco Habarulema

13:40 G23-1 TOPSIDE AND TRANIONOSPHERIC SOUNDING EXPERIMENTS ONBOARD THE TRANSPORT CARGO SPACESHIP "PROGRESS" AND INTERNATIONAL SPACE STATION (ISS)

14:00 G23-2 NETTIDE: PILOT IONOSONDE NETWORK FOR IDENTIFICATION OF TRAVELLING IONOSPHERIC DISTURBANCES
B. W. Reinsch1,2, I. A. Galkin2, A. Belehaki1, V. P. Pazmukov1, X. Huang1, J. Miellich1, D. Atdadi2, D. Buresova1, T. Verhulst2, S. Stankov2, E. Blanch1, D. Koub1, I. Tsagoun1, A. Mouzakis3, M. Messerotti9, M. Parkinson10, M. Ischi11
1Lowell Digisonde International, LLC, United States; 2University of Massachusetts Lowell, United States; 3National Observatory of Athens, Greece; 4Boston College, United States; 5Leibnitz-Institute of Atmospheric Physics, Germany; 6Observatori de l’Ebre, Spain; 7Institute of Atmospheric Research, Academy of Sciences of Czech Republic, Czech Republic; 8Royal Meteorological Institute, Belgium; 9National Institute of Astrophysics, Italy; 10Australian Bureau of Meteorology, Australia; 11National Institute of Information and Communications Technology, Japan

14:20 G23-3 LOW PROBABILITY OF INTERCEPT VERTICAL INCIDENCE IONOSPHERIC SOUNDER
J. H. Nixon, J. J. Signorotti, B. A. Martin, R. G. Fenske, J. E. Polendo, Southwest Research Institute, United States

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Session G24

Workshop on Extreme Space Weather Environments (3)

Session Chairs: Mike Haygood, Terrance Onsager

13:40 G24H2-1 IMPACT OF IONOSPHERIC SCINTILLATION ON GPS APPLICATIONS DURING SEVERE GEOMAGNETIC STORMS
X. Pi, A. J. Manuucci, B. A. Iijima, W. Lu, Jet Propulsion Laboratory, California Institute of Technology, United States

14:00 G24-2 EXTREME SPACE WEATHER IMPACT ON GNSS
S. Skone, University of Calgary, Canada

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Session F24

Active Experiments and Radio Sounding (3)

Session Chairs: Vikas Sonwalkar, Robert Moore, Natasha Jackson-Booth, Todd Pedersen

13:40 F24-1 A NUMERICAL STUDY OF THE LANGMUIR PARAMETRIC INSTABILITY EXCITED BY POWERFUL HF WAVE HEATING AT DIFFERENT LATITUDES
C. Zhou, X. Wang, M. Liu, B. Ni, Z. Zhao, Wuhan University, China (CIE)

14:00 F24-2 APPLICATION OF PARAMETRIC INSTABILITY BY X-MODE RF HEATING
F. Honary, P. D. Cannon, Lancaster University, United Kingdom; X. Wang, Wuhan University, People’s Republic of China

14:20 F24-3 ANALYSIS OF SIDEBANDS FROM WHISTLER MODE EMERGENCE AND SATELLITE MANEUVERS
M. Golkowski, J. Costabile, University of Colorado Denver, United States; M. Spasojevic, Stanford University, United States

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Session G25

Atmospheric, Ionospheric, Magnetospheric and High Energy Effects of Lightning Discharges (3)

Session Chairs: Sebastien Celestin, Ningyu Liu, Martin Fullekugr

13:40 G25-1 D-REGION IONOSPHERIC REMOTE SENSING WITH LF/MF SIGNALS OF OPPORTUNITY
M. A. Higginson-Rollins, M. B. Cohen, Georgia Tech, United States

14:00 G25-2 MICRO-SECOND TIME SCALE VLFR TRANSMISSION DISTURBANCES ASSOCIATED WITH LIGHTNING
K. Koh, Z. Liu, M. Füllekrug, University of Bath, United Kingdom

14:20 G25-3 MODELING OF X-RAY IMAGES PRODUCED BY STEPPING LIGHTNING LEADERS
W. Xu, R. A. Marshall, University of Colorado Boulder, United States; S. Celestin, University of Orleans, CNRS, France; V. P. Pasko, Pennsylvania State University, United States

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Session J24

Very Long Baseline Interferometry (1)

Session Chairs: Huib van Langevelde, Hideyuki Kobayashi

13:40 J24-1 THE ORIGINS, DEVELOPMENT, AND POTENTIAL OF VERY-LONG-BASELINE INTERFEROMETRY
J. M. Moran, Harvard Smithsonian Center for Astrophysics, United States

14:00 J24-2 VER ASTRONOMY OF GALACTIC MASER SOURCES
T. Nakanaga1, T. Hirota1, M. Homma1, T. Jike1, N. Kawaguchi1, H. Kobayashi1, A. Nakagawa1, T. Omodaka1, T. Oyama1, K. M. Shibata1, K. Sunada1, Y. Tamura1
1National Astronomical Observatory of Japan, Japan; 2Kagoshima University, Japan

14:20 J24-3 RECENT ADVANCES IN VLBI ASTROMETRY
R. Dodson, M. Rioja, University of Western Australia, Australia

Wednesday, August 23, 2017 13:40-14:40 514BD

Session GHJ24

Single Dish Instruments (3)

Session Chairs: Karen O’Neil, Ettore Carretti, Zhi-Qiang Shen

13:40 GHJ24-1 THE UPSI-UM RADIO TELESCOPE
Z. Zainal Abidin, University of Malaya, Malaysia

14:00 GHJ24-2 SPACE DEBRIS DETECTION IN LOW EARTH ORBIT WITH THE SARDINA RADIO TELESCOPE
T. Pisano1, G. Muntoni1, L. Schirru1, F. Gaudiomont1, G. Valente1, E. Urru1, G. Serra1, G. Montisci1, G. Mazzarella1
1National Institute for Astrophysics, Italy; 2Cagliari University, Italy

14:20 GHJ24-3 APPLICATION OF WAVE SPECTRA DENSITIES TO THE CHARACTERIZATION OF THE ATMOSPHERE AT THE TERRESTRIAL POLE OF ORIGIN
M. Pasko, D. Krouse, V. Sonwalkar, N. Surendra, J. S. Chandak, S. B. Lokhande, B. V. K. Kulkarni, D. N. Biradar, I. J. F. Shetye, S. S. Shokde, A. V. Adsul, Pune University, India
15:20 C19-3 A DECODE-AND-FORWARD COOPERATIVE PROTOCOL USING COMPLETE COMPLEMENTARY CODES FOR LOS BASED TRANSMISSIONS.
N. El-Ganainy, Arab Academy for Science, Technology, and Maritime Transport, Egypt

Wednesday, August 23, 2017 14:40-15:40 514A
Session CB20
5G Communication Systems (2)
Session Chairs: Ozlem Kilic, Amir Zaghloul

14:40 CB20-1 CORRELATION BASED HIGHLY SECURE IMAGE HIDING IN AUDIO SIGNALS USING WAVELET DECOMPOSITION AND CHAOTIC MAPS HOPPING FOR 5G MULTIMEDIA COMMUNICATIONS
M. H. Elshenni, S. E. Elkhamy, N. O. Korany, faculty of engineering Alexandria university, Egypt

15:00 CB20-2 IEEE 802.11AY: A NEW 60 GHZ STANDARD
E. Au, Huawei Technologies Co., Ltd., Canada

15:20 CB20-3 PRACTICAL DESIGN METHODOLOGY FOR PLANAR ORTHOMODE TRANSDUCERS BASED ON SHORT SLOT COUPLERS AND POLARIZATION SELECTIVE WALLS
A. A. Sakr, W. Dyab, K. Wu, Polytechnique Montreal, Canada

Wednesday, August 23, 2017 14:40-15:40 513B
Session DBC20
Wireless Power Transmission (1)
Session Chairs: Apostolos Georgiadis, Naoki Shinohara

14:40 DBC20-1 OPTIMIZATION OF WIRELESS POWER TRANSFER SYSTEMS WITH MULTIPLE PASSIVE ELEMENTS
H.-D. Lang, C. D. Sarris, University of Toronto, Canada

15:00 DBC20-2 MID–RANGE, COUPLING–INDEPENDENT, WIRELESS POWER TRANSFER WITH PARALLEL RESONATORS
A. Costanzo1, M. Dionigi2, F. Mastri1, M. Mongiardo2, G. Monti1, L. Tarricone3, R. Sorrentino4
1University of Bologna, Italy; 2University of Perugia, Italy; 3University of Salento, Italy

15:20 DBC20-3 RESONANT INDUCTIVE WPT LINK WITH LOAD–INDEPENDENT VOLTAGE GAIN
A. Costanzo1, M. Dionigi2, F. Mastri1, M. Mongiardo2, G. Monti1, L. Tarricone3, R. Sorrentino4
1University of Bologna, Italy; 2University of Perugia, Italy; 3University of Salento, Italy

Wednesday, August 23, 2017 14:40-15:40 513EF
Session E21
Measurement Techniques (1)
Session Chairs: Ramiro Serra, Christophe Lemoine

14:40 E21-1 MEASUREMENT AND ANALYSIS OF VOLUMETRIC AND HELICAL STIRRING OF REVERBERATION CHAMBERS USING STIR MATRICES
L. R. Armait, Queen Mary University London, United Kingdom; F. Moglia, L. Bastianelli, V. Mariani Primiani, Universita Politecnica delle Marche, Italy

15:00 E21-2 A MEASUREMENT SETUP FOR THE VALIDATION AND VERIFICATION OF NONLINEAR EFFECTS IN AN HPEM CONTEXT
M. Kotzev1, M. Kreitlow2, F. Gronwald3
1University of Siegen, Germany; 2Bundeswehr Research Institute for Protective Technologies and NBC Protection, Germany

15:20 E21-3 TIME-FREQUENCY DIVERSITY MEASUREMENTS IN POWER SYSTEMS
F. Leferink1,2, I. Setiawan1
1University of Twente, Netherlands; 2THALES Nederland, Netherlands

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Session F23

Propagat0n Modeling for Aerospace Applications (2)
Session Chairs: Carlo Capsoni, Animesh Maitra
14:40 F23-1 FADE MITIGATION IN FUTURE QV-BAND HIGH-THROUGHPUT SATELLITES
R. Nebuloni, Consiglio Nazionale delle Ricerche, Italy; C. Capsoni, Politecnico di Milano, Italy
15:00 F23-2 HYBRID HIGH-THROUGHPUT SATELLITE COMMUNICATIONS SYSTEM USING RADIO AND OPTICAL FREQUENCIES
M. Toshimsha, National Institute of Information and Communications Technology, Japan
15:20 F23-3 AVAILABILITY OF AERONAUTICAL AD-HOC NETWORK IN DIFFERENT GLOBAL AIR TRANSPORT FLEET SCENARIOS
K. D. F. Bleuechter, Bauhaus Luftfahrt e.V., Germany

Wednesday, August 23, 2017 14:40-15:40 511BE
Session G25

Science with Modern Ionosondes and Associated Instrumentation and Models (2)
Session Chairs: Ivan Galkin, Anna Belehaki, John Bosco Habarulema
14:40 G25-1 STUDIES OF WAVE ACTIVITY IN THE THERMOSPHERE-IONOSPHERE SYSTEM USING DYNASONDE TECHNIQUES
N. Zobin1, O. A. Godin1, C. Negrea1,3, T. Bullet1,4, L. Zobin1
1University of Colorado Boulder, United States; 2Naval Postgraduate School, United States; 3Institute of Space Science, Romania; 4NOAA/NCEI, United States
15:00 G25-2 SOUNDERS FOR IONOSPHERIC SCIENCE
T. J. Harris, Defence Science and Technology Group, Australia
15:20 G25-3 COMBINED TID OBSERVATION BY IONOSONDE AND DENSE GPS/GLONASS NETWORK
R. Shrestyukov, A. Akchurin, O. Shrestyukov, Kazan Federal University, Russian Federation

Wednesday, August 23, 2017 14:40-15:40 514B
Session GHJ26

Workshop on Extreme Space Weather Environments (4)
Session Chairs: Mike Hapgood, Terrance Onsager
14:40 GHJ26-1 DEVELOPMENT AND IMPACT OF IONOSPHERIC THREAT MODELS FOR AUGMENTED GNSS
S. Pullen1, J. Lee1, T. Walter1
1Stanford University, United States; 2Korea Advanced Institute of Science and Technology, South Korea
15:00 GHJ26-2 THERMOSPHERIC AND IONOSPHERIC RESPONSE TO EXTREME SOLAR FLARES
H. Le, L. Liu, Z. Ren, Y. Chen, H. Zhang, W. Wan, Institute of Geology and Geophysics, Chinese Academy of Sciences, China (CIE)
15:20 GHJ26-3 USING EXTREME VALUE THEORY FOR DETERMINING THE PROBABILITY OF CARRINGTON-LIKE SOLAR FLARES
S. Elvidge, M. J. Angling, University of Birmingham, United Kingdom

Wednesday, August 23, 2017 14:40-15:40 513C
Session HG19

Active Experiments and Radio Sounding (4)
Session Chairs: Vikas Sonwalkar, Robert Moore, Natasha Jackson-Booth, Todd Pedersen
14:40 HG19-1 VARIATION OF PLASMASPHERIC FIELD-ALIGNED ELECTRON AND ION DENSITIES AS A FUNCTION OF GEOMAGNETIC STORM ACTIVITY
A. Reddy, V. S. Sonwalkar, University of Alaska Fairbanks, United States
15:00 HG19-2 ENHANCING THE ISIS-1 TOPSIDE DIGITAL IONOGRAM DATABASE
R. F. Benson1, D. Biltra2, S. F. Fung1, V. Truhlik2, Y. Wang1

1NASA/Goddard Space Flight Center, United States; 2GMUSL/Goddard Space Flight Center, United States; 3Czech Academy of Sciences, Czech Republic; 4UMBC/GHGF/Goddard Space Flight Center, United States

15:20 HG19-3 THE LOS ALAMOS MISSION CONCEPT TO CONNECT MAGNETOSPHERIC PHYSICAL PROCESSES TO IONOSPHERIC PHENOMENA
E. A. Dors1, G. L. Delzanno1, G. D. Reeves1, J. E. Borovsky2, M. F. Thomsen1, B. E. Carlsten1, M. G. Henderson1, E. Sanchez2, E. Spanwick3, B. E. Gilchrist6
1Los Alamos National Laboratory, United States; 2Space Science Institute, United States; 3Planetary Science Institute, United States; 4SRI International, United States; 5University of Calgary, Canada; 6University of Michigan, United States

Wednesday, August 23, 2017 14:40-15:40 511CF
Session HGE20

Atmospheric, Ionospheric, Magnetospheric and High Energy Effects of Lightning Discharges (4)
Session Chairs: Sebastien Celestin, Ningyu Liu, Martin Fullekrug
14:40 HGE20-1 NEUTRONS IN GROUND-DETECTED TERRESTRIAL GAMMA-RAY FLASHES
D. M. Smith, G. S. Bowers, University of California, Santa Cruz, United States
14:40 HGE20-2 A DOWNWARD BEAM OF ENERGETIC POSITRONS FROM THE EYEWALL OF HURRICANE PATRICIA
G. S. Boweg, D. M. Smith, University of California Santa Cruz, United States
14:40 HGE20-3 TERRESTRIAL GAMMA FLASHES AT GROUND LEVEL -- TETRA II
D. J. Pleshinger, M. L. Cherry, Louisiana State University, United States

Wednesday, August 23, 2017 14:40-15:40 516DE
Session J26

Very Long Baseline Interferometry (2)
Session Chairs: Huib van Langevelde, Hideyuki Kobayashi
14:40 J26-1 MILLIMETER VLBI WITH PHASED ALMA
Y. L. Fish, MIT Haystack Observatory, United States
15:00 J26-2 RADIOASTRON RESULTS AND PROSPECTS FOR SPACE VLBI
Y. Y. Kovalyev, Lebedev Physical Institute, Russian Federation
15:20 J26-3 WATER MEGAMASERS AT EXTREME RESOLUTION
W. A. Baan1, A. Alakoz2, T. An3, S. Ellingsen4, C. Henkel5, H. Imai6, V. Kostenko2, J. McCallum1, J. Moran1, A. Sobolev3, M. Voronkov2
1Netherlands Institute for Radioastronomy, ASTRON, Netherlands; 2ASTeCS, Germany; 3Florida Institute of Technology, United States; 4University of California Santa Cruz, United States; 5Max Planck Institut fuer Radioastronomie, Germany; 6University of Kagoshima, Japan; 7Center for Astrophysics, Harvard University, United States; 8NASA/Goddard Space Flight Center, United States; 9NASA/Goddard Space Flight Center, United States; 10University of Michigan, United States

Wednesday, August 23, 2017 14:40-15:40 515ABC
Session J27

Single Dish Instruments (4)
Session Chairs: Karen O'Neil, Ettore Carretti, Zhi-Qiang Shen
14:40 J27-1 A HIGHLY-SENSITIVE CRYPTOGENIC PHASED ARRAY FEED FOR THE GREEN BANK TELESCOPE
1National Radio Astronomy Observatory, United States; 2Green Bank Observatory, United States; 3Brigham Young University, United States
15:00 J27-2 MAPPING THE SKY WITH A DEROTATING MULTI-FEED RECEIVER
S. Popp1, S. Righini2, M. Buttu1, M. Bartolini2, C. Migoni1, A. Orlati2, A. Fara2
1Istituto Nazionale di Astrofisica - Osservatorio Astronomico di Cagliari, Italy; 2Istituto Nazionale di Astrofisica - Istituto di Radioastronomia, Italy

15:20 J27-3 DESIGN OF SUPER-RESOLVING TORALDO PUPILS FOR RADIO ASTRONOMICAL APPLICATIONS
L. Olmi1, P. Bolli2, L. Carbonaro1, L. Cresci1, D. Magni2, E. Natale1, R. Nesti1, D. Pannella1, J. Roda1, G. Zaccihiero1
1INAF, Italy; 2University of Puerto Rico, USA; 3CNR, Italy

Wednesday, August 23, 2017 14:40-15:40 516AB
Session KBE14

Uncertainty Management and Stochastic Methods in Experimental and Numerical Electromagnetism, Environmental Exposure Assessment and Dosimetry (2)
Session Chairs: Gabriele Gradoni, Joe Wiart, Ari Sihvola

14:40 KBE14-1 SURROGATE MODEL BASED ON POLYNOMIAL CHAOS OF INDOOR EXPOSURE INDUCED FROM A WLAN SOURCE
Y. Pinto, J. Wiart, LT2, Télécom ParisTech, Université Paris-Saclay, Chaire C2M, France

15:00 KBE14-2 TIME DOMAIN TECHNIQUE FOR RAPID, BROADBAND MEASUREMENT OF HUMAN ABSORPTION CROSS SECTION IN A REVERBERATION CHAMBER
M. P. Robinson, X. Zhang, I. D. Flintoft, University of York, United Kingdom

15:20 KBE14-3 EFFICIENT UNCERTAINTY QUANTIFICATION IN COMPUTATIONAL ELECTROMAGNETICS USING AN ADAPTIVE METROPOLIS-HASTINGS METHOD WITH IMPORTANCE SAMPLING
S. S. Ganta, B. D. Van Veen, S. C. Hagness, University of Wisconsin-Madison, USA

Wednesday, August 23, 2017 16:00-17:40 513B
Session A13

Time Dissemination for Critical Applications
Session Chairs: Marina Gertsvolf, Leon Lobo

16:00 A13-1 REQUIREMENTS AND METHODS FOR DISTRIBUTING ACCURATE AND TRACEABLE TIME INFORMATION
J. Levine, National Institute of Standards and Technology, United States

16:20 A13-2 DEVELOPMENT OF A SECURE, PRECISE, AND TRACEABLE SOURCE OF TIME FOR INDUSTRIAL AND FINANCIAL APPLICATIONS
J. E. Bernard, A. Charbonneau, B. Hoger, H. Pham, M. Gertsvolf, National Research Council, Canada

16:40 A13-3 THE EUROPEAN DEMETRA PROJECT: DEMONSTRATING TIME SERVICES BASED ON THE EUROPEAN GNSS
P. Tayella, INRIM, Italy

17:00 A13-4 LINKEDCLOCKS FOR A ROBUST SOLUTION OF GNSS TIMING RECEIVERS
J. Diaz, E. Ros, Seven Solutions S.L.U: Granada, Spain; R. Rodriguez, B. Rat, A. Gonzalez, Seven Solutions S.L, Spain

17:20 A13-5 THE NPL TIME SERVICE: UTC TRACEABLE TIME OVER FIBRE FOR THE FINANCIAL SECTOR
E. M. Laier English, L. Lobo, NPL, United Kingdom

Wednesday, August 23, 2017 16:00-17:40 511AD
Session A13

5G Communication Systems (3)
Session Chairs: Ozlem Kilic, Amir Zoghbi

16:00 CB23-1 MIMO-UFMC IN THE PRESENCE OF ANTENNA MUTUAL COUPLING AND PHASE NOISE
X. Chen1, S. Zhang2, A. Zhang3
1Xi’an Jiaotong University, China (CIE); 2Aalborg University, Denmark

16:20 CB23-2 PLANAR ANTENNA SYSTEM FOR FULL-DUPLEX APPLICATIONS
T. J. Dougal, K. Sarabandi, University of Michigan, United States

16:40 CB23-3 A BROADBAND HIGH-EFFICIENCY DOHERTY POWER AMPLIFIER WITH CONTINUOUS INVERSE CLASS-F DESIGN
F. Meng, Y. Sun, L. Tian, X.-W. Zhu, Southeast University, China (CIE)

17:00 CB23-4 HIGH GAIN LOW Profile HIGH DENSE DIELECTRIC PATCH ANTENNA USING FSS SUPERSTRATE
M. Asadzi, A. Beltayib, H. Ghalyon, A. Sebak, Concordia University, Canada

17:20 CB23-5 EXTENDING LTE INTO THE UNLICENSED SPECTRUM: REGULATORY AND TECHNOLOGICAL CHALLENGES
M. Labi1, V. Marojevic1, A. F. Martone2, J. H. Reed1, A. I. Zoghbi1,2
1Virginia Polytechnic Institute and State University, United States; 2US Army Research Laboratory, United States

Wednesday, August 23, 2017 16:00-17:40 514A
Session CB23

CMOS Compatible Photonics
Session Chairs: Roberto Morandiotti, Milos Popovic

16:00 D21-1 SLOW LIGHT IN DISPERSION-ENGINEERED PHOTONIC CRYSTAL RING RESONATORS
K. McGarvey-Lechable1, T. Hamidfar1, D. Patel2, L. Xu2, D. V. Plant2, P. Bianucci3
1Queen’s University, Canada; 2Royal Military College of Canada, Canada; 3Concordia University, Canada; 4McGill University, Canada
16:20 D21-2 HIGH QUALITY ENTANGLEMENT ON A SILICON-CHIP
F. Mazzeas1, F. Kaiser1, D. Aktas1, W. Zhang2, C. Alonso Ramos3, T. Lunghi1, X. LeRoux2, E. Cassani2, D. Marris-Morini2, L. Vivien2, L. Labonte1, S. Tanzilli1
1Inphyni (CNRS UMR 7010), France; 2C2N, France

16:40 D21-3 SUBWAVELENGTH NANOPHOTONIC STRUCTURES FOR INTEGRATION AND SENSING
P. Chubey, National Research Council, Canada; H. Podmore, York University, Canada

17:00 D21-4 CHIP-BASED OPTICAL FREQUENCY COMBS
A. Gueta, Columbia University, United States

Wednesday, August 23, 2017 16:00-17:20 513EF
Session E22
Measurement Techniques (2)
Session Chairs: Ramiro Serra, Christophe Lemoine

16:00 E22-1 A TIME DOMAIN MEASUREMENT APPROACH FOR SHIELDING AND SHIELDING MATERIAL EVALUATION
P. G. Wild, S. O. Kuja, N. A. Omollo, Stellenbosch University, South Africa

16:20 E22-2 DESIGN OF FULL METALLIC ANECHOIC CHAMBERS
A. Farabakhsh, Graduate University of Advanced Technology, Iran; M. Khalaj Amini, Iran University of Science and Technology, Iran

16:40 E22-3 DEVELOPMENT OF WIDE-BAND MICROWAVE RADIOMETER FOR GROUND OBSERVATION
T. Takano, Nihon University, Japan; N. Kawaguchi, National Astronomical Observatory of Japan, Japan; T. Maeda, Japan Aerospace Exploration Agency, Japan

17:00 E22-4 SPATIAL RESOLUTION ENHANCEMENT OF SATELLITE-BORNE MICROWAVE RADIOMETER USING ANTENNA PATTERN MATCHING TECHNIQUE
T. Maeda, Japan Aerospace Exploration Agency, Japan

Wednesday, August 23, 2017 16:00-17:40 510BD
Session F24
Propagation Modeling for Aerospace Applications (3)
Session Chairs: Carlo Capsoni, Animesh Maitra

