## Programme for 2018 12th European Conference on Antennas and Propagation *(EUCAP)*

**Programme Overview Key**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T01 - Cellular Networks & 5G | | T04 - Connected objects | | T07 - Defence & Security | | T10 - Software Tools & Instruments | | | Keynote Speakers |
| T02 - Ultra-High Data Rate Communications | | T05 - Biomedical | | T08 - Positioning, Localization & Tracking | | T11 - Future Applications | | | Invited Speakers |
| T03 - Wireless Networks | | T06 - Radar Systems | | T09 - Space Applications | | T12 - Scientific/Industrial Workshops | | CS | Convened Session |

| Time | Oral Sessions: Room 7 | Oral Sessions: Room 12 | Oral Sessions: Room 17 | Oral Sessions: Room 16 | Oral Sessions: Room 15 | Oral Sessions: Room 14 | Oral Sessions: Room 13 | Oral Sessions: Room 6 | Oral Sessions: Room 4 | Oral Sessions: Room 3 | Oral Sessions: Room 2 | Oral Sessions: Room 1 | Oral Sessions: Capital Lounge Room 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Monday 9 April** | | | | | | | | | | | | | |
| 9:00 - 10:00 | **Opening Session** | | | | | | | | | | | | |
| 10:00 - 10:40 | Professor Sir John Pendry | | | | | | | | | | | | |
| 10:40 - 11:10 | **Refreshment Break (Capital Suite Foyer)** | | | | | | | | | | | | |
| 11:10 - 12:30 | Professor Baoyan Duan<br>Dr Nick Easton | | | | | | | | | | | | |
| 12:30 - 13:30 | **Lunch (Capital Suite Foyer)** | | | | | | | | | | | | |
| 13:30 - 15:30 | MM-wave antennas for mobile communications | Antennas for wireless LAN | EM theory and applications | Scattering, diffraction and radar cross section | Antenna-in-Package (AiP) technology for millimetre-wave and 5G applications | Antennas for ultra high data rate communications - 1 | Propagation theory and measurements | Propagation for location based devices | Environmental effects on radio propagation | Computational methods | RF absorbing techniques for defence & security | Antennas and propagation for biomedical applications -1 | |
| 15:30 - 16:00 | **Refreshment Break (Capital Suite Foyer)** | | | | | | | | | | | | |
| 16:00 - 18:00 | COST CA15104 IRACON session on mm wave and THz channel modelling<br>CS | MIMO and array antennas for wireless LAN | Metasurface materials and techniques | Frequeny and polarisation selective surfaces for radar systems | 5G testbeds, measurements, challenges, and standardisations | Antennas and propagation modeling for inter- and intra-chip wireless communications<br>CS | Antennas for wireless connectivity | Positioning and tracking applications | Antenna design and optimization for space applications - 1 | Measurement techniques | Imaging techniques and algorithms | Antennas and propagation for biomedical applications-2 | |
| 18:00 - 19:30 | **Welcome Reception and Exhibition Opening (Capital Hall)** | | | | | | | | | | | | |
| **Tuesday 10 April** | | | | | | | | | | | | | |
| 9:00 - 10:40 | 5G and mmWave device measurement challenges<br>CS | Reconfigurable antennas for compact devices<br>CS | Recent advances in asian antennas and propagation research<br>CS | Antennas for radar systems-1 | UAV-based antenna and field measurements (AMTA) | IET session on channel sounding campaigns<br>CS | New technologies and materials for wearable antennas for Wireless Personal Area Networks (WPANs) and Wireless Sensor Networks (WSNs)<br>CS | Antennas for positioning | Antenna needs and solutions for future space missions<br>CS | Fundamental challenges and novel methodologies in the next-generation computational electromagnetics<br>CS | Antennas for defence & security | Imaging and diagnosing with microwaves – new findings covering dielectric studies, imaging algorithms and patient studies: COST Action TD1301, MiMed<br>CS | |
| 10:40 - 11:10 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:10 - 12:50 | 5G and mmWave device measurement challenges<br>CS | Reconfigurable antennas for compact devices<br>CS | Recent advances in asian antennas and propagation research<br>CS | Antennas for radar systems-2 | UAV-based antenna and field measurements (AMTA) | IET session on channel sounding campaigns<br>CS | New technologies and materials for wearable antennas for Wireless Personal Area Networks (WPANs) and Wireless Sensor Networks (WSNs)<br>CS | GNSS antennas and antenna systems<br>CS | Antenna needs and solutions for future space missions<br>CS | Fundamental challenges and novel methodologies in the next-generation computational electromagnetics<br>CS | Some latest development on MIMO and mm-wave applications | Imaging and diagnosing with microwaves – new findings covering dielectric studies, imaging algorithms and patient studies: COST Action TD1301, MiMed<br>CS | |
| 12:50 - 13:30 | **Lunch (Capital Hall)** | | | | | | | | | | | | |
| 13:30 - 15:00 | **Poster Session (Capital Hall)** | | | | | | | | | | | | |
| 15:00 - 16:00 | Professor Ozlem Kilic | Professor Reiner Thomä | | | | | | | | | | | |
| | Dr Wei Hong | Professor Matthias Pätzold | | | | | | | | | | | |
| 16:00 - 16:30 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |
| 16:30 - 18:10 | Radio propagation channel - 1 | Adaptive and array antennas | Antenna designs and concepts for wireless Communications | Antennas for radar systems-3 | IDS<br>How Simcenter 3D can contribute to the efficient Electromagnetic engineering of complex platforms | Antennas for ultra high data rate communications - 2 | Innovative Small Antennas<br>CS | Propagation in aeronautics<br>CS | AMTA session on satellite and aerospace antenna measurements<br>CS | Antenna and array modelling | Multi-antenna concepts and communication techniques in cooperative ITS systems: From Theory to Application | Electromagnetic systems for Ambient Assisted Living (AAL) application<br>CS | |

| **Wednesday 11 April** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:00 - 10:40 | Higher geometrical symmetries for periodic structures<br>CS | AMTA session on 5G Antenna Measurements<br>CS | Antenna array beamsteering techniques | Radar localisation and sensing | Modeling and design tools for small antennas state-of-the-art and future perspectives<br>CS | Silicon-based integrated antennas for mm-wave wireless communications<br>CS | Propagation channels for wide-sense vehicle-to-X communications<br>CS | MM-wave & THz antennas | Antenna design and optimization for space applications -2 | Inverse problems: theory, techniques, and applications<br>CS | Advances in antenna design and analysis using characteristic modes<br>CS | Academic and industrial advances in microwave medical technologies within European COST Action TD1301 - MiMed<br>CS | Statistical methods and uncertainty quantification in antennas and propagation |
| 10:40 - 11:10 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |
| 11:10 - 12:50 | Higher geometrical symmetries for periodic structures<br>CS | Propagation for wireless LAN | Design methods for new EM devices | Imaging , sensing and radar antennas | Modeling and design tools for small antennas: state-of-the-art and future perspectives | Silicon-based integrated antennas for mm-wave wireless communications<br>CS | Propagation channels for wide-sense vehicle-to-X communications<br>CS | Satellite reflector systems | Space aperture antennas | Inverse problems: theory, techniques, and applications<br>CS | Advances in antenna design and analysis using characteristic modes<br>CS | Academic and industrial advances in microwave medical technologies within European COST Action TD1301 - MiMed<br>CS | Statistical methods and uncertainty quantification in antennas and propagation |
| 12:50 - 13:30 | **Lunch (Capital Hall)** | | | | | | | | | | | | |
| 13:30 - 15:00 | **Poster Session (Capital Hall)** | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15:00 - 16:00 | Professor Tian Hong Loh | Professor Cyril Luxey | | | | | | | | | | | |
| | Professor Mahta Moghaddam | Dr Felix Miranda | | | | | | | | | | | |
| 16:00 - 16:30 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |
| 16:30 - 18:10 | Radio propagation channel - 2 | MIMO antennas for 5G communications | Additive manufacturing; an electromagnetic perspective<br>CS | AMTA session on antenna characterisation challenges in today's automotive industry<br>CS | ANSYS Antenna Placement and Coupling | Antenna and propagation for high data rate communications | Wireless connectivity and IoT | Electromagnetic methods for direct and inverse scattering involving stratified media<br>CS | Multibeam Antennas for Space Applications<br>CS | Numerical techniques | Special material antennas and devices | Imaging and propagation for biomedical applications | |
| 19:30 - 22:30 | **Conference Dinner (National Maritime Museum)** | | | | | | | | | | | | |

| **Thursday 12 April** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:00 - 10:40 | OTA characterization of antennas and wireless devices<br>CS | Channel modelling in railway environments towards 5G applications<br>CS | Advances in theory and computation of characteristic modes<br>CS | Emerging technologies for radar systems - 1 | COST CA15104 (IRACON): Measurements and simulations in channel modelling in wireless body area networks<br>CS | Advanced technologies for wideband antennas and arrays<br>CS | Antennas for IoT applications<br>CS | Advances in modelling design and implementation of reflectarrays and periodic structures<br>CS | Propagation aspects in remote sensing<br>CS | Novel antennas and material measurements | Reconfigurable antennas and arrays<br>CS | Dielectric properties of biological tissues: achieving accurate data as the basis for novel medical device development<br>CS | |
| 10:40 - 11:10 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |
| 11:10 - 12:50 | OTA characterization of antennas and wireless devices<br>CS | Channel modelling in railway environments towards 5G applications<br>CS | Novel manufacturing techniques for antennas and microwave devices | Emerging technologies for radar systems - 2 | | COST CA15104 (IRACON) session on frequency dependency modelling of radio channels<br>CS | Antennas for IoT applications<br>CS | Advances in modelling design and implementation of reflectarrays and periodic structures<br>CS | Antenna Design and signal processing for high sensitivity astronomical receivers<br>CS | AMTA session on post processing techniques in antenna measurements<br>CS | Reconfigurable antennas and arrays<br>CS | Dielectric properties of biological tissues: achieving accurate data as the basis for novel medical device development<br>CS | |
| 12:50 - 13:30 | **Lunch (Capital Hall)** | | | | | | | | | | | | |
| 13:30 - 15:00 | **Poster Session including Best Paper Finalists (Capital Hall)** | | | | | | | | | | | | |
| 15:00 - 16:00 | Steve Nichols | Professor Trevor Bird | | | | | | | | | | | |
| | Professor Francesca Vipiana | Professor Naoki Shinohara | | | | | | | | | | | |
| 16:00 - 16:30 | **Refreshment Break Sponsored by Apple (Capital Hall)** | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:30 - 18:10 | Radio propagation channel - 3 | MM-wave propagation and measurements | Novel antenna design techniques | Millimeter wave antennas for radar systems | Keysight Over the air mmWave measurements | Mobile base-station antennas | Design and modelling for wireless connectivity | New optimization and realization of UWB feed technologies for future radio telescopes<br>CS | Antennas and devices for space applications | Nano engineering flagship | Beamforming techniques for information and power transmission – a joint COST IRACON and COST WiPE session<br>CS | Cellular communication technologies | |
| 19:30 - 22:30 | **Social Dinners (Multiple Locations)** | | | | | | | | | | | | |

| **Friday 13 April** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:00 - 10:40 | New developments of mm-Wave GAP wave technology<br>CS | Measurement techniques and applications | Techniques for RF energy harvesting and wireless power transfer | Forum for exchange between grant holders | IRACON Workshop on propagation and channel modelling challenges for 5G and beyond inclusive radio communications | MIMO performance evaluation -1 | Antenna arrays -1 | Smart antennas for satellite communications<br>CS | Satellite propagation - 1 | Satellite on the move user terminal antennas | New antenna systems involving application of metamaterials and metasurfaces<br>CS | Antennas for future applications | |
| 10:40 - 11:00 | **Refreshment Break (Capital Suite)** | | | | | | | | | | | | |
| 11:00 - 12:20 | Antenna design and analysis | Beam steering technologies | Channel measurements and model verifications | Forum for exchange between grant holders | IRACON Workshop on propagation and channel modelling challenges for 5G and beyond inclusive radio communications | MIMO performance evaluation -2 | Antenna arrays -2 | Space array antennas | Satellite propagation - 2 | Satellite on the move user terminal antennas | Metasurface materials and techniques | On and off body communications | |
| 12:20 - 13:00 | **Closing Ceremony (Room 7)** | | | | | | | | | | | | |

**Friday 13 April - Short Courses 14:00-17:30**

| **Time** | **Oral Sessions: Room 7** | **Oral Sessions: Room 12** | **Oral Sessions: Room 17** | **Oral Sessions: Room 16** | **Oral Sessions: Room 15** | **Oral Sessions: Room 14** | **Oral Sessions: Room 13** | **Oral Sessions: Room 6** | **Oral Sessions: Room 4** | **Oral Sessions: Room 3** | **Oral Sessions: Room 2** | **Oral Sessions: Room 1** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:00 - 15:30 | | | **SC01** Multibeam antennas and beamforming networks | **SC03** User antennas for internet everywhere via satellites | **SC05** Learning multiple antenna schemes without the maths! Present and future technologies | **SC06** Modern antenna array analysis and design: Network theory, mutual coupling, and array signal processing | **SC09** Terahertz communications: Ultra-broadband transceivers, antennas and propagation | **SC10** Gap waveguides for mmWave antenna systems and electronic packaging | **SC11** Far-Field wireless power transmission: RF, signal and system designs | **SC12** Additive manufacturing for microwave components | **SC13** Ground plane boosters: Antenna design for wireless devices | **SC14** Characteristic modes are useful, really! |
| 15:30 - 16:00 | **Refreshment Break (Capital Suite Foyer)** | | | | | | | | | | | |
| 16:00 - 17:30 | | | **SC01** Multibeam antennas and beamforming networks | **SC03** User antennas for internet everywhere via satellites | **SC05** Learning multiple antenna schemes without the maths! Present and future technologies | **SC06** Modern antenna array analysis and design: Network theory, mutual coupling, and array signal processing | **SC09** Terahertz communications: Ultra-broadband transceivers, antennas and propagation | **SC10** Gap waveguides for mmWave antenna systems and electronic packaging | **SC11** Far-Field wireless power transmission: RF, signal and system designs | **SC12** Additive manufacturing for microwave components | **SC13** Ground plane boosters: Antenna design for wireless devices | **SC14** Characteristic modes are useful, really! |

## Monday 9 April 2018

### Monday 9 April 2018, 09:00 – 10:00
### Opening Session
Room: Room 7 and 12
Chairs: Yang Hao (Queen Mary University of London, United Kingdom) and Tony Brown (Manchester University, United Kingdom)

### Monday 9 April 2018, 10:00 – 10:40

### Invited Keynote 1
Room: Room 7 and 12
Chair: Cyril Mangenot (EurAAP Chair)

| | |
|---|---|
| **10:00** | **Controlling THz Radiation with Graphene**<br>Professor Sir John Pendry, Imperial College London, United Kingdom |

### Monday 9 April 2018, 11:10 – 12:30

### Invited Keynote 2 and 3
Room: Room 7 and 12
Chairs: Professor Yi Huang (University of Liverpool, United Kingdom) and Professor Anja K. Skrivervik (EPFL, Switzerland)

| | |
|---|---|
| **11:10** | **On Innovation, Simulation, Mode Experiments and Engineering of the Five Hundred Meters Aperture Spherical Radio Telescope (FAST)**<br>Professor Baoyan Duan, Xidian University, P.R.China |
| **11:50** | **Future Challenges in Antennas and Propagation for Defence and Security**<br>Dr Nick Easton, BAE Systems, United Kingdom |

### Monday 9 April 2018, 13:30 – 15:30

### T01-1: MM-Wave Antennas for Mobile Communications
Cellular Networks & 5G | Regular Session | Antenna
Room: Room 7
Chairs: Dr Zhirun Hu (Manchester University, United Kingdom) and Professor Jian Yang (Chalmers University of Technology) Sweden

| | |
|---|---|
| **13:30** | **T01-1.1**<br>**A Planar Dual-Polarized Ultra-Wideband Millimeter-Wave Array Antenna**<br>Sadegh Mansouri Moghaddam, Jian Yang and Andrés Alayon Glazunov (Chalmers University of Technology, Sweden) |
| **13:50** | **T01-1.2**<br>**Millimetre-Wave Beam Steerable Leaky-Wave Antenna for 5G Systems**<br>Muhammad Saqib Rabbani, Alexandros Feresidis and James Churm (University of Birmingham, United Kingdom) |
| **14:10** | **T01-1.3**<br>**High Gain Compact 57-66 GHz Antenna Array for Backhaul & Access Communications**<br>Imran Aziz (Uppsala University, Sweden and Mirpur University of Science and Technology, Pakistan); Robin Dahlbäck and Erik Öjefors (Sivers IMA, Sweden); Anders Rydberg and Dragos Dancila (Uppsala University, Sweden) |
| **14:30** | **T01-1.4**<br>**Effective Beam-Scanning Efficiency of Millimeter-Wave Subarrays for 5G User Equipment Application**<br>Bo Xu (KTH Royal Institute of Technology and Ericsson AB, Sweden); Zhinong Ying (SONY Mobile Communications AB, Sweden); Mats Gustafsson (Lund University, Sweden); Sailing He (KTH Royal Institute of Technology, Sweden) |
| **14:50** | **T01-1.5**<br>**Wideband Millimeter-Wave End-Fire Magneto-Electric Dipole Antenna Fed by Substrate Integrated Coaxial Line**<br>Jiexi Yin, Qi Wu, Chen Yu, Haiming Wang and Wei Hong (Southeast University, P.R. China) |
| **15:10** | **T01-1.6**<br>**A Millimeter Wave Transparent Transmitarray Antenna Using Meshed Double Circle Rings Elements**<br>Guang Liu (Université de Nantes, France and Chinese Academy of Sciences, P.R.China); Kien Pham, David González-Ovejero and Ronan Sauleau (Université de Rennes, France); Eduardo Motta Cruz (Université de Nantes, France) |
| **T03–1: Antennas for Wireless LAN**<br>Wireless Networks \| Regular Session \| Antennas<br>Room: Room 12<br>Chairs: Dr Qian Xu (Nanjing University of Aeronautics and Astronautics, P.R China) and Professor Daniel N Aloi (Oakland University, USA) | |
| **13:30** | **T03-1.1**<br>**Ultra-Miniature Dual-Band Antenna Based on Subwavelength Resonators on LiNbO3 Substrate**<br>Andriy Serebryannikov and Guy Vandenbosch (Katolieke Universiteit Leuven, Belgium); Mutlu Gokkavas, Funda Tamara Gundogdu and Ekmel Ozbay (Bilkent University, Turkey); Alexander Vasylchenko (Sofitto NV, Belgium) |
| **13:50** | **T03-1.2**<br>**TCM-Based Miniaturization Progress of a Square Microstrip Patch Antenna**<br>Yanqun Liu, Xiaoxing Yin, Shun Li Li and Hongxin Zhao (Southeast University, P.R. China) |

| | |
|---|---|
| **14:10** | **T03-1.3**<br>**A Filtering Monopole Antenna with Quasi-CPW Structure**<br>Lehu Wen, Steven Gao, Benito Sanz-Izquierdo and Qi Luo (University of Kent, United Kingdom); Min Zhang and Wenchao Xiao (Wuhan Maritime Communication Research Ins, P.R.China); Yingzeng Yin (Xidian University, P.R.China) |
| **14:30** | **T03-1.4**<br>**Impact of Multilayer Stack-ups on Bond Wire Antennas at Millimetre-wave Frequencies**<br>Ivan Ndip, Flynn Brandenburger and Martin Hempel (Fraunhofer IZM, Germany); Martin Schneider-Ramelow and Klaus-Dieter Lang (Fraunhofer IZM & Technische Universität Berlin, Germany); Max Huhn (BIOTRONIK SE & Co. KG, Germany) |
| **14:50** | **T03-1.5**<br>**Impact of Source Antenna Beamwidth on Antenna Measurement Accuracy at DSRC Frequencies**<br>Ehab M Rahman and Daniel N Aloi (Oakland University, USA) |
| **15:10** | **T03-1.6**<br>**Design of a Dual-band Wearable Planar Inverted F Antenna Based on Characteristic Mode Theory**<br>Sen Yan, Xiaomu Hu, Jiahao Zhang, Linghui Kong and Guy Vandenbosch (Katholieke Universiteit Leuven (KU Leuven), Belgium) |
| **T11-1: EM Theory and Applications**<br>Future applications \| Regular Session \| Antennas<br>Room: Room 17<br>Chairs: Professor Stefano Maci (University of Siena, Italy) and Dr Tim Brown (University of Surrey, United Kingdom) | |
| **13:30** | **T11-1.1**<br>**Tailoring Near and Far Electromagnetic Fields Through Optimization**<br>Benjamin Vial and Yang Hao (Queen Mary University of London, United Kingdom) |
| **13:50** | **T11-1.2**<br>**Closed Form Basis Function Fourier Spectra for Dispersion Calculation of Metasurfaces Made by Circular and Elliptical Ring Patches**<br>Santi Concetto Pavone, Marco Faenzi, Enrica Martini, Matteo Albani and Stefano Maci (University of Siena, Italy) |
| **14:10** | **T11-1.3**<br>**Correction for Transition Boundary Conditions to Consider Scattering by a Chiral Infinite Slab**<br>Nezahat Günenç Tuncel (University of Cukurova, Turkey); A. Hamit Serbest (Cukurova University, Turkey) |
| **14:30** | **T11-1.4**<br>**Demonstration of Superdirectivity for PCB Split Ring Dimers**<br>Jiaruo Yan, Andrea I Vallecchi, Christopher Stevens and Ekaterina Shamonina (University of Oxford, United Kingdom ) and Anna Radkovskaya (M.V.Lomonosov Moscow State University, Russia) |

| | |
|---|---|
| **14:50** | **T11-1.5**<br>**Numerical Design and Investigation of Plasmonic Lenses for Maximum Power Focusing**<br>Sadri Guler, Cem Sur and Ozgur Ergul (Middle East Technical University, Turkey) |
| **15:10** | **T11-1.6**<br>**On the Theory of Propagation of Electromagnetic Waves in a Regular Waveguide Filled with Multi Periodic Modulated Medium**<br>Eduard Gevorkyan (Plekhanov Russian University of Economics, Russia) |

**T06-1: Scattering, Diffraction and Radar Cross Section**
Radar Systems | Regular Session | Propagation
Room: Room 16
Chairs: Professor Agostino Monorchio (University of Pisa and CNIT, Italy) and Steve Boyes (DSTL, UK)

| | |
|---|---|
| **13:30** | **T06-1.1**<br>**Characteristic of Spatial Distributed Field on Marine Environment with Multi-Ships and Wakes**<br>Min Zhang and Jinxing Li (Xidian University, P.R. China) |
| **13:50** | **T06-1.2**<br>**Doppler Spectral Characteristics from Dynamic Mixed Sea Waves**<br>Ding Nie and Min Zhang (Xidian University, P.R. China) |
| **14:10** | **T06-1.3**<br>**Active Cancellation of Bistatic Scattering of Large Aircraft Using Conformal 4-Port Magnetic Antenna**<br>Audrey I Semenikhin, Diana Semenikhina, Yury V Yukhanov and Artem I Chernokolpakov (Southern Federal University, Russia) |
| **14:30** | **T06-1.4**<br>**Fast RCS Prediction of Electrically Large Targets Coated with Radar Absorbing Materials**<br>Michele Borgese, Filippo Costa and Agostino Monorchio (University of Pisa and CNIT, Italy) |
| **14:50** | **T06-1.5**<br>**Coding Diffuse Surface for RCS Suppression**<br>Mohammad Akbari, Fereshteh Samadi, Marjan jalali Moghadam and Abdel R. Sebak (Concordia University, Canada) |