16:00 F24-1 AVERAGING ASPECTS IN SHORT TERM FORECASTS OF TROPOSPHERIC ATTENUATION
M. Schünhauer, F. Cuervo, S. Roiker, M. Schweinzer, Joanneum Research, Austria

16:20 F24-2 TECHNOLOGIES FOR THE GROUND SEGMENT OF THE FUTURE Q/V BAND SATELLITE SYSTEMS: THE Q/V-LIFT PROJECT
G. Codispoti, G. Parca, Agenzia Spaziale Italiana, Italy; G. Amendola, L. Boccia, CNIT-Università della Calabria, Italy; G. Grousset, S. Compagnoni, Heriot Watt University, UK; M. Siegler, ERZIA, Spain; C. Riva, R. Nebuloni, CNIT-Politecnico di Milano and IEE/CNR, Italy; A. Jouier, Omnic, France; R. Campo, A. Arcidiacono, Eutelsat, France; R. Eletster, F. Cippoloni, Skytech, Italy; G. Bacci, A. Petrolino, MBI, Italy; M. Calisti, MARTEL-INOVA/CE, Italy

16:40 F24-3 PREDICTION OF OPERATIONAL PARAMETERS OF THE BANDPASS SIGNAL IN THE BUILT-UP TERRAIN - ATMOSPHERE RADIO COMMUNICATION CHANNELS
Y. Ben-Shimol, N. Blaunstein, BGU, Israel

17:00 F24-4 RAPID CHANGES IN CROSS-POLARIZATION DISCRIMINATION OF KA-BAND SATELLITE COMMUNICATIONS LINKS CAUSED BY LIGHTNING DISCHARGES
Y. Maekawa, Osaka Electro-Communication University, Japan

17:20 F24-5 CHARACTERIZATION OF KU-BAND AMPLITUDE SCINTILLATION ON EARTH-SPACE PATH OVER AKURE, SW NIGERIA
A. G. Ashidi, J. S. Ojo, A. T. Adeedji, M. O. Ajewole, Federal University of Technology, Nigeria

Wednesday, August 23, 2017 16:00-17:40 511BE
Session GH27
Meteors, Collisional EMPs, and Other Highly-Transient Space Plasma Events (3)
Session Chairs: John Mathews, Asta Pellinen-Wannberg, Margaret Campbell-Brown

16:00 GH27-1 ELECTROMAGNETIC PULSE EMISSIONS FROM HYPERVELOCITY IMPACTS ON CHARGED TARGETS
A. Nattali, A. Goel, S. Close, I. Linscott, Stanford University, United States

16:20 GH27-2 DETECTION AND CHARACTERIZATION OF METEOR SHOCKWAVES USING RADAR OBSERVED METEOR HEAD ECHO/HEIGHT CORRELATION
R. E. Silber, W. K. Hocking, The University of Western Ontario, Canada; M. Gritsevich, Russian Academy of Sciences, Russia; E. A. Silber, Brown University, USA; M. L. Niculescu, INCAS - National Institute for Aerospace Research "Elie Carafoli", Romania

16:40 GH27-3 METEOROID SPUTTERING, HIGH-ALTITUDE RADAR AND OPTICAL METEORS, AND SOURCES FOR LOWER-THERMOSPHERIC METALS
J. D. Mathews, B. Gao, S. Kesaranu, Penn State University, United States; S. Raizada, Arcisco Observatory/SRI, United States

Wednesday, August 23, 2017 16:00-17:40 514B
Session GHJ28
Workshop on Extreme Space Weather Environments (5)
Session Chairs: Mike Happgood, Terrace Ongser

Wednesday, August 23, 2017 16:00-17:00 513C
Session HG21
Active Experiments and Radio Sounding (5)
Session Chairs: Vikas Sonwalkar, Robert Moore, Natasha Jackson-Booth, Todd Pedersen

16:00 HG21-1 DEVELOPING A VLF TRANSMITTER FOR LEO SATELLITES: PROBING OF PLASMASPHERE AND RADIATION BELTS - THE POPRAD CONCEPT
J. Lichtenberger1,2, O. Santolik3, J. Solyoms4, L. Graclík3, F. Darrouzet6, A. Demekhov7, A. Kudrin8, N. Lehtinen9
1Estivo University, Hungary; 2Research Center for Astronomy and Space Sciences, Hungary; 3Institute of Atmospheric Physics, Czech Republic; 4BHE Bonn Hungary Electronics Ltd., Hungary; 5G.L. Electronic Ltd., Czech Republic; 6Royal Belgian Institute for Space Aeronomy, Belgium; 7Institute of Applied Physics, Russia; 8University of Nizhny Novgorod, Russia; 9University of Bergen, Norway

16:20 HG21-2 PARAMETRIC INSTABILITY EXCITED BY X-MODE POWERFUL HF WAVES: OBSERVATIONS AND THEORY
X. Wang1, C. Zhou1, P. Cannon2, M. Liu1, F. Honary2, B. Ni1, Z. Zhao1
1Wuhan University, China (CIE); 2Lancaster University, UK

16:40 HG21-3 SPACECRAFT-CHARGING MITIGATION OF A HIGH-POWER ELECTRON BEAM EMITTED BY A MAGNETOSPHERIC SPACECRAFT
G. L. Delzanno, F. Lucco Castello, Los Alamos National Laboratory, United States; O. Leon, G. Miars, B. Gilchrist, University of Michigan, United States; J. Borovsky, Space Science Institute, United States

Wednesday, August 23, 2017 16:00-17:40 511CF
Session HGE22
Atmospheric, Ionospheric, Magnetospheric and High Energy Effects of Lightning Discharges (5)
Session Chairs: Sebastien Celestin, Ningsyu Liu, Martin Fullekrag

16:00 HGE22-1 AN EVENT OBSERVED WITH FERMI GBM BOTH AS A TERRESTRIAL GAMMA-RAY FLASH (TGF) AND A TERRESTRIAL ELECTRON BEAM (TEB)
M. C. Stanbro1, M. S. Briggs1, O. J. Roberts2, E. Cramer1, J. R. Dwyer3
1University of Alabama in Huntsville, USA; 2NASA Marshall Space Flight Centre / Universities Space Research Association, USA; 3University of New Hampshire, USA
16:20 HGE22-2 CURRENT STATE OF THE LIGHTNING-LEADER-BASED TGF PRODUCTION THEORY
S. Celestin, University of Orleans, CNRS, France

16:40 HGE22-3 TERRESTRIAL GAMMA-RAY FLASHES INITIATED BY POSITIVE LIGHTNING LEADERS
J. R. Dwyer, N. Liu, University of New Hampshire, United States

17:00 HGE22-4 THUNDERSTORM HIGH-ENERGY RADIATION MEASURED IN-FLIGHT
P. Kochkin1, A. P. J. van Deursen2, A. I. de Boer3, M. Barder3, C. Allasia4, J. Boismin4, N. Ongaaard4
1University of Bergen, Norway; 2Eindhoven University of Technology, Netherlands; 3Netherlands Aerospace Centre, Netherlands; 4Airbus, France

17:20 HGE22-5 SPRITE STREAMER DENSITIES ABOVE AND BELOW ~55 KM HEIGHT
M. Fullekrug1, K. Koh1, Z. Liu1, A. Mezentsev1, N. Ogechukwu2,3, M. Kosch2
1University of Bath, United Kingdom; 2University of Capetown, South Africa; 3South African National Space Agency, South Africa

Wednesday, August 23, 2017 16:00-17:40 S16DE

Session J28

Very Long Baseline Interferometry (3)
Session Chairs: Huib van Langevelde, Hideyuki Kobayashi

16:00 J28-1 CONSTRAINING EMISSION AND SCATTERING PROPERTIES OF THE CRAB PULSAR THROUGH VLBI
R. Main, M. van Kerkwijk, University of Toronto, Canada; U.-L. Pen, Canadian Institute for Theoretical Astrophysics, Canada

16:20 J28-2 THE NEXT DECADE OF VLBA DEVELOPMENTS
W. F. Brisken1, A. J. Beasley2, S. J. Durand2, J. D. Romney1
1Long Baseline Observatory, United States; 2National Radio Astronomy Observatory, United States

16:40 J28-3 PROPER MOTION OF A SUPERMASSIVE BLACK HOLE BINARY
R. T. Zavala, US Naval Observatory Flagstaff Station, United States; G. B. Taylor, K. Bansal, University of New Mexico, United States; R. W. Romani, Stanford University, United States; A. B. Peck, Gemini Observatory, United States

17:00 J28-4 PRESENT STATUS AND FUTURE DIRECTIONS OF THE EUROPEAN VLBI NETWORK
M. Lindqvist, Onsala Space Observatory, Sweden

17:20 J28-5 VLBI WITH THE SKA
C. Reynolds, CSIRO Astronomy and Space Science, Australia; Z. Paragi, Joint Institute for VLBI in Europe, the Netherlands

Wednesday, August 23, 2017 16:00-17:40 S16AB

Session K15

Electromagnetic Inversion for Biomedical, Geophysical, Non-destructive Testing, and Antenna Characterization Applications (1)
Session Chairs: Puyan Mojab, Aria Abubakar

16:00 K15-1 BOREHOLE SIZE AND MUD RESISTIVITY EVALUATION FROM LOGGING-WHILE-DRILLING PROPAGATION RESISTIVITY MEASUREMENTS IN VERTICAL AND LOW-ANGLE WELLS
K. Sun, G. L. Wang, A. Abubakar, Schlumberger, United States

16:20 K15-2 MULTIPlicative REGULARized CONTRAST SOURCE INVERSION ALGORITHM USING PARALLELED COMPUTING ARCHITECTURE
M. Li, Tsinghua University, China (CIE); X. Y. Wang, University of California San Diego, USA; A. Abubakar, Schlumberger, USA

16:40 K15-3 SPARSITY PROMOTION AND INVERSE SOURCE PROBLEMS FOR QUALITATIVE RECONSTRUCTION OF BURIED TARGETS
M. T. Bevacqua, T. Isernia, Università Mediterranea di Reggio Calabria, Italy

17:00 K15-4 METHOD FOR CHARACTERIZING LAMINAR TISSUES VIA SURFACE REFLECTOMETRY
W. Haines1, E. Neufeld2, Z. Popovic1
1University of Colorado at Boulder, United States; 2ITIS Foundation, Switzerland

17:20 K15-5 A WAVEGUIDE-BASED METHOD FOR EXTRACTING COMPLEX PERMITTIVITY OF DIELECTRIC SLAB BY GENERAL IMPEDANCE BOUNDARY CONDITION (GIBC)
K. Wang, J.-J. Laurin, K. Wu, Polytechnique Montreal, Canada
Thursday, August 24, 2017

Session B23

**Novel Mathematical Methods in Electromagnetics (1)**

- **Session Chairs:** Kazuya Kobayashi, Yury Shestopalov
- **08:00** B23-1 METHODS FOR VERIFYING SOLVABILITY OF THE PERMITTIVITY RECONSTRUCTION IN CANONICAL WAVEGUIDE INVERSE PROBLEMS
  - Y. Shestopalov, Faculty of Engineering and Sustainable Development, University of Gävle, Sweden
- **08:20** B23-2 POLARIZABILITY OF RADially ANISOTROPIC ELLIPTIC CYLINDERS WITH HYPERBOLIC PERMITTIVITY
  - H. Wallén, T. Rimpläinen, A. Sihvola, Aalto University School of Electrical Engineering, Finland
- **08:40** B23-3 NON-SEPARABLE SOLUTIONS OF HELMHOLTZ’ EQUATION REVISITED
  - E. H. Van Li, P. J. Luypaert, KU Leuven, Belgium
- **09:00** B23-4 GUARANTEED A POSTERIORI ESTIMATES OF RIGHT-HAND SIDES IN TRANSMISSION PROBLEMS FOR HELMHOLTZ EQUATIONS
  - Y. Shestopalov, Faculty of Engineering and Sustainable Development, University of Gävle, Sweden; Y. Podlipenko, A. Nakonechny, Taras Shevchenko National University of Kyiv, Ukraine

Thursday, August 24, 2017

Session B24

**Advanced Antenna Concepts (2)**

- **Session Chairs:** Ahmed Kishk, Dejan Filipovic
- **08:00** B24-1 INCREASING THE ANGULAR COVERAGE OF PLANAR CONTROLLED RECEPTION PATTERN ARRAYS USING DUAL-MODE CIRCULAR MICROSTRIP ANTENNA ELEMENTS
  - N. Rezaeezadeh, L. Shafai, University of Manitoba, Canada
- **08:20** B24-2 EXACT SOLUTIONS FOR LENS AND REFLECTOR SHAPING
  - G. G. Cheng, Y. Zhu, G. A. Jan, AllWave Corporation, United States
- **08:40** B24-3 MULTI-BAND MULTI-BEAM PERFORMANCE EVALUATION OF ON-SITE CODING DIGITAL BEAMFORMER USING ULTRA-WIDEBAND ANTENNA ARRAY
  - S. Bojja Venkatakrishnan, E. A. Alwan, J. L. Volakis, The Ohio State University, United States
- **09:00** B24-4 GENETIC ALGORITHM OPTIMIZATION OF TRAVELING WAVE SLOT ARRAYS USING FULL WAVE METHOD OF MOMENTS ANALYSIS
  - S. R. Rengarajan, California State University, United States

Thursday, August 24, 2017

Session C24

**Compressive Sensing and its Applications in Detection and Tracking of Objects in Motion (1)**

- **Session Chairs:** Ozlem Kilic, Aly Fathy
- **08:00** C24-1 POTENTIAL BIOLOGICAL PRINCIPLES OF HORNET’S NATURAL RADAR, TRACKING, POSITIONING, AND WIRELESS COMMUNICATION SYSTEMS
  - J. Gavan, M. Haridim, HIT-Holon Institute of Technology, Israel
- **08:20** C24-2 SPARSITY-BASED MOTION DETECTION USING DISTRIBUTED RADAR SYSTEMS
  - F. Ahmad, Temple University, United States
- **08:40** C24-3 MULTI-FEATURE FUSION FOR TARGET RECOGNITION BASED ON improved D-S EVIDENCE ITERATIVE DISCOUNT METHOD
  - C. Wang, Nanjing University of Aeronautics & Astronautics, China (CIE)
- **09:00** C24-4 ADVANCES IN SPARSE IMAGE RECONSTRUCTION IN THROUGH-THE-WALL RADAR
  - A. Hoorfar, W. Zhang, Villanova University, USA
Remote Sensing from Nanosatellites (1)
Session Chairs: Steven Reising, Jaan Praks

08:00 F25-1 AN OVERVIEW OF THE NASA TROPICS EARTH VENTURE MISSION
R. V. Leslie, W. J. Blackwell, MIT Lincoln Laboratory, United States; S. A. Braun, NASA/GSFC, United States

08:20 F25-2 CALIBRATION AND TEST OF THE MICROWAVE RADIOMETER TECHNOLOGY ACCELERATION (MIKITA) CUBESAT
G. Allan1, A. Hein2, Z. Lee3, W. Marlow3, I. Osareint3, M. Dililberto3, K. Cahoy1, D. Cousins2, W. J. Blackwell1
1Massachusetts Institute of Technology, USA; 2MIT Lincoln Laboratory, USA

08:40 F25-3 EARTH ICECUBE: A 883-GHZ CLOUD RADIOMETER ON CUBESAT
D. L. Wu, NASA/GSFC, United States

09:00 F25-4 THE CUBESAT RADIOMETER RADIO FREQUENCY INTERFERENCE TECHNOLOGY VALIDATION (CUBERT) MISSION

GNSS Applications in Radio Science (1)
Session Chairs: Matthew Angling, Seebany Datta-Barua

08:00 G29-1 TOPSIDE IONOSPHERIC TOTAL ELECTRON CONTENT FROM CASIOOPE GAP MEASUREMENTS USING GPS PRECISE POINT POSITIONING TECHNIQUES
H. Nicholson, R. B. Langley, University of New Brunswick, Canada

08:20 G29-2 PPP POSITIONING AND NAVIGATION BOOSTING BY ADDING IONOSPHERE INFORMATION
K. Arsov, M. Terkildsen, Bureau of Meteorology, Australia; G. Olivares, Cooperative Research Centre for Spatial Information, Australia

08:40 G29-3 ESTIMATION METHOD OF IONOSPHERIC TOTAL ELECTRON CONTENT AND DECORRELATION LENGTHS OBTAINED FROM SINGE-FREQUENCY GPS MEASUREMENTS WITH POLYNOMIAL MODELS
Y. Goto, W. Z. Hein, A. Matsui, Y. Kasahara, Kanazawa University, Japan

09:00 G29-4 DERIVATION AND APPLICATION OF 3D ELECTRON CONTENT AND DECORRELATION LENGTHS OBTAINED FROM GROUND- AND LEO-BASED GNSS MODELS
H. Lyu1,2, M. Hernández-Pajares3, E. Monte-Moreno1
1IonSAT-UPC, Spain; 2GNSS Research Center, Wuhan University, China; 3TALP-UPC, Spain

Ionospheric Space Weather (1)
Session Chairs: Sandro Radicella, Anthea Coster, Patricia Doherty

08:00 G30-1 THE SPACE WEATHER FORECAST TESTBED (SWFT): FORECAST TOOLS FOR UPPER ATMOSPHERE SPACE WEATHER
A. J. Mannucci1, C. Wang2, X. Meng1, O. P. Verkhoglyadova1, B. T. Tsurutani1, G. J. Rosen1, S. Sharma1
1Jet Propulsion Laboratory, California Institute of Technology, United States; 2University of Southern California, United States; 3University of Maryland, United States

08:20 G30-2 AURORAL SPACE WEATHER PRODUCT FOR GNSS
S. Skone, M. Najmafshar, E. Spanswick, S. Mushini, University of Calgary, Canada

08:40 G30-3 SPACE WEATHER FROM THE SUN TO THE EARTH
C. Arney, LPP, Polytechnique, Sorbonne UPMMC Paris 6, France
Thursday, August 24, 2017 08:00-09:20 516AB

**Session K16**

**EMF Exposure Assessment and Dosimetry for New Technologies (WPT)**

Session Chairs: Samyoung Chung, Teruo Onishi

08:00 K16-1 A NOVEL ULTRA-THIN FLEXIBLE METAMATERIAL ABSORBER FOR HUMAN BODY PROTECTION FROM EMF HAZARDS
H. Grisgni, ENSI Rabat, Morocco; M. M. Tzentzis, A. Nauroze, School of Electrical and Computer Engineering, Georgia Institute of Technology, USA; M. Drissi, UER, France

08:20 K16-2 IN VITRO ASSESSMENT OF IMPLANTABLE CARDIAC PACEMAKER EMI TRIGGERED BY INTERRUPTED SIGNAL OF WIRELESS POWER TRANSFER SYSTEM IN STANDBY MODE
T. Hikage, T. Notojima, Hokkaido University, JAPAN; H. Fujimoto, Medtronic Japan Co. Ltd., JAPAN

08:40 K16-3 A NOVEL ULTRA-THIN FLEXIBLE METAMATERIAL ABSORBER FOR HUMAN BODY PROTECTION FROM EMF HAZARDS
S. Watanabe, J. Chakarothai, K. Wake, National Institute of Information and Communications Technology, Japan; T. Kinoshi, Nissan Motor Co., Ltd., Japan

09:00 K16-4 EXPERIMENTAL COMPLIANCE OF REAL WPT SYSTEMS EQUIPPED IN ELECTRIC VEHICLES
S. Park, B. Choi, J. Kim, Korea Automotive Technology Institute, South Korea; J. Kim, Green Power Co Ltd., South Korea

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Thursday, August 24, 2017 09:40-11:00 513B

**Session B26**

**Advanced Antenna Concepts (3)**

Session Chairs: Ahmed Kishk, Dejan Filipovic

09:40 B26-1 ON THE USE OF WIDEBAND FEEDS WITH MILLIMETER-WAVE LUNEBURG LENSES
M. Notaros, M. Ignatenko, D. S. Filipovic, University of Colorado Boulder, United States

10:00 B26-2 SOURCE-GENERATED ELECTROMAGNETIC HOPFIIONS
J. M. Benitez, Virginia Tech, United States; A. M. Shaarawi, The American University of Cairo, Egypt

10:20 B26-3 A DUAL-BAND RECONFIGURABLE FILTER ENNA FOR INTERWEAVE COGNITIVE RADIO NETWORK
R. Bhattacharya, M. Tulsyan, S. Saha, National Institute of Technology Patna, India

10:40 B26-4 C- BAND CIRCULARLY POLARIZED RECONFIGURABLE REFLECTARRAY UNIT CELLS
M. Mehri Delnavi, J.-J. Laurin, Ecole polytechnique de Montreal, Canada

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Thursday, August 24, 2017 09:40-10:20 513A

**Session C26**

**Compressive Sensing and its Applications in Detection and Tracking of Objects in Motion (2)**

Session Chairs: Ozlem Kilic, Aly Fathy

09:40 C26-1 COMPRESSIVE SENSING APPROACH TO DETECT TARGETS USING STEPPED-FREQUENCY CONTINUOUS-WAVE RADARS
N. H. Tran, O. Kilic, The Catholic University of America, United States; S. Nahar, L. Ren, A. E. Fathy, University of Tennessee, United States

10:00 C26-2 DEVELOPMENT OF A STEP FREQUENCY CONTINUOUS WAVE RADAR FOR DETECTION AND TRACKING OF OBJECTS IN MOTION
A. Fathy, L. Ren, S. Nahar, U. Tennessee, USA; O. Kilic, Catholic University of America, USA

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Thursday, August 24, 2017 09:40-11:00 514A

**Session C27**

**Radio Signal Processing and Radar Systems (2)**

Session Chairs: Shilong Pan, Daiyin Zhu

09:40 C27-1 ARCHITECTURE, PARAMETERS ESTIMATION AND COHERENT PERFORMANCE ANALYSIS OF A DISTRIBUTED NETWORK RADAR SYSTEM
J. Yu, Shanghai Key Laboratory of Intelligent Sensing and Recognition, Shanghai Jiao Tong University, China, China (CIE)

10:00 C27-2 PROPAGATION CHARACTERISTICS OF RADIO WAVES IN INHOMOGENEOUS AND ANISOTROPIC PLASMA IN A VARIABLE MAGNETIC FIELD
M. U. Onum, N. Thompson, C. N. Nwosu, University, Nigeria

10:20 C27-3 A METHOD TO SYNTHESIZE A SIGNAL FROM THE WVD
L. Zuo1, Y. Guo2, M. Li1
1National Lab of Radar Signal Processing, China (CIE); 2School of Electronic Engineering, China (CIE)

10:40 C27-4 ON THE STATIC CLUTTER SUPPRESSION FOR THE DVB-T BASED PASSIVE RADARS
O. Mahfoudia1,2, F. Horlin2, X. Neyt1
1Royal Military Academy, Belgium; 2Université Libre de Bruxelles, Belgium

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Thursday, August 24, 2017 09:40-11:00 513C

**Session D23**

**Plasmonics and Metamaterials (1)**

Session Chair: Christoph Lienau

09:40 D23-1 ULTRAFAST NANOPLASMONICS FOR PRECISION SPECTROSCOPY AND STRONG FIELD PHYSICS
S. Kim, Pusan National University, South Korea; Y.-J. Kim, Nanyang Technological University, Singapore; S.-W. Kim, Korea Advanced Institute of Science and Technology, South Korea
Thursday, August 24, 2017 09:40-10:40 513D
Session G32
Ionospheric Space Weather (2)
Session Chairs: Sandro Radicella, Anthea Coster, Patricia Doherty
09:40 G32-1 EFFECT OF SOLAR ACTIVITY ON NIGHT-TIME F-LAYER HEIGHT PROFILE AT THE MAGNETIC EQUATOR IN WEST AFRICA DURING THE SOLAR MINIMUM PERIOD 1995 – 1997 K. Z. Zuka, K. S. Tanoi, Laboratory of Atmospheric Physics, UFR SSMT, University Felix Houphouët Boigny Abidjan-Cocody, Cote d'Ivoire; N. M. Mene, University Peleforo-Gbon-Cloudbly of Kourou, Cote d'Ivoire
10:00 G32-2 ASSESSING THE DEGREE OF IONOSPHERIC PERTURBATION FROM RADIO TOMOGRAPHIC DATA I. A. Nesterov, E. S. Andreeva, M. O. Nazarenko, Y. S. Tumanova, A. M. Padokhin, Lomonosov Moscow State University, Russia; B. Brietsch, Y. Morton, Royal Observatory of Belgium, Belgium

Thursday, August 24, 2017 09:40-11:00 511CF
Session HGE25
Atmospheric, Ionospheric, Magnetospheric and High Energy Effects of Lightning Discharges (7)
Session Chairs: Sebastien Celestin, Ningyu Liu, Martin Fulkrug
09:40 HGE25-1 LIGHTNING OBSERVATIONS FROM NEWLY DEPLOYED DETECTION SYSTEMS H. Christian, Univ. of Alabama in Huntsville, Alabama
10:00 HGE25-2 ISUAL MULTI-BAND PHOTOMETRIC MEASUREMENT OF TLES IN LIMB VIEW OBSERVATION FROM SPACE C.-L. Kuo, National Central University, Taiwan; Y.-J. Wu, J.-K. Chou, S.-C. Chang, A. B.-C. Chen, H.-T. Su, R.-R. Hsu, National Cheng Kung University, Taiwan

Thursday, August 24, 2017 09:40-11:00 511BE
Session G31
GNSS Applications in Radio Science (2)
Session Chairs: Matthew Angling, Seebany Datta-Barua
09:40 G31-1 ANALYSIS OF SEASONAL IONOSPHERIC GRADIENTS OVER TURKEY FOR YEAR 2011 M. Koroglu, O. Koroglu, Boketsan Missiles Inc., Turkey; F. Arikan, Hacettepe University, Turkey
10:00 G31-2 CONNECTION BETWEEN LOW LATITUDE ELECTRODYNAMICS AND LARGE SCALE TIDS AS INFERRED FROM GNSS INFORMATION J. B. Habarulema1,2, Z. Katunzi1,2 1South African National Space Agency, South Africa; 2Rhodes University, South Africa
10:20 G31-3 PRELIMINARY RESULTS ON DOPPLER COLLISION EFFECTS ON PERFORMANCE OF INDIAN REGIONAL NAVIGATION SATELLITE SYSTEM S. Patil, K. R. Desi Reddy, S. A. D. S. Kotla, Chaitanya Bharathi Institute of Technology, India
10:40 G31-4 ON THE APPLICATION OF NEW STRONG-SCATTER THEORETICAL RESULTS TO THE INTERPRETATION OF GPS SCINTILLATION C. L. Rino, C. S. Carrano, K. M. Gorves, Institute for Scientific Research, United States; T. Britisch, Y. Jiao, Y. Morton, Colorado State University, United States
Thursday, August 24, 2017 09:40-11:00 514B

Session HJ26

Solar, Planetary, and Heliospheric Radio Emissions (2)

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White

09:40 HJ26-1 RADIO SIGNATURES OF PARTICLE ACCELERATION IN THE SOLAR CORONA

K.-L. Klein, Observatoire de Paris, France

10:00 HJ26-2 IMAGING OF SOLAR TYPE III RADIO BURSTS WITH LOFAR

F. Breitsch, G. Mann, C. Voocks, Leibniz-Institut für Astrophysik Potsdam (AIP), Germany

10:20 HJ26-3 THE SUN RADIO IMAGING SPACE EXPERIMENT (SUNRISE)

J. Lazio1, J. C. Kasper1, F. Alibay1, N. Amir2, T. Bastian1, C. Cohen1, E. Landi2, W. B. Manchester1, A. Reinard1, N. Schwadron1, B. Cecconi1, O. Hallinan1, A. Hedges1, V. Krupa1, M. Maksimovic1, A. Zaslavsky1

Jet Propulsion Laboratory, California Institute of Technology, United States; 2University of Michigan, United States; 3National Radio Astronomy Observatory, United States; 4California Institute of Technology, United States; 5National Atmospheric & Oceanic Administration, United States; 6University of New Hampshire, United States; 7Observatoire de Paris, France; 8Czech Academy of Sciences, Czech Republic

Thursday, August 24, 2017 09:40-11:00 516DE

Session J30

Detection of Short-Duration Transients and Pulsars (2)

Session Chairs: Joeri van Leeuwen, Vicky Kaspi, Ben Stappers

09:40 J30-1 REALFAST ALL THE TIME WITH THE VERY LARGE ARRAY

S. Burke-Spolaor, West Virginia University, USA; C. J. Law, Berkeley, USA; B. Andersen, University of Virginia, USA; G. C. Bower, Academia Sinica Institute of Astronomy and Astrophysics, USA; B. Butler, P. Demorest, National Radio Astronomy Observatory, USA; T. J. W. Lazio, Jet Propulsion Laboratory, USA; M. Rupen, NRC Herzberg, Canada

10:00 J30-2 THE REPEATING FAST RADIO BURST FRB 121102


1National Research Council of Canada, Canada; 2Max-Planck-Institut fur Radioastronomie, Germany; 3ASTRON, Netherlands; 4University of Amsterdam, Netherlands; 5University of California, USA; 6Columbia University, USA; 7Academia Sinica Institute of Astronomy and Astrophysics, USA; 8National Radio Astronomy Observatory, USA; 9Cornell University, USA; 10McGill University, Canada; 11Joint Institute for VLBI ERIC, Netherlands; 12Leiden University, Netherlands; 13University of California, USA; 14California Institute of Technology, USA; 15Arecibo Observatory, USA

10:20 J30-3 A SEARCH FOR FAST RADIO BURSTS WITH THE GBNC PULSAR SURVEY

P. Chiella, McGill University, Canada

10:40 J30-4 SUPERNOVA REMNANT FRBS, LOG-N-LOGS, AND THE CHIME PATHFINDER

L. D. Connor, ASTRON / University of Amsterdam, Holland

Thursday, August 24, 2017 09:40-10:40 516AB

Session K17

Latest Development in Measurement and Applications of Dielectric Spectroscopy (2)

Session Chairs: Theodoros Samaras, Niels Kuster

09:40 K17-1 DIELECTRIC MEASUREMENTS OF SAMPLES AVAILABLE IN LIMITED SIZE OR VOLUME

F. Muranyi1, F. Bomholt1, N. Kuster1

1Foundation for Research on Information Technologies in Society, Switzerland; 2Schmid & Partner Engineering AG, Switzerland

10:00 K17-2 DUAL FREQUENCY DIELECTROPHORESIS STUDY OF SINGLE CELLS UNDER CONTROLLED STARVATION

S. Alshar, E. Salem, A. Fazekalhak, K. Braasch, M. Butler, D. Thomson, G. Bridges, University of Manitoba, Canada

10:20 K17-3 ON-CHIP MICROVOLUME DIELECTRIC SPECTROSCOPY SUPPORTED BY MOLECULAR DYNAMICS

M. Cifra, D. Havelka, O. Krivosudyk, J. Prusa, Institute of Photonics and Electronics, Czech Academy of Sciences, Czechia

Thursday, August 24, 2017 11:00-12:00 511AD

Session A15

A-Tutorial Dr. Judah Levine: “Distributing Time and Frequency Data: Requirements and Methods

Session Chair: Yasuhiro Koyama

11:00 A15-1 DISTRIBUTING TIME AND FREQUENCY DATA: REQUIREMENTS AND METHODS

J. Levine, National Institute of Standards and Technology, United States

Thursday, August 24, 2017 11:00-12:00 510AC

Session B27

Novel Mathematical Methods in Electromagnetics (3)

Session Chairs: Kazuya Kobayashi, Yury Shestopolov

11:00 B27-1 ON SOME MATHEMATICAL ASPECTS OF HIGH-FREQUENCY DIFFRACTION BY STRONGLY ELONGATED SPHEROIDS

J. V. Andronov, University of St. Petersburg, Russian Federation; B. P. Belinsky, University of Tennessee at Chattanooga, USA

11:20 B27-2 PULSE REFLECTION RESPONSES FROM TWO DISPERSION MEDIA WITH CONDUCTING STRIPS

R. Ozaki, T. Yamanshi, Nihon University, Japan

11:40 B27-3 SUPER-ALGEBRAICALLY CONVERGENT ALGORITHM FOR 2D TM WAVE SCATTERING FROM DIELECTRIC CYLINDERS WITH SMOOTHLY PARAMETRIZED CROSS SECTION BOUNDARIES

E. Sever, Y. A. Tuchkin, F. Dickmen, Gazeb Technical University, Turkey

Thursday, August 24, 2017 11:00-12:20 513C

Session B28

Advanced Antenna Concepts (4)

Session Chairs: Ahmed Kishk, Dejan Filipovic

11:00 B28-1 FLEXIBLE MICROSTRIP ANTENNA FOR EPIDERMAL ELECTRONIC DEVICES

A. Saborni, Y. Yasser, Wikkes University, United States

11:20 B28-2 SUBSTRATE INTEGRATED H-PLANE HORN ANTENNA WITH DOUBLE LEVEL GAP WAVEGUIDE CONFIGURATION

N. Bayat-Makou, A. A. Kishk, Concordia University, Canada

11:40 B28-3 MONOPULSE FREQUENCY-SCAN ANTENNA ARRAY FOR TERMINAL AREA X-BAND RADAR

A. V. Suchkov, Research & Production Corporation “Lianozovo Electromechanical Plant”, Russian Federation

12:00 B28-4 BANDWIDTH ENHANCEMENT OF OMNIDIRECTIONAL CIRCULARLY POLARIZED SLOTTED ANTENNA FOR SATELLITE COMMUNICATION

C. Turkmen, M. Seccmen, Yasar University, Turkey

Thursday, August 24, 2017 11:00-12:00 514A

Session C28

Radio Signal Processing and Radar Systems (3)

Session Chairs: Shilong Pan, Daiyin Zhu

11:00 C28-1 DIGITAL SYNCHRONIZATION SYSTEM DESIGN AND IMPLEMENTATION FOR RADIO INTERFEROMETER

E. H. Ait Mansour1, K.-L. Klein2, B. Da-Silva3, S. Bosse1

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Thursday, August 24, 2017 11:00-12:00 513EF

Session G33

Ionospheric Space Weather (3)

Session Chairs: Sandro Radicella, Anthea Coster, Patricia Doherty

11:00 G34-1 GAINING THE MOST UTILITY FROM OUR GEOSPACE OBSERVATIONAL SYSTEM: NETWORK ANALYSIS OF TOTAL ELECTRON CONTENT AS A MEANS TO UNDERSTAND SPACE WEATHER TO THE POINT OF PREDICTION

R. M. McGranaghan1,2, A. Mannucci2, O. Verkhoglyadova2, N. Malik2

1 Cooperative Programs for the Advancement of Earth System Science (CPAESS), United States; 2NASA Jet Propulsion Laboratory, California Institute of Technology, United States; 3Dartmouth College, United States

11:20 G34-2 MONITORING SHORTWAVE FADEOUT (SWF) BASED ON DAYTIME SUPERDARN GROUND-SCATTER OBSERVATIONS

S. Chakraborty, J. Ruohoniemi, J. Baker, Virginia Tech, Virginia

11:40 G34-3 IONOSPHERIC STORM MONITORING SYSTEM USING GNSS-TEC OBSERVATIONS

T. Tsugawa, M. Nishihata, H. Jin, M. Ishii, NICT, Japan

12:00 G34-4 NON-DIFFUSE POLAR TOPSIDE ELECTRON DENSITY PROFILES DURING GEOMAGNETIC STORMS

D. D. Rice, J. J. Sojka, J. V. Eccles, Space Environment Corporation, United States; H. G. James, Natural Resources Canada Geomagnetic Laboratory, Canada; R. F. Benson, NASA/Goddard Space Flight Center, United States

12:20 G34-5 IONOSPHERIC AND ELECTRODYNAMICAL RESPONSE TO THE 22-23 JUNE 2015 MAJOR GEOMAGNETIC STORM

E. Astafyeva1, I. Zakharenkova1, W. Watthanangmechaw1, P. Alken1, P. Coisson1

1IPGP, France; 2NICT, Japan; 3University of Colorado, USA

Thursday, August 24, 2017 11:00-12:00 510BD

Session G34

Remote Sensing from Nanosatellites (3)

Session Chairs: Steven Reising, Jaan Praks

11:00 F27-1 AALTO-1 EARTH OBSERVATION NANOSATELLITE MISSION STATUS AND IN ORBIT EXPERIMENTS

J. Praks1, A. Kestilä1, T. Tikka2, A. Niisilä3, B. Riwan01, N. Jovanovic1, P. Niemela1, N. Silva1, R. Vainio1, P. Janhunen1

1Aalto University, Finland; 2Reaktor Space Lab, Finland; 3TTI Technical Research Centre of Finland, Finland; 4University of Turku, Finland; 5Finnish Meteorological Institute, Finland

11:20 F27-2 MINIATURIZED REMOTE SENSING INSTRUMENTS BASED ON FABRY-PÈROT INTERFEROMETERS

A. Niisilä1, H. Saari1, R. Mannila2, K. Khaterkanto2, A. Akujiirvi1, H. J. Ojansen1, I. Nääkki2, T. Antila3, I. Stuns4, H. Toivanen5, T. Havia6, O. Viljamaa7, TTI Technical Research Centre of Finland Ltd, Finland

1Saint-Petersburg Branch of the SAO RAS, Russian Federation; 2Fedorov Institute of Applied Geophysics (IGA), Russian Federation; 3ITMO University, Russian Federation

11:40 F27-3 ESTCUBE-2 MISSION ANALYSIS: EARTH OBSERVATION IMAGER SYSTEM

J. Dalbin1,2, I. Jakubovskiy1,2, H. Ehrla1,2,3, H. Kuute1,2,3, H. Su1,2,3, I. Säätelä1,2,3, E. Ilvis1,2,3, E. Oer1,2,3, J. Kautil4, P. Janhunen5, M. Merisalu1, J. Sate5, R. Trots5, A. Slavinskis3

1Tartu Observatory, Estonia; 2University of Tartu, Estonia; 3Estonian Student Satellite Foundation, Estonia; 4Finnish Meteorological Institute, Finland; 5Ventspils University College, Latvia

Thursday, August 24, 2017 11:00-12:00 514B

Session HJ27

Solar, Planetary, and Heliospheric Radio Emissions (3)

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White

11:00 HJ27-1 CYCLOTRON MASER EMISSION IN SOLAR AND STELLAR FLARES

D. B. Melrose, University of Sydney, Australia

11:20 HJ27-2 LOFAR OBSERVATIONS OF THE QUIET SOLAR CORONA

C. Vocks, G. Mann, F. Breitling, Leibniz-Institut für Astrophysik Potsdam, Germany

11:40 HJ27-3 ABOUT FORECASTING METHODS OF SOLAR ACTIVITY DUE TO RADIOASTRONOMY OBSERVATIONS

E. A. Kurochkin1, V. M. Bogol1, P. M. Svidsky2, N. G. Peterova2, A. V. Shendrik1, N. P. Eversley3

1Saint-Petersburg Branch of the SAO RAS, Russian Federation; 2Fedorov Institute of Applied Geophysics (IGA), Russian Federation; 3ITMO University, Russian Federation
Thursday, August 24, 2017 11:00-12:00 516DE

Session J31

Detection of Short-Duration Transients and Pulsars (3)

Session Chairs: Joeri van Leeuwen, Vicky Kaspi, Ben Stappers

11:00 J31-1 A SEARCH FOR PULSARS AND TRANSIENT SIGNALS IN M33 USING ARECIBO
D. Simard, U.-L. Pen, University of Toronto, Canada

11:20 J31-2 TOWARDS PREDICTIVE MODELLING OF INTERSTELLAR SCATTERING
D. Simard, U.-L. Pen, University of Toronto, Canada

11:40 J31-3 TIME DOMAIN SCIENCE WITH THE MURCHISON WIDEFIELD ARRAY
R. Bhat, International Centre for Radio Astronomy Research, Curtin University, Australia

Thursday, August 24, 2017 11:00-12:00 516AB

Session K18

Electromagnetic Inversion for Biomedical, Geophysical, Non-destructive Testing, and Antenna Characterization Applications (2)

Session Chairs: Puyan Mojabi, Aria Abubakar

11:00 K18-1 AN EXPERIMENTAL STUDY OF MICROWAVE REMOTE SENSING OF OIL-CONTAMINATED YOUNG SEA ICE
N. Firoozy1, T. Neusitzer1, D. Desmond1, T. Tiede1, M. Lemes1, J. Landy2, G. Stern1, P. Mojabi1, S. Rysgaard1, D. G. Barber1

1Royal Belgian Institute for Space Aeronomy, Belgium; 2University of Aberdeen, United Kingdom;
3Swisstom AG, Switzerland

11:20 K18-2 3D PDE-BASED CONTRAST SOURCE INVERSION FOR BIOMEDICAL AND AGRICULTURAL APPLICATIONS
I. Jeffrey, J. LoVetri, K. Brown, N. Geddert, M. Asfeli, K. Nemez, A. Baran, G. Faucher, University of Manitoba, Canada

11:40 K18-3 BREATHE DETECTION USING SHORT-TIME FOURIER TRANSFORM ANALYSIS IN ELECTRICAL IMPEDANCE TOMOGRAPHY
D. Khodadad1, S. Nordebo1, N. Seifnaraghi2, A. D. Waldmann1, B. Müller1, R. Bayford2

1Linnaeus University, Sweden; 2Middlesex University, United Kingdom; 3Swisstom AG, Switzerland

Thursday, August 24, 2017 11:00-12:00 511CF

Session K16

Remote Sensing and Modeling of the Earth’s Plasmasphere and Plasmapause (1)

Session Chairs: Anders Jorgensen, Viviane Pierrard, Balazs Heilig

11:00 K16-1 DYNAMIC PLASMAPAUSE MODEL BASED ON THEMIS MEASUREMENTS
X. Liu, W. Liu, J. Cao, H. Fu, J. Yu, Beihang University, China; X. Li, University of Colorado, USA

11:20 K16-2 DYNAMICAL SIMULATIONS OF THE PLASMAPAUSE AND THE PLASMAPAUSE
V. Pierrard1,2

1The Royal Belgian Institute for Space Aeronomy, Belgium; 2Université Catholique de Louvain, Belgium

11:40 K16-3 AN EMPIRICAL PLASMAPAUSE MODEL BASED ON SWARM OBSERVATIONS
B. Heilig, Geological and Geophysical Institute of Hungary, Hungary; H. Lühr, GFZ German Research Centre for Geosciences, Germany

Thursday, August 24, 2017 13:40-14:40 511AD

Session A16

Education and Training in Electromagnetic Metrology (1)

Session Chairs: Demetrios Matsakis, Patrizia Tavella, Parameswar Banerjee

13:40 A16-1 QUANTITATIVE EXPERIMENTS FOR HANDS-ON TRAINING IN RF AND EMC MEASUREMENTS
C. Carobbi, University of Florence, Italy

14:00 A16-2 ANTENNA MEASUREMENTS THROUGH PLANAR NEAR FIELD APPARATUS: AN EDUCATIONAL PARADIGM LINKING ELECTROMAGNETIC THEORY, SAMPLING TECHNIQUES, AND FFT
Y. Rahmat-Samii, J. M. Kovitz, University of California Los Angeles, USA

14:20 A16-3 LOW-COST ANECHOIC CHAMBER CONSTRUCTION AND ITS APPLICATIONS FOR EDUCATIONAL PURPOSES
T. K. Vo Daj, O. Kilic, The Catholic University of America, USA

Thursday, August 24, 2017 13:40-14:40 510AC

Session B29

Recent Advances in Metamaterials (1)

Session Chairs: Ari Sihvola, Ismo Lindell

13:40 B29-1 PARAMETER STUDIES ON OPTIMAL ABSORPTION AND ELECTROPHORETIC RESONANCES IN LOSSY MEDIA
S. L. Nordebo, M. Dalarsson, Y. Ivenenko, Linnaeus University, Sweden; D. Sjöberg, Lund University, Sweden; R. Bayford, Middlesex University, United Kingdom

14:00 B29-2 TRANSMISSION-LINE MODEL FOR A NON-LINEAR AND DISPERSIVE PARITY-TIME (PT) SYMMETRIC STRUCTURE
S. Pang, G. Gradoni, A. Vukovic, S. C. Creagh, T. M. Benson, University of Nottingham, United Kingdom

14:20 B29-3 ELECTROMAGNETIC NONRECIPROCITY, AMPLIFICATION AND MIXING IN DISPERSION-ENGINEERED SPACE-TIME-VARYING SYSTEMS
N. Chamanara, C. Caloz, Polytechnique Montreal, Canada

Thursday, August 24, 2017 13:40-14:40 513A

Session C29

Wireless Communications for the Future Transportation Systems (1)

Session Chairs: David Matolak, Ruisi He

13:40 C29-1 MINIATURIZED SHARK-FIN ROOFTOP ANTENNA WITH INTEGRATED DSRC COMMUNICATION MODULE FOR CONNECTED VEHICLES
Y.-Y. Liou, S.-G. Mao, National Taiwan University, China (CIE)

14:00 C29-2 OBSERVATIONS OF 5.9 GHZ RADIO WAVE PROPAGATION AND 802.11P NETWORK PERFORMANCE AT ROAD JUNCTIONS
J. Clayton, A. J. Stocker, D. Hassan, University of Leicester, United Kingdom; T. Edwards, D. Mearns, HORIBA MIRA Ltd., United Kingdom

14:20 C29-3 A NOVEL POWER WEIGHTED MULTIPATH COMPONENT TRACKING ALGORITHM
C. Huang, R. He, D. Zhang, Beijing Jiaotong University, China (CIE)

Thursday, August 24, 2017 13:40-14:40 514A

Session C30

Massive MIMO (1)

Session Chair: Ian Glover

13:40 C30-1 MASSIVE MIMO: CONCEPTS, PRACTICAL ISSUES AND FUTURE PROSPECTS
M. Bashar, S. G. Burr, K. Cumanan, University of York, Yorkshire

14:00 C30-2 LARGE MIMO SYSTEMS WITH COST 2100 CHANNEL MODEL
M. Bashar, A. G. Burr, K. Cumanan, University of York, Yorkshire

14:20 C30-3 METAMATERIALS FOR MIMO
R. Seviour, A. Hopper, University of Huddersfield, United Kingdom
Thursday, August 24, 2017 13:40-14:40 514B

Session HJ30

Solar, Planetary, and Heliospheric Radio Emissions (4)

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White

13:40 HJ30-1 LONG WAVELENGTH OBSERVATIONS DURING CASSINI'S GRAND FINALE AT SATURN AND COMPARISONS WITH JUNO OBSERVATIONS AT JUPITER
W. S. Kurth1, D. A. Gurnett1, G. B. Hospodarsky2, S. Y. Ye1, J. D. Mennet1, A. M. Persoon1, A. Sulaman1, M. Imai1, S. Tetrick2, P. Zarka3, L. Lamy3, B. Cecconi1, C. Louis4, A. Leceux5, W. M. Farrell6, G. Fischer7, J. E. Wahlund8, M. Morooka9, S. J. Bolton10, J. E. P. Connerney11, S. Tetrick2, L. Lamy3, A. M. Levin12

1University of Iowa, United States; 2Observatoire de Paris, France; 3NASA/Goddard Space Flight Center, United States; 4Austrian Academy of Sciences, Austria; 5IRF-U, Sweden; 6Southwest Research Institute, United States; 7Jet Propulsion Laboratory, United States

14:20 HJ30-2 PLANNED MEASUREMENTS OF ELECTROMAGNETIC SIGNALS ON THE SURFACE OF MARS: EXOMARS 2020
O. Santolik1, I. Kolmasova1, A. Skalsky2

1Institute of Atmospheric Physics of the Czech Academy of Sciences, Czechia; 2Charles University, Czechia; 3Institute of Space Research, Russia

Thursday, August 24, 2017 13:40-14:40 516DE

Session J32

Detection of Short-Duration Transients and Pulsars (4)

Session Chairs: Joeri van Leeuwen, Vicky Kaspi, Ben Stappers

13:40 J32-1 DETECTION OF RADIO EMISSION FROM FIREBALLS WITH THE MWA
X. Zhang, P. Hancock, R. B. Wayth, International Centre for Radio Astronomy Research, Australia

14:00 J32-2 GALACTIC AND EXTRA-GALACTIC TRANSIENT RADIO SOURCES
S. Pal1, D. Patra1, S. K. Chakrabarti2

1Indian Centre for Space Physics, India; 2S. N. Bose National Centre for Basic Sciences, India

14:20 J32-3 CHARACTERIZING THE HOST GALAXY OF THE REPEATING FAST RADIO BURST FRB 121102

Thursday, August 24, 2017 14:40-15:20 511AD

Session C31

Recent Advances in Metamaterials (2)

Session Chairs: Demetrios Matsakis, Patrizia Tavella, Parameswar Banerjee

14:40 C31-1 GENERAL SCATTERING CHARACTERISTICS OF RESONANT CORE-SHELL SPHERES
D. C. Tsarouchia, A. Sihvola, Aalto University, Finland

15:00 C31-2 DESIGN STRATEGIES FOR METAMATERIAL QUADRATURE POWER DIVIDERS IN CP ANTENNAS: ARE TWO CRLH-LOADED LINES NECESSARY?
J. M. Kovitz, Y. Rahmat-Samii, University of California Los Angeles, USA

15:20 B30-3 BANDWIDTH, WIDE ANGLE AND POLARIZATION-INDEPENDENT RCS REDUCTION BASED ON RANDOM COMBINATORIAL PHASE GRADIENT METASURFACE
Y. Zhan, G. Wang, Air Force Engineering University, China; Q. Zhang, South University of Science and Technology of China, China

Thursday, August 24, 2017 14:40-15:20 510AC

Session B30

Wireless Communications for the Future Transportation Systems (2)