**T02-1: Antennas for Ultra High Data Rate Communications – 1**
Ultra-High Data Rate Communications | Regular Session | Antennas
Room: Room 14
Chairs: Professor Anja K. Skrivervik (EPFL, Switzerland) and Carolina Tienda Herrero (Airbus, UK)

| | |
|---|---|
| **13:30** | **T02-1.1**<br>**Millimeter-Wave Circularly-Polarized Substrate-Integrated Planar Discrete Lens**<br>Kossaila Medrar, Loic Marnat and Laurent Dussopt (CEA Leti, France) |
| **13:50** | **T02-1.2**<br>**Dielectric Slab Waveguide Based Millimeter-Wave Leaky-Wave Antennas**<br>Utpal Dey and Jan Hesselbarth (University of Stuttgart and IHF - Institute of Radio Frequency Technology, Germany) |
| **14:10** | **T02-1.3**<br>**Low-Permittivity Elliptical Lens Fed by a Resonant Leaky-Wave Antenna for Wideband Wireless Communications**<br>Darwin Blanco Montero, Marta Arias and Nuria Llombart (Delft University of Technology, The Netherlands) |
| **14:30** | **T02-1.4**<br>**140 GHz Linear to Circular Polarization Convertor Based on Modified Cross Slot Frequency Selective Surface with High Selectivity**<br>Hong Bin Wang and Yu Jian Cheng (UESTC, P.R. China) |
| **14:50** | **T02-1.5**<br>**140 GHz Planar Gap Waveguide Array Antenna for Line of Sight (LOS) MIMO Backhaul Links**<br>Ashraf Uz Zaman, Sofia Rahiminejad, Thomas Eriksson, Sadia Farjana and Peter Enoksson (Chalmers University of Technology, Sweden) |
| **15:10** | **T02-1.6**<br>**Ultra-Wide Band Diversity Antenna for Omnidirectional Coverage**<br>Maxime Volery, Tatjana Asenov and Anja K. Skrivervik (EPFL, Switzerland) |
| **T04-1: Propagation Theory and Measurements**<br>Connected objects \| Regular Session **\|** Propagation<br>Room: Room 13<br>Chairs: Professor Hendrik Rogier (Ghent University, Belgium) and Professor R. S. Thoma (Technische Universität Ilmenau, Germany) | |
| **13:30** | **T04-1.1**<br>**Measurement and Characterization of Dual-Band LoRa Communication in the Antarctic**<br>Patrick Van Torre, Johnny Gaelens, Jo Verhaevert and Hendrik Rogier (Ghent University, Belgium) |
| **13:50** | **T04-1.2**<br>**Measured Delay and Doppler Profiles of Overtaking Vehicles at 60 GHz**<br>Erich Zochmann, Sebastian Caban, Martin Lerch, Stefan Pratschner and Gerald Artner (Institute of Telecommunications, Austria); Christoph F. Mecklenbrauker and Markus Rupp (Institute of Telecommunications, Austria and TU Brno, Czech Republic); Jiri Blumenstein and Ales Proke (TU Brno, Czech Republic); Markus Hofer, David L¨oschenbrand and Thomas Zemen (Austrian Institute of Technology, Austria); Seun Sangodoyin and Andreas F. Molisch (University of Southern California, USA) |

| | |
|---|---|
| **14:10** | **T04-1.3**<br>**Wireless Transmission in Ventilation (HVAC) Ducts for the Internet of Things and Smarter Buildings: Proof of Concept and Specific Antenna Design**<br>G. Villemaud, F. Hutu, P. Belloche and F. Kninech (University of Lyon, France) |
| **14:30** | **T04-1.4**<br>**Compressive Spatial Channel Sounding**<br>M. Ibrahim, F. Romer, M. K¨aske, S. Semper, R. S. Thoma and G. Del Galdo (Technische Universität Ilmenau, Germany); W. Al-Aqqad (Technische Universität Ilmenau, Germany and Prince Sultan University, Saudi Arabia) |
| **14:50** | **T04-1.5**<br>**Universal Ionosonde for Diagnostics of Ionospheric HF Radio Channels and its Application in Estimation of Channel Availability**<br>Dmitry Ivanov, V. A. Ivanov, Aleksey Elsukov, N. V. Ryabova, R. R. Belgibaev and Vladimir Ovchinnikov (Volga State University of Technology, Russia) |
| **15:10** | **T04-1.6**<br>**Studying Frequency Dispersion in Transionospheric Radio Paths Using the Estimates of the Total Electron Content**<br>Dmitry Ivanov, V. A. Ivanov, N. V. Ryabova, Vladimir Ovchinnikov and Aleksey Kislitsin (Volga State University of Technology, Russia); M. I. Ryabova (Bauman Moscow State Technical University, Russia) |
| **T08-1: Propagation For Location Based Devices**<br>Positioning, Localization & Tracking \| Regular Session \| Propagation<br>Room: Room 6<br>Chairs: Professor Lars Jonsson (KTH Royal Institute of Technology, Sweden) and Chaoyun Song (University of Liverpool, United Kingdom) | |
| **13:30** | **T08-1.1**<br>**TDoA-based Outdoor Positioning in a Public LoRa Network**<br>Nico Podevijn, Jens Trogh, Abdulkadir Karaagac, Jetmir Haxhibeqiri, Jeroen Hoebeke, Luc Martens, David Plets and Wout Joseph (Ghent University-IMEC, Belgium); Pieter Suanet (Aucxis, Belgium); Kim Hendrikse (Private, Belgium) |
| **13:50** | **T08-1.2**<br>**Analysis of Ionospheric GPS TEC Measurements During Total Solar Eclipse over American Region on August 21 2017**<br>Teddy M. Surco Espejo and Emanoel Costa (Pontificia Universidade Catolica Do Rio De Janeiro, Brazil) |
| **14:10** | **T08-1.3**<br>**Measurements and Model for the Satellite-to-Aircraft Channel in L-Band**<br>Thomas Jost and Wei Wang (German Aerospace Center (DLR), Germany); Martin Schwinzerl and Michael Schonhuber (Joanneum Research, Austria); Fernando Pérez-Fontán (University of Vigo, Spain); Nicolas Floury (ESA, The Netherlands) |
| **14:30** | **T08-1.4**<br>**Comparison of Theoritical Scintillation Spectra with Equatorial GNSS Data**<br>Aurelien Galmiche and Vincent Fabbro (ONERA, France); Laurent Féral (Laboratoire LAPLACE, France); Sebastien Rougerie (CNES, France) |

| | |
|---|---|
| **14:50** | **T08-1.5**<br>**RSS-Based Direction-of-Arrival Estimation with Increased Accuracy for Arbitrary Elevation Angles Using ESPAR Antennas**<br>Mateusz Rzymowski and Lukasz Kulas (Gdansk University of Technology, Poland) |
| **15:10** | **T08-1.6**<br>**Efficient RF Coverage Prediction Through a Fully Discrete, GPU-Parallelized Ray-Launching Model**<br>Vittorio Degli-Esposti, Enrico M. Vitucci, Franco Fuschini and Marina Barbiroli (University of Bologna, Italy); Jonathan S. Lu and Jerome A. Blaha (Polaris Wireless, USA); Henry Bertoni (NYU Tandon School of Engineering, USA) |
| **T09-1: Environmental Effects on Radio Propagation**<br>Space Applications \| Regular Session \| Propagation<br>Room: Room 4<br>Chairs: Professor Costas Constantinou (University of Birmingham, United Kingdom) and Michael Zemba (NASA, USA) | |
| **13:30** | **T09-1.1**<br>**Rain Attenuation at Low Elevation Angles: A Step Towards a LEO Time Series Generator**<br>Luciano M Tomaz and Carlo Capsoni (Politecnico di Milano, Italy) |
| **13:50** | **T09-1.2**<br>**Alphasat Experiment in Madrid: Modeling Considerations on Fade and Inter-Fade Durations**<br>Domingo Pimienta-del-Valle, Jose M Riera and Pedro Garcia-del-Pino (Universidad Politecnica de Madrid, Spain); Gustavo Siles (Universidad Privada Boliviana, Bolivia) |
| **14:10** | **T09-1.3**<br>**Three Years of Atmospheric Characterization at Ka/Q-band with the NASA/POLIMI Alphasat Receiver in Milan, Italy**<br>Michael Zemba and James Nessel (NASA, USA); Carlo Riva and Lorenzo Luini (Politecnico di Milano, Italy) |
| **14:30** | **T09-1.4**<br>**Short Term Satellite Channel Characteristics Forecast Using Numerical Weather Prediction Data**<br>Félix Cuervo and Michael Schonhuber (Joanneum Research, Austria); Fernando Las-Heras (Universidad de Oviedo, Spain); Jose M Riera, Domingo Pimienta-del-Valle and Pedro Garcia-del-Pino (Universidad Politecnica de Madrid, Spain); Antonio Martellucci (European Space Agency, The Netherlands) |
| **14:50** | **T09-1.5**<br>**Predicting Mean Radiative Temperature at Millimeter Wavelengths in Continental Climate Areas**<br>Marianna Biscarini, Luca Milani and Frank S. Marzano (Sapienza University of Rome, Italy); Klaide De Sanctis (HIMET, Italy); Mario Montopoli (ISAC CNR, Italy); Saverio Di Fabio (CETEMPS, Italy); George Brost (Air Force Research Laboratory, USA) |
| **15:10** | **T09-1.6**<br>**Impact of Adverse Weather Conditions onMulti-Layer Radomes Installed in Arctic Regions**<br>Andrea Martellosio and Marco Pasian (University of Pavia, Italy); Filippo Concaro and Pier Mario Besso (European Space Agency, Germany) |

| **T10-1: Computational Methods**<br>Software Tools & Instruments \| Regular Session \| Antennas<br>Room: Room 3<br>Chairs: Yong Wang (Remcom Inc., USA) and Francesco D'Agostino (University of Salerno, Italy) | |
|---|---|
| **13:30** | **T10-1.1**<br>**Hybrid Simulations with Measurements as Improved Technique to Obtain the Complex Antenna Responses on Structures**<br>Adrien Beaudiot, Cyrille Menudier and Cyril Decroze (University of Limoges, France); Cyrille Le Meins and William Hubert (Thales Communications and Security, France) |
| **13:50** | **T10-1.2**<br>**Stable TD-EFIE Discretized with Implicit Runge-Kutta Methods**<br>Alexandre Dély (IMT Atlantique, France); Francesco Andriulli (Polytecnico di Torino, Italy); Kristof Cools (University of Nottingham, United Kingdom ) |
| **14:10** | **T10-1.3**<br>**Vector Spherical Wave Expansion with Optimal Sampling Scheme**<br>Salma Mirhadi (Iran University of Science and Technology, Iran); Iman Aryanian (Iran Telecommunication Research Center, Iran) |
| **14:30** | **T10-1.4**<br>**Implementation of FDTD Waveguide Port Based on Virtual Domain**<br>Xi Chao Bo, Jian Feng Zhang and Tie Jun Cui (Southeast University, P.R. China) |
| **14:50** | **T10-1.5**<br>**An Efficient Domain Cascading Approach for Linear Discontinuous Galerkin Schemes**<br>Doganay Dogan and Mustafa Kuzuoglu (Middle East Technical University, Turkey) |
| **15:10** | **T10-1.6**<br>**Towards Performance Optimisation of the FDTD Method via Matrix Casting Approach**<br>Maksims Abalenkovs (The University of Manchester, United Kingdom) |
| **T07-1: RF Absorbing Techniques for Defence & Security**<br>Defence & Security \| Regular Session \| Measurement<br>Room: Room 2<br>Chairs: Michael Foegelle (ETS-Lindgren, USA) and Professor Agostino Monorchio (University of Pisa, Italy) | |
| **13:30** | **T07-1.1**<br>**An Absorptive Frequency-Selective Reflector Based on Miniaturized Square-Loop Resonator**<br>Hao Huang and Zhongxiang Shen (Nanyang Technological University, Singapore) |

| | |
|---|---|
| **13:50** | **T07-1.2**<br>**An Ultra-thin Triple-band Metamaterial Absorber with Equivalent Circuit Analysis**<br>Xianliang Zeng, Linxi Zhang, Guobin Wan, Meng Gao and Bin Hu (Northwestern Polytechnical University, P.R. China) |
| **14:10** | **T07-1.3**<br>**Hybrid Physical Optics-Ray Tracing Method for the RCS Calculation of Electrically Large Objects Covered with Radar Absorbing Materials**<br>Pierpaolo Usai, Michele Borgese, Filippo Costa and Agostino Monorchio (University of Pisa, Italy) |
| **14:30** | **T07-1.4**<br>**Retrieving the Constitutive Parameters of Metal-Backed Radar Absorbing Material by Phase Unwrapping Method**<br>Bin Fu, Xin Ma and Guobin Wan (Northwestern Polytechnical University, P.R. China) |
| **14:50** | **T07-1.5**<br>**A Broadband Metamaterial Based Radar Absorber**<br>Thtreswar Beeharry, Riad Yahiaoui and Habiba Ouslimani (Université Paris Ouest Nanterre La Défense, France); Kamardine Selemani (CMN, France) |
| **15:10** | **T07-1.6**<br>**Uneven-Layered Metamaterial Tile for Ultra-wideband RCS Reduction**<br>Jianxun Su, Jinbo Liu and Zengrui Li (Communication University of China, P.R. China); Shan Zhao (Beijing Institute of Graphic Communication, P.R. China) |
| **T05-1: Antennas and Propagation for Biomedical Applications -1**<br>Biomedical \| Regular Session \| Antennas and Propagation<br>Room: Room1<br>Chairs: Dr Jiafeng Zhou (University of Liverpool, United Kingdom) and Dr Albert Sabban (Ort Braude College, Israel) | |
| **13:30** | **T05-1.1**<br>**New Wideband Wearable Notch Antennas for Energy Harvesting Applications**<br>Albert Sabban (Ort Braude College, Israel) |
| **13:50** | **T05-1.2**<br>**Waveform Matching Based Real-time Ablation Monitoring for Microwave Breast Cancer Ablation**<br>Kazuki Kanazawa and Shouhei Kidera (The University of Electro-Communications, Japan) |
| **14:10** | **T05-1.3**<br>**Convex Lenses Horn Antenna Microwave Hyperthermia Scheme**<br>Maha Abdel-Haleem, Sabah M Ahmed and Mohammed Abo-Zahhad (Egypt-Japan University of Science and Technology, Egypt); Tamer Gaber Aboelnaga (ERI, Egypt) |

| | |
|---|---|
| **14:30** | **T05-1.4**<br>**New Approach for the Design of UWB Monopoles with Directive Radiation for BAN Applications**<br>Hamza Benchakroun and Zakaria Mahlaoui (Universitat Poltècnica de València and National School of Applied Sciences, Morocco); Marta Cabedo-Fabrés and Miguel Ferrando-Bataller (Universitat Politècnica de València, Spain); Adnane Latif (Cadi Ayyad University, Morocco) |
| **14:50** | **T05-1.5**<br>**Thin Cavity-Backed Slot Antenna for Deeply Implantable Devices**<br>Longfang Zou, Mohammad Reza Bahmanyar and Christopher McLeod (Imperial College London, United Kingdom) |
| **15:10** | **T05-1.6**<br>**Dosimetric Comparison Using the Human Models Reconstructed by Precise Segmentation, Tissue Simplification and Template Based Registration**<br>Congsheng Li and Tongning Wu (CATR, P.R. China); Xiaobang Sun (Dalian University of Technology, P.R. China) |

## Monday 9 April 2018, 16:00 – 18:00

| **CS25: COST CA15104 IRACON Session on MM Wave and THz Channel Modelling**<br>Cellular Networks & 5G \| Convened Session \| Propagation<br>Room: Room 7<br>Chairs: Professor Claude Oestges (UC Louivain, Belgium) and Reiner S. Thomä (Technische Universität Ilmenau, Germany) | |
|---|---|
| **16:00** | **CS25.1**<br>**Modeling of Intra-Cluster Multipaths for 60 GHz Fading Channels**<br>Naveed Iqbal and Jian Luo (Huawei Technologies, Germany); Diego Dupleich, Christian Schneider, Robert Müller, Stephan Häfner, Giovanni Del Galdo and Reiner S. Thomä (Ilmenau University of Technology, Germany) |
| **16:20** | **CS25.2**<br>**Comparing Radio Propagation Channels Between 28 and 140 GHz Bands in a Shopping Mall**<br>Sinh Nguyen, Jan Järveläinen, Aki Karttunen and Katsuyuki Haneda (Aalto University, Finland); Jyri Putkonen (Nokia Bell Labs, Finland) |
| **16:40** | **CS25.3**<br>**Frequency Dependence of Penetration Through Gaps into Buildings at mmWave**<br>Tim Brown (University of Surrey, United Kingdom ); Pat Chambers (Heriot Watt University, United Kingdom); Ruhan Xie (University of Surrey, United Kingdom) |
| **17:00** | **CS25.4**<br>**Clutter Loss Measurements in Suburban Environment at 26 GHz and 40 GHz**<br>Belen Montenegro-Villacieros, Jean Marc Chareau, James Bishop, Philippe Viaud, Tiziano P Pinato and Marco Basso (European Commission, Italy) |

| | |
|---|---|
| **17:20** | **CS25.5**<br>**3GPP Channel Model Developments for 5G NR Requirements and Testing**<br>Moray Rumney (KeysightTechnologies, United Kingdom); Pekka Kyösti and Lassi Hentila (Keysight Technologies, Finland) |
| **17:40** | **CS25.6**<br>**Channel Characterization at THz Frequencies for High Data Rate Indoor Communications**<br>Sana Salous, Xavier Raimundo, Maryam Hajji, Andreas Klein, Claudio Balocco and Andrew Gallant (Durham University, United Kingdom) |
| **T03-2: MIMO and Array Antennas for Wireless LAN**<br>Wireless Networks \| Regular Session \| Antennas<br>Room: Room 12<br>Chairs: Professor Wout Joseph (Ghent University, Belgium) and Professor Mohammad S. Sharawi (King Fahd University of Petroleum and Minerals, Saudi Arabia) | |
| **16:00** | **T03-2.1**<br>**Measurement-based Analysis of Dense Multipath Components in a Large Industrial Warehouse**<br>Brecht Hanssens, Sunil Raut Kshetri, Emmeric Tanghe, David Plets, Jeroen Hoebeke, Abdulkadir Karaagac, Jetmir Haxhibeqiri, Luc Martens and Wout Joseph (Ghent University, Belgium); Davy P. Gaillot and Martine Liénard (University of Lille, France); Claude Oestges (Universit´e Catholique de Louvain, Belgium) |
| **16:20** | **T03-2.2**<br>**Dense Multipath Component Polarization and Wall Attenuation at 1.35 GHz in an Office Environment**<br>Emmeric Tanghe, Nico Podevijn, Luc Martens and Wout Joseph (Ghent University, Belgium); Pierre Laly, Davy P. Gaillot and Martine Liénard (University of Lille, France); Stijn Denis, Noori BniLam, Ben Bellekens, R. Berkvens and M. Weyn (University of Antwerp, Belgium) |
| **16:40** | **T03-2.3**<br>**A Wideband Multi-Beam Yagi Based MIMO Antenna System with Multiple Parasitic Directors**<br>Syed Jehangir and Mousa Hussein (UAE University, United Arab Emirates); Rifaqat Hussain and Mohammad S. Sharawi (King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia) |
| **17:00** | **T03-2.4**<br>**Antenna Micro-Diversity Systems Hidden Underneath the Car Roof for Vehicle-to-X Applications**<br>Miguel Angel Bueno Diez and Stefan Lindenmeier (Universität der Bundeswehr, Germany) |
| **17:20** | **T03-2.5**<br>**Fractal Antenna of MIMO System WLAN**<br>Wojciech Krzysztofik (Wroclaw University of Technology, Poland); Thanh Cao (Vinh University, Vietnam) |
| **17:40** | **T03-2.6**<br>**Compact Planar Four Element Dual Band-Notched UWB MIMO Antenna for Personal Area Network Applications**<br>Deepika Sipal, Mahesh P Abegaonkar and Shiban K Koul (Indian Institute of Technology Delhi, India) |

| | |
|---|---|
| **T11-2: Metasurface Materials and Techniques**<br>Future applications \| Regular Session \| Propagation<br>Room: Room 17<br>Chairs: Professor Richard Ziolkowski (University of Technology Sydney, Australia) and Professor Sergei Tretyakov (Aalto University, Finland) | |
| **16:00** | **T11-2.1**<br>**Compound Reflection Metagrating for Wideband Backscattering Reduction**<br>Bakhtiyar Orazbayev (EPFL, Switzerland); Pablo Rodríguez-Ulibarri and Miguel Beruete (Universidad Publica de Navarra, Spain) |
| **16:20** | **T11-2.2**<br>**Concept of an Asymmetric Metasurface Absorber**<br>Xuchen Wang, Ana Diaz-Rubio, Viktar Asadchy and Sergei Tretyakov (Aalto University, Finland) |
| **16:40** | **T11-2.3**<br>**Design of a Metasurface Covered Slotted Waveguide Antenna**<br>Javier Chocarro, Jose M. Perez, Ramon Gonzalo and Iñigo Ederra (Universidad Pública de Navarra, Spain) |
| **17:00** | **T11-2.4**<br>**A Reflecting Focusing Dielectric Metasurface**<br>Andrey Sayanskiy, Mikhail Odit, Polina Kapitanova and Pavel Belov (ITMO University, Russia); Viktar Asadchy (Aalto University, Finland) |
| **17:20** | **T11-2.5**<br>**On the use of the Source Reconstruction Method for Metasurface Design**<br>Trevor Brown, Chaitanya Narendra and Puyan Mojabi (University of Manitoba, Canada) |
| **17:40** | **T11-2.6**<br>**Design and Analysis of a Wide Angle Impedance Matching Metasurface for Wideband Antenna Arrays**<br>Alpha Bah, Richard Ziolkowski, Pei-Yuan Quin and Y Jay Guo (University of Technology Sydney, Australia) |
| **T06-2: Frequeny and Polarisation Selective Surfaces for Radar Systems**<br>Radar Systems \| Regular Session \| Propagation<br>Room: Room 16<br>Chairs: Professor Fan Yang (Tsinghua University, P.R. China) and Professor Eva Rajo-Iglesias (University Carlos III of Madrid, Spain) | |
| **16:00** | **T06-2.1**<br>**Ultra-Wideband Harmonic-Suppressed Bandpass/stop Frequency-Selective Surface Based on L-C Lumped Elements**<br>Ahmed Abdelmottaleb Omar and Zhongxiang Shen (Nanyang Technological University, Singapore) |