Session Chairs: David Matolak, Ruisi He

14:40 C31-1 BAYESIAN MULTI-ARMED BANDIT FRAMEWORK FOR MASSIVE MIMO SYSTEMS
R. Husbands, University of Kent, United Kingdom; Q. Z. Ahmed, F. Khan, P. Lazaridis, I. Glover, University of Huddersfield, United Kingdom

15:00 C31-2 WEAK GPS L1 BAND SIGNAL TRACKING THROUGH LOW COST COMMUNICATION SATELLITE BASED DUAL POLARIZATION ANTENNA FOR VEHICULAR APPLICATIONS
J. Yan, R. Tiwari, Newcastle university, UK; A. Ahmed, Sukkur IBA, Pakistan

Thursday, August 24, 2017 14:40-15:20 513A

Session C31

Education and Training in Electromagnetic Metrology (2)

Session Chairs: Demetrios Matsakis, Patrizia Tavella, Parameswar Banerjee

14:40 A17-1 EDUCATION IN METROLOGY: THE EXPERIENCE IN INRIM AND POLITECNICO DI TORINO
P. Tavella, INRIM, Italy

15:00 A17-2 A WEB PAGE FOR ELECTROMAGNETIC METROLOGY TRAINING RESOURCES
D. Matsakis, US Naval Observatory, United States; C. Bunting, Oklahoma State, United States; B. Davis, Virginia Tech, United States; T. Loh, National Physical Laboratory, UK; United Kingdom; A. Motevasselian, LEAX Linköping Telecom, Sweden; P. Tavella, Istituto Nazionale di Ricerca Metrologica, Italy; Y. Koyama, National Institute of Information and Communications Technology, Japan; C. Wang, Key Laboratory of Electronic Equipment Structure, China

15:20 A17-3 INDIAN EFFORT IN SENSITIZING THE IMPORTANCE OF METROLOGY IN SOCIETY AT LARGE
P. Banerjee, Former Scientist National Physical laboratory, New Delhi India, India; V. N. Ojha, National Physical laboratory, New Delhi, India

Thursday, August 24, 2017 14:40-15:40 515A

Session K19

EMF Exposure Assessment and Dosimetry and EMC for WBAN and Implanted Devices (1)

Session Chairs: Jianqing Wang, Ping Jack Soh

13:40 K19-1 POWER TO TEMPERATURE TRANSFER FUNCTION DERIVATION FOR AID LOCAL TISSUE HEATING
A. Yao1, E. Zastrozzi1, N. Kuster2

1ITTS Foundation, Switzerland; 2ETH Zurich, Switzerland

14:00 K19-2 OPTIMIZATION-BASED STRATEGY IN MULTIPLE-CHANNEL MAGNETIC RESONANCE SYSTEMS OPERATING AT 128 MHZ TO REDUCE RADIOFREQUENCY HEATING INDUCED BY ACTIVE IMPLANTABLE MEDICAL DEVICES
J. Córcoles1, E. Zastrozzi1, N. Kuster2

1Universidad Autónoma de Madrid, Spain; 2ITTS Foundation, Switzerland; 3Swiss Federal Institute of Technology of Zurich, Switzerland

14:20 K19-3 AN APPROACH TO IMMUNITY TESTING OF WEARABLE DEVICES SUCH AS MYOELECTRIC ARTIFICIAL ARM
J. Wang, R. Nakaya, K. Sato, D. Anzai, O. Fujitwara, Nagoya Institute of Technology, Japan

Thursday, August 24, 2017 14:40-15:40 511AD

Session A17

EMF Exposure Assessment and Dosimetry and EMC for WBAN and Implanted Devices (1)

Session Chairs: Jianqing Wang, Ping Jack Soh

13:40 K19-1 POWER TO TEMPERATURE TRANSFER FUNCTION DERIVATION FOR AID LOCAL TISSUE HEATING
A. Yao1, E. Zastrozzi1, N. Kuster2

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J. Córcoles1, E. Zastrozzi1, N. Kuster2

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14:20 K19-3 AN APPROACH TO IMMUNITY TESTING OF WEARABLE DEVICES SUCH AS MYOELECTRIC ARTIFICIAL ARM
J. Wang, R. Nakaya, K. Sato, D. Anzai, O. Fujitwara, Nagoya Institute of Technology, Japan
Thursday, August 24, 2017 16:00-19:00 Poster Room

**Session A16P**

**POSTERS - Education and Training in Electromagnetic Metrology**

Session Chairs: Demetrios Matsakis, Patrizia Tavella, Parameswar Banerjee
A16P-1 TRAINING ACTIVITIES OF NICT FOR TIME AND FREQUENCY METROLOGY IN THE REGION OF ASIA PACIFIC
Y. Koyama, H. Neza, NICT, Japan

Thursday, August 24, 2017 16:00-19:00 Poster Room

**Session A18P**

**POSTERS - Microwave Frequency Standards and Applications**

Session Chairs: Amitava Sen Gupta, Fang Fang
A18P-1 IMPROVEMENT OF H-MASER PERFORMANCE DUE TO INCREASE OF POWER RADIATED BY ATOMIC BEAM
M. Aleynikov, A. Boyko, I. Bilinov, Y. Domnin, FGUP VNIIFTRI, Russian Federation
A18P-2 STATUS OF THE ATOMIC FOUNTAIN CLOCK NRC-FCS2 AT THE NATIONAL RESEARCH COUNCIL CANADA
S. Beattie, B. Jian, A. J. Alcock, J. Bernard, M. Gertovitch, National Research Council, Canada; R. Hendricks, F. Ozimek, K. Szeymaniec, National Physical Laboratory, UK; K. Gibble, The Pennsylvania State University, USA

Thursday, August 24, 2017 16:00-19:00 Poster Room

**Session A20P**

**POSTERS - Linear and Nonlinear Measurements for Communications Systems**

Session Chair: Pedro Cruz
A20P-1 CLOUD-BASED RF INFOTAINMENT TESTING SYSTEM FOR THE AUTOMOTIVE INDUSTRY
F. Leite¹, M. Jordão², P. Cruz¹, C. Pereira¹
¹Controlar – Innovating Industry, Portugal; ²Instituto de Telecomunicações - Universidade de Aveiro, Portugal

Thursday, August 24, 2017 16:00-19:00 Poster Room

**Session B22P**

**POSTERS - Advanced Antenna Concepts**

Session Chairs: Yahia Antar, Sembiam Rengarajan
B22P-2 NEW PHYSICAL INSIGHT INTO UNDERSTANDING AND CONTROLLING CROSS-POLAR RADIATIONS OF A PROBE-FED MICROWAVE TECHNIQUES
C. Sarkar, D. Guha, University of Calcutta, India; C. Kumar, Indian Space Research Organisation, India; Y. M. M. Antar, Concordia University, Canada
B22P-3 SIZE REDUCTION OF PATCH ANTENNAS BY CONVEXITY
A. Farahbaksh, Graduate University of Advanced Technology, Iran; D. Zarifi, University of Kashan, Iran; A. R. Sebak, Concordia University, Canada
B22P-4 CONFORMAL AXIAL-DIRECTION PIFA ON A SMALL CYLINDER
R. Zahiri, R. G. Vaughan, Simon Fraser University, Canada
B22P-5 ON MAXIMUM ABSORPTION BY A LOSSY ANTENNA – TO CONJUGATE-MATCH OR NOT TO CONJUGATE-MATCH?
O. Markish, Y. Levitov, Technion, Israel
B22P-6 APERTURE FIELD TRANSFORMATION IN RESONANT CAVITY ANTENNAS BY TRANSVERSE PERMITTIVITY GRADIENT SUPERSTRATES
R. M. Hashmi, K. P. Esselle, Macquarie University, Australia
B22P-7 MAGNETIC CURRENT SYNTHESIS USING CURVATURE STRUCTURES
Y. Li, Z. Zhang, Z. Fang, Tsinghua University, China (CBE)
B22P-9 SUBSTRATE INTEGRATED HORN ANTENNAS WITH IMPROVED APERTURE EFFICIENCY
N. Bayat-Makou, A. A. Kishk, Concordia University, Quebec
B22P-10 ADAPTIVE BEAMFORMING SYNTHESIS FOR THINNED FRAC TAL ANTENNA ARRAYS
S. E. El-Khamy, A. S. Eltrass, Alexandria University, Faculty of Engineering, Egypt; H. Fawzy, Pharos University, Egypt
B22P-11 WIDE-BAND CIRCULARLY POLARIZED CAVITY BACKED CROSSED DIPOLE ANTENNA
K. Saurav, D. Sarkar, K. V. Srivastava, Indian Institute of Technology, Kanpur, India
B22P-12 GEOMETRY PERTURBATION OF DIELECTRIC RESONATOR FOR SAME FREQUENCY OPERATION AS RADIATOR AND FILTER
T. T. Praniti, M. A. Moharram, A. A. Kishk, Concordia University, Canada
B22P-13 TRUNCATION OF NEAR- AND FAR-FIELDS IN DIRECTIVITY ESTIMATION
M. Raznhooseini, R. G. Vaughan, Simon Fraser University, Canada
B22P-14 MEASUREMENT, SIMULATION AND OPTIMIZATION OF WIDEBAND LOG-PERIODIC ANTENNAS
K. K. Mistry, P. I. Lazaridis, I. A. Glover, V. Holmes, F. Khan, Q. Ahmed, University of Huddersfield, United Kingdom; Z. D. Zahari, T. D. Xenos, Aristotle University of Thessaloniki, Greece
B22P-15 SUM AND DIFFERENCE BEAM PATTERNS IN RESONANT SLOTTED- WAVEGUIDE ARRAY
Y. Chen, R. G. Vaughan, Simon Fraser University, Canada
B22P-16 DIRECTIVITY AND BANDWIDTH OF A DUAL-SIDED SLOTTED WAVEGUIDE ARRAY
M. Raznhooseini, R. G. Vaughan, Simon Fraser University, Canada
B22P-17 TIME DOMAIN RESPONSE OF TRANSMITTING AND RECEIVING UWB CIRCULAR DISC MONOPOLE ANTENNA
J. Y. Siddiqui, N. Bhattacharyya, University of Calcutta, India; Y. M. M. Antar, Royal Military College of Canada, Canada
B22P-18 AN ADVANCED DESIGN METHOD FOR TSA ELEMENTS
F. Li, M.-W. Chen, C.-S. Lin, Tumkang University, China (SRS)
B22P-19 ANALYSIS OF DIMENSIONAL INVARIANCE IN U-SLOT MICROSTRIP PATCH VIA SEGMENTATION METHOD
M. Khan, D. Chatterjee, University of Missouri Kansas City, United States
B22P-20 SMALL BROADBAND PATCH ANTENNA DESIGN FOR L-BAND APPLICATIONS
M. Lattrach, ESEO-IETR, France; S. Islam, ESEO, France
B22P-21 PANELED CENTER-FED REFLECTARRAY FOR BANDWIDTH ENHANCEMENT
M. M. Tafseer, A. A. Kishk, Concordia University, Canada
**POSTERS - Recent Advances in Metamaterials**

Session Chairs: Ari Sihvola, Ismo Lindell

**B29P-1** DIRECTED PROPAGATION OF ELECTROMAGNETIC WAVES IN STRATIFIED PERIODIC STRUCTURES  
M. V. Perel, M. S. Sidorenko, Saint Petersburg State University, Russian Federation

**B29P-2** OPTIMAL PLASMONIC RESONANCES FOR SMALL ARBITRARILY SHAPED PARTICLES IN LOSSY MEDIA  
M. Dalarsson, S. Nordebo, Linnæus University, Sweden; D. Sjöberg, Lund University, Sweden

**B29P-3** TRANSISTOR-LOADED ISOLATOR BASED ON BOTH FRUSTRATED PROPAGATION AND FIELD CANCELLATION MECHANISMS  
Y. Yokohama, T. Kodera, Meisei University, Japan

**B29P-4** DEVELOPMENT AND TEST OF CONCENTRATION SCALED PARTICULATE DEMAGNETIZATION IN EFFECTIVE MEDIA: THEORIES OF MAGNETIC METAMATERIALS AND COMPOSITES  
R. L. Moore, Georgia Tech Research Institute, United States

**B29P-5** A MINIATURIZED DIRECTIVE HIGH GAIN METAMATERIAL ANTENNA WITH ELC LOADING FOR WIMAX APPLICATION  
N. Mishra, R. K. Chaudhary, Indian Institute of Technology (Indian School of Mines), Dhanbad, India

**B29P-6** TRANSIENT RESPONSE OF WAVE THROUGH DISPERSIVE TRANSMISSION OPTICS BASED ELECTROMAGNETIC DEVICES  
C. Qian, H. Wang, R. Li, B. Zheng, H. Chen, Zhejiang University, China (CIE)

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**POSTERS - Scattering and Diffraction**

Session Chairs: Ludger Klinkenbusch, Giuliano Manara

**B31P-1** SCATTERING BY A COATED CYLINDER TRUNCATED BY A METAL PLANE  
P. L. E. Uslenghi, M. D. Poort, University of Illinois at Chicago, United States

**B31P-2** STUDY ON SCATTERING PROPERTIES BETWEEN SLIGHTLY ROUGH WAFER AND MULTI-BODY DEFECTS PARTICLES  
G. Lee, Xi’an Technological University, China; W. Zhenben, G. Chengxian, Xidian University, China

**B31P-3** SCATTERING OF AN EVANESCENT WAVE FROM THE END-FACE OF AN ORDERED WAVEGUIDE SYSTEM  
A. Komivama, Osaka Electro-Communications University, Japan

**B31P-4** NUMERICAL ELECTRODYNAMICS MODELING RCS ELECTRICAL DIPOUL WITH HUYGENS CUBE FEEDING USING IMPEDANCE MATCHED MATERIAL  
A. T. Kruglov, Meisei University, Japan

**B31P-5** ENHANCEMENT OF MICROVOLTAGE ABSORPTION PROPERTIES OF SOFT-SKIN RADIATION ABSORBING MATERIALS  
A. Teber, R. Bansal, K. Cil, T. Yilmaz, B. Eraslan, D. Uysal, G. Surucu, A. Baykal

**B31P-6** REFLECTION AND TRANSMISSION OF SHAPED VORTEX BEAMS FROM MULTILAYERED MEDIA  
H. Li, Z. Wu, F. Honary, L. Bai, Q. Shang, G. Zhang

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**POSTERS - Small Antennas from Nano to Macro Scales**

Session Chairs: Richard Ziolkowski, Samel Arslanagic

**B33P-1** ON-CHIP MICROSTRIP PATCH REFLECTARRAY  
S. Abd Elhamied, Faculty of Electronic Eng., Menoufa University, Egypt; E. Gregory; H. A. Malhat, S. H. Zainud-Deen, Faculty of Electronic Engineering-Menoufa University, Egypt

**B33P-2** V-BAND LINEAR TAPERED SLOT ANTENNA ARRAY USING GLASS-BASED INTEGRATED PASSIVE DEVICE TECHNOLOGY  
Y.-Z. Lee, Y.-S. Lin, National Central University, China (SRS)

**B33P-3** RESONANT BRIGHT AND DARK MODES ON PLASMONIC NANOSCATTERS: CHARACTERISTIC MODES FOR PLATONIC SOLIDS  
D. C. Tsarouchia, P. Ylä-Oijala, A. Sihvola, Aalto University, Finland

**B33P-4** DUAL-BAND MONOPOLE ANTENNA AND CONDITIONING CIRCUIT FOR WIRELESS ENERGY HARVESTING  
C. Liu, S. Zhou, J. Zhang, Z. Wu, Wuhan University of Technology, China (CIE); K. Yang, Xiangan Electric Manufacturing Group Co., Ltd, China (CIE); J. Wu, Huazhong Institute of Electro-Optics, China (CIE)

**B33P-5** DESIGN OF A WIDEBAND SUPERDIRECTIVE ENDIFIRE ANTENNA ARRAY USING CHARACTERISTIC MODES OPTIMIZATION  
H. Jaafar, A. Sharainta, S. Collardey, Université de Rennes 1 / IETR, France
Thursday, August 24, 2017 16:00-19:00 Poster Room

B33P-6 MINIATURIZED SATELLITE ANTENNA USING ARTIFICIAL MAGNETIC CONDUCTORS (AMC) OF VHF BAND
A. A. Izmaylov, JSC RPC Lianozovoe Electromechanical Plant, Russian Federation

B33P-7 STORED ENERGY IN DISPERSIVE AND PIECEWISE HOMOGENOUS MEDIA
C. Ehrenborg, M. Gustafsson, Lund University, Sweden

B33P-8 GOING BEYOND CHU HARRINGTON LIMIT: ULF RADIATION WITH A SPINNING MAGNET ARRAY
S. P. Mysore Nagaraja, Y. Huang, Y. E. Wang, University of California, Los Angeles, United States

B33P-9 A MONOPOLE ANTENNA WITH NOTCH-FREQUENCY FUNCTION FOR UWB APPLICATION
M. Dashi, Arakani, J. Pourahmadazar, S. O. Tatu, Institut National de la Recherche Scientifique (INRS), Canada

B33P-10 EFFECTS OF SPLIT RING ARRANGEMENT AND SLIT LOCATION ON THE MINIATURIZATION PERFORMANCE OF SPLIT RING LOADED DIELECTRIC RESONATOR ANTENNAS
Y. Liu, L. Shafai, C. Shafai, University of Manitoba, Canada

B33P-11 SIMPLE HIGH IMPEDANCE SURFACE FOR ENHANCED RADIATION FROM LOW PROFILE ANTENNAS OVER SURFACES WITH FINITE CONDUCTIVITY
P. Hansen, Peder Hansen Consultant, United States; A. Rodriguez, Naval Post Graduate School, United States

B33P-12 TRUNCATED GROUND ULTRA COMPACT MONOPOLE ANTENNA FOR WIRELESS APPLICATIONS
S. V. A, Cochin University of Science and Technology, India

B33P-13 SIZE REDUCTION AND BANDWIDTH ENHANCEMENT OF APERTURE COUPLED BASED MICROSTRIP ANTENNA BY USING MEANDER LINE SLOT
P. H. Mulki, H. Schreiber, H. Paulitsch, A. Grauber, W. Bosch, Graz University of Technology, Austria

B33P-14 V-BAND DIPOLE PHASED ARRAY ANTENNAS ON EXTENDED HEMISPHERICAL DIELECTRIC LENSES
J. Pourahmadazar, M. Dashi, Arakani, S. O. Tatu, T. A. Denidni, Institut National de la Recherche Scientifique (INRS), Canada

B33P-15 A COMPACT MULTI-BAND MICROSTRIP SLOT ANTENNA FOR MOBILE AND WIRELESS TECHNOLOGIES
M. Fazaaah, Mohammed F University in Rabat, Morocco; I. Ben Issa, Abdelmalek Essaadi University, Morocco

Thursday, August 24, 2017 16:00-19:00 Poster Room
Session B35P

POSTERS - High-Resolution Electromagnetic Sensing and Imaging
Session Chair: Natalia Nikolova

B35P-1 ADVANCED MULTIPLE INPUT MULTIPLE OUTPUT (MIMO) SAR ALGORITHM FOR HIGH-RESOLUTION 3D RECONSTRUCTION IMAGING
X. Wu, Tongji University, China (CIE)

B35P-2 STUDY OF SCANNING SCHEMES FOR THZ HOLOGRAPHIC IMAGING
M. Zhou, Y. Alfadhl, X. Chen, Queen Mary, University of London, United Kingdom

B35P-3 MUSIC LOCALIZATION OF RADIO-FREQUENCY SOURCES USING FIELD DISTRIBUTIONS MEASURED BY METASURFACE ABSORBER
N. Tonooka, R. Kanaura, S. Yagitani, T. Imachi, M. Ozaki, Kanazawa University, Japan; Y. Yoshimura, H. Sugiyama, Industrial Research Institute of Ishikawa, Japan

B35P-4 MULTIPLE TARGET IMAGING USING A SINGLE MONOSTATIC ULTRA-WIDEBAND DOPPLER RADAR BASED ON TIME DOMAIN ADAPTIVE SIGNAL PROCESSING
S. Okumura1, A. Ueshina1, T. Sakamoto2, T. Sato3
1Kyoto University, Japan; 2University of Hyogo, Japan

Thursday, August 24, 2017 16:00-19:00 Poster Room
Session BD36P

POSTERS - Advances in Antennas for RFID
Session Chair: Smail Tedjini

BD36P-1 DESIGN OF ELECTRICALLY SMALL 3D WIRE ANTENNAS FOR UHF RFID APPLICATIONS USING GENETIC ALGORITHM
F. Bemahmoud, P. Lamaitre Auger, S. Tedjini, Grenoble Alpes University, France

BD36P-2 ANTENNA DESIGN FOR COMPACT RFID SENSORS DEDICATED TO METALLIC ENVIRONMENTS
K. Zannas1, H. El Matboul2, Y. Duroc3, S. Tedjini1
1Grenoble-Alpes University, France; 2University of Lyon, France

BD36P-3 CHIPLESS TAG PRINTED WITH COMMON OFF THE SHELF INKJET PRINTER AND AIR DRY CONDUCTIVE INK
E. Perez, University of Grenoble Alpes - LCIS, France; Y. Hebrard, SKF Aerospace, France; P. J. Cottinet, INSa-Lyon - LIGE, France

Thursday, August 24, 2017 16:00-19:00 Poster Room
Session C25P

POSTERS - Radio Signal Processing and Radar Systems
Session Chairs: Shilong Pan, Daiyin Zhu

C25P-1 MICRO-DOPPLER SIGNATURE OF ROTATING TARGETS IN SAR-GMTI SYSTEM USING CSI TECHNIQUE
X. Wu, Y. Salous, Durham University, Durham

C25P-3 VLBI APPLICATIONS IN HIGH ACCURACY TRACKING OF CHINESE LUNAR PROBES
W. Zheng, Shanghai Astronomical Observatory, China (CIE)

C25P-4 IN SITU INVESTIGATION OF RAIN DROP SIZE DISTRIBUTION (DDSD) USING MICRO RAIN RADAR DATA AND ITS EFFECT ON MICROWAVE RADIO SIGNALS IN TROPICAL REGION
A. C. Tomiwa, J. S. Ojo, M. O. Ajewole, Adekunle Ajasin University, Alakia Akoko Ondo State, Nigeria

C25P-5 TUNABLE C-SECTION PHASER FOR DYNAMIC ANALOG SIGNAL PROCESSING
X. Wang, L. Zou, C. Caloz, Polytechnique Montreal, Canada

C25P-7 PERFORMANCE ANALYSIS OF PHASED MIMO RADAR IN LOW SNR REGIME
S. N. Sig, R. Bera, Sikkim Manipal Institute of Technology, India; B. Maji, NATIONAL INSTITUTE OF TECHNOLOGY, DURGAPUR, INDIA

C25P-8 DEVELOPMENT OF ADAPTIVE DOPPLER RADAR
S. Bera, M. Das, T. Singh, R. Bera, Sikkim Manipal Institute of Technology, India

C25P-9 U-SHAPE-BASED ORBITAL DESIGN METHOD FOR GEO-BISSAR RESOLUTION IMPROVEMENT
Y. Cheng, S. Zhang, B. Zhao, C. Hu, University of Electronic Science and Technology of China, China (CIE)

C25P-10 COOPERATIVE GAME-THEORETIC POWER ALLOCATION ALGORITHM FOR TARGET DETECTION IN RADAR NETWORK
C. Shi1, S. Salous3, J. Zhou1, F. Wang2
1Nanjing University of Aeronautics and Astronautics, United Kingdom; 3University of Durham, United Kingdom

C25P-11 HIGH RESOLUTION EXTRACTION OF RADAR MICRO-DOPPLER SIGNATURE USING SPARSE TIME-FREQUENCY DISTRIBUTION
X. Chen, J. Guan, Y. He, Naval Aeronautical and Astronautical University, China (CIE)

Thursday, August 24, 2017 16:00-19:00 Poster Room
Session C29P

POSTERS - Wireless Communications for the Future Transportation Systems
Session Chairs: David Matolak, Ruisi He

C29P-1 PATH LOSS CHARACTERISTICS FOR VEHICLE-TO-INFRASTRUCTURE CHANNEL IN URBAN AND SUBURBAN SCENARIOS AT 5.9 GHZ
M. Yang, B. Ai, R. He, D. Yao, J. Li, B. Zhang, Q. Wang, D. Fei, M. Ni, Beijing Jiaotong University, China (CIE)

C29P-2 ADAPTIVE BEAMFORMING BASED ON SUBBAND STRUCTURE IN SMART ANTENNAS
Y. Zhao1,2, B. Ai1, D. Fei1, Y. Liu1, N. Li2
Thursday, August 24, 2017 16:00-19:00 Poster Room

Session E23P

POSTERS - EMC in Wired and Wireless Systems
Session Chairs: Jacob Gavan, Frank Gronwald

E23P-1 2D MODELING OF BULK CURRENT INJECTION PROBE AND VALIDATION WITH MEASUREMENTS
M. S. Doig, E. Clavel, G2ELab, France; H. Cheaito, C. Voltaire, Ampère, France; E. Vialardi, Altair, France