| | |
|---|---|
| **16:20** | **T06-2.2**<br>**Evaluation of Carbon-Fiber-Reinforced Plastics for Automotive Radar Applications**<br>Patrick Hoerner (Universtiy of Applied Sciences, Germany); Niels Koch (Audi AG, Germany) |
| **16:40** | **T06-2.3**<br>**Microwave Absorber Using Single-Layer FSS with Wideband Operation Above the X-band**<br>Hamza Ahmad, Muhammad Umar Khan and Farooq A. Tahir (National University of Sciences and Technology, Pakistan); Rifaqat Hussain and Mohammad S. Sharawi (KFUPM, Saudi Arabia) |
| **17:00** | **T06-2.4**<br>**Equivalent Circuit Model for Cross-Shaped Frequency Selective Surface Absorbing Material**<br>Wei Zhang, Jian-ying Li, YangXiao Qi, Rui Xu and Feng Liu (Northwestern Polytechnical University, P.R. China) |
| **17:20** | **T06-2.5**<br>**Low-pass Frequency Selective Surface for a Dual-band Gyro-multiplier Characterized by THz-TDS**<br>Xiaoming Liu (Anhui Normal University, P.R. China); Jun Zhou (University of Electronic Science and Technology of China, P.R.China); Cuiwei Tang and Junsheng Yu (Beijing Universtiy of Posts and Telecommunications, P.R. China); Xiang Li and Xiaodong Chen (Queen Mary Universty of London, United Kingdom) |
| **17:40** | **T06-2.6**<br>**Broadband Experimental Validation of the Near Field Focusing Pattern of Frequency Selective Absorber Based Kinetic Inductance Detectors**<br>Shahab Oddin Dabironezare, Erio Gandini and Nuria LLombart (TNO, The Netherlands); Juha Hassel, Leif Grönberg, Hannu Sipola and Visa Vesterinen (VTT Technical Research Center of Finland, Finland) |
| **CS38: Antennas and Propagation Modeling for Inter- and Intra-Chip Wireless Communications**<br>Ultra-High Data Rate Communications \| Convened Session \| Antennas and Propagation<br>Room: Room 14<br>Chairs: Dr Franco Fuschini (University of Bologna, Italy) and Professor Thomas Kürner (Technische Universität Braunschweig, Germany) | |
| **16:00** | **CS38.1**<br>**Modeling of THz Chip-to-Chip Wireless Channels in Metal Enclosures**<br>Alenka Zajic and Prateek Juyal (Georgia Institute of Technology, USA) |
| **16:20** | **CS38.2**<br>**Interference Study for THz Intra-Device Communication Systems with Multiple Links**<br>Thomas Kürner and Alexander Fricke (TU Braunschweig, Germany) |
| **16:40** | **CS38.3**<br>**Example Antenna and Link Performance for Wireless Network on Chip Applications**<br>William Rayess and David W Matolak (University of South Carolina, USA) |

| | |
|---|---|
| **17:00** | **CS38.4**<br>**Antenna Concepts for Board-To-Board Communication**<br>Ronny Hahnel, Patrick Seiler, Bernhard Klein, Xiaozhou Wang, Michael Jenning and Dirk Plettemeier (Dresden University of Technology, Germany) |
| **17:20** | **CS38.5**<br>**On-chip Wireless Optical Communication Through Plasmonic Nanoantennas**<br>Giovanna Calo, Michele Bozzetti and Vincenzo Petruzzelli (Politecnico di Bari, Italy); Gaetano Bellanca and Ali Emre Kaplan (University of Ferrara, Italy); Franco Fuschini, Marina Barbiroli and Paolo Bassi (Università di Bologna, Italy) |
| **17:40** | **CS38.6**<br>**On-Chip Antennas for Inter-Chip Wireless Interconnections: Challenges and Opportunities**<br>Rounak Singh Narde, Naseef Mansoor, Amlan Ganguly and Jayanti Venkataraman (Rochester Institute of Technology, USA) |
| **T04-2: Antennas for Wireless Connectivity**<br>Connected objects \| Regular Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Shangbin Wu (Samsung R&D Institute, United Kingdom) and Professor Christophe Roblin (Telecom ParisTech and LTCI - Institut Mines-Télécom, France) | |
| **16:00** | **T04-2.1**<br>**Microstrip Antenna for IoT/WLAN Applications in Smart Homes at 17GHz**<br>Tiago Varum (Instituto de Telecomunicações, Portugal); Michael Duarte and João Matos (Instituto de Telecomunicações and Universidade de Aveiro, Portugal); Pedro Tavares Pinho (Instituto de Telecomunicações and Instituto Superior de Engenharia de Lisboa, Portugal) |
| **16:20** | **T04-2.2**<br>**An UWB Coplanar Waveguide Fed Integrated IFA Design for Wearable Communications**<br>Jinxin Du and Christophe Roblin (Telecom ParisTech and LTCI - Institut Mines-Télécom, France) |
| **16:40** | **T04-2.3**<br>**Dual-Band Dual-Polarized Stacked Rectenna for RF Energy Harvesting at 1.85 and 2.45 GHz**<br>Hichem Mahfoudi and Mohamed Tellache (University of Sciences and Technology Houari Boumediene, Algeria); Hakim Takhedmit (Paris-Est Marne-la-Vallée University, France) |
| **17:00** | **T04-2.4**<br>**Genetic Algorithm Assisted Hybrid Beamforming for Wireless Fronthaul**<br>Shangbin Wu (Samsung R&D Institute, United Kingdom) |
| **17:20** | **T04-2.5**<br>**Textile-based UHF RFID Patch Antenna with H-slot**<br>Andrej Galoić, Branimir Ivšić, Davor Bonefačić and Juraj Bartolić (University of Zagreb, Croatia) |

| | |
|---|---|
| **17:40** | **T04-2.6**<br>**Performance Assessment of a Small UHF RFID Tag on Metallic Objects of Different Sizes**<br>Sergio López-Soriano and Josep Parrón (Universitat Autònoma de Barcelona, Spain) |
| **18:00** | **T04-2.7**<br>**A Broadband Planar Rhombus Monopole Antenna for 28 GHz Millimeter-Wave Communications**<br>Farooq A. Tahir and Hidayat Ullah (National University of Sciences and Technology, Pakistan) |
| **T08-2: Positioning and Tracking Applications**<br>Positioning, Localization & Tracking \| Regular Session \| Propagation<br>Room: Room 6<br>Chairs: Professor Jan Steckel (University of Antwerp, Belgium) and Professor Agostino Monorchio (University of Pisa, Italy) | |
| **16:00** | **T08-2.1**<br>**A Compact Dual-Wideband Automotive Ring Antenna for GNSS L1- and L2-Band**<br>Sebastian Matthie and Stefan Lindenmeier (Universität der Bundeswehr München, Germany) |
| **16:20** | **T08-2.2**<br>**Low-cost Hardware Platform for Angle of Arrival Estimation Using Compressive Sensing**<br>Jan Steckel, Dennis Laurijssen, Anthony Schenck, Noori BniLam and Maarten Weyn (University of Antwerp, Belgium) |
| **16:40** | **T08-2.3**<br>**Software-Defined Radio System for Tracking Application**<br>Clément Campo (ISL and Universtiy of Poitiers, France); Loic Bernard and Sébastien Hengy (ISL, France); Hervé Boeglen and Jean-Marie Paillot (University of Poitiers, France) |
| **17:00** | **T08-2.4**<br>**UWB Printed Monopole Antennas for Application in Detection of Partial Discharges**<br>Josiel Cruz, Raimundo Freire, Alexandre Serres, George Xavier and Luiz Nobrega (Universtiy of Campina Grande, Brazil); Joabson Nogueira de Carvalho (Federal Institute of Education, Brazil) |
| **17:20** | **T08-2.5**<br>**Experimental Evaluation of Localization Accuracy of Multiple Subjects Using Multiple Receiving Stations**<br>Nobuyuki Shiraki, Dai Sasakawa, Shoichi Iizuka and Naoki Honma (Iwate University, Japan); Takeshi Nakayama (Panasonic Corporation, Japan) |
| **17:40** | **T08-2.6**<br>**Wireless Detection of Moving Chipless Tags Made of Metamaterial Resonators**<br>Filippo Costa, Michele Borgese, Antonio Gentile, Simone Genovesi, Luca Buoncristiani, Francesco Alessio Dicandia, Davide Bianchi, Agostino Monorchio and Giuliano Manara (University of Pisa, Italy) |

| **T09-2: Antenna Design and Optimization for Space Applications - 1**<br>Space Applications \| Regular Session \| Antennas<br>Room: Room 4<br>Chairs: Professor Ronan Sauleau (University of Rennes 1, France) and Professor Yahia Antar (Royal Military College of Canada, Canada) | |
|---|---|
| **16:00** | **T09-2.1**<br>**Coherent Fourier Optics Analysis of Large Format Lens Based Focal Plane Arrays**<br>Shahab Oddin Dabironezare, Giorgio Carluccio, Andrea Neto and Nuria Llombart (Delft University of Technology, The Netherlands) |
| **16:20** | **T09-2.2**<br>**Multi-Frequency GNSS Dielectric Resonator Antenna with In-Band Filtering**<br>Slobodan Jović and Michel Clénet (Defence R&D Canada and Royal Military College of Canada, Canada); Yahia Antar (Royal Military College of Canada, Canada) |
| **16:40** | **T09-2.3**<br>**Comparison of Optimization Procedures for the Design of Continuous Parallel Plate Waveguide Multiple Beam Lens Antennas**<br>François Doucet and Ronan Sauleau (University of Rennes 1, France); Nelson Fonseca (European Space Agency, The Netherlands); Etienne Girard and Hervé Legay (Thalès Alenia Space, France) |
| **17:00** | **T09-2.4**<br>**Hybrid Beamforming with Reduced Grating Lobes for Satellite Applications**<br>Vincent Tugend and Andrew Thain (Airbus Defence and Space, France) |
| **17:20** | **T09-2.5**<br>**Preliminary Configuration Design of Mesh Antennas Using Integrated Structural-electromagnetic Method**<br>Yali Zong, Lu-Yang Ji and Shuangxi Zhang (Northwestern Polytechnical University, P.R. China); Congsi Wang (Xidian University, P.R. China) |
| **17:40** | **T09-2.6**<br>**A Low-Profile Dielectric Dome Antenna for Wide-Scanning Applications**<br>Erio Gandini, Stefania Monni, Fabrizio Silvestri and Giampiero Gerini (TNO, The Netherlands); Alice Benini, Enrica Martini and Stefano Maci (University of Siena, Italy); Maria Carolina Vigano (VIASAT, Switzerland); Giovanni Toso (European Space Agency, The Netherlands) |
| **T10-2: Measurement Techniques**<br>Software Tools & Instruments \| Regular Session \| Measurement<br>Room: Room 3<br>Chairs: Professor Roger Appleby (Roger Appleby MMW Consulting Ltd, United Kingdom) and Professor Jorge Costa (Instituto de Telecomunicacoes /ISCTE-IUL, Portugal) | |
| **16:00** | **T10-2.1**<br>**A Cost-Effective Set-up for Time Modulated Array Measurement Using Software Defined Radio**<br>Mohammad Hossein Mazaheri, Mohammad Reza Amjadian, Hossein Khalili, Mahmood Akbari and Mohammad Fakharzadeh (Sharif University of Technology, Iran) |

| | |
|---|---|
| **16:20** | **T10-2.2**<br>**Nonconvex Phaseless Near-Field Far-Field Transformation for Electrically Large Problems**<br>Alexander Paulus, Josef Knapp and Thomas F. Eibert (Technical University of Munich, Germany) |
| **16:40** | **T10-2.3**<br>**A Scatterometer Operating at Millimetre and Sub-Millimetre Wave Wavelengths**<br>Roger Appleby (Roger Appleby MMW Consulting Ltd, United Kingdom); Richard Wylde and Stuart Froud (Thomas Keating Ltd, United Kingdom); Cecilia Cappellin and Per Nielsen (TICRA, Denmark); Phil Atkin (Pixel Analytics, United Kingdom ); Elena Saenz (ESA/ESTEC, The Netherlands) |
| **17:00** | **T10-2.4**<br>**A Computational and Experimental Investigation of Lambda/2 and Lambda/4 Sampling Step in Phaseless Planar Near-Field Measurements at 60GHz**<br>Javier Fernández Álvarez and Olav Breinbjerg (Technical University of Denmark, Denmark) |
| **17:20** | **T10-2.5**<br>**Compressive Sensing Approach for Fast Antenna Far Field Characterization**<br>Benjamin Fuchs and Laurent Le Coq (University of Rennes 1, France); Sébastien Rondineau (University of Brasilia, Brazil); Marco Donald Migliore (University of Cassino e Lazio Meridionale, Italy) |
| **17:40** | **T10-2.6**<br>**A Truncation Criterion in Planar near Field Techniques**<br>Maria Antonia Maisto, Raffaele Solimene and Rocco Pierri (Università della Campania Luigi Vanvitelli, Italy) |
| **T07-2: Imaging Techniques and Algorithms**<br>Defence & Security \| Regular Session \| Propagation<br>Room: Room 2<br>Chairs: Dr Rob Donnan (Queen Mary University of London, United Kingdom) and Yijun Feng (Nanjing University, China) | |
| **16:00** | **T07-2.1**<br>**Multi-Beam Quasi-Optical System Design for a Real Time Radar Imager at 340 GHz**<br>Erio Gandini and Nuria Llombart (Technical University of Delft, The Netherlands); Duncan Robertson, David Macfarlane, Robert Hunter and Scott Cassidy (University of St Andrews, United Kingdom ); Tomas Bryllert (Wasa Millimeter Wave AB, Sweden); Mattias Ferndahl (GotMIC AB, Sweden); Hannu Lindström, Jussi Tenhunen and Hannu Vasama (VTT Technical Research Centre of Finland Ltd, Finland); Jouni Huopana, Timo Selkälä and Antti-Jussi Vuotikka (Global Boiler Works Oy, Finland) |
| **16:20** | **T07-2.2**<br>**Wideband Single Pixel Radiometer in 28 nm CMOS Technology for Low-Cost Imaging Applications**<br>Sven van Berkel, Satoshi Malotaux, Daniele Cavallo, Marco Spirito, Andrea Neto and Nuria Llombart (Delft University of Technology, The Netherlands) |
| **16:40** | **T07-2.3**<br>**The Design of High-Responsivity Millimeter Wave Imager Using Vanadium Dioxide Microbolometers**<br>Shangyi Chen, Behnam Ghassemiparvin and Nima Ghalichechian (The Ohio State University, USA) |

| | |
|---|---|
| **17:00** | **T07-2.4**<br>**3D Printed Compressive Horn Antenna for High-Sensing-Capacity Millimeter-Wave Imaging**<br>Ali Molaei, Juan Heredia-Juesas, Luis Tirado, Weite Zhang, Anthony Bisulco, Ashkan Ghanbarzade and Jose Martinez Lorenzo (Northeastern University, USA); Alexander Zhu (Wayland High School, USA); Diego Cachay (Boston Latin School, USA) |
| **17:20** | **T07-2.5**<br>**A Modified Contrast Source Inversion Method for the Synthesis of Innovative Dielectric Devices**<br>Roberta Palmeri, Martina Teresa Bevacqua, Andrea Francesco Morabito and Tommaso Isernia (University of Reggio Calabria, Italy) |
| **17:40** | **T07-2.6**<br>**Suppressing Ghost Images for Synthetic Aperture THz Imaging with Large Sampling Spacing**<br>Shaoqing Hu, Min Zhou, Xiaodong Chen and Yasir Alfadhl (Queen Mary University of London, United Kingdom) |
| **T05-2: Antennas and Propagation for Biomedical Applications-2**<br>Biomedical \| Regular Session \| Antennas and Propagation<br>Room: Room1<br>Chairs: Dr Mohammad Ojaroudi (University of Limoges, France) and Dr Akram Alomainy (Queen Mary University of London, United Kingdom) | |
| **16:00** | **T05-2.1**<br>**Efficient and Full-Wave Electromagnetic Analysis of MRI Antennas Using the Array Scanning Method**<br>Jose Ignacio Echeveste, Denis Tihon and Christophe Craeye (Université Catholique de Louvain, Belgium); Marc Dubois, Redha Abdeddaim and Stefan Enoch (Aix Marseille University, France) |
| **16:20** | **T05-2.2**<br>**Interdigital Based EBG: Compact and Polarization Stable for MBAN and Wi-Fi**<br>Dinesh Rano (Indraprastha Institute of Information Technology, India); Mohammad Hashmi (Indraprastha Institute of Information Technology, India and Nazarbayev University, Kazakhstan) |
| **16:40** | **T05-2.3**<br>**A New Approach of Multi-Parameter UWB Antenna Modeling Based on Knowledge-Based Artificial Neural Network**<br>Mohammad Ojaroudi, Stéphane Bila and François Torres (University of Limoges, France) |
| **17:00** | **T05-2.4**<br>**Decoupling of Dual-Tuned MRI Coils by Using Distributed Magnetic Traps**<br>Nunzia Fontana (Consorzio Nazionale Interuniversitario per le Telecomunicazioni, Italy); Filippo Costa and Danilo Brizi (University of Pisa, Italy); Gianluigi Tiberi (Fondazione Imago 7, Italy); Angelo Galante and Marcello Alecci (University of L'Aquila, Istituto Nazionale di Fisica Nucleare and Istituto SPIN-CNR, Italy); Agostino Monorchio (Consorzio Nazionale Interuniversitario per le Telecomunicazioni and University of Pisa, Italy) |
| **17:20** | **T05-2.5**<br>**High Sensitivity Inkjet-Printed Terahertz Metallic Hole Array Sensor**<br>Ahmed Aziz, Syeda Fizzah Jilani, Akram Alomainy and Khalid Z Rajab (Queen Mary University of London, United Kingdom) |

| | |
|---|---|
| **17:40** | **T05-2.6**<br>**Penetration Depth Evaluation of Split Ring Resonator Sensor Using In-Vivo Microwave Reflectivity and Ultrasound Measurements**<br>Syaiful Redzwan Mohd Shah, Jacob Velander, Mauricio D Perez, Noor Badariah Asan, and Robin Augustine (Uppsala University, Sweden); Parul Mathur and Dhanesh G. Kurup (Amrita Univerity, India); Taco Blokhuis (University Medical Center Maastricht, The Netherlands) |

# Tuesday 10 April 2018

## Tuesday 10 April 2018, 09:00 – 10:40

### CS07: 5G and mmWave Device Measurement Challenges

Cellular Networks & 5G | Convened Session | Measurement
Room: Room 7
Chairs: Professor Tian Hong Loh (National Physical Laboratory, United Kingdom) and Janet O'Neil (ETS-Lindgren, USA)

| | |
|---|---|
| **09:00** | **CS07.1**<br>**Antenna Measurement Based on Very Near Field Scanning**<br>Feng Zhou, Kai Cheng, Jing-lu Sun and Xiu-hua Yuan (China Academy of Information and Communication Technology, P.R. China); Hai-man Zhang (Beijing University of Posts and Telecommunication, P.R. China) |
| **09:20** | **CS07.2**<br>**5G and mmWave Device Measurement Challenges**<br>Michael Foegelle (ETS-Lindgren, USA) |
| **09:40** | **CS07.3**<br>**Single Layer PCB Broadband Circular Polarisation Millimetre Wave Massive MIMO Array**<br>Qian Xu, Lei Xing, Min Wang and Hui Gan (Nanjing University of Aeronautics and Astronautics, P.R. China); Yi Huang and Manoj Stanley (The University of Liverpool, United Kingdom); Tian-Hong Loh (National Physical Laboratory, United Kingdom) |
| **10:00** | **CS07.4**<br>**Design of Hook Type Dipole Phased Array with Anti-Metal Structure for 5G Mobile Terminals**<br>Ruixin Wang, Siting Zhu, Na Tian and Zheng Liu (China Academy of Information and Communication Technology, P.R. China); Yan Zhang and Ting Yu (Beihang University, P.R. China) |
| **10:20** | **CS07.5**<br>**Efficient Measurement of Aircraft Quality Factor for Evaluation and Prototyping of Wireless Systems**<br>Dennis Lewis (Boeing, USA); Jason Bommer (ANSYS, USA); Genevieve Hankins (Riverside Research, USA) |

### CS27: Reconfigurable Antennas for Compact Devices

Connected objects | Convened Session | Antennas
Room: Room 12
Chairs: Dr Leonardo Lizzi (University of Cote d'Azur, France) and Professor Joseph Costantine (American University of Beirut, Lebanon)

| | |
|---|---|
| **09:00** | **CS27.1**<br>**A Multiple Elevational Beam Switching Antenna for Unmanned Aerial Vehicle Application**<br>Pei-Yuan Qin, Shu-Lin Chen and Y. Jay Guo (University of Technology, Australia); Lu-Yang Ji (Northwestern Polytechnical University, P.R. China); Yiannis Vardaxoglou (Loughborough University, United Kingdom) |

| | |
|---|---|
| **09:20** | **CS27.2**<br>**Optical Switching of GeTe Phase Change Material: Application to a Frequency Agile Millimeter-Waves Patch Antenna**<br>Laure Huitema, Jehison Leon Valdes and Aurelian Crunteanu (Xlim Laboratory, France); Hang Wong (City University of Hong Kong, Hong Kong) |
| **09:40** | **CS27.3**<br>**A Pattern Reconfigurable Microstrip Antenna for Future Automotive Applications**<br>Jerzy Kowalewski, Jonathan Mayer, Tobias Mahler and Thomas Zwick (Karlsruhe Institute of Technology (KIT), Germany) |
| **10:00** | **CS27.4**<br>**A Cognitive Radio Simulator for Mobile Autonomous Reconfigurable Antennas**<br>Youssef Tawk, Ahmad El-Amine and Sandy Saab (Notre Dame University, Lebanon); Joseph Costantine (American University of Beirut, Lebanon); Christos Christodoulou (University of New Mexico, USA) |
| **10:20** | **CS27.5**<br>**Frequency Reconfigurable Dual Narrow Band Antenna matched on the Low Band LTE FDD Physical Layer**<br>Serge Bories, Francois Sarrazin and Alexandre Giry (CEA LETI, France) |
| **CS01: Recent Advances in Asian Antennas and Propagation Research**<br>Future applications \| Convened Session \| Antennas and Propagation<br>Room: Room 17<br>Chairs: Professor Jaehoon Choi (Hanyang University, Korea) and Professor Ronan Sauleau (IETR, Université de Rennes 1, France) | |
| **09:00** | **CS01.1**<br>**Investigations on the Terahertz Beam Scanning Antennas with a Wide Scanning Range**<br>Zhang-Cheng Hao, Jixin Chen, Wei Hong and Jianfeng Zhai (Southeast University, P.R. China) |
| **09:20** | **CS01.2**<br>**Digital Beamforming Receiver for Analog Phased Array by Rotating Element Phase**<br>Tasuku Kuriyama, Takashi Maruyama, Kazunari Kihira, Toru Fukasawa and Naofumi Yoneda (Mitsubishi Electric.Corporation, Japan) |
| **09:40** | **CS01.3**<br>**Recent Breakthroughs in Reconfigurable Antennas at the University of Technology Sydney**<br>Y. Jay Guo, Peiyuan Qin, Shu-Lin Chen and Wei Lin ( (University of Technology, Australia); Richard Ziolkowski (University of Technology Sydney, Australia and University of Arizona, USA) |
| **10:00** | **CS01.4**<br>**Dual-Band Shared-Aperture Array Antenna for Naval Radar Applications**<br>Gina Kwon (Agency for Defense Development, Korea); JoonYoung Park (Hanwha Systems, Korea); DongHwan Kim (Agency for Defense Development, Korea); Keum Cheol Hwang (Sungkyunkwan University, Korea) |