E23P-2 STUDY OF THE IMPACTION BY LIGHTNING STRIKE ON COMMUNICATION CABLE BASED ON TIME-DOMAIN FINITE ELEMENT METHOD
H. Ma, W. Zhang, X. Liu, North China Electric Power University, China (CIE)

E23P-3 THE ACCELERATION OF THE SHOOTING AND BOUNCING RAY TRACING METHOD ON GPUs
D. Shi, Beijing University of Posts and Telecommunications, China (CIE)

E23P-4 AN EVALUATION METHOD OF DIGITAL COMMUNICATION SYSTEM BASED ON STATISTICAL PARAMETER APD AND PDD
N. Song1, Y. Wen1,2
1Beijing Jiaotong University, China (CIE); 2Beijing Engineering Research Center of EMC and GNSS Technology for Rail Transportation, China (CIE)

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session EFGH28

POSTERS - Remote Sensing from Nano-Satellites
Session Chairs: Jaan Praks, Steven Reising

F25P-1 HYPERSONTIAL IMAGING CUBETS FOR SPACE-BASED SERVICES
J. Kalnins, T. Tikka, Reaktor Space Lab, Finland; J. Praks, Aalto University, Finland

F25P-2 IMPROVING CUBESAT TRANSMITTER EIRP TO ENABLE SPACE NETWORK COMMUNICATION CAPABILITIES
S. Rahimizadeh1, P. Ferrere2, Z. Popovic1, H. Shaw2
1University of Colorado at Boulder, United States; 2Goddard Space Flight Facility, United States

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session F34P

POSTERS - Outdoor Propagation and Channel Modeling in Built-Up Areas, with Special Interest in the Effects of Vegetation
Session Chairs: Robert Bultitude, Saul Torrico

F34P-1 VERTICAL REFRACTIVITY GRADIENT STATISTICS IN THE LOWER TROPOSPHERE OVER AKURE, NIGERIA USING ECMWF DATASET
S. T. Osampa, I. A. Fuwape, Federal University of Technology, Akure, Nigeria

F34P-2 ANALYSIS OF PROPAGATION IN BOTH BOTTOM- AND SIDE-WALL ENVIRONMENT
S. Oh, J.-W. Choi, H.-C. Lee, Chosun University, South Korea; Y.-C. Lee, Mokpo National Maritime University, South Korea; D. Choi, S. W. Park, Radio Research Agency, South Korea

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session G29P

POSTERS - GNSS Applications in Radio Science
Session Chairs: Matthew Angling, Seebany Datta-Barua

G29P-1 STUDIES ON RELATIVE PERFORMANCE OF DIFFERENT SATELLITE-BASED NAVIGATION SYSTEMS DURING ADVERSE IONOSPHERIC CONDITIONS FROM EQUATORIAL IONIZATION ANOMALY CREST LOCATION
A. Paul; S. Goswami, University of Calcutta, India

G29P-2 COMPARISON OF GLOBAL TEC BETWEEN IRI TEC AND GPS TEC IN THE SPRING OF 2006
X. Wang1, Q. Wan1, T. Maruyama1,2, G. Ma1, J. Li1, J. Fan1
1National Astronomical Observatories, Chinese Academy of Sciences, China; 2Space Environment Group, National Institute of Information and Communications Technology, Japan

G29P-3 TEC STORM ON 13 OCTOBER 2016 AT 400N LATITUDE DERIVED FROM GPS RECEIVERS
Q. Wan, G. Ma, T. Maruyama, J. Li, X. Wang, J. Fan, National Astronomical Observatories, Chinese Academy of Sciences, China

G29P-4 COMPARISON OF SOFTWARE DERIVED SLANT TEC VERSUS HARDWARE PRODUCED SLANT TEC
R. Caldas, J. Little, T. Gauzin, D. Munton, A. Fleischmann, The University of Texas, United States

G29P-5 REAL-TIME IGS NETWORK TO STUDY IONOSPHERIC IRREGULARITIES: IMPACT OF GLONASS
R. Ghoddousi-Fard, Natural Resources Canada, Canada

G29P-6 USE OF GNSS SIGNALS FOR PLASMAPHERIC REMOTE SENSING
Y. Hao1, J. Huang1, W. Liu1, D. Zhang1, Z. Xiao1
1Peking University, China (CIE); 2Beihang University, China (CIE)

G29P-7 MULTIPATH AND THERMAL NOISE FREE RELATIVE TEC ESTIMATION USING RNSS LS AND SI SIGNALS
M. O. Javeed, A. D. Sarma, T. Sridher, N. V. K. Rao, Chaitanya Bharathi Institute of Technology, India

G29P-8 DETERMINATION OF GNSS INSTRUMENTAL BIASES FOR TOTAL ELECTRON CONTENT STUDY USING ISOLATED SINGLE RECEIVER
T. Maruyama, National Institute of Information and Communications Technology, Japan; G. Ma, National Astronomical Observatories, China

G29P-9 FUZZY LOGIC BASED ADAPTIVE EXTENDED KALMAN FILTER FOR GNSS RECEIVERS
P. B. S. Harsha, D. V. Rattam, KL University, India

G29P-10 EFFECT OF AMPLITUDE SCINTILLATIONS ON THE TRACKING ERROR OF RNSS RECEIVER FOR INDOOR NAVIGATION APPLICATIONS
N. Aliuolu Mang, K. Lashmamana, A. D. Sarma, N. V. K. Rao, Chaitanya Bharathi Institute of Technology, India; T. K. Pant, Vikram Sarabhai Space Centre, India

G29P-11 QUALITY OF GLOBAL POSITIONING SYSTEM SERVICES WITHIN EQUATORIAL IONOSPHERIC ANOMALY REGION IN NIGERIA
S. R. Fayose, O. J. Ibukun, ADEKUNLE AJASIN UNIVERSITY AKUNGBA-AKOKO, Nigeria

G29P-12 THE IONOSPHERE PREDICTION SERVICE PROJECT
C. Cesaroni1, F. Rodriguez2, G. De Franceschi1, M. Aquino1, P. Berrilli1, M. Hutchinson1, G. L. Gopalakrishnan1, S. Veetil1, L. Spogli1, V. Romano1, R. Ronchini1, S. Di Rollo2, D. Del Moro3
1University of Pavia, Italy; 2Italian Space Agency, France; 3RIKEN, Japan
Thursday, August 24, 2017 16:00-19:00 Poster Room
Session G39P

POSTERS - International Beacon Satellite Studies

Session Chairs: Patricia Doherty, Bruno Nava, Andrzej Krankowski

G39P-1 IMPULSIVE ENERGY TRANSFER VIA JOULE HEATING DURING GEOMAGNETIC STORMS
I. J. Zanetti, NOAA, United States; R. M. Robinson, Catholic University, United States; B. Anderson, H. Korth, Johns Hopkins Applied Physics Laboratory, United States

G39P-2 EVALUATING DIFFERENT GPS CALIBRATION TECHNIQUES IN THE EQUATORIAL IONIZATION ANOMALY REGION
D. Bilizzi1, S. Radicella2, L. Cirillo2, F. J. Arpilucea2, G. K. Seemala2, X. O. Villamidé2
1George Mason University, United States; 224th Asland Slaam International Centre of Theoretical Physics, Italy; 3Universidad Nacional de La Plata, Argentina; 4Indian Institute of Geomagnetism, Brazil

G39P-3 FIRST OBSERVATIONS OF EQUATORIAL IONIZATION ANOMALY TROUGH VARIABILITY OVER THE INDIAN REGION
M. Neelakantan1, T. K. Pant, Space Physics Laboratory, Vikram Sarabhai Space Centre, ISRO P.O., Thiruvananthapuram, India

G39P-4 GS ROTPOLARMAP: PRODUCT, SERVICE, AND APPLICATIONS
I. Chemiü, A. Krankowski1, I. Zakharovskii1
1Institute of Radio Astronomy National Academy of Sciences of Ukraine, Ukraine

G39P-5 TEC MEASUREMENTS USING SATELLITE RADIO BEACONS AND GROUND-BASED RECEIVERS OVER THE PERUVIAN REGION
E. Pacheco, J. Chávez, J. Gómez, F. Villanueva, Instituto Geofisico del Peru, Peru; C. Valladares, The University of Texas at Dallas, USA

N. Wang1, Z. Li1, K. Kotsulak2, Y. Yuan1, A. Krankowski3
1Institute of Geodesy and Geophysics, Chinese Academy of Science, PR China; 2Academy of Opto-Electronics, Chinese Academy of Science, PR China; 3Space Radio-Diagnostics Research Center, University of Warmia and Mazury, Poland

G39P-7 FIELD DEPLOYMENT OF THE RADIO ARRAY OF PORTABLE INTERFEROMETRIC DEVICES (RAPID) FOR STUDIES OF THE EQUATORIAL IONOSPHERE
G. Allan, A. Carlson, R. Volz, A. Coster, K. Cahey, F. Lind, Massachusetts Institute of Technology, USA; M. Milla, Instituto Geofisico del Peru, Peru

Thursday, August 24, 2017 16:00-19:00 Poster Room
Session G44P

POSTERS - Radio Studies of Mid and Low Latitude Aeronomy

Session Chair: A Rabiu

G44P-1ON THE INTER-HOURLY VARIABILITY OF TOTAL ELECTRON CONTENT DURING THE QUIET CONDITION WITHIN THE EQUATORIAL IONIZATION ANOMALY REGION
A. B. Rabiu1, T. A. Ayonín2, A. C. Amory-Mazaудур1
1Centre for Atmospheric Research, Nigeria; 2North-West University, South Africa; 3Sorbonne University’s, IPMC University1, France

G44P-2 DC ELECTRIC FIELD MEASUREMENTS NEAR THE SQ CURRENT SYSTEM BY S-310-44 SOUNDING ROCKET
K. Ishihaka, Toyama Prefectural University, Japan; T. Abe, JAXA/ISAS, Japan; A. Kumanoto, Tokoh University, Japan; M. Tanaka, Tokai University, Japan; A. Yoshikawa, H. Matushita, Kyushu University, Japan

G44P-3 DC ELECTRIC FIELD MEASUREMENT IN THE MID-LATITUDE IONOSPHERE BY S-528-26 SOUNDING ROCKET
A. Yamamoto, K. Ishihaka, Toyama Prefectural University, Japan; M. Tanaka, Tokai University, Japan; M. Yamamoto, RISH, Kyoto University, Japan; T. Abe, ISAS/IJASA, Japan

G44P-4 TOTAL ELECTRON CONTENT VARIATIONS OVER ABUJA DURING THE ANNULAR SOLAR ECLIPSE OF SEPTEMBER 1, 2016.
A. A. Akerele, D. I. Okoh, B. A. Rabiu, CENTER FOR ATMOSPHERIC RESEARCH/NASRDA, Nigeria

G44P-5 ROLE OF METEORIC ACTIVITY IN PRODUCING EQUATORIAL COUNTER ELECTROJET
C. Vigneot, N. Mrudula, K. K. Kumar, T. K. Pant, Space Physics Laboratory, India

G44P-6 UNUSUAL OBSERVATIONS OF LONG LASTING POST NOON F3 LAYERS AND SUBSEQUENT ESF GENERATION OVER THE EQUATORIAL LOCATION OF THIRUVANANTHAPURAM
M. Neelakantan, T. K. Pant, Space Physics Laboratory, Vikram Sarabhai Space Centre, ISRO P.O., Thiruvananthapuram, India

G44P-7 PREDICTION OF THE PEAK HEIGHT OF IONOSPHERIC ELECTRON DENSITY F2-LAYER USING NEURAL NETWORK OVER EQUATORIAL AFRICAN SECTOR
O. E. Abe1,2, A. B. Rabiu1, S. M. Radicella1, B. Nava2, E. O. Oyeyemi1, A. C. Amory-Mazaудур1, O. S. Bolaji1, A. O. Adewale, A. O. Akala, B. Olugbon, University of Lagos, Nigeria

G44P-8 2-TEC VARIATION IN THE AFRICAN EQUATORIAL AND LOW LATITUDE REGION AND PERFORMANCE OF THE IRI MODEL
S. J. Adebiyi, Landmark University, Nigeria; I. A. Adimula, O. A. Oladipo, University of Ilorin, Nigeria

G44P-9 PREDICTION OF THE PEAK HEIGHT OF IONOSPHERIC ELECTRON DENSITY F2-LAYER OVER AFRICA WITH THE IRI Model
O. E. Abe1,2, A. B. Rabiu1, S. M. Radicella1, B. Nava2, E. O. Oyeyemi1, A. C. Amory-Mazaудур1, O. S. Bolaji1, A. K. Kazeem1, P. Mungufemi1, A. Tebabal1, R. H. Ngayà2, C. Paparini2
1Federal University Oye-Ekiti, Nigeria; 2Federal University of Technology, Nigeria; 3Centre for Atmospheric Research, National Space Research & Development Agency, NASRDA, Nigeria; 4The Abus Salam International Centre for theoretical Physics (ICTP), Italy; 5University of Lagos, Nigeria; 6Bharata University of Science and Technology, Thailand; 7Bahir Dar University, Ethiopia; 8Agence pour la Sécurité de la Navigaison Aérienne en Afrique et à Madagascar (ASECNA), Senegal; 9European Satellite Services Provider, France

G44P-10 LONGITUDINAL DISCREPANCIES IN THE IRI BOTTOMSIDE PROFILE PARAMETERS OVER THE EQUATORIAL AND LOW LATITUDE REGION FROM FORMOSAT-3/COSMIC IONOSPHERIC OCCULTATIONS
S. K. Panda, Koneru Lakshmaiah University, India; H. Haralambas, Frederick University, Cyprus; K. Venkatesh, Universidade do Vale do Paraiba / IP & D, Brazil

G44P-11 INTERNATIONAL REFERENCE IONOSPHERE EXTENDED TO PLASMASHPER (IRI-FLAS) MODEL
L. Sezer1, T. L. Gulyaeva2, F. Ankan1
1Hacettepe University, Turkey; 2IZMIRAN, Russia
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Session HJ24P

POSTERS - Solar, Planetary, and Heliospheric Radio Emissions

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian

HJ24P-1  SHADOW EFFECTS IN THE JOVIAN DECAMETER EMISSION
G. V. Litvinenko, A. A. Kononvalenko, V. V. Zakharenko, I. Y. Vasilev, Institute of Radio Astronomy, Ukraine; M. Panchenko, Space Research Institute, Austria; V. E. Shaposhnikov, National Research University High School of Economics, Russia; P. Zarza, LERES, Observatoire de Paris, UMR CNRS, France; H. O. Rucker, Commission for Astronomy, Austrian Academy of Sciences, Austria

HJ24P-2  STREAM STRUCTURE OF SOLAR WIND BEYOND EARTH’S ORBIT BY IPS OBSERVATIONS WITH LOW FREQUENCY UKRAINIAN RADIO TELESCOPES UTR-2, URAN AND GURT
M. Kalinichenko1, O. Olyak1, O. Kononvalenko1, H. Rucker2, R. Fallows3, P. Zarza4, A. Lecacheux5, I. Bunov6, S. Yerin7, A. Brazhenko8, O. Ivantishin9, V. Koshovy9, O. Lytvynenko10
1Radio Astronomy institute, Ukraine; 2Space Research Institute, Austria; 3ASTRON – the Netherlands institute for Radio Astronomy, The Netherlands; 4LESA – Observatoire de Paris, France; 5Institute of Physics and Mechanics, Ukraine

HJ24P-3  SOLAR SYSTEM LOW-FREQUENCY RADIO EMISSION STUDIES WITH THE UTR-2, URAN AND GURT RADIOTELESCOPES
Y. Volvach1, A. Kononvalenko1, P. Zarza1, H. Rucker2, V. Zakharenko1, O. Ulyanov1, M. Sidorchev1, S. Stepin1, V. Melnik2, N. Kalinichenko1, A. Stanislavsky1, P. Tokarsky1, V. Kolidin3, V. Shepelev4, V. Dorovsky5, I. Bunov6, S. Yerin7, A. Reznichenko1, G. Litvinenko1, A. Koval8, N. Shevechuk1, I. Vasylyeva1, K. Mylosta1, A. Skoryk1, A. Shevtsova1, V. Vasylykov1, V. Ryabov1, A. Lecacheux5, L. Denis1, M. Panchenko1, G. Fischer1, M. Im1, J.-M. Griesmeier1, G. Mans1, O. Litvinenko1
1Institute of Radioastronomy of NAS of Ukraine, Ukraine; 2LESA, UMR CNRS 8109, Observatoire de Paris, France; 3Space Research Institute, Austrian Academy of Sciences, Austria; 4Future University-Hakodate, Japan; 5Station de Radioastronomie de Nancy, Observatoire de Paris, I8 Nancay, France; 6Department of Physics and Astronomy, University of Iowa, USA; 7LPCE2 – Universite d’Orleans/CNRS, France; 8Leibniz-Institut fur Astrophysik Potsdam, Germany

HJ24P-4  THE POLARIZATION LEAKAGE OF MINGANTU SPECTRAL RADIOHELIOPHOTOGRAPH
C. Su1, Y. Yan1, W. Wang2, National Astronomical Observatories, Chinese Academy of Sciences, China

HJ24P-5  TWO NEW 3-BAND SOLAR RADIO POLARIMETERS
G. Lihong1,1, C. Tan1,1, J. Dun2, H. Zhang3, Y. Jia3, Z. Yan1,1, Z. Chen1,1, S. Ma4,1, D. Liu5,1, J. Du6,1, C. Su1,1
1NAOC, China (CIE); 2NSMC, China (CIE); 3CETC, China (CIE); 4Shandong University, China (CIE)

HJ24P-6  SIBERIAN RADIOHELIOPHOTOGRAPH: FIRST OBSERVATIONS
S. Lenouvel1, A. A. Kachanov, V. V. Grechnev, A. V. Gubin, Institute of Solar-Terrestrial Physics, Russian Federation

HJ24P-7  IONOSPHERIC SCINTILLATION AND SOLAR WIND MONITORING WITH LOFAR STATION PL610
H. Rothkaehl1, M. Pozoga1, B. Matyjasiak1, D. Przepiorka1, R. Wronowski1, H. Calvani1, T. Abe2,3, M. Grzesiak1, M. Grzesiak1
1Institute of Radio Astronomy, Ukraine; 2V.N. Karazin Kharkiv National University, Ukraine; 3Charles University, Czech Republic

HJ24P-8  EXTENDED RADIO SOLAR IMAGE PROCESSING FOR MUSER
D. Liu1, Y. Yan1, W. Wang2, National Astronomical Observatories, Chinese Academy of Sciences, China

HJ24P-9  ON THE INFLUENCE OF THE ANTENNA RPW/SOLAR ORBITER TILT ANGLE AND THERMAL BENDING TO THE RADIO DIRECTION FINDING CAPABILITIES
V. Krupa1,2, M. Maksimovic1, M. Panchenko1,2, O. Kruparova2, O. Santolik2,3, J. Soucek2
1NASA Goddard Space Flight Center, United States; 2Institute of Atmospheric Physics CAS, Czech Republic; 3Observatoire de Paris, France; 4Space Research Institute, Austria; 5Charles University, Czech Republic

HJ24P-10  SPATIALLY-RESOLVED OBSERVATIONS OF SOLAR DRIFT-PAIR PAIRS AT 9-33 MHZ
Y. Volvach1, A. Stanislavsky1,2, A. Kovat1, A. Kononvalenko1
1Institute of Radio Astronomy, Ukraine; 2V.N. Karazin Kharkiv National University, Ukraine; 3Institute of Space Sciences, Shandong University, China

HJ24P-11  SOLAR RADIO IMAGING WITH MINGANTU SPECTRAL RADIOHELIOPHOTOGRAPH (MUSER)
L. Chen1, W. Wang2, Y. Yan1, D. Liu1, National Astronomical Observatories, Chinese Academy of Sciences, China

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Session H12P

POSTERS - Remote Sensing and Modeling of the Earth’s Plasmasphere and Plasmapause

Session Chair: Balazs Heilig

H12P-1 WHAT CAN WE LEARN FROM THE VAN ALLEN PROBE MEASUREMENTS OF THE ELECTRIC DRIFT (E×B)/B^2 IN THE INNER MAGNETOSPHERE? - AN UPDATE
S. Lejosne, F. S. Mozer, University of California, United States

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Session H33P

POSTERS - Macro/Micro-Scale Kinetic Processes at Natural Boundary Layers in Terrestrial and Planetary Environments

Session Chair: Bertrand Lembège

H33P-1 ELECTRON-SCALE SECONDARY MAGNETIC ISLAND NEAR THE RECONNECTION ELECTRON DIFFUSION REGION BY MMS OBSERVATION
R. Tang, Z. Zhong, M. Zhou, X. Deng, Nanjing University, China (CIE)

H33P-2A MECHANISM FOR EVOLUTION OF ELECTROSTATIC SOLITARY WAVES IN THE LUNAR WAKE
R. K., S. V. Singh, G. S. Lakhina, INDIAN INSTITUTE OF GEOMAGNETISM, India

H33P-3A MECHANISM FOR COHERENT LOW-FREQUENCY ELECTROSTATIC TURBULENCE IN THE SOLAR WIND
G. S. Lakhina, S. V. Singh, Indian Institute of Geomagnetism, India

H33P-4 ELECTROMAGNETIC PARTICLE SIMULATIONS ABOUT THE LOW FREQUENCY COMPONENT OF BEN OBSERVED BY GEOTAIL SPACECRAFT
T. Miyake, M. Saji, Toyauma Prefectural University, Japan; M. Okada, National Institute of Polar Research, Japan; Y. Omura, Kyoto University, Japan

H33P-5 SUPERSOLITONS” IN TWO ELECTRON TEMPERATURE WARM MULTI-ION PLASMAS
S. S. Varghese, S. Ghosh, Indian Institute of Geomagnetism, India

H33P-6 FILLING OF QUASI PERPENDICULAR ION FORESHOCK : 2D FULL-PARTICLE AND TEST-PARTICLES SIMULATIONS
P. Savoini, LPP - Ecole Polytechnique - UPMC, France; R. Lembège, LATMOS - UVSQ - CNRS, France

H33P-7 THE QUASI-MONOCHROMATIC ULF WAVE BOUNDARY IN THE VENUSIAN FORESHOCK: COMPARISON WITH TERRRESTIAL RESULTS
C. Mazellé1, K. Meziane2, L. Shan3, N. Romanelli2
1IPAP UPS-CNRS, France; 2University of New Brunswick, Canada; 3Chinese Academy of Sciences, China; Key Laboratory of Lunar and Deep Space Exploration, China; LATMOS CNRS-UPMC, France

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Session H41P

POSTERS - Commission H Open Session

Session Chairs: O. Santolik, János Lichtenberger

H41P-1 ULF ELECTROMAGNETIC EMISSIONS IN THE INNER MAGNETOSPHERE: LONGITUDINAL DEPENDENCE
Z. Záhlavová, F. Nemec1, O. Santolik1, I. Kolmašová2, G. B. Hospodarsky3, M. Parrot4, W. S. Kurth4, C. Kleising4, N. Cornilleau-Wehrlin4
1Charles University, Czech Republic; 2Czech Academy of Sciences, Czech Republic; 3University of Iowa, USA; 4LPC2E-CNRS, France; 5CNRS, France; 6Observatoire de Meudon, France

H41P-2 COMPUTER MODEL FOR WAVE BREAKING PHENOMENON IN SUPERHEATING PLASMA ENVIRONMENTS
A. B. Lotekur, A. Kakad, B. Kakad, Indian Institute of Geomagnetism, India

H41P-3 SUBSTORM RELATED ULF WAVES OBSERVED IN THE SOLAR WIND AND ON THE GROUND
M. Alimaganbetov, A. V. Streltsov, Embry-Riddle Aeronautical University, United States

H41P-4 COEXISTENCE OF COMPRESSIVE AND RAREFACTIVE ION ACOUSTIC SOLITARY WAVES IN A MAGNETIZED PLASMA
S. S. Ghosh, Indian Institute of Geomagnetism, India

H41P-5 DEVELOPMENT OF THE ASIC WAVEFORM RECEIVER FOR THE SS 520-3 SOUNCING ROCKET EXPERIMENT
Y. Tokunaga1, T. Zushi1, M. Ozaki1, S. Yagitani1, H. Kojima1
1Kanazawa Univ., Japan; 2RISH, Kyoto Univ., Japan

H41P-6 NEW TYPE OF SPECTRUM PLASMA WAVE RECEIVER USING ONE-CHIP ANALOG-DIGITAL MIXED ASIC
T. Zushi1, H. Kojima1, M. Ozaki1, Y. Kashara2, S. Yagitani1, Y. Tokunaga1, T. Takahashi2, H. Yamakawa2
1Kyoto University, Japan; 2Kanazawa University, Japan

H41P-7 GEOMETRY EXPERIMENT OF ADVANCED WAVE ANTENNASaboard Scientific Satellite
T. Kita1, T. Imaichi1, S. Yagitani1, M. Ozaki1, R. Higashi2, F. Kondo1
1Kanazawa University, Japan; 2National Institute of Technology, Ishikawa College, Japan

H41P-8 NOVEL DEEP DRILLING TECHNOLOGY BASED ON ELECTRIC PLASMA DEVELOPED IN SLOVAKIA
V. Sudmák2, I. Kočis2, T. Kristofic2, M. Gebura2, G. Horváth2, M. Gajdos2
1PEJ STU, Slovakia; 2G4 Drilling, Slovakia

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session J29P

POSTERS - Detection of Short-Duration Transients and Pulsars

Session Chairs: Joeri van Leeuwen, Vicky Kaspi, Ben Stappers

J29P-1 A NEW LOOK INTO PULSAR MICROSTRUCTURE WITH THE GMRT
K. De2, Y. Gupta1, P. Sharma2
1California Institute of Technology, United States; 2Indian Institute of Science, India; 3National Centre for Radio Astrophysics, India

J29P-2 REFINING OF PULSAR SPECTRA CATALOGUE AT FREQUENCIES BELOW 80 MHZ USING SYNERGY OF UTR-2 AND GURT RADIOTELESCOPES
S. N. Yerin, V. V. Zakharenko, I. N. Bubnov, I. Y. Vasileva, I. P. Kravtsov, Institute of Radios Astronomy NAS of Ukraine, Ukraine

J29P-3 AN INSTRUMENTATION DESIGN FRAMEWORK TO DETECT FAST RADIO BURSTS
P. R. Sanghavi, K. M. Bandura, West Virginia University, United States

J29P-4 PROBING THE INTERSTELLAR SCINTILLATION OF PSR B0329+54
R. McKinnon, University of Toronto, Canada

J29P-5 PULSAR STUDIES WITH SHANGHAI TIAN MA RADIO TELESCOPE
Z. Yan1,2, Z.-Q. Shen1,2, Y.-J. Wu1,2, R.-B. Zhao1,2, Q.-H. Liu1,2
1Shanghai Astronomical Observatory, Chinese Academy of Sciences, China (CIE); 2Key Laboratory of Radio Astronomy, Chinese Academy of Sciences, China (CIE)
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Session J34P

POSTERS - Latest News and Observatory Reports
Session Chairs: Richard Bradley, Willem Baan

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Session K15P

POSTERS - Electromagnetic Inversion for Biomedical, Geophysical, Non-destructive Testing, and Antenna Characterization Applications
Session Chairs: Puyan Mojabi, Aria Abubakar

K15P-1 AEROMAGNETIC INTERPRETATION SHOWING INFLUENCE OF BASALTS TO BOREHOLE FAILURE OVER KAURA AREA OF KADUNA STATE, NORTH-WESTERN NIGERIA
C. G. Afuwai, Federal University Dutsinma, Nigeria

K15P-2 FMCW GPR RADAR FOR ARCHAEOLOGICAL APPLICATIONS: FIRST ANALYTICAL AND MEASUREMENT RESULTS
S. Alvarez, H. J. Martinez, A. C. Canelo, M. A. Yarlequé, PUCP, Peru

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session K16P

POSTERS - EMF Exposure Assessment and Dosimetry for New Technologies (WPT)
Session Chairs: Teruo Onishi, Samyoung Chung

K16P-1 ESTIMATION OF THE THRESHOLDS FOR CORNEAL EPITHELIUM DAMAGE INDUCED BY MILLIMETER-WAVE ELECTROMAGNETIC FIELD EXPOSURE WITH A MATHEMATICAL MODEL BASED ON CEM43°C CRITERION
Y. Suzuki1, M. Kojima2, T. Tsuchi3, M. Mizuno4, T. Okuno5, M. Taki1,
J. Chakarothai6, K. Sasaki6, K. Wake6, S. Watanabe6, H. Sasaki6

K16P-2 EXPOSURE INDUCED BY SMART METERS
J.-B. Agnani, E. Conil, Agence nationale des fréquences, France

Thursday, August 24, 2017 16:00-19:00 Poster Room

Session K19P

POSTERS - EMF Exposure Assessment and Dosimetry and EMC for WBAN and Implanted Devices
Session Chairs: Ping Jack Soh, Jianqing Wang

K19P-1 ROBUST EXPERIMENTAL EVALUATION METHOD FOR THE SAFETY ASSESSMENT OF IMPLANTS WITH RESPECT TO RF-INDUCED HEATING DURING MRI
A. Yao1,2, E. Zastrow1, N. Kuster1,2

K19P-2 MAXIMUM ALLOWABLE DATA THROUGHPUT AND ERROR PERFORMANCE OF ON-BODY MEDICAL BODY AREA NETWORKS (MBANS)
N. N. El-Maradny, H. Shaban, M. Abou El-Nasr, Arab Academy of Science and Technology, Egypt

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Session K20P

POSTERS - Biomedical Applications and EMF Exposure of IoT
Session Chairs: Nam Kim, Shoogo Ueno

K20P-1 INKJET-PRINTED SMART BANDAGE FOR WIRELESS CHRONIC WOUND MONITORING
M. F. Farooqui, A. Shamim, King Abdullah University University of Science and Technology (KAUST), Makka
Remote Sensing in Complex and Random Media (Volumetric - 1)
Session Chairs: Saba mudalair, Akira Ishimaru

Microwave Frequency Standards and Applications (1)
Session Chairs: Amitava Sen Gupta, Fang Fang

Scattering and Diffraction (1)
Session Chairs: Ludger Klinkenbusch, Giuliano Manara

Wireless Power Transmission (2)
Session Chairs: Apostolos Georgiadis, Naoki Shinohara

Natural Electromagnetic Noise and Radio Sensing Applications in Terrestrial and Planetary Environments (1)
Session Chairs: Yasuhide Hohara, Colin Price, Tomoo Ushio, Martin Fullekrug
08:20 F31-2 SMOS AND RFI: A LONG STORY
Y. H. Kerr1, P. Richaume1, R. Oliva-Balaguer2, F. Cabot1, E. Anterrieu1
1CESBIO, France; 2ESA, Spain

08:40 F31-3 SMOS RFI IN THE 1400-1427 MHz PASSIVE BAND: ESA APPROACH IN RFI DETECTION, MONITORING AND REPORTING PROCESS
E. Dueñas-Fusco1, R. Oliva1, M. Castillo3, A. Llorente2, E. Uranga1, M. Martín Neira1, S. Mecklenburg2
1European Space Agency ESA-ESTEC, Netherlands; 2European Space Agency ESA-ESAC, Spain; 3European Space Agency ESA-ESRIN, Italy

09:00 F31-4 ACCURATE GEOLOCATION OF RFI SOURCES FROM SMOS INTERFEROMETRIC DATA
E. Anterrieu, A. Khazaal, F. Cabot, Y. H. Kerr. CESBIO, France

Friday, August 25, 2017 08:00-09:20 511BE
Session G38

Design and Application of HF and OTH Radar Systems (3)

Session Chairs: Manuel Cervera, J Michael Ruohoniemi, Richard Parris

08:00 G38-1 SUPERDARN INTERFEROMETRY
S. G. Shepherd, E. G. Thomas, Dartmouth College, United States

08:20 G38-2 CALCULATING THE ABSORPTION OF HF RADIO WAVES IN THE IONOSPHERE
K. A. Fawcett, D. P. Drob, D. E. Siskind, C. Coker, Naval Research Laboratory, United States

08:40 G38-3 CLIMATOLOGICAL MODEL OF OVER-THE-HORIZON RADAR (CMOR)
M. A. Cervera1, D. B. Francis1, G. J. Frazer1
1Defence Science and Technology Group, Australia; 2The University of Adelaide, Australia

09:00 G38-4 EXPANDING CAPABILITIES OF SUPER DUAL AURORAL RADAR NETWORK IN MONITORING SPACE WEATHER AT HIGH LATITUDES
P. Pommerenke, J.-P. St.-Maurice, University of Saskatchewan, Canada

Friday, August 25, 2017 08:00-09:20 513C
Session G39

International Beacon Satellite Studies (1)

Session Chairs: Patricia Doherty, Andrzej Krankowski, Bruno Nava

08:00 G39-1 UPC REAL-TIME GLOBAL IONOSPHERIC MAPS: RECENT IMPROVEMENTS AND PERFORMANCE
D. Roma-Dollase1,2, M. Hernandez-Pajares2, A. Garcia-Rigo1
1IonSAT-UPC, Spain; 2Dept. Electronics - UB, Spain

08:20 G39-2 UNDERSTANDING SPACE WEATHER EFFECTS IN THE UPPER ATMOSPHERE USING GLOBAL MAP OF IONOSPHERIC IRREGULARITIES AND SCINTILLATION
X. Pi, A. J. Mannucci, Jet Propulsion Laboratory, California Institute of Technology, United States; Y. Zhang, Applied Physics Laboratory, Johns Hopkins University, United States

08:40 G39-3 PROGRESS IN SPACE WEATHER MONITORING OVER AFRICA USING GNSS-BASED PROBBING TECHNIQUES
A. B. Rabiu, Centre for Atmospheric Research, Nigeria

09:00 G39-4 SPACE BASED PLASMAPHERE MODELLING AND RELATIONS TO GROUND BASED GNSS MEASUREMENTS
N. Jakowski, M. M. Hoque, German Aerospace Center, Germany

Friday, August 25, 2017 08:00-09:20 511CF
Session H33

Macro/Micro-Scale Kinetic Processes at Natural Boundary Layers in Terrestrial and Planetary Environments (1)

Session Chairs: Bertrand Lembègue, Iku Shinohara, Gurbax Lakhina

08:00 H33-1 MACRO/MICRO COUPLING IN THE FULL KINETIC MODELLING OF PLANETARY ENVIRONMENTS
G. Lapenta, KULeuven, Belgium

08:20 H33-2 SURVEY OF LANGMUIR AND BEAM-MODE WAVES OBSERVED BY WHISPER INSTRUMENTS ON CLUSTER SPACECRAFT INSIDE TERRITORIAL FOreshock
D. Pits, J. Soucek, O. Santolik1,2
1Institute of Atmospheric Physics CAS, Prague, Czech Republic, Czech Republic; 2Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic

08:40 H33-3 A UNIQUE CONSTELLATION OF SPACECRAFT TO STUDY KHI IN 2017-2020: MMS, CLUSTER AND THEMIS
A. Masson1, K. Nykyri1, P. Eseoub1, H. Laakso1
1European Space Agency (ESA/ESAC), Spain; 2Emory-Riddle University, USA; 3European Space Agency (ESA/ESTEC), The Netherlands

09:00 H33-4 PARTICLE ACCELERATION AT THE EARTH’S BOW SHOCK: RECENT RESULTS FROM MMS MISSION
M. I. Desai1, J. L. Burch1, S. A. Fuselier1, K. Genestreti2, R. Torbert1, R. E. Ergun1, C. T. Russell1, H. Y. Wei1, B. Giles1, T. Phan1, L. J. Chen1, S. Wang2, B. Maud1, H. Lai1, J. Rolf1
1Southwest Research Institute, United States; 2Astronomy Academy of Sciences 2.C.3., Austria; 3University of New Hampshire, United States; 4University of Colorado, United States; 5University of California Los Angeles, United States; 6Goddard Space Flight Center, United States; 7University of California Berkeley, United States; 8Applied Physics Laboratory, United States; 9University of Texas at San Antonio, United States
Friday, August 25, 2017 09:40-10:40 511AD

Session A19

Microwave Frequency Standards and Applications (2)

Session Chairs: Amitava Sen Gupta, Fang Fang

09:40 A19-1 ALL-DIGITAL IMPLEMENTATION OF DUAL MIXER TIME DIFFERENCE TECHNIQUE FOR PRECISE PHASE AND FREQUENCY MEASUREMENT
A. Acharya, P. Arora, CSIR-National Physical Laboratory, India; A. S. Gupta, The NorthCap University, India

10:00 A19-2 EVALUATION OF TUNABLE SPECIFIC ABSORPTION RATE WITH MAGNETIC NANOPARTICLES FOR BIOMEDICAL APPLICATIONS
S. K. Dabov1, N. Narang2, P. S. Negi1, V. N. Ojha1
1CSIR- National Physical laboratory New Delhi, India; 2AcSIR, National Physical Laboratory, New Delhi, India, 110012., India

10:20 A19-3 DESIGN OF A NOVEL COMPACT TRIPLE BAND (1.575 / 3.5 / 3.9) PIFA ANTENNA FOR GPS AND WIMAX
R. Varma, J. Ghosh, NIT PATNA, India

Friday, August 25, 2017 09:40-10:40 510AC

Session B32

Scattering and Diffraction (2)

Session Chairs: Ludger Klinkenbusch, Giuliano Manara

09:40 B32-1 SPHERICAL-MULTIPOLE EXPANSION OF AN INHOMOGENEOUS ELECTROMAGNETIC PLANE WAVE IN LOSSLESS MEDIA
H. Bruens, L. Klinkenbusch, Kiel University, Germany; G. Manara, University of Pisa, Italy

10:00 B32-2 SPACE-TIME (ST) REFLECTION FOCUSING IN DISPERSION-ENGINEERED MEDIUM
Z.-L. Deck-Leger, N. Chamamana, M. Skorobogaty, C. Caloz, Polytechnique Montréal, Canada

10:20 B32-3 SCATTERING BY AN ISOREFRACTIVE ELLIPTIC CYLINDER TRUNCATED BY A METAL PLANE
P. L. E. Uslenghi, University of Illinois at Chicago, United States

Friday, August 25, 2017 09:40-10:40 510BD

Session F32

Radio-frequency Interferences (RFI) in Passive Microwave Remote Sensing (2)

Session Chairs: Paolo de Mattheis, Y. Kerr

09:40 F32-1 LOCALIZATION OF L-BAND RFI SOURCES FROM SMAP DATA
Y. Soldo1,2, P. de Mattheis1,2, D. M. Le Vine1
1NASA GSFC, United States; 2GESTAR, United States

10:00 F32-2 THE ULTRA-WIDEBAND SOFTWARE DEFINED MICROWAVE RADIOMETER (UWBRAD) FOR ICE SHEET SUBSURFACE TEMPERATURE SENSING: RFI ALGORITHMS AND PERFORMANCE
M. J. Andrews, H. Li, J. Johnson, A. Bringer, Ohio State University, United States

Friday, August 25, 2017 09:40-10:40 511AD

Session F33

Remote Sensing in Complex and Random Media (Volumetric - 2)

Session Chairs: Saba mudaliar, Akira Ishimaru

09:40 F33-1 A SPACETIME ADAPTIVE APPROACH TO CHARACTERIZE COMPLEX DISPERSIVE MEDIA
R. Abedi, University of Tennessee Space Institute, United States; S. Mudaliar, Wright-Patterson Air Force Base, United States

10:00 F33-2 CALCULATION OF TARGETS LASER RCS IN RANDOM MEDIA FOR H-WAVE POLARIZATION
H. El-Ocla, Lakehead University, Canada

10:20 F33-3 RADIATIVE TRANSFER IN TURBULENT FLOW USING SPACETIME DISCONTINUOUS GALERKIN FINITE ELEMENT METHOD
S. Mudaliar, Air Force Research Laboratory, United States; P. Clarke, R. Abedi, University of Tennessee Space Institute, United States

Friday, August 25, 2017 09:40-10:40 513B

Session DBC30

Wireless Power Transmission (3)

Session Chairs: Apostolos Georgiadis, Naoki Shinohara

09:40 DBC30-1 BROADBAND RECTENNA FOR AMBIENT RF ENERGY HARVESTING APPLICATIONS
J. Tissier, M. Latrach, ESEO-IETR, France

10:00 DBC30-2 SIDE-LOBE REDUCTION WITH A GAN ACTIVE ANTENNA TECHNIQUE
N. Hasegawa, N. Shinohara, Kyoto University, Japan

10:20 DBC30-3 CIRCULARLY POLARIZED RECTIFYING REFLECTARRAY ANTENNA AT C-BAND
H. A. Mahal1, H. A. El-Araby2, S. H. Zaimud-Deen1
1Faculty of Electronic Engineering- Menoufia University, Egypt; 2Ministry of Electricity and Energy, Egypt

Friday, August 25, 2017 09:40-10:40 511AD

Session F32

Sensing (2)

Session Chairs: Paolo de Mattheis, Y. Kerr

09:40 F32-3 LOCALIZATION OF L-BAND RFI SOURCES FROM SMAP DATA
Y. Soldo1,2, P. de Mattheis1,2, D. M. Le Vine1
1NASA GSFC, United States; 2GESTAR, United States

10:00 F32-4 THE ULTRA-WIDEBAND SOFTWARE DEFINED MICROWAVE RADIOMETER (UWBRAD) FOR ICE SHEET SUBSURFACE TEMPERATURE SENSING: RFI ALGORITHMS AND PERFORMANCE
M. J. Andrews, H. Li, J. Johnson, A. Bringer, Ohio State University, United States

Friday, August 25, 2017 09:40-10:40 511BE

Session G40

Design and Application of HF and OTH Radar Systems (4)

Session Chairs: Manuel Cervera, J Michael Ruohoniemi, Richard Parris

09:40 G40-1 HF RADAR SIGNATURES OF TERRESTRIAL LANDFORMS
S. J. Anderson, University of Adelaide, Australia

10:00 G40-2 HF RADAR FOR LARGE AREA SEA MAPPING WITH GROUND-IONOSPHERE-OCEAN-SPACE (GIOS)
P. A. Bernhardt, C. L. Siefring, S. C. Briczinski, Naval Research Laboratory, United States; A. Howarth, G. James, University of Calgary, Canada; J. Bryant, Raytheon, United States

Friday, August 25, 2017 09:40-10:40 513C

Session G41

International Beacon Satellite Studies (2)

Session Chairs: Patricia Doherty, Andrzey Krankowski, Bruno Nava

09:40 G41-1 IONOSPHERIC WEATHER PROBED BY RADIO OCCULTATION OF FORMOSAT-3/COSMIC
J.-Y. Liu, J. Tissier, M. Latrach, ESEO-IETR, France

10:00 G41-2 STUDY OF IONOSPHERE OVER JAPAN BY USING THREE-DIMENSIONAL GPS-TEC TOMOGRAPHY
H.-Y. Liu, Naval Central University, China (SRS)

Friday, August 25, 2017 09:40-10:40 513EF

Session E29

E-Tutorial William Radasky: “EMC Aspects in Smart Grids”

Session Chair: Dave Giri

09:40 E29-1 EMC ASPECTS IN SMART GRIDS
W. A. Radasky, Metatech Corporation, United States
Session H35

Macro/Micro-Scale Kinetic Processes at Natural Boundary Layers in Terrestrial and Planetary Environments (2)

Session Chairs: Bertrand Lembège, Iku Shinohara, Gurbax Lakhina

09:40 H35-1 MICROSTURBULENCE WITHIN THE FOOT OF QUASI-PERPENDICULAR SUPERCRITICAL SHOCKS: POYNTING FLUX ANALYSIS OF WHISTLER INSTABILITIES WITH PIC SIMULATIONS
L. Muschietti1,2, B. Lembège2
1SSL, University of California at Berkeley, United States; 2LATMOS-UVSQ-IPSL-CNRS, France

10:00 H35-2 GENERATION OF INTERMITTENT ION ACOUSTIC WAVES IN WHISTLER TURBULENCE
S. Saito1, Y. Naruiyuki2, T. Umeda1
1Nagoya University, Japan; 2University of Toyama, Japan

10:20 H35-3 MARTIAN ELECTRON FORESHOCK: NEW RESULTS FROM MAVEN AND COMPARISON WITH TERRESTRIAL ELECTRON FORESHOCK
C. X. Mazelle, IRAP UPS-CNRS, France; K. Meziane, University of New Brunswick, Canada; N. Romanelli, LATMOS CNRS - UPMC, France; D. L. Mitchell, SSL University of California, USA

Session HJ36

Solar, Planetary, and Heliospheric Radio Emissions (7)

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White

09:40 HJ36-1 ULTRA-LONG WAVELENGTH DIGITAL RADIO ARRAY-PATHFINDER
L. Chen, Y. Yan, Z. Chen, W. Wang, L. Geng, National Astronomical Observatories, Chinese Academy of Sciences, China (CIE)

10:00 HJ36-2 AUTOMATIC DETECTION AND RECOGNITION OF MAJOR SOLAR RADIO BURST EVENTS OF TYPE (II III AND IV).
H. Salmane, R. Weber, K. Abed-meraim, University of Orleans, PRISME Laboratory, France; K.-L. Klein, X. Bonnin, Observatory of Paris, LESIA-UMR 8109 CNRS, France

10:20 HJ36-3 EFFECTIVE LENGTH OF A RECEIVING ANTENNA IN CASE OF SPACECRAFT OBSERVATIONS OF QUASI-ELECTROSTATIC CHORUS EMISSIONS
E. A. Shirokov1, A. G. Demekhov1,2, Y. V. Chugunov1, A. V. Larchenko2
1Institute of Applied Physics of the Russian Academy of Sciences, Russian Federation; 2Polar Geophysical Institute, Russian Federation

Session J35

The Square Kilometer Array (2)

Session Chairs: Douglas Bock, Robert Braun, Justin Jonas

09:40 J35-1 HIGH-COMPRESSION BASELINE DEPENDENT AVERAGING
S. Salvini, Oxford e-Research Centre, UK; S. J. Wijnholds, ASTRON, Netherlands

10:00 J35-2 THE HYDROGEN EPOCH OF REIONIZATION ARRAY (HERA)
D. R. Delboer, University of California, United States; H. Collaboration, HERA Collaboration, USA

10:20 J35-3 RADIO TELESCOPE COST MODELLING USING PERFORMANCE MEASURES, COST SCALING RULES, AND TOTAL COST CONSTRAINTS
A. J. Boonstra, R. J. Nijboer, ASTRON, Netherlands
Friday, August, 25, 2017

Session L2

General Lecture 3: Bahram Jalali - 'Analog Computing with Optical Rogue Waves'

11:00 L2-1 ANALOG OPTICAL COMPUTING
B. Jalali, D. Solli, ucla, United States
Friday, August 25, 2017

Session A20

Linear and Nonlinear Measurements for Communications Systems (1)

Session Chairs: Pedro Cruz, Nuno Borges Carvalho

13:40 A20-1 TEST BENCH FOR BEAMFORMING NETWORK IMPACT ASSESSMENT ON ANTENNA ARRAYS
P. M. Cruz, M. Jordão, N. B. Carvalho, Institute of Telecommunications - Aveiro, Portugal

14:00 A20-2 SOURCE RECONSTRUCTION USING FAST ARRAY-BASED NEAR-FIELD MEASUREMENT
T. A. Kings, R. Pattyn, P. Monazzi1
1University of Alberta, Canada; 2EMSCAN Corporation, Canada

14:20 A20-3 PHASE REFERENCE / STANDARD WITH ARBITRARILY EXTENDABLE BANDWIDTH BASED ON MULTISINE SIGNALS
J. Huang, X. Guo, Z. He, L. Wang, W. Zhao, Z. Zhang, Y. Zhang, National Institute of Metrology, China (CIE)

Session DC31

Friday, August 25, 2017 13:40-14:40 511AD

DC31-1 DYNAMIC MICROWAVE FREQUENCY MEASUREMENT
M. Li, Institute of Semiconductors, Chinese Academy of Sciences, China (CIE)

14:40 DC31-2 INTEGRATED OPTICAL ANALOG SIGNAL PROCESSING
M. Li, Institute of Electromagnetic Fields, ETH Zurich, Switzerland; 1University of British Columbia, Canada; 2Institute of Semiconductors, Chinese Academy of Sciences, China

Session DC31-3 GENERATION AND PROCESSING OF RF WAVEFORMS IN PHOTONIC FREQUENCY-SHIFTING LOOPS
H. Guilhet de Chatellus, LIPhy, CNRS/Université Grenoble Alpes, France

Session EFGH30

Friday, August 25, 2017 13:40-14:40 513EF

Thursday, August 25, 2017 13:40-14:40 510AC

Small Antennas from Nano to Macro Scales (1)

Session Chairs: Richard Ziolkowski, Samel Arslanagic

13:40 B33-1 METAMATERIAL-INSPIRED NEAR-FIELD RESONANT PARASITIC PARADIGM: ELECTRICALLY SMALL ANTENNAS FROM MICROWAVES TO OPTICS
R. W. Ziolkowski1,2
1University of Technology Sydney, Australia; 2University of Arizona, United States

14:00 B33-2 SYMMETRIC AND ASYMMETRIC 3D ACTIVE COATED NANO-PILLS AS NANO ANTENNAS
R. E. Jacobsen, S. Arslanagic, Technical University of Denmark, Denmark

14:20 B33-3 PLASMONIC NANOANTENNAS AS A NANOSCALE PLATFORM TO ENHANCE LIGHT-MATTER INTERACTIONS
C. Argyropoulos, University of Nebraska-Lincoln, United States

Session EFGH30-1 PERFORMANCE IMPROVEMENT OF DIGITAL BEAMFORMING FOR PHASED ARRAY WEATHER RADAR
H. Kikuchi, T. Ushio, Osaka University, Japan; F. Minatani, M. Wada, Toshiba Corporation, Japan