| | |
|---|---|
| **10:20** | **CS01.5**<br>**Development of Advanced Receiving Antennas for Satellite Broadcasting**<br>Masafumi Nagasaka, Atsushi Iwasaki, Susumu Nakazawa and Shoji Tanaka (NHK, Japan) |
| **T06-3: Antennas for Radar Systems-1**<br>Radar Systems \| Regular Session \| Antennas<br>Room: Room 16<br>Chairs: Jiafeng Zhou (University of Liverpool, United Kingdom) and Professor Payam Nayeri (Colorado School of Mines, USA) | |
| **09:00** | **T06-3.1**<br>**Phase Management for Extended Scan Range Antenna Arrays Based on Rotman Lens**<br>Enrico Tolin (Politecnico di Torino, Italy and IMST GmbH, Germany); Francesca Vipiana (Politecnico di Torino, Italy); Oliver Litschke (IMST GmbH, Germany) |
| **09:20** | **T06-3.2**<br>**Deterministic Synthesis of Complex Shaped-Beam Radiation Patterns Using Conformal Aperiodic Antenna Arrays**<br>Diego Caratelli (The Antenna Company, The Netherlands); Giovanni Toso (European Space Agency, The Netherlands) |
| **09:40** | **T06-3.3**<br>**Uniform Arrays with Low Sidelobe Two-Way Antenna Patterns**<br>Randy Haupt and Payam Nayeri (Colorado School of Mines, USA) |
| **10:00** | **T06-3.4**<br>**Implementation of a Correcting Coupling Mechanism to Mitigate Surface Wave in Phased Arrays**<br>Aurélien Ayissi Manga, Raphael Gillard and Renaud Loison (INSA Rennes, France); Isabelle LeRoy-Naneix and Christian Renard (Thales Airborne Systems, France) |
| **10:20** | **T06-3.5**<br>**Compensation Method for Distorted Active Phased Array Antennas in Condition of Quantization Errors Based on Structural-Electromagnetic Coupling**<br>Yan Wang, Congsi Wang, Shuai Yuan, Haihua Li and Kang Ying (Xidian University, P.R. China); Wei Gao (University of New South Wales, Australia); Qian Xu (Chinese Academy of Sciences, P.R. China) |
| **CS04: IET Session on Channel Sounding Campaigns**<br>Ultra-High Data Rate Communications \| Convened Session \| Propagation<br>Room: Room 14<br>Chairs: Professor Sana Salous (Durham University, United Kingdom) and Peter Papazian (NIST, USA) | |
| **09:00** | **CS04.1**<br>**Angle- And Delay-Dispersion Characteristics in a Hallway and Lobby at 60 GHz**<br>Ruoyu Sun, Peter Papazian, Jelena Senic, Camillo Gentile and Kate A. Remley (National Institute of Standards and Technology, USA) |

| | |
|---|---|
| **09:20** | **CS04.2**<br>**The Development of the New ITU-R Model for Building Entry Loss**<br>Richard Rudd (Plum Consulting Ltd, United Kingdom); Jonas Medbo (Ericsson, Sweden); Fryderyk Lewicki (Orange Polska, Poland); Fabiano Chaves (Nokia Bell Labs, USA); Ignacio Rodriguez (Aalborg Universitet, Denmark) |
| **09:40** | **CS04.3**<br>**Measurement-Based Beam Mis-Alignment Analysis of Millimeter-Wave Directional Beamforming in Large Indoor Environments**<br>Juyul Lee, Myung-Don Kim, Kyung-Won Kim and Jae-Joon Park (ETRI, Korea) |
| **10:00** | **CS04.4**<br>**Measurement and Characterization of 28 GHz High-Speed Train Backhaul Channels in Rural Propagation Scenarios**<br>Mathis Schmieder, Michael Peter, Ramez Askar, Ivan Komsic and Wilhelm Keusgen (Fraunhofer Heinrich Hertz Institute, Germany) |
| **10:20** | **CS04.5**<br>**Investigation of V2I Channel Transitions in Urban Environment**<br>Martin Käske, Daniel Czaniera, Christian Schneider, Reiner S. Thomä and Giovanni Del Galdo (Ilmenau University of Technology, Germany); Mate Boban and Jian Luo (Huawei Technologies, Germany) |
| **CS22: New Technologies and Materials for Wearable Antennas for Wireless Personal Area Networks (WPANs) and Wireless Sensor Networks (WSNs)**<br>Connected objects \| Convened Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Simone Genovesi (University of Pisa, Italy) and Dr Dimitris Anagnostou (Heriot-Watt University, United Kingdom) | |
| **09:00** | **CS22.1**<br>**Flexible Antennas for Wearable Applications: Recent Advances and Design Challenges**<br>Saad Alharbi and Asimina Kiourti (The Ohio State University, USA); Raed Shubair (Massachusetts Institute of Technology, USA) |
| **09:20** | **CS22.2**<br>**Wearable Antennas Based on Graphite Paper and Conductive Polymer**<br>Shengjian Jammy Chen and Christophe Fumeaux (The University of Adelaide, Australia) |
| **09:40** | **CS22.3**<br>**Textile-Integrated Electronics for Small Airplanes**<br>Miroslav Cupal, Jiri Drinovsky, Tomas Gotthans, Roman Hermany, Martin Kokolia, Jaroslav Lacik, Tomas Parizek, Jan Prasek, Zbynek Raida and Jan Spurek (Brno University of Technology, Czech Republic); Dita Kracalova, Zdenka Ledrova and Jiri Prochazka (SINTEX, Czech Republic); David Krutilek (Evektor, Czech Republic), Zdenek Reznicek (Design and Engineering, Czech Republic) |
| **10:00** | **CS22.4**<br>**Robust Implementation of Flexible Wearable Antennas with PDMS-Embedded Conductive Fabric**<br>Roy B. V. B. Simorangkir and Karu Esselle (Macquarie University, Australia); Yang Yang (University of Technology Sydney, Australia) |

| | |
|---|---|
| **10:20** | **CS22.5**<br>**Novel Compact Multiband Antennas for Biomedical Applications**<br>Zengdi Bao and Yong-Xin Guo (National University of Singapore, Singapore); Raj Mittra (Penn State University, USA and King Abdulaziz University, Saudi Arabia) |
| **T08-3: Antennas for Positioning**<br>Positioning, Localization & Tracking \| Regular Session \| Antennas<br>Room: Room 6<br>Chairs: Dr Robert J Watson (University of Bath, United Kingdom) and Professor David W Matolak (University of South Carolina, USA) | |
| **09:00** | **T08-3.1**<br>**An Array Antenna for Low Power Localisation of GPS Interference**<br>Elizabeth Lloyd and Robert J Watson (University of Bath, United Kingdom) |
| **09:20** | **T08-3.2**<br>**Metasurface-inspired Antenna in Cavity for GNSS Applications**<br>Laura Garcia-Gamez (University of Rennes and French-German Research Institute of Saint-Louis, France); Loic Bernard (French-German Research Institute of Saint-Louis, France); Ronan Sauleau, Sylvain Collardey and Kourosh Mahdjoubi (University of Rennes, France) |
| **09:40** | **T08-3.3**<br>**A Spherical Model of the Array Factor for Active Element Pattern Synthesis**<br>Ayichatou Gueye, Benoit Poussot, Florence Nadal and Geneviève Baudoin (Université Paris-Est, France) |
| **10:00** | **T08-3.4**<br>**Measurements of UWB Pulse Propagation Along a Wind Turbine Blade at 1 to 20 GHz**<br>Johannes Hejselbæk, Igor Syrytsin and Patrick Eggers (Aalborg University, Denmark) |
| **10:20** | **T08-3.5**<br>**OFDM Wideband DOA System for Detecting and Tracking Vehicles Applications**<br>Mohammed A. G. Al-Sadoon (Universtiy of Bradford, United Kingdom and Basra Universtiy college of Science and Technology, Iraq); Nazar Ali (University of Bradford, United Kingdom and Khalifa University, Abu Dhabi); Issa Elfergani and Jonathan Rodriguez (Instituto de Telecomunicações, Portugal); Rameez Asif, Stephen M R Jones, Jim M. Noras and Raed A Abd-Alhameed (University of Bradford, United Kingdom); Abdulkareim Zweid (Basra University College of Science and Technology, Iraq) |
| **CS05: Antenna Needs and Solutions for Future Space Missions**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 4<br>Chairs: Dr Mauro Ettorre (University of Rennes 1, France) and Dr Hervé Legay (Thales Alenia Space, France) | |
| **09:00** | **CS05.1**<br>**Fabrication of Four Panels of Parallel Plate Slot Arrays for a 100Kg-Class X-band SAR Satellite**<br>Jiro Hirokawa (Tokyo Institute of Technology, Japan); Prilando Rizki Akbar and Hirobumi Saito (Institute of Space and Astronautical Science-Japan Aerospace Exploration Agency, Japan); Budhaditya Pyne (University of Tokyo, Japan) |

| | |
|---|---|
| **09:20** | **CS05.2**<br>**Challenges for Future Active Space Communication Array Antennas**<br>Dennis T. Schobert, Nelson Fonseca, Jean-Christophe Angevain, Peter de Maagt and Giovanni Toso (European Space Agency, The Netherlands) |
| **09:40** | **CS05.3**<br>**Optimisation by Unit-Cell Rotation of Linear-To-Circular Polarising Reflectors for Multiple Primary Feeds**<br>Salvador Mercader-Pellicer, George Goussetis and Gabriela Medero (Heriot-Watt University, United Kingdom); Daniele Bresciani and Hervé Legay (Thales Alenia Space, France); Nelson Fonseca (European Space Agency, The Netherlands) |
| **10:00** | **CS05.4**<br>**Metallic Metasurface Antennas for Space**<br>David González-Ovejero, Xavier Morvan, Ronan Sauleau and Mauro Ettorre (Université de Rennes, France); Nacer Chahat and Goutam Chattopadhyay (California Institute of Technology, USA) |
| **10:20** | **CS05.5**<br>**Antennas for Space Instruments from GHz to THz**<br>Goutam Chattopadhyay, Maria Alonso-delPino, Cecile Jung-Kubiak, Theodore Reck, Choonsup Lee, Nacer Chahat and Imran Mehdi (California Institute of Technology, USA); David González-Ovejero (Université de Rennes, France) |
| **CS19: Fundamental Challenges and Novel Methodologies in the Next-Generation Computational Electromagnetics**<br>Software Tools & Instruments \| Convened Session \| Antennas<br>Room: Room 3<br>Chairs: Professor Francesca Vipiana (Politecnico di Torino, Italy) and Professor Zhen Peng (University of New Mexico, USA) | |
| **09:00** | **CS19.1**<br>**Improved Accuracy Combined Source and Magnetic Field Integral Equations with Low-Order Discretization**<br>Jonas Kornprobst and Thomas F. Eibert (Technische Universität München, Germany) |
| **09:20** | **CS19.2**<br>**Reduction of Singular Surface Integrals to Non-Singular Line Integrals for Matrix Elements of Tensor and Vector Green Functions in Integral Equations Involving Non-Parallel Surface Elements**<br>Elizabeth Bleszynski, Marek Bleszynski and Thomas Jaroszewicz (Monopole Resesarch, USA) |
| **09:40** | **CS19.3**<br>**Versatile and Accurate Electromagnetic Analysis of Piecewise Homogeneous Composite Objects**<br>Ivan Sekulic, Eduard Ubeda and Juan M. Rius (Universitat Politècnica de Catalunya, Spain) |
| **10:00** | **CS19.4**<br>**Fast Spectral Iterative Technique for the Analysis of Planar Metasurface-type Structures**<br>Simon Hubert, Modeste Bodehou and Christophe Craeye (Université Catholique de Louvain, Belgium) |

| | |
|---|---|
| **10:20** | **CS19.5**<br>**Some Recent Advances in the Development of Numerically Efficient Computational Electromagnetic Techniques**<br>Raj Mittra and Nathawut Homsup (University of Central Florida, USA); Kapil Sharma (Pennsylvania State University, USA), Rajarshi Bhattacharya (NIT, India) |
| **T07-3: Antennas for Defence & Security**<br>Defence & Security \| Regular Session \| Antennas<br>Room: Room 2<br>Chairs: Professor Yikai Chen (University of Electronic Science and Technology of China, P.R.China) and Zhipeng Wu (Manchester University, United Kingdom) | |
| **09:00** | **T07-3.1**<br>**Design and Fabrication of Nonuniform Helical Antennas for Detection of Side-Channel Attacks in Computer Systems**<br>Sinan Adibelli and Alenka Zajic (Georgia Institute of Technology, USA); Ruzica Golubovic (Federal Office of Communications (OFCOM), Switzerland); Antonije Djordjevic and Dragan I. Olcan (University of Belgrade, Serbia) |
| **09:20** | **T07-3.2**<br>**An Improved Directional Modulation Technique Based on Four-Dimensional Retrodirective Arrays**<br>Chao Sun, Shiwen Yang and Yikai Chen (University of Electronic Science and Technology of China, P.R. China) |
| **09:40** | **T07-3.3**<br>**A Fully-Planar 6:1 Antenna Array Aperture**<br>John Logan and Rick Kindt (Naval Research Laboratory, USA) |
| **10:00** | **T07-3.4**<br>**Smooth-Walled Spline-Profile Horn Feed to Enlarge Compact Antenna Test Range Quiet Zone**<br>Clive Parini, Rostyslav Dubrovka and Stuart F Gregson (Queen Mary University of London, United Kingdom); Christophe Granet (Lyrebird Antenna Research Pty Ltd, Australia); John Kot (Young and Kot Engineering Research, Australia) |
| **10:20** | **T07-3.5**<br>**Miniaturized Switchless Pattern Reconfigurable Antenna Utilizing Spherical Modes Analysis**<br>Adam Narbudowicz and Max James Ammann (Dublin Institute of Technology, Ireland); Nicola Marchetti (The University of Dublin, Ireland) |
| **CS10: Imaging and Diagnosing with Microwaves – New Findings Covering Dielectric Studies, Imaging Algorithms and Patient Studies: COST Action TD1301, MiMed**<br>Biomedical \| Convened Session \| Propagation<br>Room: Room 1<br>Chairs: Dr Raquel Cruz Conceição (Universidade de Lisboa, Portugal) and Dr Angie Fasoula (MVG – Microwave Vision, France) | |
| **09:00** | **CS10.1**<br>**Application of the DBIM-TwIST Algorithm to 3-D Microwave Tomography Data**<br>Ziwen Guo and Zhenzhuang Miao (King's College London, United Kingdom) |

| | |
|---|---|
| **09:20** | **CS10.2**<br>**The Use of a Novel Microwave Radar Reconstruction Algorithm to Image Lesions in Realistic 3D Breast Phantoms**<br>Tyson Reimer Diego Rodriguez Herrera and Mario Solis Nepote (University of Manitoba, Canada); Stephen Pistorius (University of Manitoba and CancerCare Manitoba, Canada) |
| **09:40** | **CS10.3**<br>**Demonstration of Dielectric Heterogeneity of Previously Assumed Homogeneous Tissues Examination of the Heart**<br>Saqib Salahuddin, Alessandra La Gioia, Atif Shahzad, Muhammad Adnan Elahi, Emily Porter and Martin O'Halloran (National University of Ireland, Ireland); Arun Kumar and David Kilroy (University College Dublin, Ireland) |
| **10:00** | **CS10.4**<br>**Open-source Software for Microwave Radar-based Image Reconstruction**<br>Declan O'Loughlin, M. Adnan Elahi, Emily Porter, Atif Shahzad, Bárbara L. Oliveira, Martin Glavin, Edward Jones and Martin O'Halloran (National University of Ireland, Ireland) |
| **10:20** | **CS10.5**<br>**Microwave Sensing of Human Hydration: Measurement Repeatability**<br>David Christopher Garrett, Sarah Thorson, Jeremie Bourqui and Elise Fear (University of Calgary, Canada) |

## Tuesday 10 April 2018, 11:10 – 12:50

| **CS07: 5G and mmWave Device Measurement Challenges**<br>Cellular Networks & 5G \| Convened Session \| Measurement<br>Room: Room 7<br>Chairs: Professor Tian Hong Loh (National Physical Laboratory, United Kingdom) and Janet O'Neil (ETS-Lindgren, USA) | |
|---|---|
| **11:10** | **CS07.6**<br>**A Parallel Channel Sounder for MM Wave Channel Measurement and Modeling**<br>Haowen Wang, Yunsong Gui, Zhongfei Cai, Yang Yang, Jianguo Xie (Shanghai Research Center for Wireless Communications, P.R. China) |
| **11:30** | **CS07.7**<br>**Designing and Characterizing MATE, the Chalmers mm-Wave MIMO Testbed**<br>Koen Buisman and Thomas Eriksson (Chalmers University of Technology, Sweden) |
| **11:50** | **CS07.8**<br>**The need for Spatial Channel Emulation to Evaluate mmWave UE and Base Station Performance**<br>Moray Rumney (KeysightTechnologies, United Kingdom); Pekka Kyösti and Jukka Kyröläinen (Keysight Technologies, Finland) |

| | |
|---|---|
| **12:10** | **CS07.9**<br>**Prediction of SINR Using BER and EVM for Massive MIMO Applications**<br>Tim Brown (University of Surrey, United Kingdom); David Humphreys and Tian Hong Loh (National Physical Laboratory, United Kingdom); Martin Hudlička (Czech Metrology Institute, Czech Republic) |
| **12:30** | **CS07.10**<br>**The Challenge of Electromagnetic Field Measurements for Modern 5G Devices**<br>Manuel Sierra-Castañer (Universidad Politécnica de Madrid, Spain) |
| **CS27: Reconfigurable Antennas for Compact Devices**<br>Connected objects \| Convened Session \| Antennas<br>Room: Room 12<br>Chairs: Dr Leonardo Lizzi (University of Cote d'Azur, France) and Professor Joseph Costantine (American University of Beirut, Lebanon) | |
| **11:10** | **CS27.6**<br>**Pattern-Reconfigurable Mobile Terminal Antenna System for MIMO and Link Stabilization in LTE**<br>Igor Syrytsin, Henrik Vesterager, Søren Nørgaard, Samantha Caporal del Barrio, Gert Pedersen and Lasse Thomsen (Aalborg University, Denmark) |
| **11:30** | **CS27.7**<br>**Reconfigurable Multi-band Antenna for Miniature Tracking Terminal**<br>Rania Khalifeh, Leonardo Lizzi and Fabien Ferrero (Université Côte d'Azur, France) |
| **11:50** | **CS27.8**<br>**Beam Switching Collocated Antennas for WLAN Systems**<br>Halim Boutayeb and Paul Watson (Huawei Technologies, Canada); Teyan Chen, Tao Wu and Jingjing Huang (Huawei Technologies, P.R. China) |
| **12:10** | **CS27.9**<br>**A Compact Planar 60-GHz CPW-fed Pattern Reconfigurable Quasi-Yagi Antenna**<br>Yu-Chen Lo, Sung-Jung Wu, Nai-Chen Liu and Jenn-Hwan Tarng (National Chaio Tung University, Taiwan) |
| **12:30** | **CS27.10**<br>**Frequency Reconfigurable Antenna with Integrated Band-pass Filters**<br>Jingya Deng, Si-Min Hou and Li-Xin Guo (Xidian University, P.R. China) |
| **CS01: Recent Advances in Asian Antennas and Propagation Research**<br>Future applications \| Convened Session \| Antennas and Propagation<br>Room: Room 17<br>Chairs: Professor Jaehoon Choi (Hanyang University, Korea) and Professor Ronan Sauleau (IETR, Université de Rennes 1, France) | |

| | |
|---|---|
| **11:10** | **CS01.6**<br>**Recent Development on Magneto-electric Dipole Antennas**<br>Kwai-Man Luk (City University of Hong Kong, P.R.China) |
| **11:30** | **CS01.7**<br>**Recent Progress of Incidence Angle-Insensitive Broadband Metamaterial Absorbers**<br>Toan Trung Nguyen and Sungjoon Lim (Chung- Ang University, Korea) |
| **11:50** | **CS01.8**<br>**Millimeter-wave 4X4 Butler Matrix for Feeding Circuit of Multi-beam Antenna Using Finline in Multilayer Substrate**<br>Kunio Sakakibara, Yuta Mizuno and Nobuyoshi Kikuma (Nagoya Institute of Technology, Japan); Kojiro Iwasa (Nippon Pillar Packing, Japan) |
| **12:10** | **CS01.9**<br>**Translational Research into Metasurface-based Antennas**<br>Zhi Ning Chen (National University of Singapore, Singapore) |
| **12:30** | **CS01.10**<br>**A 2.5-D Ultra-Miniaturized FSS Structure with Stable Band-Stop Performance**<br>Da Li, Tian-Wu Li and Er-Ping Li (Zhejiang University, P.R. China) |
| **T06-4: Antennas for Radar Systems-2**<br>Radar Systems \| Regular Session \| Antenna<br>Room: Room 16<br>Chairs: Professor Nima Ghalichechian (The Ohio State University, USA) and Dr Marco Pasian (University of Pavia, Italy) | |
| **11:10** | **T06-4.1**<br>**W-Band True-Time Delay Phase Shifters Using Paraffin Microactuators**<br>Behnam Ghassemiparvin and Nima Ghalichechian (The Ohio State University, USA) |
| **11:30** | **T06-4.2**<br>**Half Ellipsoid Luneburg GRIN Dielectric Lens Loaded Double Ridged Horn Antenna**<br>Karina Hoel (FFI and University of Oslo, Norway); Stein Kristoffersen (FFI, Norway); Maxim Ignatenko and Dejan Filipovic (University of Colorado Boulder, USA) |
| **11:50** | **T06-4.3**<br>**Radiation Characteristics of EWE Antenna on Actual Ground for Landslides Prediction Based on Bistatic Radar System Using AM Radio Broadcasting**<br>Kousei Kumahara and Futoshi Kuroki (NIT, Kure College, Japan); Masanori Eguchi and Takeshi Yamakawa (Fuzzy Logic Systems Institute, Japan) |

| | |
|---|---|
| **12:10** | **T06-4.4**<br>**Compact UWB Circularly Polarized Dielectric Rod Antenna Design**<br>Chi-Chih Chen (The Ohio State University, USA) and Gregory Wainwright (Sandia National Laboratory, USA) |
| **12:30** | **T06-4.5**<br>**Optimization of a Multi-Receiver FMCW Radar for Snow Cover Monitoring**<br>Pedro Fidel Espin Lopez, Marco Pasian and Fabio Dell'Acqua (University of Pavia, Italy); Massimiliano Barbolini (University of Pavia and Flow-Ing S. R. L. La Spezia, Italy) |
| **CS04: IET Session on Channel Sounding Campaigns**<br>Ultra-High Data Rate Communications \| Convened Session \| Propagation<br>Room: Room 14<br>Chairs: Professor Sana Salous (Durham University, United Kingdom) and Peter Papazian (NIST, USA) | |
| **11:10** | **CS04.6**<br>**The Development of the ITU-R Terrestrial Clutter Loss Model**<br>Jonas Medbo, Christina Larsson and Bengt-Erik Olsson (Ericsson Research, Sweden); Fabiano Chaves, István Z. Kovács and Preben Mogensen (Nokia Bell Labs, USA); Huan Cong Nguyen, Ignacio Rodriguez and T. B. Sørensen (Aalborg University, Denmark); Kyungtak Lee and JungSoo Woo (Samsung Electronics, Korea); Motoharu Sasaki and Wataru Yamada (NTT Access Network Service Systems Laboratories, Japan) |
| **11:30** | **CS04.7**<br>**Multi-band Spatio-Temporal Characterization of a V2V Environment Under Blockage**<br>Diego Dupleich, Robert Müller, Sergii Skoblikov, Christian Schneider, Giovanni Del Galdo and Reiner S. Thomä (Ilmenau University of Technology, Germany); Mate Boban and Jian Luo (Huawei Technologies Duesseldorf GmbH, Germany) |
| **11:50** | **CS04.8**<br>**Path Loss Characteristics from 2 to 66 GHz in Urban Macrocell Environments Based on Analysis Using ITU-R Site-General Models**<br>Motoharu Sasaki, Mitsuki Nakamura, Wataru Yamada, Naoki Kita and Yasushi Takatori (NTT Corporation, Japan); Minoru Inomata, Koshiro Kitao and Tetsuro Imai (NTT DOCOMO, INC., Japan) |
| **12:10** | **CS04.9**<br>**Multi-band Outdoor Measurements in a Residential Environment for 5G Networks**<br>Sana Salous, Xavier Raimundo and Saied El-Faitori (Durham University, United Kingdom) |
| **12:30** | **CS04.10**<br>**Dual-User Massive MIMO Measurements at 3.5GHz with Bi-Directional Angular Discrimination**<br>Anders Karstensen, Jesper Ø Nielsen, Patrick Eggers and Elisabeth de Carvalho (Aalborg University, Denmark); Martin Alm and Gerhard Steinbock (Huawei Technologies, Sweden) |
| **CS22: New Technologies and Materials for Wearable Antennas for Wireless Personal Area Networks (WPANs) and Wireless Sensor Networks (WSNs)**<br>Connected objects \| Convened Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Simone Genovesi (University of Pisa, Italy) and Dr Dimitris Anagnostou (Heriot-Watt University, United Kingdom) | |

| | |
|---|---|
| **11:10** | **CS22.6**<br>**Design of A Compact and Low-Profile Wearable MIMO Antenna for Wireless Personal Area Networks**<br>Dingliang Wen and Yang Hao (Queen Mary University of London, United Kingdom); Hanyang Wang and Hai Zhou (Huawei Technology, United Kingdom) |
| **11:30** | **CS22.7**<br>**Design and Integration of a Wearable Antenna System for On- And Off-Body Communication Based on 3D-MID Technology**<br>Lukas Berkelmann, Timo Martinelli, Aline Friedrich and Dirk Manteuffel (University of Hannover, Germany) |
| **11:50** | **CS22.8**<br>**Epidermal Loop Antenna Design at 900 MHz for Biotelemetry**<br>Haitham Abu Damis, Nabil Khalid, Rashid Mirzavand, Hyun-Joong Chung and Pedram Mousavi (University of Alberta, Canada) |
| **12:10** | **CS22.9**<br>**3D Printed Patch Antenna for Millimeter Wave 5G Wearable Applications**<br>Mariam Fawaz, Sungyun Jun, William Oakey, Ahmed Elibiary, Chun-Xu Mao and Benito Sanz-Izquierdo (University of Kent, United Kingdom); David Bird and Alan McClelland (CPI, United Kingdom) |
| **12:30** | **CS22.10**<br>**Wearable Sensor for Communication with Implantable Devices**<br>Muhammad Ali Babar Abbasi (Queen's University Belfast (ECIT), United Kingdom); Abdul Quddious, Photos Vryonides and Symeon Nikolaou (Frederick Research Center, Cyprus); Marco A. Antoniades (University of Cyprus, Cyprus) |
| **CS29:GNSS Antennas and Antenna Systems**<br>Positioning, Localization & Tracking \| Convened Session \| Antennas<br>Room: Room 6<br>Chairs: Dr Michel Clénet (Defence R&D Canada and Royal Military College of Canada, Canada) and Dr Loïc Bernard (French-German Research Institute of Saint-Louis, France) | |
| **11:10** | **CS29.1**<br>**A Low-Profile Dual-Band Tunable AMC Structure for GNSS Antennas and its Performance Trade-Offs**<br>Mohamed Emara, Shulabh Gupta and Jim Wight (Carleton University, Canada); Julien Hautcoeur and Gyles Panther (Tallysman Wireless Inc., Canada) |
| **11:30** | **CS29.2**<br>**All-GNSS-Band DRA Antenna for High-Precision Applications**<br>Stefano Caizzone, Mihaela Simona Circiu, Wahid Elmarissi and Christoph Enneking (German Aerospace Center (DLR), Germany) |
| **11:50** | **CS29.3**<br>**A Multi-Frequency and Multi-Constellation GNSS Antennas and Design Considerations**<br>Ning Yang (NovAtel Inc., Canada) |

| | |
|---|---|
| **12:10** | **CS29.4**<br>**Dual Circularly Polarized Antennas with Low Cross-Polarization for GNSS-R Applications**<br>Yan Jia (Nanjing University of Posts and Telecommunications, P.R.China); Gianluca Dassano and Patrizia Savi (Politecnico di Torino, Italy) |
| **12:30** | **CS29.5**<br>**Wideband Crossed Dipoles Antenna for All GNSS Bands Using Wideband AMC**<br>Alshrafi Wasim, Vladimir Ekaterinichev and Dirk Heberling (RWTH Aachen University, Germany) |
| **CS05: Antenna Needs and Solutions for Future Space Missions**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 4<br>Chairs: Dr Mauro Ettorre (University of Rennes 1, France) and Dr Hervé Legay (Thales Alenia Space, France) | |
| **11:10** | **CS05.6**<br>**Enhancing Beam Congruence in Orthogonally Polarized Tx/Rx Offset Antenna Systems Using Reflectarrays**<br>Min Zhou, Tonny Rubæk and Stig Sørensen (TICRA, Denmark); Yves Demers and Eric Amyotte (MDA Corporation, Canada); Giovanni Toso (European Space Agency, The Netherlands) |
| **11:30** | **CS05.7**<br>**A Systematic Circuit-Based Approach to Efficiently Realize Single- And Dual-Band Circular Polarizers**<br>Mehdi Hosseini and Sean V Hum (University of Toronto, Canada) |
| **11:50** | **CS05.8**<br>**Ka-Band Metasurface Antenna for Data Downlink from LEO Satellites**<br>G. Minatti, F. Caminita and E. Martini (University of Siena, Italy); V. Martorelli and M. Bandinelli (IDS S.p.A, Italy); A. Benini and S. Maci (University of Siena, Italy); L. Le Coq, M. Ettorre and R. Sauleau (Université de Rennes, France); R. Ravanelli, (Thales Alenia Space-Italia); M. Sabbadini, (Esa Estec, The Netherlands) |
| **12:10** | **CS05.9**<br>**All-metal Dual Frequency RHCP High Gain Antenna for the Extreme Environments of a Europa Lander**<br>Nacer Chahat, Brant Cook and Polly Estabrook (California Institute of Technology, USA) |
| **12:30** | **CS05.10**<br>**W-band Array Antenna for Radar Detection of Space Debris**<br>Eduardo Garcia-Marin, Jose Luis Masa-Campos and Pablo Sanchez-Olivares (Universidad Autonoma de Madrid, Spain) |
| **CS19: Fundamental Challenges and Novel Methodologies in the Next-Generation Computational Electromagnetics**<br>Software Tools & Instruments \| Regular Session \| Antennas<br>Room: Room 3<br>Chairs: Professor Francesca Vipiana (Politecnico di Torino, Italy) and Professor Zhen Peng (University of New Mexico, USA) | |

| | |
|---|---|
| **11:10** | **CS19.6**<br>**Fully Numerical Evaluation of 6-D Reaction Integrals of Galerkin Interactions via Two Applications of the Divergence Theorem**<br>Javier Rivero (Istituto Superiore Mario Boella, Italy); Francesca Vipiana (Politecnico di Torino, Italy); Donald Wilton (University of Houston, USA); William Johnson (Private Consultant, USA) |
| **11:30** | **CS19.7**<br>**Nonuniform Array Antenna Design Incorporating the Mutual Coupling Between Rectangular Aperture Antennas**<br>Zhengzheng Wang and Ioan E. Lager (Delft University of Technology, The Netherlands); Massimiliano Simeoni (European Space Agency, The Netherlands) |
| **11:50** | **CS19.8**<br>**High Order Description of Complex Geometries for Integral Equation Methods in Electromagnetic Scattering Problems**<br>Felipe Vico-Bondía, Miguel Ferrando-Bataller, Eva Antonino-Daviu and Marta Cabedo-Fabrés (Universidad Politécnica de Valencia, Spain) |
| **12:10** | **CS19.9**<br>**A Stochastic Green's Function Method for Wave Propagation in Chaotic Environments**<br>Zhen Peng, Shen Lin and Edl Schamiloglu (University of New Mexico, USA); Thomas Antonsen (University of Maryland, USA) |
| **12:30** | **CS19.10**<br>**DDM-Assisted Analysis of Large Scale Radiating Structures**<br>Diego M. Solís (University of Vigo, Spain and University of Pennsylvania, USA); Víctor Martín, David Larios and Jose Manuel Taboada (Universidad de Extremadura, Spain); José Rodríguez and Fernando Obelleiro (University of Vigo, Spain) |
| **T07-4: Some Latest Development on MIMO and mm-Wave Applications**<br>Defence & Security \| Regular Session \| Antennas<br>Room: Room 2<br>Chairs: Professor Matteo Albani (University of Siena, Italy) and Dr Ashraf Uz Zaman (Chalmers University of Technology, Sweden) | |
| **11:10** | **T07-4.1**<br>**A Dual PIFA Based MIMO and Tunable DGS MIMO Antenna System**<br>Rifaqat Hussain and Mohammad S. Sharawi (King Fahd University for Petroleum and Minerals, Saudi Arabia); Muhammad Umar Khan (National University of Sciences and Technology, Pakistan) |
| **11:30** | **T07-4.2**<br>**Design Criteria of X-wave Launchers for Millimeter-Wave Applications**<br>Walter Fuscaldo, Davide Comite and Alessandro Galli (Sapienza University of Rome, Italy); Santi Concetto Pavone and Matteo Albani (University of Siena, Italy); Guido Valerio (Sorbonne Universités UPMC, France) |
| **11:50** | **T07-4.3**<br>**A Compact Phase Shifter in Groove Gap Waveguide for Millimeter-Wave Applications**<br>Seyed Ali Razavi (Graduate University of Advanced Technology, Iran); Ashraf Uz Zaman (Chalmers University of Technology, Sweden) |

| | |
|---|---|
| **12:10** | **T07-4.4**<br>**Near-Field Antenna Measurements Using a Lithium Niobate Photonic Probe**<br>Vince Rodriguez and Brett Walkenhorst (NSI-MI Technologies, USA); Jim Toney (SRICO, USA) |
| **12:30** | **T07-4.5**<br>**Ray-based Predictions of the Outdoor-to-Indoor Massive MIMO Channel**<br>Mohammed Zahid Aslam, Yoann Corre and Gregory Gougeon (SIRADEL, France); Yves Lostanlen (SIRADEL, Canada) |
| **CS10: Imaging and Diagnosing with Microwaves – New Findings Covering Dielectric Studies, Imaging Algorithms and Patient Studies: COST Action TD1301, MiMed**<br>Biomedical \| Convened Session \| Propagation<br>Room: Room1<br>Chairs: Dr Raquel Cruz Conceição (Universidade de Lisboa, Portugal) and Dr Angie Fasoula (Microwave Vision Group, France) | |
| **11:10** | **CS10.6**<br>**Towards an Experimental Validation of Microwave Imaging Monitoring of Thermal Ablation Treatments**<br>Rosa Scapaticci and Lorenzo Crocco (National Research Council of Italy, Italy); Gennaro G. Bellizzi (Mediterranea University of Reggio Calabria and National Research Council, Italy); Federica Perrelli and Marta Cavagnaro (Sapienza University of Rome, Italy); Vanni Lopresto and Rosanna Pinto (Casaccia Research Center, Italy) |
| **11:30** | **CS10.7**<br>**Comparison of Regularization Techniques for Microwave Imaging of Brain Stroke**<br>Mina Bjelogrlic and Jean-Philippe Thiran (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Benjamin Fuchs (University of Rennes 1, France); Michael Mattes (Technical University of Denmark, Denmark) |
| **11:50** | **CS10.8**<br>**Three-Dimensional Sparse Microwave Imaging for Brain Stroke Monitoring**<br>Marija Nikolic (University of Belgrade, Serbia); Rosa Scapaticci and Lorenzo Crocco (CNR-National Research Council of Italy, Italy) |
| **12:10** | **CS10.9**<br>**New In-vivo Estimation of Electrical Properties of Biological Tissues for Hyperthermia Treatment Planning**<br>Martina Teresa Bevacqua (University Mediterranea, Italy); Gennaro G Bellizzi, Lorenzo Crocco and Tommaso Isernia (Mediterranea University of Reggio Calabria and IREA - National Research Council, Italy) |
| **12:30** | **CS10.10**<br>**Impact of Fibroblast Cell Density on the Material Parameters of Thin Artificial Human Skin in the Terahertz Band**<br>Rui Zhang, Ke Yang and Akram Alomainy (Queen Mary University of London, United Kingdom); Qammer H Abbasi (Queen Mary University of London and University of Glasgow, United Kingdon and Texas A&M University, Qatar); Khalid A. Qaraqe (Texas A&M University, Qatar) |

**Tuesday 10 April 2018, 15:00 – 16:00**

| **Invited Speakers Session**<br>Room: Room 7<br>Chairs: Stuart Gregson (Queen Mary University of London, United Kingdom) and Dr Hanyang Wang (Huawei Technologies, P.R China) | |
|---|---|
| **15:00** | **Large Scale Electromagnetics: Overview and Future Direction**<br>Professor Ozlem Kilic, Catholic University of America, USA |
| **15:30** | **Multibeam Array Antennas for 5G Massive MIMO Systems**<br>Dr Wei Hong, Southeast University, P.R. China |
| **Invited Speakers Session**<br>Room: Room 12<br>Chairs: Professor Sana Salous (University of Durham, United Kingdom) and Professor Dirk Manteuffel (Leibniz University of Hannover, Germany) | |
| **15:00** | **Cooperative Passive Coherent Location - a Vertical Radar Service in 5G?**<br>Professor Reiner Thomä, Ilmenau University of Technology, Germany |
| **15:30** | **Non-stationary Mobile Radio Channels: Modelling, Analysis, and Applications**<br>Professor Matthias Pätzold, University of Agder, Norway |

## Tuesday 10 April 2018, 16:30 – 18:10

| **T01-5: Radio Propagation Channel - 1**<br>Cellular Networks & 5G \| Regular Session \| Propagation<br>Room: Room 7<br>Chairs: Professor Katsuyuki Haneda (Aalto University, Finland) and Professor Y. Jay Guo (University of Technology Sydney, Australia) | |
|---|---|
| **16:30** | **T01-5.1**<br>**Window and Wall Penetration Loss On-Site Measurements with Three Methods**<br>Aki Karttunen, Sinh Nguyen, Pasi Koivumäki and Katsuyuki Haneda (Aalto University, Finland); Tuomo Hentilä and Ari Asp (Tampere University of Technology, Finland); Arto Hujanen, Ismo Huhtinen, Matti Somersalo, Seppo Horsmanheimo and Jouko Aurinsalo (VTT Technical Research Centre of Finland, Finland) |
| **16:50** | **T01-5.2**<br>**Propagation Graph Modeling of Time-Varying Radio Channels**<br>Kristoffer Stern, Andreas Fuglsig, Kasper Ramsgaard-Jensen and Troels Pedersen (Aalborg University, Denmark) |
| **17:10** | **T01-5.3**<br>**Radio Propagation Prediction for High Frequency Bands Using Hybrid Method of Ray-Tracing and ER Model with Point Cloud of Urban Environments**<br>Minoru Inomata, Tetsuro Imai, Koshiro Kitao and Yukihiko Okumura (NTT DOCOMO, INC., Japan); Sasaki Motoharu and Yasushi Takatori (NTT Access Network Service Systems Laboratories, Japan) |

| | |
|---|---|
| **17:30** | **T01-5.4**<br>**Increased Reliability of Outdoor Millimeter-Wave Link Simulations by Leveraging Lidar Point Cloud**<br>Julien Stephan, Yoann Corre and Romain Charbonnier (SIRADEL, France); Yves Lostanlen (SIRADEL, Canada) |
| **17:50** | **T01-5.5**<br>**26GHz Ray-Tracing Pathloss Prediction in Outdoor Scenario in Presence of Vegetation**<br>Francesco Mani, Enrico M. Vitucci, Marina Barbiroli, Franco Fuschini and Vittorio Degli-Esposti (University of Bologna, Italy); Mingming Gan, Chao Li, Jianyao Zhao and Zhimeng Zhong (Huawei Technologies Co., P.R. China) |
| **T03-3: Adaptive and Array Antennas**<br>Wireless Networks \| Regular Session \| Antennas<br>Room: Room 12<br>Chairs: Dr Tim Brown (University of Surrey, United Kingdom) and Professor Yuehe Ge (Huaqiao University, P.R China) | |
| **16:30** | **T03-3.1**<br>**360-Degree Polarization Scanning with the Diversity of Boresight and Conical Patterns Switching**<br>Roy B. V. B. Simorangkir and Karu Esselle (Macquarie University, Australia); Mengze Li and Kaida Xu (Xiamen University, P.R. China); Yang Yang and Eryk Dutkiewicz (University of Technology Sydney, Australia) |
| **16:50** | **T03-3.2**<br>**Beam-Switching Antenna Using a Novel Triangular Active Frequency Selective Surface**<br>Ghada Elzwawi, Hifa Elzuwawi and Tayeb A. Denidni (University of Quebec, Canada) |
| **17:10** | **T03-3.3**<br>**Fabric Based Beam Steering Wearable Antenna Array**<br>Paul Czeresko, Nowrin Chamok and Mohammod Ali (University of South Carolina, USA) |
| **17:30** | **T03-3.4**<br>**Radiation Pattern Reconfigurable Antenna Design Using Characteristic Modes**<br>Zakaria Mahlaoui (Cadi Ayyad University, Morocco and Universitat Politècnica de València, Spain); Eva Antonino-Daviu (Universitat Politècnica de València, Spain); Adnane Latif (Cadi Ayyad University, Morocco); Miguel Ferrando-Bataller (Universitat Politècnica de València, Spain) |
| **17:50** | **T03-3.5**<br>**Compact Butler Network for 2D-Steered Array**<br>Marzieh SalarRahimi and Guy Vandenbosch (Katholieke Universiteit Leuven, Belgium) |
| **T11-3: Antenna Designs and Concepts for Wireless Communications**<br>Future applications \| Regular Session \| Antennas<br>Room: Room 17<br>Chairs: Professor Long Li (Xidian University, P.R China) | |

| | |
|---|---|
| **16:30** | **T11-3.1**<br>**New Antenna Design Concept for Future Generation Wireless Communication Systems**<br>Giorgio Gottardi (University of Trento, Italy); Giacomo Oliveri (University of Trento, Italy and ELEDIA Research Center, France); Andrea Massa (University of Trento, Italy, ELEDIA Research Center, France and Universidad Carlos III de Madrid, Spain) |
| **16:50** | **T11-3.2**<br>**On Performance of Hidden Car Roof Antennas**<br>Irfan Yousaf (Lunds University and Volvo Cars Corporation, Sweden); Buon Kiong Lau (Lund University, Sweden) |
| **17:10** | **T11-3.3**<br>**A Wide Band Compact Size UHF Band Monopole Clustered with L and S Band Dipoles for Self-networking Communication in Handset Devices**<br>Jin Zhang, Shuai Zhang and Gert Frølund Pedersen (Aalborg University, Denmark) |
| **17:30** | **T11-3.4**<br>**A New Quad-band Diversity Antenna with High Isolation**<br>Alaa H. Radhi, Rajagopal Nilavalan, Hamed Saffa Al-Raweshidy and Nur Ab Aziz (Brunel University, United Kingdom) |
| **17:50** | **T11-3.5**<br>**Low-Profile Circularly-Polarized Filtering Antenna with Improved Bandwidth and Gain**<br>Chun-Xu Mao and Steven Gao (University of Kent, United Kingdom); Yi Wang (University of Greenwich, United Kingdom) |
| **T06-5: Antennas for Radar Systems-3**<br>Radar Systems \| Regular Session \| Antennas<br>Room: Room 16<br>Chairs: Ke Wu (Polytechnique Montreal, Canada) and Professor Symon K. Podilchak (Heriot-Watt University, United Kingdom) | |
| **16:30** | **T06-5.1**<br>**Simple Surface-Wave Launching by Parallel-Plate and Microstrip Feeding for Leaky-Wave Antennas and Other Planar Guided-Wave Applications**<br>Victoria Gómez-Guillamón Buendía and Symon K. Podilchak (Heriot-Watt University, United Kingdom) |
| **16:50** | **T06-5.2**<br>**A Hybrid Antenna Element for Travelling Wave Dual-Plane Monopulse Slotted Waveguide Arrays**<br>Gokhan Gultepe and Doganay Dogan (Aselsan Inc and Middle East Technical University, Turkey); Ozlem Aydin Civi (Middle East Technical University, Turkey) |
| **17:10** | **T06-5.3**<br>**Accurate and Simplified Network Model for Composite Right-Left Handed Transmission Line**<br>Yunhua Zhang, Ke Chen, Guo-Qiang Zhu and Si-yuan He (Wuhan University, P.R. China) |

| | |
|---|---|
| **17:30** | **T06-5.4**<br>**Millimeter-Wave Substrate-Integrated Waveguide Based Leaky-Wave Antenna With Broadbeam Radiation at Broadside**<br>Miguel Poveda García and Jose-Luis Gómez-Tornero (Technical University of Cartagena, Spain); Symon K. Podilchak and George Goussetis (Heriot-Watt University, United Kingdom) |
| **17:50** | **T06-5.5**<br>**Two-Dimensional Periodic Leaky-Wave Antenna for Oblique Frequency Scanning**<br>Amar Al-Bassam and Dirk Heberling (RWTH Aachen University, Germany); Christophe Caloz (Ecole Polytechnique de Montreal, Canada) |
| **T02-2: Antennas for Ultra High Data Rate Communications - 2**<br>Ultra-High Data Rate Communications \| Regular Session \| Antennas<br>Room: Room 14<br>Chairs: Professor Jiro Hirokawa (Tokyo Institute of Technology, Japan) and Tim Drysdale (Open University, United Kingdom) | |
| **16:30** | **T02-2.1**<br>**Generation of Three OAM Modes Through a 60-GHz Butler Matrix Fed RLSA**<br>Agnese Mazzinghi and Jiro Hirokawa (Tokyo Institute of Technology, Japan); Xin Xu, Ryotaro Ohashi and Angelo Freni (University of Florence, Italy) |
| **16:50** | **T02-2.2 (CANCELLED)**<br>**High Efficient and Wide Bandwidth Fresnel Lens Antenna at Millimeter-Wave**<br>Antoine Jouade, Mohamed Himdi and Olivier Lafond (Université de Rennes 1, France) |
| **17:10** | **T02-2.3**<br>**Effects of the Feeding Structure on Low-THz Bull's Eye Antennas**<br>Despoina Kampouridou and Alexandros Feresidis (University of Birmingham, United Kingdom) |
| **17:30** | **T02-2.4**<br>**24GHz Paper Based Inkjet Printed Quasi Yagi-Uda Antenna with New Bowtie Director**<br>Jose M Gonzalez-Perez (King Abdullah University of Science and Technology, Saudi Arabia and University of the Basque Country, Spain); Loic Marnat and Atif Shamim (King Abdullah University of Science and Technology, Saudi Arabia) |
| **17:50** | **T02-2.5**<br>**Reduction of Orbital Angular Momentum Radio Beam Divergence Using a 3D Printed Planar Graded Index Lenses**<br>Ben Allen (University of Oxford and Network Rail, United Kingdom); Timothy Drysdale (The Open University, United Kingdom); Shiyu Zhang, William Whittow and J (Yiannis) Vardaxoglou (Loughborough University, United Kingdom); Alan Tennant (University of Sheffield, United Kingdom); Christopher Stevens, Justin P Coon and Dmitry Isakov (University of Oxford, United Kingdom) |
| **CS15: Innovative Small Antennas**<br>Connected objects \| Convened Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Anu Lehtovuori (Aalto University, Finland) and Dr Adam Narbudowicz (Dublin Institute of Technology, Ireland) | |