14:00 EFGH30-2 PERFORMANCE IMPROVEMENT OF DIGITAL BEAMFORMING FOR PHASED ARRAY WEATHER RADAR
H. Kikuchi, T. Ushio, Osaka University, Japan; F. Minatani, M. Wada, Toshiba Corporation, Japan

Session EFGH30-3 IONOSPHERIC REMOTE SENSING USING LIGHTNING-GENERATED VLF/LF SFERICS IN SPACE AND TIME
J. C. McCormick, M. B. Cohen, Georgia Institute of Technology, United States

Friday, August 25, 2017 13:40-14:40 510BD

Outdoor Propagation and Channel Modeling in Built-Up Areas (1)

Session Chairs: Robert Bultitude, Saul Torrico

13:40 F34-1 EFFICIENT WIRELESS LINK MODELING FOR MARINE DRONE APPLICATION UNDER HARSH OFFSHORE ENVIRONMENT
Z. O. Zaw, V. P. Bui, C. E. Png, Institute of High Performance Computing, Singapore

14:00 F34-2 A RAY-TRACING MODEL FOR MILLIMETER-WAVE RADIO PROPAGATION IN DENSE-SCATTER OUTDOOR ENVIRONMENTS
J. C. Silva, P. E. P. Costa, CETUC PUC-Rio, Brazil

14:20 F34-3 WIRELESS URBAN PROPAGATION MEASUREMENTS AT 2.44, 5.8, 14.8 & 58.68 GHz
J. Melibo, D. Sundman, H. Asplund, N. Jalden, S. Dwivedi, Ericsson, Sweden

Session F34

Friday, August 25, 2017 13:40-14:40 514A

Remote Sensing in Complex and Random Media (Surface - 1)

Session Chairs: Saba mudaliar, Akira Ishimaru

13:40 F35-1 APPLICATION OF ELECTROMAGNETIC MODELS FOR SEA SURFACE WIND SPEED RETRIEVAL FROM C-BAND SAR IMAGES
T. V. La, A. Khenchaf, F. Comblet, ENSTA Bretagne, France; C. Nahum, General Directorate for Armament (DGA), France

14:00 F35-2 PERIODIC-BASED DERIVATION OF FIRST-ORDER POWER SPECTRAL DENSITY FROM REMOTE SENSING OF THE OCEAN SURFACE BY HF-DOPPLER RADAR
R. Shahidi, E. W. Gill, Memorial University of Newfoundland, Canada

14:20 F35-3 A PARALLEL EFFICIENT PARTITIONING ALGORITHM FOR THE BACKSCATTERING COEFFICIENT FROM MULTI-SCALE OCEAN SURFACE AT LOW GRAZING ANGLE
Z. S. Wu, T. Wu, X. X. Zhang, Xidian University, China (CIE)

Friday, August 25, 2017 13:40-14:40 514B

Friday, August 25, 2017 13:40-14:40 513A

5G Small Cell Networks (1)

Session Chairs: Jie Zhang, Andres Glazunov, Xiaoli Chu

13:40 C33-1 OTA METHODS FOR 5G BTS TESTING – SURVEY OF POTENTIAL APPROACHES
M. Gustafsson, T. Jämä, M. Högberg, Huawei Technologies, Sverige

14:00 C33-2 PROBABILISTIC CACHING STRATEGY IN COLLABORATIVE SMALL CELL NETWORKS
Y. Zhou1,2, Y. Long1, H. Zhang2
1Institut National de la Recherche Scientifique, Canada; 2Institute of High Performance Computing, Singapore

14:20 C33-3 GENETIC ALGORITHM BASED RESOURCE ALLOCATION IN ULTRA DENSE NETWORKS
S. Xu, R. Li, Beijing Jiaotong University, China (CIE)

Session F34

Friday, August 25, 2017 13:40-14:40 513B

Friday, August 25, 2017 13:40-14:40 514A

Optical Telecommunications (1)

Session Chairs: Mohamad Asghari, Jose Azana

13:40 DC31-1 DYNAMIC MICROWAVE FREQUENCY MEASUREMENT SYSTEM BASED ON SILICON PHOTONICS
M. Butt1,2, X. Wang1, M. Li1, L. Chrostowski3, J. Azaña1
1Institut National de la Recherche Scientifique, Canada; 2Institute of Electromagnetic Fields, ETH Zurich, Switzerland; 1University of British Columbia, Canada; 3Institute of Semiconductors, Chinese Academy of Sciences, China
Friday, August 25, 2017 13:40-14:40 511CF

G-Tutorial Tim Fuller-Rowell: “Will we Ever Be Able to Model and Forecast the Ionosphere Well Enough to Support the Needs of the Radio Wave Users?”

Session Chair: Iwona Stanislawska

13:40 HJ38-1 WILL WE EVER BE ABLE TO MODEL AND FORECAST THE IONOSPHERE WELL ENOUGH TO SUPPORT THE NEEDS OF THE RADIO WAVE USERS?

T. Fuller-Rowell, CIBES University of Colorado, United States

Friday, August 25, 2017 13:40-14:40 513C

International Beacon Satellite Studies (3)

Session Chairs: Patricia Doherty, Andrzej Krankowski, Bruno Nava

13:40 G43-1 IMPROVED MODELLING OF EQUATORIAL PLASMA BUBBLES

E. Blanche1, D. Altadill1, J. M. Juan1, A. Camps1, J. Barbosa1, G. González2, G. Vazquez3, J. Ribó3, J. Sanz3, R. Orús4

1Observatori de l’Ebre (OE); Universitat Ramon Llull - CSIC, Spain; 2Universitat Politècnica de Catalunya & IEEC/CTE-UPC, Spain; 3Institut d’Estudis Espacials de Catalunya IEEC/UPC, Spain; 4ROA Research and Development in Aerospace GmbH, Switzerland, 5ESTEC, The Netherlands

14:00 G43-2 SCINTILLATION MONITORING, MITIGATION, AND IMPROVED MODELLING OF EQUATORIAL PLASMA BUBBLES

B. Roy, S. Ray, A. Paul, University of Calcutta, India

14:20 G43-3 SCINTILLATION MONITORING, MITIGATION, AND MODELLING IN THE GPS ERA - WHAT WENT WRONG IN THE LAST 60 YEARS?

J. P. Thayyil, A. McCaffrey, H. Mezaoui, A. Hamza, P. Prikryl, University of New Brunswick, Canada

Friday, August 25, 2017 13:40-14:40 511CF

Session H37

Macro/Micro-Scale Kinetic Processes at Natural Boundary Layers in Terrestrial and Planetary Environments (3)

Session Chairs: Bertrand Lembègue, Iku Shinohara, Gurbax Lakhina

13:40 H37-1 CASSINI OBSERVATIONS OF SATURN’S HIGH-MACH NUMBER BOW SHOCK


1University of Iowa, United States; 2Imperial College London, United Kingdom; 3Queen Mary University of London, United Kingdom; 4National and Kapodistrian University of Athens, Greece; 5University of Michigan, United States

14:00 H37-2 MAGNETOSHEATH HIGH-SPEED JETS DOWNSTREAM OF QUASI-PARALLEL SHOCKS

F. Plaschke, Austrian Academy of Sciences, Austria

14:20 H37-3 DYNAMICS OF THE CUSP AT MERCURY’S MAGNETOSPHERE

D. Schriver1, P. M. Travnicek2,3, P. Hellinger1, R. L. Richard1, D. Perkins1, J. Raines2

1University of Iowa, United States; 2Imperial College London, United Kingdom; 3ACSR, Czech Republic; 4University of Michigan, United States

Friday, August 25, 2017 13:40-14:40 514B

Solar, Planetary, and Heliospheric Radio Emissions (8)

Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White

13:40 HJ38-1 RADIO AND PLASMA-WAVE OBSERVATIONS IN THE INTERSTELLAR MEDIUM WITH VOYAGER 1

D. A. Gurnett, W. S. Kurth, University of Iowa, United States; E. C. Stone, California Inst. of Technology, United States; S. M. Krimgis, R. B. Decker, Applied Physics Laboratory/JHU, United States; N. F. Ness, University of Delaware, United States; L. F. Burlaga, NASA/Goddard Space Flight Center, United States

14:00 HJ38-2 ALMA TOMOGRAPHY OF STELLAR CHROMOSPHERES

R. Lineau1, V. De la Luz2, E. O’Gorman2, E. Bertone3, C. Miguel4, F. Tapia5

1Earth and Space Sciences, Chalmers University of Technology, Sweden; 2Universidad Nacional Autonoma de Mexico, Mexico; 3Dublin Institute for Advanced Studies, Astronomy and Astrophysics, Ireland; 4Instituto Nacional de Astrofisica, Mexico

14:20 HJ38-3 EXTRASOLAR SPACE WEATHER MONITORING WITH THE OVRO-LWA

M. M. Anderson, G. Hallman, Caltech, United States
Small Antennas from Nano to Macro Scales (2)

Session Chairs: Richard Ziolkowski, Samel Arslanagic

14:40 B34-1 STRUCTURED LIGHT TO REVEAL NANOSCALE MAGNETISM AND CHIRALITY
M. Albovich, M. D. Varcheie, M. Kamandi, M. Hanifeh, M. Veysi, F. Capolino, University of California Irvine, United States

15:00 B34-2 NONRECIPROCAL NANOANTENNAS BASED ON TIME MODULATION
A. Ali, D. L. Souzas, The University of Texas at Austin, United States

15:20 B34-3 MULTI-OBJECTIVE TRADEOFF STUDIES OF DIRECTIVITY ACHIEVABLE BY ELECTRICALLY SMALL NANOLOOPS
J. Nagar, S. D. Campbell, P. L. Warner, D. H. Werner, Penn State University, United States

5G Small Cell Networks (2)

Session Chairs: Jie Zhang, Andres Glazunov, Xiaoli Chu

14:40 C34-1 ENERGY EFFICIENCY AND PING-PONG HANDOVER OPTIMIZATION IN TWO-TIER HETEROGENEOUS NETWORKS
B. Zhang, H. Hu, Q. Hong, J. Zhang, University of Sheffield, United Kingdom

15:00 C34-2 LFMSMIFN: LEADER-FOLLOWER STRATEGY BASED GREEN MICRO-FEMTOCELL NETWORK
A. Mukherjee, D. De, West Bengal University of Technology, India

15:20 C34-3 A NOVEL POWER EFFICIENT MANAGER-FEMTOCELL SELECTION AND ALLOCATION ALGORITHM FOR LARGECELL-FEMTOCELL LTE-ADVANCED NETWORK
P. Deb, D. De, West Bengal University of Technology, India

Optical Telecommunications (2)

Session Chairs: Mohamad Asghari, Jose Azana

14:40 DC32-1 ON-CHIP FREQUENCY COMBS FOR GENERATING COMPLEX ENTANGLED QUANTUM STATES

15:00 DC32-2 RECONFIGURABLE PHOTONIC INTEGRATED CIRCUIT FOR OPTICAL SIGNAL PROCESSING AND MICROWAVE SIGNAL GENERATION
J. Yao, Univ. Ottawa, Canada

15:20 DC32-3 FBG-BASED OPTICAL SIGNAL PROCESSORS
A. Carballar, Universidad de Sevilla, Spain; M. R. Fernández-Ruiz, Universidad de Alcalá, Spain

Session EFGH31

Natural Electromagnetic Noise and Radio Sensing Applications in Terrestrial and Planetary Environments (3)

Session Chairs: Yasuhide Hobara, Colin Price, Tomoo Usbio, Martin Fullekrug

14:40 EFGH31-1 THE LOW FREQUENCY ELECTROMAGNETIC NOISE ENVIRONMENT - COMPARISON OF RADIO QUIESCENCE IN SOUTH AFRICA AND EUROPE
M. Fullekrug1, N. Ogechukwu2, 3, M. Kosch, K. Koh, Z. Liu, M. Stock4
1University of Bath, United Kingdom; 2South African National Space Agency, South Africa; 3University of Capetown, South Africa; 4EarthNetworks, United States

15:00 EFGH31-2 SHORT-TERM VARIABILITY OF THE LOWER IONOSPHERE FROM VLF NARROWBAND RADIO OBSERVATIONS
J. Silber1, C. Price1
1Tel Aviv University, Israel; 2Penn State University, USA

15:20 EFGH31-3 MULTI STEP AHEAD PREDICTION OF NIGHTTIME VLF AMPLITUDE SIGNAL FOR LOW-, MID- AND HIGH-LATITUDE PATHS
H. Santosa1, Y. Hohara1, 2
1The University of Electro-Communications, Japan; 2Bengkulu University, Indonesia

Outdoor Propagation and Channel Modeling in Built-Up Areas (2)

Session Chairs: Robert Bultitude, Saul Torrico

14:40 F36-1 EVALUATION OF LARGE-SCALE PARAMETERS IN URBAN MICROCCELLS AT 3.8 GHZ
C. Oestges, N. Dementieva, E. Vinogradov, Université catholique de Louvain, Belgium

15:00 F36-2 STATISTICAL MODELLING OF THROUGH WALL ATTENUATION AND DEPOLARIZATION AT 10 AND 30 GHZ
D. G. Michelson, A. Bhadbhaj, S. Bonyadi-Ram, University of British Columbia, Canada; G. Gut, University of Electronic Science and Technology of China, China; Y. Liu, Northwestern Polytechnical University, China

15:20 F36-3 A COMPARISON OF RADIO PROPAGATION CHARACTERISTICS IN A SMALL ROOM AT CENTRE FREQUENCIES BETWEEN 2 GHZ AND 30 GHZ
E. J. C. Bultitude, M. Alkadamani, Carleton University, Canada

Remote Sensing in Complex and Random Media (Surface - 2)

Session Chairs: Saba mudaliar, Akira Ishimaru

14:40 F37-1 MICROWAVE SCATTERING FROM SUBMERGED OBJECT INDUCED WAKE OVER ROUGH SEA SURFACE
M. Zhang, J. Wang, Xidian University, China (CIE)

15:00 F37-2 A COMPARATIVE STUDY OF ANALYTIC MODELLING, NUMERICAL SIMULATIONS, AND EXPERIMENTAL MEASUREMENTS FOR ROUGH SOIL SURFACE SCATTERING AND EMISSION
J. Zeng, K.-S. Chen, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China (CIE)

15:20 F37-3 INVESTIGATION OF ELECTROMAGNETIC SCATTERING CHARACTERISTICS FROM DYNAMIC SEA SURFACE WITH BREAKING WAVES
X. Zhang, Z. Wu, Xidian University, China; X. Su, China Academy of Space Technology, China
Radio Studies of Mid and Low Latitude Aeronomy (1)
Session Chairs: Cesar Valladares, A Rabiu
14:40 G44-1 RADAR INTERFEROMETER ESTIMATES OF F-REGION ZONAL IRREGULARITY DRIFTS IN THE BRAZILIAN SECTOR
F. S. Rodrigues, W. Zhan, UT Dallas, United States; E. R. de Paula, INPE, Brazil
15:00 G44-2 ON THE PROBING OF MID-LOW-EQUATORIAL D-REGION DYNAMICS USING PROPAGATION CHARACTERISTICS OF VERY LOW-FREQUENCY RADIO WAVES, DRIVEN BY ST. PATRICK’S DAY GEOMAGNETIC STORM
A. K. Maurya, K. Venkatesh, R. Singh, Indian Institute of Geomagnetism, India
15:20 G44-3 EQUATORIAL SCINTILLATION ON THE DAYS OF CEJ EVENTS
S. K. Chakraborty, Maharaja Srikrishandra College, India; D. Jana, Raja Peary Mohan College, India; A. Dasgupta, S.K. Mitra Center for Research in Space Environment, India

Friday, August 25, 2017 14:40-15:40 511BE
Session G44

Macro/Micro-Scale Kinetic Processes at Natural Boundary Layers in Terrestrial and Planetary Environments (4)
Session Chairs: Bertrand Lembège, Iku Shinohara, Gurbax Lakhina
14:40 H39-1 3D OUTFLOW JETS ORIGINATED FROM COLLISIONLESS MAGNETIC RECONNECTION
K. Fujimoto, University of Tokyo, Japan
15:00 H39-2 NUMERICAL SIMULATIONS OF WAVE-MODE CONVERSION IN MAGNETOSPHERIC PLASMA
M. Horányi1,2, Y. Omura3, O. Santolik1,3
1Institute of Atmospheric Physics, Czech Academy of Sciences, Czech Republic; 2RISH, Kyoto University, Japan; 3Faculty of Mathematics and Physics, Charles University in Prague, Czech Republic
15:20 H39-3 EFFECTS OF THE MAGNETIC FIELD AND DENSITY INHOMOGENEITY ON THE ELECTRON HOLE EVOLUTION
I. Kuzeichev1, I. Vasko1, O. Agapitov2,3, F. Mozer2, A. Artemyev2,1
1Space Research Institute, Russian Federation; 2University of California, USA; 3National Taras Shevchenko University of Kiev, Ukraine

Friday, August 25, 2017 14:40-15:00 511CF
Session H39

Solar, Planetary, and Heliospheric Radio Emissions (9)
Session Chairs: Gottfried Mann, Helmut Rucker, Patrick Galopeau, Yihua Yan, Timothy Bastian, Stephen White
14:40 H40-1 PROPERTIES THE SOLAR S-BURSTS STORM OBSERVED ON JULY 13 AT FREQUENCIES 9-32 MHz
V. V. Dorovskyy1, V. N. Melnik1, A. A. Konovalenko1, A. I. Brazhenko2, S. Poedts3, J. Kozuch1, S. Weinreb, D. C. C-J. Bock, R. D. Ekers, CSIRO Astronomy and Space Science, Australia; R. H. Frater, Macquarie University, Australia
15:20 J37-3 THE AUSTRALIA TELESCOPE COMPACT ARRAY
D. C. C-J. Bock, R. D. Ekers, CSIRO Astronomy and Space Science, Australia; R. H. Frater, Macquarie University, Australia

Friday, August 25, 2017 14:40-15:40 516AB
Session K21

Mode-Stirred Chambers
Session Chairs: Luk Arnaut, Tian Hong Loh
16:00 A22-1 ALTERNATIVE METHODS FOR CHARACTERIZING THE ELECTROMAGNETIC ENVIRONMENT INSIDE A MSRC
A. Ibrahim Jauh, University of Djbouti, Djbouti; L. Kone, S. Baranowski, University of Lille, France
16:20 A22-2 INVESTIGATION OF BANDPASS FILTERS IN THE TIME DOMAIN SIGNAL ANALYSIS OF REVERBERATION CHAMBER
Q. Xu1, Y. Huang2, Y. Zhao1, X. Ying1, Z. Tian2, T. Loh3
1Nanjing University of Aeronautics and Astronautics, China (CIE); 2University of Liverpool, UK; 3University of Tokyo, Japan
16:40 A22-3 EXPERIMENTAL INVESTIGATION OF THE UNIFORMITY OF ROOT-MEAN-SQUARE DELAY SPREAD SIMULATED IN REVERBERATION CHAMBER
X. Guo, Z. He, Y. Zhang, L. Wang, X. Zhou, National Institute of Metrology, NIM, China (CIE)
16:00 B35-1 SUPER-RESOLUTION ARRAY RADAR IMAGING OF HUMAN BODIES FOR HEARTBEAT MONITORING
1University of Hyogo, Japan; 2Delft University of Technology, The Netherlands; 3Kyoto University, Japan; 4Tohoku University, Japan
16:20 B35-2 MICROWAVE COMPUTATIONAL IMAGING: SIMPLIFYING RF ARCHITECTURES WITH CAVITIES AND METASURFACES
T. Fromenteze1,2, C. Decroze1, O. Yurduseven2, D. R. Smith2

Friday, August 25, 2017 16:00-17:40 511AD
Session A22

High-Resolution Electromagnetic Sensing and Imaging
Session Chairs: Alexander Yarovoy, Natalia Nikolova
16:00 B35-1 SUPER-RESOLUTION ARRAY RADAR IMAGING OF HUMAN BODIES FOR HEARTBEAT MONITORING
1University of Hyogo, Japan; 2Delft University of Technology, The Netherlands; 3Kyoto University, Japan; 4Tohoku University, Japan
16:20 B35-2 MICROWAVE COMPUTATIONAL IMAGING: SIMPLIFYING RF ARCHITECTURES WITH CAVITIES AND METASURFACES
T. Fromenteze1,2, C. Decroze1, O. Yurduseven2, D. R. Smith2

Friday, August 25, 2017 16:00-17:40 510AC
Session B35

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16:40 BD36-1 DESIGN OF A CHIPLESS RFID TAG LOADED WITH SQUARE SPIRAL RESONATOR.
J. Y. Siddiqui, University of Calcutta, India; S. Datta, Heritage Institute of Technology, India

16:00 BD36-3 ALTERNATIVE IMPLEMENTATIONS OF SMALL ALL-PLATFORM UHF RFID TRANSPONDERS.
K. Jankola, VTT Technical Research Centre of Finland Ltd., Finland

16:40 BD36-2 SENSITIVITY ENHANCEMENT BY PARITY-TIME SYMMETRY IN WIRELESS TELEMETRY SENSOR SYSTEMS.
P.-Y. Chen, Wayne State University, United States

16:20 BD36-5 ON THE TRANSFORMATION OF SYMBOLS AND FIGURES TO RFID TAGS.
A. Abdelhour1, A. Rennane2, D. Kaddour2, S. Tedjini3
1Université Grenoble Alpes - LCIS, France; 2Instrumentation Laboratory, FEI USTHB University, Algeria

Friday, August 25, 2017 16:00-17:40 514B

Session BD36

Advances in Antennas for RFID

Session Chairs: Smail Tedjini, Ville Viikari, Apostolos Georgiadis

16:00 BD36-1 DESIGN OF A CHIPLESS RFID TAG LOADED WITH SQUARE SPIRAL RESONATOR.
J. Y. Siddiqui, University of Calcutta, India; S. Datta, Heritage Institute of Technology, India

16:20 BD36-2 SENSITIVITY ENHANCEMENT BY PARITY-TIME SYMMETRY IN WIRELESS TELEMETRY SENSOR SYSTEMS.
P.-Y. Chen, Wayne State University, United States

16:40 BD36-3 ALTERNATIVE IMPLEMENTATIONS OF SMALL ALL-PLATFORM UHF RFID TRANSPONDERS.
K. Jankola, VTT Technical Research Centre of Finland Ltd., Finland

17:00 BD36-4 ON THE TAG DETECTION IN NEAR-FIELD UHF RFID APPLICATIONS.
A. Michel1, M. Pino2, P. Nepa1, G. Manara1
1University of Pisa, Italy; 2University of Oviedo, Spain

17:20 BD36-5 ON THE TRANSFORMATION OF SYMBOLS AND FIGURES TO RFID TAGS.
A. Abdelhour1, A. Rennane2, D. Kaddour2, S. Tedjini3
1Université Grenoble Alpes - LCIS, France; 2Instrumentation Laboratory, FEI USTHB University, Algeria

Friday, August 25, 2017 16:00-17:40 513A

Session C35

5G Small Cell Networks (3)

Session Chairs: Jie Zhang, Andres Glazunov, Xiaoli Chu

16:00 C35-1 A PROPOSED ELEVATION ANGLE MODEL FOR SMALL CELL ENVIRONMENTS.
Q. Hong, H. Hu, H. Li, H. Zheng, B. Zhang, J. Zhang, The university of Sheffield, UK

16:20 C35-2 MILLIMETER WAVE WIDEBAND HIGH GAIN ANTENNA BASED ON GAP WAVEGUIDE TECHNOLOGY.
A. U. Zaman, A. A. Glazunov, Chalmers University of Technology, Sweden

16:40 C35-3 LOW-PAPR CONDITION FOR 5G-CANDIDATE WAVEFORMS.
M. Ben Mabrouk, M. Chaffi, Y. Lóuti, F. Bader, CentraleSupélec, France

17:00 C35-4 SMALL CELL DEPLOYMENT OPTIMIZATION WITH A NEW PROPOSED PATHLOSS MODEL UNDER INDOOR SCENARIOS.
H. Zheng1, J. Zhang2, Q. Hong3, H. Li, H. Hu, J. Zhang4
1The university of Sheffield, United Kingdom; 2Lanzhou University, China

17:20 C35-5 SYSTEM-LEVEL PERFORMANCE OF MMWAVE CELLULAR NETWORKS FOR URBAN MICRO ENVIRONMENTS.
N. Rupasinghe1, Y. Kakishima1, J. Guvenc1
1North Carolina State University, United States; 2DOCOMO Innovations, Inc., United States

Friday, August 25, 2017 16:00-17:40 514B

Session DA33

Optical Methods for Microwave Metrology

Session Chairs: Mark Bieler, Chuntao Yang

16:00 DA33-1 MICROWAVE PHOTONICS RESEARCH AT KRIS.
D.-J. Lee, Y. Y. Hong, J.-Y. Kwon, N.-W. Kang, KRIS, South Korea

16:20 DA33-2 PHOTODIODE CALIBRATION COMPARISON BETWEEN ELECTRO-OPTIC SAMPLING AND HETERODYNE MEASUREMENTS UP TO 75 GHZ.
A. Feldman, J. Jurgon, T. Dennis, P. Hale, National Institute of Standards and Technology, United States

16:40 DA33-3 OPTICAL FIBER LINK END EXTENDER FOR VECTOR NETWORK ANALYZER.
S. Kurokawa, M. Hirose, National Institute of Advanced Industrial Science and Technology (AIST), Japan; K. Toba, M. Onizawa, J. Ichijo, Seiko Giken, Japan

17:00 DA33-4 MICROWAVE POWER MEASUREMENTS USING RYDBERG ATOMS.
A. Michael, National Research Council, Canada, Canada

17:20 DA33-5 TRACEABLE MEASUREMENT OF TERAHERTZ POWER AND INTENSITY USING OPTICAL METHODS.
Y. Deng, Q. Sun, National Institute of Metrology, China; M. Bieler, Physikalisch-Technische Bundesanstalt, Germany

Friday, August 25, 2017 16:00-17:20 513EF

Session ECJ32

Spectrum Management

Session Chairs: Jose Pedro Borrego, Adrian Tipldy, Anil Shukla, Harvey Liszt

16:00 ECJ32-1 PROTECTION PROGRESS OF RADIO ASTRONOMY SERVICE IN CHINA.
H. Zhang, National Astronomical Observatories of CAS, China

16:20 ECJ32-2 TIERED SPECTRUM MANAGEMENT, RESILIENCE AND SANDPITS – ARE THEY A WAY FORWARD.
A. K. Shukla, QinetiQ, United Kingdom

16:40 ECJ32-3 AUTOMATED BANDWIDTH MEASUREMENTS USING ITU-R SM.443 AND GNU RADIO DEVICES.
A. Navarro, L. Vargas, C. Urcuqui, J. Aristizabal, Universidad Icesi, Colombia; A. Artega, Universidad de Chile, Chile

17:00 ECJ32-4 SUCCESSES AND CHALLENGES IN SPECTRUM MANAGEMENT FOR RADIO ASTRONOMY.
H. Liszt, NRAO, USA

Friday, August 25, 2017 16:00-17:40 510BD

Session F38

Outdoor Propagation and Channel Modeling in Built-Up Areas (3)

Session Chairs: Robert Bultitude, Saul Torrico

16:00 F38-1 MAP-BASED CHANNEL MODEL FOR 5G WIRELESS COMMUNICATIONS.
A. Hekkal1, P. Kyöst1, J. Dou2, L. Tian3, N. Zhang4, W. Zhang1, B. Gao2
1Keysight Technologies, Finland; 2ZTE Corporation, China; 3ZTE-TX Inc, USA

16:20 F38-2 A FRAMEWORK FOR THE EVALUATION BACKHAUL/FRONTHAUL LINKS AT 300 GHZ.
T. Kürner, S. Rey, A. Fricke, B. Peng, TU Braunschweig, Germany

16:40 F38-3 POINT-TO-POINT SYSTEMS – PROPAGATION LOSS MODELS AND MEASUREMENTS AT 5GHz AND 3.5GHz.
S. A. Torrico, Comsearch, United States; R. H. Lang, The George Washington University, United States

17:00 F38-4 CHANNEL MODELING FOR GNSS, A PHYSICAL-STATISTICAL APPROACH.
P. Perez-Fontan, University of Vigo, Spain; M. Kvicera, P. Pechac, Czech Technical University, Czech Rep.