| | |
|---|---|
| **16:30** | **CS15.1**<br>**Circularly Polarized Electrically Small Antennas for Emerging Wireless Applications**<br>Wei Lin and Richard Ziolkowski (University of Technology Sydney, Australia); Ming-chun Tang (Chongqing University, P.R. China) |
| **16:50** | **CS15.2**<br>**On Bandwidth Optimal Positioning of Embedded Antennas, a Case Study**<br>Lars Jonsson and Lei Wang (KTH Royal Institute of Technology, Sweden); Fabien Ferrero (University of Côte d'Azur, France) |
| **17:10** | **CS15.3**<br>**Compact Antenna with Unidirectional Radiation Patterns**<br>Carlos Ramiro Peñafiel-Ojeda (Universitat Politècnica de València, Spain and Universidad Nacional de Chimborazo, Ecuador); Marta Cabedo-Fabrés, Eva Antonino-Daviu and Miguel Ferrando-Bataller (Universitat Politècnica de València, Spain) |
| **17:30** | **CS15.4**<br>**Optimal Currents and Optimal Antennas**<br>Miloslav Capek and Lukas Jelinek (Czech Technical University in Prague, Czech Republic) |
| **17:50** | **CS15.5**<br>**A Novel mm-Wave Phased Array for 180-Degree Coverage for 5G Smartphone Applications**<br>Manoj Stanley, Yi Huang, Ahmed Alieldin and Sumin Joseph (University of Liverpool, United Kingdom); Hanyang Wang and Hai Zhou (Huawei Technology, United Kingdom) |
| **CS36:Propagation in Aeronautics**<br>Defence & Security \| Convened Session \| Propagation<br>Room: Room 6<br>Chairs: Professor Uwe-Carsten Fiebig (German Aerospace Center (DLR), Germany) and Dr Fernando Perez-Fontán (University of Vigo, Spain) | |
| **16:30** | **CS36.1**<br>**State Propagation Channel Model for 2 GHz UAV Links in Cluttered Environment**<br>Jan Zeleny, Milan Kvicera, Pavel Valtr and Pavel Pechac (Czech Technical University in Prague, Czech Republic); Fernando Pérez-Fontán (University of Vigo, Spain) |
| **16:50** | **CS36.2**<br>**Validation of the Geometry-based Stochastic Channel Model for the Air-Ground Channel**<br>Nicolas Schneckenburger, Thomas Jost and Uwe-Carsten G. Fiebig (German Aerospace Center (DLR), Germany); Giovanni Del Galdo (Fraunhofer Institute for Integrated Circuits IIS & Ilmenau University of Technology, Germany); David W Matolak (University of South Carolina, USA) |
| **17:10** | **CS36.3**<br>**Wide Band Propagation Measurements and Modelling for Low Altitude UAVs**<br>César Calvo Ramírez, Ana Gonzalez-Plaza, Cesar Briso and Antonio Perez Yuste (Technical University of Madrid, Spain) |

| | |
|---|---|
| **17:30** | **CS36.4**<br>**Initial Ku-Band Air-Ground Channel Measurement Results**<br>David W Matolak and Albert Smith (University of South Carolina, USA); Kurt Shalkhauser and Steven Bretmersky (NASA Glenn Research Center, USA) |
| **17:50** | **CS36.5**<br>**Cross-Channel Sounding for HF Geolocation: Concepts and Experimental Results**<br>Ankit Jain, Pascal Pagani, Rolland Fleury, Michel Ney and Patrice Pajusco (IMT Atlantique, France) |
| **CS06: AMTA Session on Satellite and Aerospace Antenna Measurements**<br>Space Applications \| Convened Session \| Measurement<br>Room: Room 4<br>Chairs: Dr Luca Salghetti Drioli (European Space Agency, The Netherlands) and Christian Hunscher (Airbus, Germany) | |
| **16:30** | **CS06.1**<br>**NISAR L-Band and S-Band Instrument Antennas: Compatibility Test and Results**<br>Paolo Focardi, Joseph D. Vacchione and Jefferson A. Harrell (California Institute of Technology, USA) |
| **16:50** | **CS06.2**<br>**Performance Data of a New, Large Compensated Compact Range for Antenna and Payload Testing of Future Spacecrafts**<br>Josef Migl, Carsten H Schmidt and Fritz Hartmann (Airbus Defence and Space GmbH, Germany) |
| **17:10** | **CS06.3**<br>**Antenna Testing During the RADARSAT Constellation Mission Program**<br>Pierre Arsenault and Peter Allan (MDA, Canada) |
| **17:30** | **CS06.4**<br>**MetOp SG Scatterometer Antenna Testing - Gain Reference Calibration and Golden Standard Measurement 2017**<br>Olav Breinbjerg and Jeppe M. Bjørstorp (Technical University of Denmark, Denmark) |
| **17:50** | **CS06.5**<br>**Verifying the Geometric Accuracy of Sentinel-1A and Sentinel-1B Using L0-Products**<br>Kersten Schmidt, Nuria Tous-Ramon, Jens Reimann and Marco Schwerdt (German Aerospace Center (DLR), Germany) |
| **T10-3: Antenna and Array Modelling**<br>Software Tools & Instruments \| Regular Session \| Antennas<br>Room: Room 3<br>Chairs: Dr Michael Foegelle (ETS-Lindgren, USA) and Stuart Gregson (Queen Mary University of London, United Kingdom) | |

| | |
|---|---|
| **16:30** | **T10-3.1**<br>**Lens Antennas Focus Determination Using Full-Wave Simulation**<br>Patricio Gross (Universidad Nacional de La Plata and Universidad Nacional Arturo Jauretche, Argentina); Julieta Vernieri (Universidad Nacional de La Plata, Argentina); Felipe Vico-Bondía (Universidad Politécnica de Valencia, Spain); J. Alberto Bava (Universidad Nacional de La Plata and CIOp (CONICET – CIC), Argentina); Miguel Ferrando-Bataller (Universitat Politècnica de València, Spain and CIOp (CONICET – CIC), Argentina) |
| **16:50** | **T10-3.2**<br>**An Application of Singularity Cancellation for Periodic Structures in Free Space**<br>Suleyman Adanir (ASELSAN, Turkey); Lale Alatan (Middle East Technical University, Turkey) |
| **17:10** | **T10-3.3**<br>**On Feed Line Modifications for Compact Wideband Antenna Design**<br>Muhammad ul Haq and Slawomir Koziel (Reykjavik University, Iceland); Qingsha Cheng (Southern University of Science and Technology, P.R. China) |
| **17:30** | **T10-3.4**<br>**Densely Convoluted Slotted Cross Dipole Element FSS Arrays**<br>Badredin M Turki, Edward Parker, John Batchelor and Mohamad Ali Ziai (University of Kent, United Kingdom) |
| **17:50** | **T10-3.5**<br>**Behavioural Modelling for Adaptive Array Systems Incorporating High-Power Amplifier Nonlinearities**<br>Tristan Goss (Defence Science and Technology Laboratory, United Kingdom); Peter Aaen (University of Surrey, United Kingdom) |
| **CS42: Electromagnetic Systems for Ambient Assisted Living (AAL) Application**<br>Biomedical \| Convened Session \| Antennas<br>Room: Room1<br>Chairs: Dr Paola Russo (Università Politecnica delle Marche, Italy) and Dr Sandra Dudley (London South Bank University, United Kingdom) | |
| **16:30** | **CS42.1**<br>**Robust and Compact PDMS Antennas for Search and Rescue Operations and Emergency Communications**<br>Rahil Joshi, Constantin Constantinides and Symon K. Podilchak (Heriot-Watt University, United Kingdom); Muhammad Nazrin Ramli, Herwansyah bin Lago and Ping Jack Soh (Universiti Malaysia Perlis, Malaysia) |
| **16:50** | **CS42.2**<br>**Epidermal Radio-Sensors for Wireless Detection of Physiological Parameters and Sense Augmentation**<br>Maria Cristina Caccami, Carolina Miozzi, Valentina Greco and Gaetano Marrocco (University of Rome, Italy) |
| **17:10** | **CS42.3**<br>**Radar Doppler Technique to Estimate the Energy Expenditure of Human Physical Activities**<br>Paola Russo, Valentina Di Mattia, Alfredo De Leo and Graziano Cerri (Università Politecnica delle Marche, Italy); Giovanni Manfredi (SONDRA, Centrale-Supelec, France) |

| | |
|---|---|
| **17:30** | **CS42.4**<br>**Remote Vital Sign Recognition Through Machine Learning Augmented UWB**<br>Soumya Prakash Rana, Maitreyee Dey, Robert Brown, Hafeez Siddiqui and Sandra Dudley (London South Bank University, United Kingdom) |
| **17:50** | **CS42.5**<br>**RFID Monitoring for Assistive Technologies Beyond the Clinic**<br>John Batchelor, Robert Horne, Paul S Taylor and Mohamed I Sobhy (University of Kent, United Kingdom) |

## Tuesday 10 April – 13:30 – 15:00– P1 Posters

**Room: Capital Hall**

**A: Antennas**
**M: Measurements**
**O: Other subjects**
**P: Propagation**
**S: Simulations**

**P1.1 (A-T01)**

**K/Ka-Band Transmitarray Antennas Based on Polarization Twisted Unit-Cellsé**

Kien Pham (University of Rennes 1 & IETR, France); Ronan Sauleau (University of Rennes 1, France); Erwan Fourn (INSA of Rennes and IETR, France); Fatimata Diaby and Antonio Clemente (Université Grenoble-Alpes and CEA-LETI Minatec, France); Laurent Dussopt (CEA, LETI, Minatec, France)

**P1.2 (A-T01)**

**Compact Broadband Inverted-L Filtering Microstrip Antenna with Multiple-Mode Resonator**

Tao Xu, Fei Liu, Hui Gan Hongwei Deng and Yonggang Zhou (Nanjing University of Aeronautics and Astronautics, P.R. China)

**P1.3 (A-T01)**

**Compact L/S-Band Circularly Polarized Microstrip Antenna over Reactive Impedance Surface**

Rongjie Ma, Qi Wu, Jiexi Yin, Chen Yu, Haiming Wang and Wei Hong (Southeast University, P.R. China)

**P1.4 (A-T01)**

**A High-gain Wideband EBG Resonator Antenna for 60 GHz Unlicenced Frequency Band**

Ali Lalbakhsh, Muhammad Usman Afzal and Karu Esselle (Macquarie University, Australia); Stephanie Smith (CSIRO, Australia)

**P1.5 (A-T01)**

**MM-Wave Slot Array Antenna Backed by AMC Reflector for 5G Smartwatch Applications**

Jihoon Bang, Youngtaek Hong and Jaehoon Choi (Hanyang University, Korea)

**P1.6 (A-T01)**

**Influence of Antenna Mounting Location on the Radiation Pattern of an Automotive Antenna**

Muhammad Ehtisham Asghar, Frank Wollenschläger, Aidin Asgharzadeh, Jasmeet Singh and Matthias Hein (Ilmenau University of Technology, Germany)

**P1.7 (A-T01)**

**A Novel Electronically Wideband Steering System Using Rotman Lens for 5G Applications at 28 GHz**

Mohamed Ahmed, Ronny Hahnel and Dirk Plettemeier (Dresden University of Technology, Germany)

**P1.8 (A-T01)**

**About the Beam Cosines and the Radiation Efficiency of a Multiport Antenna Array**

Frédéric Broydé and Evelyne Clavelier (Excem, France)

**P1.9 (A-T01)**

**Dual Band Dual Mode Low Cross-Polarization Slot-Patch Antenna Fed by Microstrip Line**

Yifan Yin and Ke Wu (Polytechnique Montreal (University of Montreal), Canada)

**P1.10 (A-T01)**

**Novel Wideband Omnidirectional Monopole Antenna for Indoor Communication Environment**

Chenfeng Li, Xiao Wei Zhu, Pengfei Liu and Chao Yu (Southeast University, P.R. China)

**P1.11 (A-T01)**

**Linearly Polarized 64-Element Antenna Array for mm-Wave Mobile Backhaul Application**

Marko Sonkki, Sami Myllymäki, Nuutti Tervo, Marko E Leinonen, Maciej Sobocinski Giuseppe Destino and Aarno Pärssinen (University of Oulu, Finland)

**P1.12 (A-T01)**

**Wideband Low-Profile Transmitarray Antenna for Backhauling at 60 GHz**

Maciej Smierzchalski and Antonio Clemente (Université Grenoble-Alpes and CEA-LETI Minatec, France); Mathieu Huchard and Cyril Barbier (Radiall, France)

**P1.13 (A-T01)**

**Implementation of Rotman Lens Beamformer for Relatively Flexible Multi-beam Radiation Control by Electrically Large Phased Arrays of Antennas**

Chen-Yi Chang and Hsi-Tseng Chou (National Taiwan University, Taiwan)

**P1.14 (A-T01)**

**Adaptive Continous Beam Steering in Quasi-optical Antenna Solutions**

Mohammad Reza Dehghani Kodnoeih (Université de Nantes IETR & Radio Frequency Systems (RFS), France); Romain Negrier and Eduardo Motta Cruz (Université de Nantes IETR, France); Yoann Letestu (Radio Frequency Systems (RFS), France); Ronan Sauleau and Laurent Ferro-Famil (University of Rennes 1, France)

**P1.15 (A-T01)**

**A Wideband CPW-fed Stepped Monopole Slot Antenna for 5G Communications**

Farooq A. Tahir and Hidayat Ullah (National University of Science and Technology, Pakistan)

**P1.16 (A-T02)**

**Link Characteristics of Directional Surface Wave Antenna Arrays**

Prabhat Baniya and Kathleen Melde (University of Arizona, USA)

**P1.17 (A-T02)**

**Design and Performance of a Flexible 60-GHz Rotman Lens-Based Array Beamformer**

Ardavan Rahimian, Yasir Alfadhl and Akram Alomainy (Queen Mary University of London, United Kingdom)

**P1.18 (A-T02)**

**Time-Domain Analysis of Classical Omnidirectional Axis-Displaced Dual-Reflector Antennas**

Rafaela Carvalho, Fernando Moreira and Cássio Rego (Federal University of Minas Gerais, Brazil)

**P1.19 (A-T02)**

**W-Band High-Gain Low Profile Circularly Polarized Magneto-Electric Dipole Antenna Array with Gap Waveguide Feeding Technology**

Jianyin Cao, Yan Wang, Shanxlang Mou and Hao Wang (Nanjing University of Science and Technology, P.R. China); Jian Yang (Chalmers University of Technology, Sweden)

**P1.20 (A-T02)**

**Printed-Circuit Monopole Antenna for Super-Wideband Applications**

Alireza Seyfollahi and Jens Bornemann (University of Victoria, Canada)

**P1.21 (A-T03)**

**An UWB Compact Microstrip Antenna for S Band, C Band and X Band Applications**

Tapesh Bhandari and Sudeep Baudha (BITS Pilani, India)

**P1.22 (A-T03)**

**Diversity Antenna Using Dipole/Monopole Modes with Simple Configuration**

Shimpei Akimoto, Kengo Nishimoto, Yasuhiro Nishioka and Naofumi Yoneda (Mitsubishi Electric Corporation, Japan)

**P1.23 (A-T03)**

**Compact Slot Array with Unidirectional Radiation for 5 GHz WiFi Applications**

Jeen-Sheen Row and Yu-Hsin Wu (National Changhua University of Education, Taiwan)

**P1.24 (A-T03)**

**A Dual-Band Circularly Polarized Slot Antenna Design for WLAN 2.4/5.2 GHz Operation**

Chow-Yen-Desmond Sim and Yu-Feng Chen (Shenzhen University, P.R. China); Guan-Long Huangand and Chih-Heng Lin (Feng Chia University, Taiwan)

**P1.25 (A-T03)**

**Systematic Octopus-Shape Antenna Design with Circular Polarization by Characteristic Mode Theory**

Mohammad Poordaraee, Homayoon Oraizi, Seyfollah Khajevandi and Farrokh Hojjat-Kashani (Iran University of Science and Technology, Iran)

**P1.26 (A-T04)**

**Dual-Resonance NFC Antenna System for Mobile Phone with Metal Back Cover**

Fuqiang Ai and Anping Zhao (Shenzhen Sunway Communication Co., Ltd, P.R. China)

**P1.27 (A-T04)**

**Reconfigurable Circularly Polarized Cross-Dipole Antenna with a Near-Field Resonant Parasitic Element**

Son Xuat Ta (Hanoi University of Science and Technology, Vietnam); Ikmo Park (Ajou University, Korea); Richard W. Ziolkowski (University of Arizona, USA and University of Sydney, Australia)

**P1.28 (A-T04)**

**Internally Loaded Endfire Superdirective Array for Wideband Performance**

Hussein Jaafar, Sylvain Collardey and Ala Sharaiha (Université de Rennes 1 & IETR, France)

**P1.28.a (A-T10)**

**Phase Retrieval of Scalar Fields as a Low Number of Sequential Optimizations**

Tommaso Isernia, Antonia Rita Laganà, Valeria Morabito and Andrea Francesco Morabito (University Mediterranea of Reggio Calabria, Italy)

**P1.28.b (A-T11)**

**Exploiting the Aperture Antennas Theory in the Assessment of Orbital Angular Momentum Antennas Limitations in Far-Field Links**

Andrea Francesco Morabito and Tommaso Isernia (University Mediterranea of Reggio Calabria, Italy)

**P1.29 (A-T04)**

**Design of UHF RFID Tag Antenna for Automotive Tire**

Nadir Sarsri and Mohamed Nabil Srifi (National School of Apllied Sciences, Ibn Tofail University, Morocco); Sami Myllymäki (University of Oulu, Finland)

**P1.30 (A-T04)**

**Design of a Monopolar Wire-Plate Antenna Loaded with Magneto-Dielectric Material**

Lotfi Batel, Christophe Delaveaud and Jean-François Pintos (Université Grenoble-Alpes and CEA-LETI, France)

**P1.31 (A-T05)**

**A Highly Sensitive Microwave Resonator for Non- Invasive Blood Glucose Level Detection**

Ayodunni Oloyo and Zhirun Hu (University of Manchester, United Kingdom)

**P1.32 (A-T05)**

**Bacterial Detection by Using Micro Immunosensing Biomedical Cavity Resonator**

Dalia Elsheakh (Electronics Research Institute and ElTahrir St. Dokki Giza, Egypt); Hala Elsadekm and Esmat Abdallah (Electronics Research Institute, Egypt); Saad Moghannem (Doctor, Egypt); Waleed ELmazny (Holding Company for Biological Products and Vaccines (VACSERA), Egypt)

**P1.33 (A-T05)**

**Compact Flexible UWB Antenna Using Polyimide Substrate**

Saba Rashid, Yizhi Wu and Yongsheng Ding (Donghua University, P.R. China); Muhammad Ali Babar Abbasi (Queen's University Belfast, United Kingdom)

**P1.33.a (A-T05)**

**Dual-Band Dual-Polarized Textile Antenna for Location Tracking in AAL**

Ezzaty Faridah Nor Mohd Hussin, Ping Jack Soh, Azremi Abdullah Al-Hadi, Mohd Faizal Jamlos, Muhammad Nazrin Ramli and Herwansyah Lago (Universiti Malaysia Perlis, Malaysia); Niels Kuster (Swiss Federal Institute of Technology, Switzerland); Symon K. Podilchak (Heriot-Watt University, United Kingdom)

**P1.34 (A-T06)**

**A Technique to Suppress Mutual Coupling in Densely Packed Antenna Arrays Using Metamaterial Supersubstrate**

Mohammad Alibakhshikenari and Ernesto Limiti (University of Rome Tor Vergata, Italy); Bal Virdee (London Metropolitan University, United Kingdom)

**P1.36 (A-T06)**

**Design of a Low-Profile 3:1 Bandwidth Phased Antenna Array**

Fuguo Zhu (The 14th Research Institute, CETC, P.R. China); Jinping Zhang and Zhipeng Zhou (Nanjing Research Institute of Electronics Technology, P.R. China); Steven Gao (University of Kent, United Kingdom)

**P1.37 (A-T06)**

**Monostatic RCS Enhancing Design Based on Retroreflective Antenna Array**

Wen-Jiao Liao, Wan-Rou Lin and Hsi-Tseng Chou (National Taiwan University, Taiwan)

**P1.38 (A-T06)**

**Caustics, Plane Waves and Applications to Antennas**

Giuseppe Orlando (Thales Alenia Space Italia, Italy)

**P1.39 (A-T06)**

**Surface Mounted Notch Element for AESA Applications**

Bengt Svensson and Jacob Samuelsson (Saab AB, Sweden)

**P1.40 (A-T06)**

**Dielectric Material Characterization in the Frequency Range 68 - 92 GHz**

Isam Alawneh, Jan Barowski and Ilona Rolfes (Ruhr Universty Bochum, Germany)

**P1.41 (A-T07)**

**Auxiliary Elements Selection for Planar Array Sidelobe Cancellation Based on Genetic Algorithm**

Wei Dong, Zhenhai Xu, Luo-Sheng-Bin Wang, Shun-Ping Xiao and Xinghua Liu (National University of Defense Technology, P.R. China)

**P1.43 (A-T07)**

**A UHF Sea-Water Array Antenna for Maritime Wireless Communications**

Xinhe Pan, Zhenxin Hu and Mingzhou Zheng (Huawei Technologies Co. Ltd., P.R. China); Zhen Ren and Qiaoyu Chen (Nanjing University of Science and Technology, P.R. China)

**P1.45 (A-T07)**

**Wideband Dual-Circularly Polarised Feed for Compact Antenna Test Ranges with Low Cross Polarisation**

Ignacio Montesinos-Ortego and Ana Rosa Ruiz (TTI Spain); Sergiy Pivnenko (Antenna Systems Solutions, Denmark)

**P1.46 (A-T08)**

**3D Hodograph of Antenna Local Phase Center**

Yu. I Choni (Kazaz National Research Technical University, Russia)

**P1.47 (A-T08)**

**Compact GPS Antenna Array Using Meta Structure**

Jae-Gon Lee and Jeong Hae Lee (Hongik University, Korea)

**P1.48 (A-T08)**

**Accuracy of Harmonic Analysis Techniques for Direction of Arrival Estimation Using Time Modulated Arrays**

Ben Clark and James A. Flint (Loughborough University, United Kingdom)

**P1.50 (A-T09)**

**Design Procedures for Rectangular Patch Antennas**

Giulia Buttazzoni, Alessandro Cuttin and Roberto Vescovo (University of Trieste, Italy)

**P1.51 (A-T09)**

**3D Printed Helix Antenna**

Konstantin Lomakin, Tatiana Pavlenko, Mark SippelGerald Gold, Tobias Weidner Klaus Helmreich, Markus Ankenbrand and Jörg Franke (Friedrich-Alexander University, Germany)

**P1.52 (A-T09)**

**A Posteriori Antenna Surface Rework:A Simple Technique to Correlate Distortions to Pattern Degradations**

Annalisa Iacono and Steve McLaren (Airbus DS Ltd, United Kingdom)

**P1.53 (A-T10)**

**Novel Miniaturized Circular Polarization Antenna with Elliptical Slots and Feed with Loaded Stubs**

Adrian Bekasiewicz (Gdansk University of Technology, Poland); Slawomir Koziel (Reykjavik University, Iceland); Qingsha Cheng (SUSTC, P.R. China)

**P1.54 (A-T10)**

**Design and Validation of Corporate Feeds for Low-Sidelobe Microstrip Linear Arrays**

Stanislav Ogurtsov and Slawomir Koziel (Reykjavik University, Iceland); Qingsha Cheng and Yang Yu (SUSTC, P.R. China)

**P1.55 (A-T10)**

**Design and Performance Analysis of an UWB Patch Antenna with Enhanced Bandwidth Characteristics**

Mohamed Soliman and Ahmad Alahmadi (Taif University, Saudi Arabia); Majed Dwairi (Al-Balqa Applied Univerity University, Jordan)

**P1.58 (A-T11)**

**Terahertz Dielectric Resonator Antenna Coupled to Graphene Plasmonic Dipole**

Seyed Ehsan Hosseininejad, Mohammad Neshat and Reza Faraji-Dana (University of Tehran, Iran); Sergi Abadal, Eduard Alarcon and Albert Cabellos-Aparicio (Universitat Politècnica de Catalunya (UPC) and NaNoNetwoking Center in Catalunya (N3Cat), Spain); Max C Lemme (RWTH Aachen University, Germany); Peter Haring Bolívar (The Institute of High Frequency and Quantum Electronics, University of Siegen, Germany)

**P1.59 (A-T11)**

**Slotted Substrate Integrated Waveguide Antenna**

Yasameen Azeez and P R Young (University of Kent, United Kingdom)

**P1.60 (A-T11)**

**Design of Antipodal Tapered Slot Antenna Divided into Three Units**

Akinori Matsui and Kuniaki Suto (Saitama Institute of Technology, Japan)

**P1.62 (A-T11)**

**Circularly Polarized Mu-zero Resonance Antenna Array Having Wide Scanning Angle**

Chang-Hyun Lee and Jeong-Hae Lee (Hongik University, Korea)

**P1.63 (M-T01)**

**Comparative Channel Study of Ray Tracing and Measurement for an Indoor Scenario at 28 GHz**

Jinnan Zhan, Jianhua Zhang, Xinzhuang Zhang and Pan Tang (Beijing University of Posts and Telecommunications, P.R. China); Lei Tian (Beijing University of Posts and Telecommunications & Wireless Technology Innovation Institute, P.R. China); Jianwu Dou (ZTE Corporation, P.R. China); He-Wen Wei (Southwest Electronics and Telecommunication Technology Research Institute, P.R.

China)

**P1.64 (M-T01)**

**Non-Intrusive Characterization of 60GHz Antenna Array, Using Packet Measurements**

Timothy Pelham, David Reyes, Mark Beach and Evangelos Mellios (University of Bristol, United Kingdom); Moray Rumney (KeysightTechnologies, United Kingdom)

**P1.65 (M-T01)**

**Plane Wave Converter for 5G Massive MIMO Basestation Measurements**

Corbett Rowell and Adam Tankielun (Rohde & Schwarz GmbH & Co. KG, Germany)

**P1.66 (M-T01)**

**Assessment of Beamforming Capabilities of a 4-element Array in a Smartphone at 26 GHz**

Fabien Ferrero and Tran Quang Khai Nguyen (University Nice Sophia Antipolis, CNRS, LEAT & CREMANT, France); Philippe Ratajczak (Orange Labs, France)

**P1.67 (M-T09)**

**High-Frequency Characterization of EMI/EMC Ground Test Facility for the Measurements of Electric Propulsion Thruster Emissions**

Matteo Albani, Federico Puggelli and Alberto Toccafondi (University of Siena, Italy); Gianfranco Meniconi and Fabrizio Scortecci (Aerospazio Tecnologie s.r.l., Italy)

**P1.69 (M-T09)**

**Imaging the Inner Structure of a Comet from Few Measurements in a Bistatic Scenario Case of a Scale Model**

Christelle Eyraud and Jean-Michel Geffrin (Aix Marseille Université, CNRS, France); Alain Hérique (Université Grenoble Alpes, France); Wlodek Kofman (Université Grenoble Alpes, Space Research Centre, France)

**P1.71 (M-T11)**

**Realization of FDA Using Variable-Period Time Modulated Technique**

Jin-Dong Zhang, Wen Wu and Da-Gang Fang (Nanjing University of Science and Technology, P.R. China)

**P1.72 (M-T11)**

**Dielectric Properties Measurement Based on Split Ring Resonator for Microfluidic Characterization**

Amyrul Azuan Mohd Bahar, Zahriladha Zakaria, Azmi Awang Md Isa, Yosza Dasril and Rammah A. Alahnomi (Universiti Teknikal Malaysia Melaka (UTeM), Malaysia)

**P1.73 (M-T11)**

**Results of Medium Wave HD Radio Mobile Reception Measurements in a Dense Urban Region**

Elizabeth Verdugo, Luiz da Silva Mello and Marta Pudwell Chaves de Almeida (University of Rio de Janeiro, Brazil)

**P1.74 (M-T11)**

**Design-Oriented Constrained Modeling of Antenna Structures**

Slawomir Koziel and Ari Sigurdsson (Reykjavik University, Iceland)

**P1.74.a (M-T11)**

**High Sensitivity Microwave Near-Field Sensors for Fluids Characterization**

Ali Albishi (King Saud University, Kingdom of Saudi Arabia and University of Waterloo, Canada); Omar M Ramahi (University of Waterloo, Canada)

**P1.75 (M-T11)**

**Experimental Evaluation of Patch Antennas with Ferrite Loaded Substrate at 5GHz Frequency Band**

Evmorfili Andreou (NCSR Demokritos and National Technical University of Athens, Greece); Antonis A Alexandridis (NCSR Demokritos, Greece); George Fikioris (National Technical University of Athens, Greece)

**P1.77 (O-T01)**

**Long-Term Spectrum Monitoring and Occupancy from 174 to 1000 MHz in Rural Western Montana**

Erin Wiles and Kevin Negus (Montana Tech University, USA)

**P1.78 (O-T01)**

**Design of a Benchtop RF Vector Parameter Analyzer**

Zhengbo Jiang and Jianfeng Zhai (Southeast University, P.R. China); Ming Liu (Shanghai Transcom Instrument Technologies Co., Ltd, P.R. China)

**P1.80 (O-T01)**

**A Novel Design Approach for NB-IoT Networks Using Hybrid Teaching-Learning Optimization**

Sotirios Goudos (Aristotle University of Thessaloniki, Greece); Margot Deruyck, David Plets, Luc Martens and Wout Joseph (Ghent University, Belgium)

**P1.81 (O-T04)**

**Considerations on Series Inductance and Inductively Coupled Loop Matching Circuits for UHF RFID Tags**

S. Protat, J. Dubouil and J.-M. Laheurte (Université de Paris-Est, France); F. Gourari and S.M. Meriah (Université de Tlemcen, Algeria)

**P1.82 (O-T04)**

**Study on Curved Barrier to Reduce Electromagnetic Interference from Solid Cables**

Jaeyul Choo and Lee Dongjin (Korea Institute of Nuclear Safety, Korea)

**P1.83 (O-T04)**

**A Compact Quad-Port Dual-Polarized Dipole Rectenna for Ambient RF Energy Harvesting**

Shanpu Shen, Yujie Zhang, Chi-Yuk Chiu and Ross Murch (Hong Kong University of Science and Technology, P.R. China)

**P1.84 (O-T04)**

**Enhanced Cooperative Spectrum Sensing in Hybrid Homogeneous-Heterogeneous Cognitive Radio Networks**

Md Sipon Miah, Michael Schukat and Enda Barrett (National University of Ireland, Ireland)

**P1.85 (O-T05)**

**Microwave Radar Imaging for Monitoring Dysphagia**

Zhenhua Hu, Huihai Wang, Lin Sun, Rui Wu, Xiaofeng Zhang, and Fan Yang (ET Terahertz Science and Technology Co., Ltd, P.R. China)

**P1.86 (O-T05)**

**Wireless Power Transfer: Exposure Assessment for Grounded and Ungrounded Human Body**

Mohsen Koohestani, Mauro Ettorre and Maxim Zhadobov (University of Rennes 1, France)

**P1.88 (O-T06)**

**Signal-to-Noise Ratio Enhancement of High Frequency Ground Wave Radar Based on a Metamaterial-Based Transition Structure**

Liang-Yu Ou Yang (National Chung-Shan Institute of Science & Technology, Taiwan); Shih-Yuan Chen (National Taiwan University, Taiwan)

**P1.89 (O-T06)**

**High Power Non-Foster Circuit Class-J GaN HEMT Amplifier**

Charles Akwuruoha and Zhirun Hu (University of Manchester, United Kingdom)

**P1.91 (O-T06)**

**An Accurate Closed-Form Design for Microstrip Directional Couplers with Compensative Capacitances**

Jin Ling (Nanjing Research Institute of Electronics Technology, P.R. China)

**P1.92 (O-T06)**

**Multi-radar Coherently Combining Based on Clean Signal Reconstruction**

Xinghua Liu, Zhenhai Xu, Luoshengbin Wang, Wei Dong and Shunping Xiao (National University of Denfence Technology, P.R. China)

**P1.94 (O-T07)**

**Design of a Simultaneous X/Ka-Band SATCOM-on-the-Move Terminal for Commercial and Military Applications with Monopulse Tracking in Both Bands**

Christophe Granet (Lyrebird Antenna Research, Australia); John Kot (YK Engineering Research, Australia); John Ness and Glen Callaghan (EM Solutions, Australia)

**P1.95 (O-T07)**

**Broadband Linear Polarization Conversion Metasurface Based on Grounded Vias**

Fereshteh Samadi, Mohammad Akbari and Abdel R. Sebak (Concordia University, Canada); Reza Chaharmir (Communications Research Centre Canada, Canada)

**P1.97 (O-T11)**

**Radiation Characteristics of Filamentary Sources in the Presence of Periodically Spaced Nonreciprocal Cylindrical Scatterers**

Alexander Kudrin, Alexander Ivoninsky and Vasiliy Es'kin (University of Nizhny Novgorod, Russia)

**P1.98 (O-T11)**

**Dual-polarized Frequency Selective Surface for SOTM Applications**

Daniel Sanchez-Escuderos, Miguel Ferrando-Rocher, José Ignacio Herranz-Herruzo, Hon Ching Moy-Li and Alejandro Valero-Nogueira (Universidad Politécnica de Valencia, Spain)

**P1.99 (O-T11)**

**Optimization and Analysis of Photoconductive Switch for Frequency Reconfigurable Antenna**

Hansheng Su (Science and Technology on Space Physics Laboratory, P.R. China and Queen Mary, University of London, United Kingdom); Xiaodong Chen (Queen Mary, University of London, United Kingdom); Yanyang Chen and Bin Li (Science and Technology on Space Physics Laboratory, P.R. China)

**P1.100 (O-T11)**

**Directional Modulation via Weighted Fractional Fourier Transform - A Way to Enhance Security**

Feng Liu, Ling Wang and Jian Xie (Northwestern Polytechnical University, P.R. China)

**P1.101 (P-T01)**

**Propagation Prediction Based on Time Domain Electric Field Integral Equation for Smoothly Irregular Terrains**

Ruã Barbosa and Fernando Moreira (Federal University of Minas Gerais, Brazil)

**P1.102 (P-T01)**

**Atmospheric Impact on the Performance of a 60GHz Point-To-Point Link for 5G Infrastructures**

Nigel Linge, Rowani Odum, Steve Hill and Sabine Von Hunerbein (The University of Salford, United Kingdom); Patrick Linnebank (NEC Europe, The Netherlands); Andy Sutton and Dave Townend (BT Technology, Services and Operations, United Kingdom)

**P1.103 (P-T01)**

**Propagation Models Tuning for Long Term Evolution and Long Term Evolution-Advanced Using Genetic Algorithms and Least Mean Square**

Bruno Cavalcanti, Gustavo Cavalcante and Marcela T. G. Santos (IFPB - Instituto Federal de Educação, Brazil); Gabriel Moura Cantanhede, Adaildo Assunção and Laércio Martins de Mendonça (University of Rio Grande do Norte, Brazil)

**P1.104 (P-T01)**

**A Rain Model for the Tropics Based on TRMM Data Fitted to DBSG3**

Kevin S Paulson, Geraldine Rimven and Timothy Bellerby (University of Hull, United Kingdom)

**P1.106 (P-T03)**

**Statistics of Rain Attenuation in Prague, Empirical Data and Numerical Predictions**

Martin Grabner (Czech Metrology Institute, Czech Republic)

**P1.107 (P-T04)**

**Channel Model in Urban Environment for Unmanned Aerial Vehicle Communications**

Zhi Yang, Lai Zhou, Guangyue Zhao and Shidong Zhou (Tsinghua University, Canada)

**P1.107.a (P-T04)**

**Artificial Neural Network Optimal Modelling of Received Signal Strength in Mobile Communications Using UAV Measurements**

Sotirios Goudos (Aristotle University of Thessaloniki, Greece); George Tsoulos and Georgia E. Athanasiadou (University of Peloponnese, Greece)

**P1.108 (P-T06)**

**Radio Wave Diffraction on Ledge-like Underlying Surface**

Yekaterina Yungaitis (Chelyabinsk Radio Plant Polyot, Russia); Nikolay Voytovich, Aleksey Golovnin and Boris Zhdanov (South Ural State University, Russia)

**P1.110 (P-T06)**

**Experimental and Numerical Studies on Scattering from Multiple Propellers of Small UAVs**

Tamas Peto, Károly Marák, Sandor Bilicz and József Pávó (Budapest University of Technology and Economics, Hungary)

**P1.110a (P-T06)**

**Calibration of the Simultaneous Polarimetric Radar Based on the Sampling Rate Compensation**

Li Chao, Yong Yang, Li Yong-zhen and Wang Xue-song (National University of Defence Technology, P.R. China)

**P1.111 (P-T10)**

**Establishing the Limits of Antenna Measurement in Fading Channels**

Mohammed A. Almoteriy, Mohamed I Sobhy and John Batchelor (University of Kent, United Kingdom)

**P1.112 (P-T10)**

**Retrieving of Significant Wave Height and Period from the Doppler Spectrum of Backscattered Microwave Signal**

Maria Panfilova, Maria Ryabkova, Yuriy Titchenko and Vladimir Karaev (Institute of Applied Physics Russian Academy of Sciences, Russia)

**P1.114 (P-T11)**

**A Superstrate Independent to the Linear Polarization Direction of an Incident Plane Wave with Transmittance Higher than 80%**

Yin-Hua Yu, Zhi-Yuan Zong, Wen Wu and Da-Gang Fang (Nanjing University of Science and Technology, P.R. China)

**P1.115 (P-T01)**

**Analytical Approximation of the Time-dependent Antenna Cross-correlation Green's Function**

Debdeep Sarkar (Indian Institute of Technology, India and Royal Military College of Canada, Canada); Said Mikki (University of New Haven, USA); Kumar Vaibhav Srivastava (Indian Institute of Technology, India); Yahia Antar (Royal Military College of Canada, Canada)

**P1.116 (S-T01)**

**Analytical Study of 5G Beamforming in the Reactive Near-Field Zone**

Maryna Nesterova and Stuart Nicol (Aprel Inc., Canada)

**P1.117 (S-T01)**

**Thermal Modeling of the Near-Field Exposure from Wireless 5G Devices**

Andreas Christ (Consultant, Brazil); Davide Colombi (Ericsson Research, Sweden); Ken Joyner (Consultant, Australia)

**P1.118 (S-T01)**

**Multi-antenna Configuration Modeling for Massive MIMO V2I**

Andreas Pfadler, Christian Ballesteros, Jordi Romeu and Luis Jofre (Universitat Politecnica de Catalunya, Spain)

**P1.119 (S-T10)**

**Low-Cost Multi-Objective Optimization of Antennas by Means of Generalized Pareto Ranking Bisection Algorithm**

Sigmar Unnsteinsson (Reykjavik University, Iceland); Slawomir Koziel (Reykjavik University, Iceland and Gdansk University of Technology, Poland)

**P1.120 (S-T10)**

**Using the Filter Diagonalization Method to Compute Modes of Dielectric Waveguides**

David A. Rimel, Sergey Averkin, Carl A. Bauer, Adam V. Higuera, Ben M. Cowan, Jonathan D. A. Smith and Sveta Shasharina (Tech-X Corporation, USA); Gregory R. Werner (University of Colorado, USA); John R. Cary (Tech-X Corporation and University of Colorado, USA)

**P1.121 (S-T10)**

**A New Sub-Entire-Domain Basis Function for the Accurate Analysis of Large-Scale Finite-Sized Periodic Structures with Connected-Cell**

Tao Xiong, Wei Bing Lu and Wu Yang (SouthEast University, P.R. China)

**P1.122 (S-T10)**

**EM Simulation Based on State of the Art CAD Data Conversion and Simplification Techniques**

Patrick Soboll, Winfried Simon, Thorsten Liebig, David Schaefer and Matthias Geissler (IMST GmbH, Germany) Rainer Kronberger (Cologne University of Applied Sciences, Germany)

**P1.123 (S-T10)**

**Linear Antenna Transient Analysis Using Running Fourier Transform and Page Spectrum**

Anna Witenberg and Maciej Walkowiak (University of Science and Technology in Bydgoszcz, Poland); Katarzyna Jagodzińska (Koszalin University of Technology, Poland)

**P1.124 (S-T10)**

**Hybrid Technique for Efficient and Accurate Analysis of the V2X Channel in Urban Traffic Scenarios**

Jose-Luis García, Lorena Lozano, Ivan Gonzalez and Felipe Cátedra (Alcala University, Spain); Alvaro Somolinos (newFASANT, Spain)

**P1.125 (S-T10)**

**Synthesis of Electromagnetic Equivalents of Composite Sheets by Multi-Objective Optimization of Anisotropic Band-Stop Filters**

Martin Marek, Zbynek Raida and Petr Kadlec (Brno University of Technology, Czech Republic)

**P1.126 (S-T11)**

**Accurate Scattering Matrix Reconstruction for Multi-Element Antennas - Application to Hybrid Arrays**

Amel Maati, Cyrille Menudier, Marc Thevenot, François Torres and Thierry Monediere (XLIM-University of Limoges, France)

**P1.127 (S-T11)**

**A Numerical Study for the Design of a New DD Coil Prototype for Dynamic Wireless Charging of Electric Vehicles**

Rosanna Pinto, Vanni Lopresto and Antonino Genovese (ENEA, Italy)

**P1.127a (A-T11)**

**The Generation of Circular Polarization in Cylindrical Dielectric Resonator Antenna Using an Arc Shaped Dielectric Element**

Gaurav Varshney (National Institute of Technology Delhi, India); Shailza Gotra (Amity University, India); Vinay Pandey (NIT Delhi, India); Rajveer Singh Yaduvanshi (AIACTR, India)

## Wednesday 11 April 2018

## Wednesday 11 April 2018 09:00 – 10:40

### CS14: Higher Geometrical Symmetries for Periodic Structures

Cellular Networks & 5G | Convened Session | Antennas

Room: Room 7

Chairs: Dr Guido Valerio (Université Pierre et Marie Curie, France) and Dr Astrid Algaba Brazalez (Ericsson AB, Sweden)

| | |
|---|---|
| **09:00** | **CS14.1**<br>**Accurate and Low-Dispersive Control of Refractive Properties in Fully Metallic Waveguides Possessing Twist Symmetry**<br>Oskar Dahlberg and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |
| **09:20** | **CS14.2**<br>**Engineering Modes of PT Symmetric Photonic Crystals**<br>Adam Mock (Central Michigan University, USA) |
| **09:40** | **CS14.3**<br>**Glide-symmetric Holey Structures with Selected Bandgaps for Gap-waveguide Technology**<br>Pablo Padilla, Angel Palomares and Juan Valenzuela-Valdés (University of Granada, Spain); Antonio Alex-Amor and José-Manuel Fernández-González (Technical University of Madrid, Spain); Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |
| **10:00** | **CS14.4**<br>**A Two-Dimensional All Metal Luneburg Lens Using Glide-Symmetric Holey Metasurface**<br>Lars Manholm, Astrid Algaba Brazález and Martin Johansson (Ericsson Research, Ericsson AB, Sweden); Jingwei Miao and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |
| **10:20** | **CS14.5**<br>**A Cost-effective D-band Multi-layer Rectangular Waveguide Transmission Line Based on Glide-Symmetric EBG Structure**<br>Abbas Vosoogh (Chalmers University of Technology, Sweden); Zhongxia Simon He and Herbert Zirath (Chalmers University of Technology, Sweden) |

### CS02: AMTA Session on 5G Antenna Measurements

Cellular Networks & 5G | Convened Session | Measurement

Room: Room 12

Chairs: Lars Jacob Foged (MVG, Microwavevision Group, Italy) and Dr Daniël Janse van Rensburg (NSI-MI, USA)

| | |
|---|---|
| **09:00** | **CS02.1**<br>**Antenna Measurements at Millimeter Wavelengths - Overview**<br>Antti V Räisänen, Jianfang Zheng, Ville Viikari and Juha Ala-Laurinaho (Aalto University, Finland) |
| **09:20** | **CS02.2**<br>**Characterization and Enhancement of the Environment for 5G Millimetre-wave Broadband Mobile Communications**<br>Aldo Petosa, Nicolas Gagnon, Cesar A Amaya, Ming Li, Shailesh Raut, Jonathan Ethier and Reza Chaharmir (Communications Research Centre Canada, Canada) |
| **09:40** | **CS02.3**<br>**Analysis of Applicability of Radiated Two-Stage Test Method to 5G Radiated Performance Measurement**<br>Ya Jing, Hongwei Kong and Zhu Wen (Keysight Technologies, PR China); Moray Rumney (Keysight Technologies, United Kingdom) |
| **10:00** | **CS02.4**<br>**Efficient Testing of Antennas for 5G mm-Wave Applications**<br>Andrea Giacomini, Alessandro Scannavini and Lars Foged (Microwave Vision Italy, Italy); Luc Duchesne, Nicolas Gross and Fabrice Herbiniere (MVG Industries, France) |
| **10:20** | **CS02.5**<br>**Antenna Diagnosis and Power Density Calculation of 5G Millimeter-Wave Mobile Terminal Using Inverse Source Technique**<br>Bo Xu (Royal Institute of Technology and Ericsson AB, Sweden); Lucia Scialacqua, Alessandro Scannavini and Lars Foged (Microwave Vision Italy, Italy); Zhinong Ying and Thomas Bolin (Sony Mobile Communications, Sweden); Sailing He (Royal Institute of Technology, Sweden) |
| **T11-4: Antenna Array Beamsteering Techniques**<br>Future Applications \| Regular Session \| Antennas<br>Room: Room 17<br>Chairs: Professor Richard Ziolkowski (University of Technology Sydney, Australia) and Ioan E. Lager (Delft University of Technology, The Netherlands) | |
| **09:00** | **T11-4.1**<br>**Wideband MM-wave Non-diffracting Airy Beam Forming**<br>Ravi Kadlimatti, Hemanth Gaddam and Patanjali Parimi (State University of New York, USA); Hugo Larocque, Ebrahim Karimi and Robert Boyd (University at Ottawa, USA) |
| **09:20** | **T11-4.2**<br>**Connected Array for Radiated Power Enhancement of Pulsed Photoconductive Antennas**<br>Alessandro Garufo, Giorgio Carluccio, Andrea Neto and Nuria LLombart (Delft University of Technology, The Netherlands); Juan Bueno and Jochem Baselmans (SRON, The Netherlands); Joshua R Freeman, E Linfield and Alexander Davies (University of Leeds, United Kingdom) |
| **09:40** | **T11-4.3**<br>**Four Dimensional Antenna Arrays for Wideband Transmit Beamforming**<br>Jixin Guo, Shiwen Yang and Yikai Chen (University of Electronic Science and Technology of China, P.R. China); Lorenzo Poli, Paolo Rocca and Andrea Massa (University of Trento, Italy) |

| | |
|---|---|
| **10:00** | **T11-4.4**<br>**Code-Division Multiplexing Based Hardware Reduction for a Digital Beamforming Transmitter Array**<br>Zhengyu Peng (Mitsubishi Electric Research Laboratories, USA and Texas Tech University, USA); Kyeong Jin Kim, Pu Wang, Rui Ma and Bingnan Wang (Mitsubishi Electric Research Lab, USA); Kazunari Kihira and Toru Fukasawa (Mitsubishi Electric Corporation, Japan); Changzhi Li (Texas Tech University, USA) |
| **10:20** | **T11-4.5**<br>**A Compact and Wideband Variable Microwave Phase Shifter for Phased Arrays and Diversity in S-Band**<br>Simon Senega and Stefan Lindenmeier (Universität der Bundeswehr, Germany) |