17:20 F38-5 SHIP-TO-SHIP BEYOND LINE-OF-SIGHT COMMUNICATIONS: A COMPARISON BETWEEN RAY TRACING SIMULATIONS AND THE PETOOL.
G. Dahman, F. Gagnon, École de technologie supérieure, Canada; G. Poitau, Ultra Electronics TCS, Canada
Session K22

EMF Exposure Assessment and Dosimetry and EMC for WBAN and Implanted Devices (2)

Session Chairs: Ping Jack Soh, Jianqing Wang

16:00  K22-1 EMC EVALUATION OF WEARABLE ECG/EMG FOR A 6.8 MHZ WIRELESS POWER TRANSFER SYSTEM
J. Shi, Northeastern University, China; W. Liao, Shanghai University of Engineering Science, China; J. Wang, Nagoya Institute of Technology, Japan

16:20  K22-2 PRACTICAL CONSIDERATIONS IN EXPERIMENTAL EVALUATIONS OF RF-INDUCED HEATING OF LEADED IMPLANTS
E. Zastrow, A. Yao, N. Kuster, IT’IS Foundation, Switzerland

16:40  K22-3 SAR INVESTIGATION FOR THE CARDIAC IMPLANTED ANTENNAS IN MEDRADIO
Q. Wang, D. Plettemeier, Chair for RF and Photonics Engineering, Communication Laboratory, Germany

17:00  K22-4 SAR FOR WEARABLE ANTENNAS WITH AMC MADE USING PDMS AND TEXTILES
M. N. Ramli¹, P. J. Soh¹,², H. A. Rahim¹, M. F. Jamlos¹, F. N. Gimun¹,
E. F. N. Mohd Hussin¹, H. Lago¹, E. Van Lil²
¹Universiti Malaysia Perlis, Malaysia; ²KU Leuven, Belgium

17:20  K22-5 SAR COMPUTATION IN CYLINDRICAL SHAPED ENVIRONMENT
L.-R. Harris, The University of the West Indies, Mona, Jamaica
Saturday, August 26, 2017

Session B37

Inverse Scattering and Imaging (3)

Session Chairs: Matteo Pastorino, LianLin Li

08:00 B37-1 3-D INVERSE SCATTERING ALGORITHM FOR RADAR IMAGING THROUGH MULTILAYERED MEDIA
W. Zhang, A. Hoofar, Villanova University, United States

08:20 B37-2 MULTI-RESOLUTION CONTRAST SOURCE INVERSION IN WAVELET DOMAIN
X. Song, M. Li, F. Yang, S. Xu, Tsinghua University, China (CIE); A. Abubakar, Schlumberger, USA

08:40 B37-3 PROPAGATING BEAM FRAME: A NOVEL FORMULATION FOR LOCAL INVERSE SCATTERING
R. Tuji, E. Heyman, Tel Aviv University, Israel; T. Melamed, Ben-Gurion University of the Negev, Israel

09:00 B37-4 A SYSTEMATIC STUDY ON DIFFERENTIAL EVOLUTION OVER BENCHMARK ELECTROMAGNETIC INVERSE SCATTERING
A. Qing, University of Electronic Science and Technology of China, China (CIE)

Session C36

Sub-Nyquist Sampling for Green Radio

Session Chairs: Yves LOUET, Sumit Darak

08:00 C36-1 SUB-SAMPLING OF CHANNELS WITH TIME AND FREQUENCY SPARSITY ACCESS
Y. Louet, C. Moy, CentraleSupelec, France; V. Savaux, B-Com, France; A. Kountouris, Orange-Labs, France

08:20 C36-2 A NOVEL MATRIX OPTIMIZATION FOR COMPRESSIVE SAMPLING BASED SUB-NYQUIST OFDM RECEIVER IN COGNITIVE RADIO
H. Chen, C. H. Van, Nanyang Technological University, Singapore

08:40 C36-3 BENEFITS OF SPARSE SIGNALING IN ASYNCHRONOUS MULTI-ACCESS CHANNEL COMMUNICATION
S. Khan, J. Baijem, Y. Feng, McGill University, Canada

09:00 C36-4 SUB-NYQUIST SAMPLING AND MACHINE LEARNING BASED ONLINE AUTOMATIC MODULATION CLASSIFIER FOR MULTI-CARRIER WAVEFORM
H. Joshi, S. J. Darak, IIT-Delhi, India

Session C37

Commission C Open Session

Session Chairs: Sana Salous, Amir Zaghloul

08:00 C37-1 INVESTIGATIONS ON MINIATURIZED RF FRONT-END IN MIMO CHANNEL EMULATOR
X. Fei, L. Tian, Southeast University, China (CIE)

08:20 C37-2 DESIGN OF MIMO ARRAY WITH LOW GRATING LOBES IN NEAR-FIELD IMAGING
W. Tian, Y. Li, J. Wang, C. Hu, T. Zeng, Beijing Institute of Technology, China (CIE)

08:40 C37-3 IDENTIFICATION AND DETECTION OF MICROANEURYSMS LESIONS IN DIABETIC RETINOPATHY USING ELM CLASSIFIER
P. Subbuthai, S. Mahaganand, Bharathiar University, India

09:00 C37-4 BEAMSPACE MIMO-NOMA FOR MILLIMETER-WAVE COMMUNICATIONS WITH LENS ANTENNA ARRAY
B. Wang, L. Dai, Tsinghua University, China

09:20 C37-5 AN LLR BASED COOPERATIVE SPECTRUM SENSING WITH HARD-SOFT COMBINING FOR COGNITIVE RADIO NETWORKS
S. Saha, A. Kumar, R. Bhattacharya, National Institute of Technology Patna, India

08:40 C37-6 DEVELOPMENT AND APPLICATION OF A CHANNEL MODEL FOR INTRA-DEVICE COMMUNICATIONS AT 300 GHZ
A. Fricke, T. Künig, TU Braunschweig, Germany

10:00 C37-7 ANALYSIS OF DUOBINARY ENCODING FOR CPM SIGNALS
R. Othman1,2; Y. Loun1; A. Skrzypczak2
1CentraleSupelec/IEITR, France; 2Zodiac Data Systems, France

Saturday, August 26, 2017

Session C34

Commission D Open Session: Recent Advances in Electronics and Photonics (1)

Session Chairs: Günter Steinmeyer, Apostolos Georgiadis

08:00 D34-1 THE LASER-BASED VECTOR NETWORK ANALYZER PROJECT AT PTB
P. Suszewska, Physikalisch-Technische Bundesanstalt, Germany

08:20 D34-2 LOW POWER EMBEDDED PROCESSING OF SCINTILLATION EVENTS WITH SILICON PHOTO MULTIPLIERS
R. P. Haigh, D. W. Upton, P. J. Mather, M. J. N. Sibley, University of Huddersfield, United Kingdom

08:40 D34-3 3D PRINTING OF X BAND WAVEGUIDE RESONATORS AND FILTERS
G. Venanzoni, M. Dionigi, C. Tomassoni, D. Eleonori, R. Sorrentino, University of Perugia, Italy

09:00 D34-4 THE PROSPECTS OF GRAPHENE AND SINGLE-WALLED CARBON NANOTUBES FOR PASSIVE Q-SWITCHING OF COMPACT LASERS AT ~2 UM
P. Loiko1,2; X. Mateos1,2; S. Y. Choi1; F. Rotermund1; J. M. Serres1; R. Lan1; Y. Wang2; J. Li1; Y. Pan1; M. Aquilí1, F. Díaz2; U. Griebner3; V. Petrov2
1Universitat Rovira i Virgili, Spain; 2ITMO University, Russian Federation; 3Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Germany; 4Aqs University, Republic of Korea; 5KAIST, Republic of Korea; 6CAS Shanghai Institute of Ceramics, China

Session D34

Natural Electromagnetic Noise and Radio Sensing Applications in Terrestrial and Planetary Environments (4)

Session Chairs: Yasuhide Hobar, Colin Price, Tomoo Ushio, Martin Fullekrug

08:00 EFGH33-1 RESPONSE OF THE SUB-IONOSPHERIC VLF/LF SIGNALS TO THE MAJOR SSW EVENT OF 2009
S. Pal1; Y. Hobar3; S. K. Chakrabarti1,2,3; P. W. Schnoor4
1Indian Centre for Space Physics, India; 2University of Electro-Communication, Japan; 3S N Bose National centre for Basic Sciences, India; 4Christian-Albrechts-University, Germany

08:20 EFGH33-2 INVESTIGATION OF TELLURIC AND PLANETARY PROCESSES MITIGATION IN HIGH FREQUENCY MICROSEISMS STRUCTURE FOR GEOPHYSICAL MONITORING PROBLEMS
E. Pavlyukova, A. Nikolaev, V. Lavrno, A. Belyakov, Schmidt Institute of Physics of the Earth RAS, Russian Federation

Saturday, August 26, 2017

Session EFGH3

Remote Sensing of Sea Surface Salinity (1)

Session Chairs: Roger Lang, David Le Vine

08:00 F40-1 STATUS OF REMOTE SENSING OF SALINITY BY AQUARIUS
D. M. Le Vine, Goddard Space Flight Center, United States; E. P. Dinnat, Chapman University, United States; S. T. Brown, Jet Propulsion Laboratory, United States; T. Meissner, F. Wentz, Remote Sensing Systems, United States; G. S. E. Lagerlof, Earth and Space Research, United States

08:20 F40-2 SEA SURFACE SALINITY FROM SMOS SATELLITE MISSION: MAJOR ACHIEVEMENTS AFTER 7 YEARS IN ORBIT (2010-2017)
J. Boutin1; N. Reul1; T. Delcroix1; A. SMOS-OCEAN team1,2,3
1LOCEAN/CNRS, France; 2LOPS/IFREMER, France; 3LEGOS/IRD, France

08:40 F40-3 STATUS OF SALINITY REMOTE SENSING: SMAP
B. Wang, L. Dai, Remote Sensing Systems, United States
09:00 F47-4 INTERCOMPARISON OF SEA SURFACE SALINITY PRODUCTS FROM SMOS, AQUARIUS AND SMAP SATELLITES
E. P. Dinnat1, D. M. Le Vine2, J. Boutin1, T. Meissner3
1Chapman University, USA; 2NASA GSFC, USA; 3UPMC/CNRS, France; 4Remote Sensing Systems, USA

08:00 J39-4 THE EMMIRICAL CANADIAN HIGH ARCTIC IONOSPHERIC COMPARISON OF WHISLTER TRANSMISSION RATES AT PROGRESS AT MINGANTU OBSERVING STATION OF NAOC
Session Chairs: Richard Bradley, Willem Baan
Latest News and Observatory Reports (3)
Session J39

08:00 J39-3 A NEW 40-M RADIO TELESCOPE IN CHINA
J. Luo, National Time Service Center, CAS, China (CIE)

08:00 J39-2 GPU-BASED HIGH PERFORMANCE IMAGING FOR MINGANTU SPECTRAL RADIOHELIOGRAPH
Y. Mei1,2,3, F. Wang1,2,3, L. Chen4, Y. Yan4
1Yunnan Observatories, Chinese Academy of Sciences, China (CIE); 2Yunnan Computer Technology Application Key Lab, Kunming University of Science and Technology, China (CIE); 3University of Chinese Academy of Sciences, China (CIE); 4National Astronomical Observatory, Chinese Academy of Science, China (CIE)

08:00 J39-1 PROGRESS AT MINGANTU OBSERVING STATION OF NAOC
Y. Yang, Z. Chen, L. Geng, W. Wang, F. Liu, B. Tan, National Astronomical Observatories, Chinese Academy of Sciences, China

08:00 G47-2 COMPREHENSIVE RADIATIVE TRANSFER MODELING OF UV EMISSIONS: ENABLING NOVEL REMOTE SENSING OF THE GEOSPHERE ENVIRONMENT
J. Qin, F. Kannalabadi, J. J. Makela, L. Waldrop, University of Illinois at Urbana-Champaign, United States; R. R. Meier, George Mason University, United States

08:00 G47-1 INITIAL FINDINGS OF LAGRANGIAN COHERENT STRUCTURES IN THE IONOSPHERE VIA SIMULATION N. Wang, Illinois Institute of Technology, United States

08:00 F40-4 INTERCOMPARISON OF SEA SURFACE SALINITY PRODUCTS FROM SMOS, AQUARIUS AND SMAP SATELLITES
E. P. Dinnat1, D. M. Le Vine2, J. Boutin1, T. Meissner3
1Chapman University, USA; 2NASA GSFC, USA; 3UPMC/CNRS, France; 4Remote Sensing Systems, USA

08:00 H42-3 IN-SITU OBSERVATIONS OF WHISTLER-MODE WAVES IN THE IONOSPHERE VIA SIMULATION
Y. Yan, Z. Chen, L. Geng, W. Wang, F. Liu, B. Tan, 1Yunnan Observatories, Chinese Academy of Sciences, China (CIE); 2Yunnan University, China; 3Chinese Academy of Sciences, China; 4British Antarctic Survey, UK; 5University of Otago, New Zealand; 6Nanchang University, China; 7National Astronomical Observatory of Japan, Japan

08:00 H42-2 ULF WAVES IN THE IONOSPHERIC ALFVEN RESONATOR: OBSERVATIONS AND SIMULATIONS B. Telelegenov, A. V. Streltsov, ERAU, United States

08:00 H42-1 RESONANT ULF WAVES IN THE MAGNETOSPHERE-IONOSPHERE SYSTEM A. V. Streltsov, Embry-Riddle Aeronautical University, United States

Saturday, August 26, 2017 08:00-09:00 511BE
Session G47
Commission G Open Session and Recent Results (1)
Session G47

Saturday, August 26, 2017 08:00-09:20 511CF
Session H42
Commission H Open Session (2)
Session H42

Saturday, August 26, 2017 08:00-09:00 516AB
Session J42
The Square Kilometer Array (3)
Session J42

Saturday, August 26, 2017 08:00-09:15 516DE
Session J39
Latest News and Observatory Reports (3)
Session J39

Saturday, August 26, 2017 08:00-09:15 516DE
Session J39
Latest News and Observatory Reports (3)
Session J39

Saturday, August 26, 2017 08:00-09:20 513CD
Session J42
The Square Kilometer Array (3)
Session J42

Saturday, August 26, 2017 08:00-09:00 510AC
Session B38
Inverse Scattering and Imaging (4)
Session B38
Session D35

Commission D Open Session: Recent Advances in Electronics and Photonics (2)

Session Chair: Günter Steinmeyer

09:40 D35-1 DYNAMICS OF STRONGLY-DRIVEN PASSIVE KERR RESONATORS: FROM SPIATIOTEMPORAL CHAOS TO SUPER CAVITY SOLITONS
M. Erikintalo1, M. Anderson1,2, Y. Wang1, F. Loe3, S. Coen1, S. Murdoch1
1The University of Auckland, New Zealand; 2Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland; 3Universite libre de Bruxelles, Belgium

10:00 D35-2 BOOSTING THE TERAHERTZ NONLINEARITY OF GRAPHENE BY ORIENTATION DISORDER
I. H. Baek1, F. Rotermund2, Y. U. Jeong1
1Korea Atomic Energy Research Institute, South Korea; 2Korea Advanced Institute of Science and Technology, South Korea

10:20 D35-3 PRECISION MEASUREMENTS AND ULTRAFAST OPTICS IN MICROWAVE FREQUENCY COMBS
S.-W. Huang1, J. Yang, A. K. Vinod, J. Lim, C. W. Wong, University of California Los Angeles, USA

Session E34

Commission E Open Session

Session Chairs: Frank Gronwald, Dave Giri

09:40 E34-1 ANALOGUE DESIGN FOR DYNAMIC, BROADBAND RECEIVERS
A. R. Botha, J. Manley, P. S. Van der Meeter, A. J. Otto, MESA Product Solutions, -- select state ---

10:00 E34-2 FUNDAMENTAL LIMITATIONS OF PML OMNIDIRECTIONAL ELECTROMAGNETIC ABSORBERS AS EM RADIATION SHIELDS: SUMMARY OF RECENT FINDINGS
K. K. Sainath, Sandia National Labs, USA

10:20 E34-3 POSSIBLE CHANGES IN CONDUCTED EMISSIONS OF BIOTECHNOLOGICAL DEVICES AFTER REPEATED SWITCHING
L. O. Fichte1, T. R. Almeida2, A. P. Coimbra2, F. Gronwald3, M. Stiemer1
1Helmut Schmidt University, Germany; 2University of Coimbra, Portugal; 3University of Siegen, Germany

Session F41

Remote Sensing of Sea Surface Salinity (2)

Session Chairs: Roger Lang, David Le Vine

09:40 F41-1 STATUS OF SALINITY REMOTE SENSING WITH FUTURE CHINESE MISSIONS
X. Dong1, H. Liu2, J. Shi2, Z. Wang1, Y. Da1, J. Wu1
1National Space Science Center, Chinese Academy of Sciences, China; 2Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China; 3Zhejiang University, China

10:00 F41-2 DIELECTRIC CONSTANT MEASUREMENTS FOR REMOTE SENSING OF SEAWATER SALINITY
Y. Zhu1, R. H. Lang1, E. Dinnat1,2, D. M. Le Vine1
1George Washington University, United States; 2NASA Goddard Space Flight Center, United States; 3Chapman University, United States

10:20 F41-3 RAIN IMPACT ON NEAR-SURFACE SALINITY STRATIFICATION USING THE RAIN IMPACT MODEL (RIM)
W. L. Jones, University of Central Florida, United States; M. Jacob, Universidad Nacional de Cordoba, Argentina; K. Drushka, W. Asher, University of Washington, United States

Session G48

Commission G Open Session and Recent Results (2)

Session Chairs: Iwona Stanislawska, Patricia Doherty, John Mathews

09:40 G48-1 INSTANTANEOUS GLOBAL MAPS OF IONOSPHERIC CRITICAL FREQUENCY GIM-FQ2 FOR EVALUATION OF THE IONOSPHERIC WEATHER
I. Stanislawsk1, T. Gulyaeva2, O. Grynshyna-Poliuga2, L. Pustovalova2
1Space Research Centre PAS, Poland; 2IZMIRAN, Russia

10:00 G48-2 INITIAL RESULTS FROM THE Arecibo Heating Experiment (IHEX)
N. K. Jackson-Booth, P. L. Martin, R. W. Penney, R. A. Buckland, QinetiQ, United Kingdom; P. A. Bernhardt, NRL, USA

10:20 G48-3 LOWER D-REGION HEIGHT AND SHARPNESS AT HIGH MID-LATITUDE
N. R. Thomson1, M. A. Clilverd2, C. J. Rodger1
1University of Otago, New Zealand; 2British Antarctic Survey, United Kingdom

Session H43

Commission H Open Session (3)

Session Chairs: O. Santolik, Janos Lichtenberger

09:40 H43-1 CLUSTER AND MMS MISSIONS: ESTIMATION OF THE GRADIENT OF A FIELD WITH A FLATTENING TETRAHEDRON
G. M. Chanteur, CNRS - Ecole Polytechnique, France

10:00 H43-2 A REVIEW OF KANNUS LEHTO ELF-VLF OBSERVATIONS DURING WINTERTIME CAMPAIGN IN 2016-2017
J. Manninen, T. Turunen, University of Oulu, Finland

10:20 H43-3 NUMERICAL MODELING OF SPACECRAFT POTENTIAL MODULATIONS DUE TO TIME-VARYING PLASMA WAVE FIELDS
Y. Miyake1, T. Kiriyama1, Y. Kohda2, H. Usui1
1Kobe University, Japan; 2Tohoku University, Japan

Session J40

Latest News and Observatory Reports (4)

Session Chairs: Richard Bradley, Willem Baan

09:40 J40-1 GIANT RADIO GALAXIES: MORPHOLOGY, SPECTRUM AND EVOLUTION
D. P. Pan1, S. Pal1, C. Konar2, S. K. Chakrabarti1,3
1Indian Centre for Space Physics, India; 2Amity Institute of Applied Sciences, India; 3N. R. Bose National Centre for Basic Sciences, India

09:55 J40-2 THE GREENLAND TELESCOPE - STATUS
M.-T. Chen, Academia Sinica, Taiwan

10:10 J40-3 THE AUSTRALIA TELESCOPE NATIONAL FACILITY
D. C. C. J. Bock, CSIRO Astronomy and Space Science, Australia

10:25 J40-4 RADIO OBSERVATIONS OF HIGH-REDSHIFT RADIO LOUD QUASARS
T. An, Y. Zhang, P. Mohan, Shanghai Astronomical Observatory, China (CIE)

10:40 J40-5 A JVLA SURVEY OF THE HIGH FREQUENCY RADIO EMISSION OF THE MASSIVE MAGNETIC B- AND O-TYPE STARS
S. Kuruppi, P. Chandra, Tata Institute of Fundamental Research, India; G. Wade, Royal Military College of Canada, Canada

Session J41

AstroPhotonics

Session Chairs: Peter Maat, Martin Roth, Stefano Minardi

09:40 J41-1 LOW COST, LONG DISTANCE RF OVER FIBER LINK TECHNOLOGY FOR RADIO TELESCOPE SYSTEMS
P. Maat, L. Goudbeek, R. H. Witvers, J. Iserda, ASTRON, Netherlands
### Session K24

**Biomedical Applications of Low Frequency EMF Including TMS, DBS, MRI and MP (3)**

**Session Chair:** Frank Prato

#### 09:40 K24-1 VISUALIZING HOTSPOTS AND THRESHOLDS IN THE BRAIN BY TRANSCRANIAL MAGNETIC STIMULATION

S. Aonuma¹, J. Gomez-Tames¹, I. Laakso², A. Hirata¹  
¹Nagoya Institute of Technology, Japan; ²Aalto University, Finland

#### 10:00 K24-2 MRI AND GENETIC DAMAGE: WHAT DO WE KNOW NOW?

V. - Vijayalaxmi, University of Texas Health Science Center, United States