## T06-6: Radar Localisation and Sensing

Radar Systems | Regular Session | Propagation
Room: Room 16
Chairs: Professor Ozlem Aydin Civi (Middle East Technical University, Turkey) and Professor Herbert Aumann (University of Maine, USA)

| | |
|---|---|
| **09:00** | **T06-6.1**<br>**Millimetre-Wave FMCW MIMO Radar System Development Using Broadband SIW Antennas**<br>Cristian Alistarh, Pascual Hilario Re, Thomas Ströeber, Samuel Rotenberg, Symon K. Podilchak, Carolina Mateo-Segura, Yan Pailhas, George Goussetis, Yves Petillot and John Thompson (University of Edinburgh, United Kingdom ); Jaesup Lee (Samsung Electronics Co Ltd, Korea) |
| **09:20** | **T06-6.2**<br>**A Single Antenna Radar Sensor with FMCW Radar Transceiver IC**<br>Kyungha Yoo (Kwangwoon University, Korea); Sang Gyun Kim (Silicon R&D, Korea); Yun Seong Eo (Kwangwoon University and Silicon R&D, Korea) |
| **09:40** | **T06-6.3**<br>**A Sea-wave-dynamics Monitoring Radar Based on Propagation Characteristics of Echo Signals**<br>Nanxin Wang, Xuesong Cai and Xuefeng Yin (Tongji Unversity, P.R. China); Antonio Perez Yuste (Technical University of Madrid, Spain); Yuanmiao Hu (Hangzhou Lanchang Technology Limited Company, P.R. China) |
| **10:00** | **T06-6.4**<br>**TOA Estimation Algorithms Evaluated According ED-117 Minimum Operational Performance Specifications for Mode S Multilateration Systems**<br>Stephan Bernhart and Erich Leitgeb (Graz University of Technology, Austria); Gerhard A. Hofbauer and Ulrich Feichter (AviBit GmbH, Austria) |
| **10:20** | **T06-6.5**<br>**Characteristic Mode Analysis of Reflectarray Unit Cell**<br>Yigit Haykir and Ozlem Aydin Civi (Middle East Technical University, Turkey) |

## CS37: Modeling and Design Tools for Small Antennas State-of-the-Art and Future Perspectives

Software Tools & Instruments | Convened Session | Antennas
Room: Room 15
Chairs: Professor Guy Vandenbosch (University of Leuven (KU Leuven), Belgium) and Francesca Mioc (Microwave Vision, Switzerland)

| | |
|---|---|
| **09:00** | **CS37.1**<br>**Design Tools for Small Implantable Antennas**<br>Ismael Vico Trivino and Anja K. Skrivervik (EPFL, Switzerland); Marko Bosiljevac and Zvonimir Sipus (University of Zagreb, Croatia) |
| **09:20** | **CS37.2**<br>**AToM: A Versatile MATLAB Tool for Antenna Synthesis**<br>Miloslav Capek, Pavel Hazdra, Viktor Adler, Michal Masek, Vit Losenicky, Martin Strambach and Milos Mazanek (Czech Technical University in Prague, Czech Republic); Petr Kadlec, Vladimir Sedenka and Martin Marek (Brno University of Technology, Czech Republic); Jaroslav Rymus (MECAS ESI, Czech Republic) |
| **09:40** | **CS37.3**<br>**Advanced Measurement Post-processing by Equivalent Currents on Small 5G Antennas**<br>Lucia Scialacqua, Lars Foged, Alessandro Scannavini and Francesca Mioc (Microwave Vision Italy, Italy); Fabrice Herbinière (SATIMO Main Office, France); Bo Xu (KTH Royal Institute of Technology, Sweden); Zhinong Ying and Thomas Bolin (Sony Mobile Communications, Sweden) |
| **10:00** | **CS37.4**<br>**Minimum Q-factor, Maximum Efficiency and Generalized Mode Expansions**<br>Mats Gustafsson (Lund University, Sweden) |
| **10:20** | **CS37.5**<br>**Modeling and Design Tools for Small Antennas: State-of-the-Art and Future Perspectives**<br>Guy Vandenbosch (University of Leuven (KU Leuven), Belgium); Francesca Mioc (MVI, Italy) |
| **CS34: Silicon-Based Integrated Antennas for mm-Wave Wireless Communications**<br>Ultra-High Data Rate Communications \| Convened Session \| Antennas<br>Room: Room 14<br>Chairs: Professor Bart Smolders (Eindhoven University of Technology, The Netherlands) | |
| **09:00** | **CS34.1**<br>**Circularly-polarized On-Chip Dielectric Resonator Antenna**<br>Julio Gonzalez Marin and Jan Hesselbarth (University of Stuttgart, Germany) |
| **09:20** | **CS34.2**<br>**Wideband Substrate Integrated Waveguide Antenna for Next-Generation mmWave Wireless Systems**<br>Thomas Deckmyn, Hendrik Rogier, Dries Vande Ginste and Sam Agneessens (Ghent University, Belgium); Ad Reniers and A. B. Smolders (Eindhoven University of Technology, The Netherlands) |
| **09:40** | **CS34.3**<br>**THz Packaging Solution for Low Cost Si-based 40 Gb/s Wireless Link System**<br>Elsa Lacombe (University of Nice Sophia Antipolis and STMicroelectronics, France); Frédéric Gianesello and Cedric Durand (STMicroelectronics, France); Cyril Luxey and Diane Titz (University Nice Sophia Antipolis, France); Jorge R. Costa and Carlos A Fernandes (Instituto de Telecomunicacoes and ISCTE-IUL, Portugal); Carlow Del-Rio Bocio (Universidad Publica e Navarr, Institute of Smart Cities, Spain); Guillaume |

| | |
|---|---|
| | Ducournau (Lille University, France); Helko Gulan and Thomas Zwick (Karlsruhe Institute of Technology, Germany) |
| **10:00** | **CS34.4**<br>**Multibeam Antenna with a Passive Beamforming System in LTCC Technology for Mm-wave Systems-in-Package**<br>Francesco Foglia Manzillo, Maciej Smierzchalski, Mauro Ettorre and Ronan Sauleau (University of Rennes 1, France); Jouko Aurinsalo, Kari Kautio, Markku Lahti, Antti E. I. Lamminen and Jussi Säily (VTT Technical Research Centre of Finland, Finland) |
| **10:20** | **CS34.5**<br>**Efficient Millimeter-Wave High Power Generation with Spatial Power-Combined Feeding Element**<br>Artem Roev, Rob Maaskant and Marianna Ivashina (Chalmers University of Technology, Sweden); Anders Höök (SAAB AB, Sweden) |
| **CS17: Propagation Channels for Wide-Sense Vehicle-to-X Communications**<br>Connected Objects \| Convened Session \| Propagation<br>Room: Room 13<br>Chairs: Dr Ke Guan (Beijing Jiaotong University, P.R. China) and Professor Uwe-Carsten Fiebig (German Aerospace Center, Germany) | |
| **09:00** | **CS17.1**<br>**Comparison on Channel Characteristics at 3.5 GHz and 28 GHz**<br>Zhongyuan Wu, Jianhua Zhang, Lei Tian, Zhixue Hu and Tao Jiang (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (Northern Illinois University, USA) |
| **09:20** | **CS17.2**<br>**IEEE 802.11P Performance for Vehicle-to-Anything Connectivity in Urban Interference Channels**<br>Thomas Blazek and Christoph F Mecklenbräuker (TU Wien, Austria); Golsa Ghiaasi (Technical University of Vienna, Austria); Christian Backfrieder and Gerald Ostermayer (FH Upper, Austria) |
| **09:40** | **CS17.3**<br>**An Online Supervised Calibration Scheme for Time-Varying MIMO Channel Measurement**<br>Haifeng Tan and Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Zhongfei Cai, Yunsong Gui, Haowen Wang and Yang Yang (Shanghai Research Center for Wireless Communications, P.R. China) |
| **10:00** | **CS17.4**<br>**Measurement Based Ultra-Wideband Channel Model for Mobile Communications in Tunnels**<br>Andrej Hrovat, Klemen Bregar and Tomaz Javornik (Jožef Stefan Institute, Slovenia) |
| **10:20** | **CS17.5**<br>**MIMO System Performance Using Leaky Coaxial Cables in Confined Area**<br>Asad Saleem (Shanghai Institute for Advanced Communication and Data Science (SICS), P.R. China); Min Wang and Guoxin Zheng (Shanghai Institute for Advanced Communication and Data Science, Shanghai University, P.R. China); |

## T09-5: MM-wave & THz Antennas

Space Applications | Regular Session | Antennas
Room: Room 6
Chairs: Dr Luca Salghetti Drioli (ESA, The Netherlands) and Professor Xiaodong Chen (Queen Mary University of London, United Kingdom)

| | |
|---|---|
| **09:00** | **T09-5.1**<br>**Ku-Band Grounded Dielectric Slab Based Asymmetric Bull's-Eye Antenna Fed by Monopole**<br>Unai Beaskoetxea and Alicia E Torres-García (Public University of Navarra, Spain); Miguel Beruete (Universidad Publica de Navarra, Spain) |
| **09:20** | **T09-5.2**<br>**Integrated Beam-Scanning Antenna for Heterodyne Instruments at Submillimeter-Wave Frequencies for Martian Climatology Measurements**<br>Maria Alonso-delPino, Cecile Jung-Kubiak, Theodore Reck, Nathaniel Livesey, Leslie Tamppari and Goutam Chattopadhyay (Jet Propulsion Laboratory, USA); Nuria LLombart (Delft University of Technology, The Netherlands) |
| **09:40** | **T09-5.3**<br>**An Incoherent Dual-Polarized Leaky Lens Antenna: Experimental Validation at 1.55 THz**<br>Ozan Yurduseven, Andrea Neto and Nuria LLombart (Delft University of Technology, The Netherlands); Juan Bueno, Jochem Baselmans and Stephen Yates (SRON, The Netherlands) |
| **10:00** | **T09-5.4**<br>**Fourier Optics Based Analysis of Focal Plane Array of Distributed Absorbers**<br>Shahab Oddin Dabironezare, Giorgio Carluccio, Andrea Neto and Nuria LLombart (Delft University of Technology, The Netherlands); Angelo Freni (Università degli studi Firenze, Italy) |
| **10:20** | **T09-5.5**<br>**3.5-THz Quantum-Cascade Laser Emission from Dual Diagonal Feedhorns**<br>Brian Ellison, O Auriacombe, T Rawlings, N Brewster, M Oldfield and L Li (STFC Rutherford Appleton Laboratory, United Kingdom ); Elena Saenz (European Space Agency, The Netherlands); Alex Valavanis, Y Han, E. Linfield and Alexander Davies (University of Leeds, United Kingdom) |

## T09-3: Antenna Design and Optimization for Space Applications

Space Applications | Regular Session | Antennas
Room: Room 4
Chairs: Professor Yahia Antar (Royal Military College of Canada, Canada) and Professor Ronan Sauleau (University of Rennes 1, France)

| | |
|---|---|
| **09:00** | **T09-3.1**<br>**Physical Bounds of Metasurface Antennas**<br>Marco Faenzi and Stefano Maci (University of Siena, Italy); Gabriele Minatti and Enrica Martini (Wave Up Srl., Italy); Marco Sabbadini (Esa Estec, The Netherlands) |
| **09:20** | **T09-3.2**<br>**Dispersion Analysis of Polar Glide Symmetry with Coaxial Rings**<br>Qiao Chen (KTH Royal Institute of Technology, Sweden and State Key Laboratory of Millimeter Wave, Southeast University, PR China); Guido Valerio (Sorbonne Universités UPMC, France); Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |

| | |
|---|---|
| **09:40** | **T09-3.3**<br>**Very High Gain Low Profile Antennas for Satellite Communications in Ka Band**<br>Francesco Caminita, Enrica Martini and Gabriele Minatti (Wave Up Srl and University of Siena, Italy); Marco Sabbadini (ESA, The Netherlands); Fabrizio De Paolis (ESA, United Kingdom); Stefano Maci (University of Siena, Italy) |
| **10:00** | **T09-3.4**<br>**A Fast Computational Algorithm to Evaluate Large Transmit-arrays**<br>Parinaz Naseri, Carlos A. Fernandes, Sergio Matos and Jorge R. Costa (Instituto de Telecomunicações, Portugal) |
| **10:20** | **T09-3.5**<br>**Reflector Antenna Optimization Using One-Sided Least-Squares**<br>Anders Eltved and Martin Andersen (Technical University of Denmark, Denmark); Oscar Borries (TICRA, Denmark) |
| **CS20: Inverse Problems: Theory, Techniques, and Applications**<br>Software Tools & Instruments \| Convened Session \| Propagation<br>Room: Room 3<br>Chairs: Professor Paolo Rocca (DISI - ELEDIA Research Center, Italy) and Fan Yang (Tsinghua University, P.R.China) | |
| **09:00** | **CS20.1**<br>**Compressive Sensing for Inverse Problems**<br>Nicola Anselmi, Massimo Donelli, Lorenzo Poli, Paolo Rocca and Federico Viani (University of Trento, Italy); Giacomo Oliveri and Andrea Massa (University of Trento, Italy and ELEDIA Research Center, Italy) |
| **09:20** | **CS20.2**<br>**A Simple Technique to Find Landmines from Total Near-Field Measurements**<br>Adriana Brancaccio (Università di Napoli, Italy); Marco Donald Migliore (University of Cassino, Italy) |
| **09:40** | **CS20.3**<br>**Inversion Approach to Super-resolution Imaging in Near-field Scanning Microwave Impedance Microscopy**<br>Zhun Wei, Rui Chen and Xudong Chen (National University of Singapore, Singapore) |
| **10:00** | **CS20.4**<br>**Application of Supervised Descent Method to Nonlinear Inversion for Transient EM Data**<br>Rui Guo, Maokun Li, Fan Yang and Shenheng Xu (Tsinghua University, P.R. China); Fang Guangyou (Institute of Electronics, Chinese Academy of Sciences, P.R. China); Aria Abubakar (Schlumberger-Doll Research, USA) |
| **10:20** | **CS20.5**<br>**The Finite Element-Boundary Integral Based Subspace Optimization Method for Solving Three-Dimensional Inverse Scattering Problems**<br>Rui Chen, Zhun Wei and Xudong Chen (National University of Singapore, Singapore) |

| **CS08: Advances in Antenna Design and Analysis Using Characteristic Modes**<br>Future Applications \| Convened Session \| Antennas<br>Room: Room 2<br>Chairs: Dr Kurt Schab (North Carolina State University, USA) and Dr Eva Antonino Daviu (Universitat Politècnica de València, Spain) | |
|---|---|
| **09:00** | **CS08.1**<br>**Cardioid Type Pattern Optimization Using Characteristic Mode Analysis**<br>Rohani Bakar, Kazuki Kamiyama and Hiroyuki Arai (Yokohama National University, Japan) |
| **09:20** | **CS08.2**<br>**Characteristic Mode Theory for Practical HF Antenna Design**<br>Sai Ho Yeung and Chao-Fu Wang (National University of Singapore, Singapore) |
| **09:40** | **CS08.3**<br>**Design of a High-Gain Millimeter-Wave Antenna Using Characteristic Modes**<br>Daniel Santillán-Haro (Universidad Politecnica de Valencia, Spain and Universidad Nacional de Chimborazo, Ecuador); Eva Antonino-Daviu, Daniel Sanchez-Escuderos and Miguel Ferrando-Bataller (Universitat Politècnica de València, Spain) |
| **10:00** | **CS08.4**<br>**Characteristic Modes Analysis for the Design of CubeSat Antennas**<br>Francesco Alessio Dicandia, Simone Genovesi and Agostino Monorchio (University of Pisa and CNIT, Italy) |
| **10:20** | **CS08.5**<br>**Modal Decomposition of Transients in Direct Antenna Modulation Systems**<br>Kurt Schab and Jacob Adams (North Carolina State University, USA) |
| **CS13: Academic and Industrial Advances in Microwave Medical Technologies within European COST Action TD1301 – MiMed**<br>Biomedical \| Convened Session \| Antennas<br>Room: Room1<br>Chairs: Dr Lorenzo Crocco (CNR-IREA, National Research Council of Italy, Italy) and Panagiotis Kosmas (King's College London, United Kingdom) | |
| **09:00** | **CS13.1**<br>**Elaborated Breast Phantoms and Experimental Benchmarking of a Microwave Breast Imaging System Before First Clinical Study**<br>Angie Fasoula, Luc Duchesne, Jean-Gaël Bernard and Guillaume Robin (MVG Industries, France) |
| **09:20** | **CS13.2**<br>**Tackling Hypertension Via Adrenal Ablation - The Development of Novel Immunohistochemical Ablation Biomarkers**<br>Padraig Donlon, Michael Dennedy, Atif Shahzad, Jimmy Eaton-Evans and Martin O'Halloran (National University of Ireland, Galway, Ireland); Punit Prakash (Kansas State University, USA); Giuseppe Ruvio (Dublin Institute of Technology, Ireland) |

| | |
|---|---|
| **09:40** | **CS13.3**<br>**Enhancing Quantitative Microwave Holography in Tissue Imaging**<br>Daniel Tajik, Aaron Pitcher, Natalia Nikolova and John Bandler (McMaster University, Canada); Denys Shumakov (Health Canada, Canada) |
| **10:00** | **CS13.4**<br>**Optimized Antenna Array layout in a Microwave Imaging Aystem for Brain Stroke Monitoring**<br>Rosa Scapaticci and Lorenzo Crocco (CNR - National Research Council of Italy, Italy); Jorge Tobon Vasquez, Giovanna Turvani, Gianluca Dassano, Mario Roberto Casu and Francesca Vipiana (Politecnico di Torino, Italy); Nadine Joachimowicz and Bernard Duchene (CentraleSupelec, France) |
| **10:20** | **CS13.5**<br>**Dielectric Properties of Breast: A Review**<br>Lourdes Farrugia, Charles Sammut and Julian Bonello (University of Malta, Malta) |

## Wednesday 11 April 2018 11:10 – 12:50

| **CS14: Higher Geometrical Symmetries for Periodic Structures**<br>Cellular Networks & 5G \| Convened Session \| Antennas<br>Room: Room 7<br>Chairs: Dr Guido Valerio (Université Pierre et Marie Curie, France) and Dr Astrid Algaba Brazalez (Ericsson AB, Sweden) | |
|---|---|
| **11:10** | **CS14.6**<br>**A Floquet-Expansion Approach for the Study of Glide-Symmetric Metasurfaces**<br>Guido Valerio (Sorbonne Universités UPMC, France); Fatemeh Ghasemifard and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden); Zvonimir Sipus (University of Zagreb, Croatia) |
| **11:30** | **CS14.7**<br>**Analytical Equivalent Models of Artificial Dielectric Layers with Arbitrary Inter-Layer Shifts**<br>Daniele Cavallo (Delft University of Technology, The Netherlands) |
| **11:50** | **CS14.8**<br>**Higher Mode Propagation in Periodic Patch Structures with Two-Dimensional Glide Symmetries**<br>Qingbi Liao and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |
| **12:10** | **CS14.9**<br>**Time-modulated Periodic Systems with PT Symmetry**<br>Adam Mock (Central Michigan University, USA) |

| | |
|---|---|
| **12:30** | **CS14.10**<br>**Expanding Microwave Absorption Bandwidth with Metasurface Salisbury Screen**<br>Ziheng Zhou, Ke Chen, Junming Zhao and Yijun Feng (Nanjing University, P.R. China); Yue Li (Tsinghua University, P.R. China) |
| **T03-4: Propagation for Wireless LAN**<br>Wireless Networks \| Regular Session \| Propagation<br>Room: Room 12<br>Chairs: Professor Tony Brown (Manchester University, United Kingdom) and Steve Boyers (DSTL, United Kingdom) | |
| **11:10** | **T03-4.1**<br>**A Multi-wall and Multi-frequency Home Environment Path Loss Characterization and Modeling**<br>Marc Kacou and Valery Guillet (Orange Labs, France); Gheorghe Zaharia and Ghais El Zein (IETR-INSA Rennes, France) |
| **11:30** | **T03-4.2**<br>**Effect of Line of Sight in Clustering Distribution of Signal Contribution at 5.8 GHz Indoor Environments**<br>Jenifer Campero and Iñigo Cuiñas (University of Vigo, Spain) |
| **11:50** | **T03-4.3**<br>**Inter-Link Interference Measurement of Indoor Dense Millimeter-Wave WLANs**<br>Kun Zeng, Yu Ziming, Jia He and Guangjian Wang (Huawei Technologies Co Ltd, P.R. China); Yan Xin and Wen Tong (Huawei Technologies Canada Co Ltd, Canada) |
| **12:10** | **T03-4.4**<br>**Modeling the Power Angular Profile of Dense Multipath Components Using Multiple Clusters**<br>Brecht Hanssens, Emmeric Tanghe, Wout Joseph and Luc Martens (Ghent University, Belgium); Kentaro Saito and Jun-ichi Takada (Tokyo Institute of Technology, Japan); Claude Oestges (Université Catholique de Louvain, Belgium) |
| **12:30** | **T03-4.5**<br>**Analysis of Rain Rate Estimations in Tropical Regions Using a 5 GHz Microwave Link**<br>Boris Ramos, Alfredo Núñez and Sucre Cando (Escuela Superior Politécnica del Litoral (ESPOL), Ecuador); Michele D'Amico (Politecnico di Milano, Italy) |
| **T11-5: Design Methods for New EM Devices**<br>Future Applications \| Regular Session \| Antennas<br>Room: Room 17<br>Chairs: Dr Henry Giddens (Queen Mary University of London, United Kingdom) and Rob Lewis (BAE Systems, United Kingdom) | |
| **11:10** | **T11-5.1**<br>**Novel Ridge Gap Waveguide Configuration Supporting TEM Propagation with Lower Loss and Better Isolation**<br>Nima Bayat-Makou and Ahmed Kishk (Concordia University, Canada) |

| | |
|---|---|
| **11:30** | **T11-5.2**<br>**Assessment on the Bandwidth of Artificial Magnetic Conductors for Antenna-on-Chip Applications**<br>Antonius Johannes van den Biggelaar, Ulf Johannsen and A B Smolders (Eindhoven University of Technology, The Netherlands) |
| **11:50** | **T11-5.3**<br>**A Holistic Approach to the Design of Impedance Matched Perfect Absorbers**<br>Patrick Bradley (Dublin Ciry University, Ireland and Queen Mary University, London); Conor Brennan (Dublin City University, Ireland); Max Munoz and Yang Hao (Queen Mary University, London) |
| **12:10** | **T11-5.4**<br>**New Propagation Regimes of Symmetric Hybrid Waves in a Nonlinear Metal-Dielectric Waveguide**<br>Yury Shestopalov (University of Gävle, Sweden); Yury Smirnov and Eugene Smolkin (Penza State University, Russia) |
| **12:30** | **T11-5.5**<br>**An Invisible Gradient-Index Lens with Negative Refractive Index**<br>Sergei P Skobelev (Radiophyzika and Moscow Institute of Physics and Technology, Russia) |
| **T06-7: Imaging, Sensing and Radar Antennas**<br>Radar Systems \| Regular Session \| Antennas<br>Room: Room 16<br>Chairs: Professor Arismar Cerqueira S. Jr. (INATEL, Brazil) and Professor Herbert Aumann (University of Maine, USA) | |
| **11:10** | **T06-7.1**<br>**On the Use of a Hybrid Monostatic-Bistatic Radar System for a 3D Standoff Imaging**<br>Lorena María Pérez Eijo, Borja Gonzalez-Valdes,Yolanda Rodriguez-Vaqueiro, Marcos Arias, Oscar Rubiños-López and Antonio Pino (University of Vigo, Spain) |
| **11:30** | **T06-7.2**<br>**Time of Flight Sphere-Based Reconstruction Algorithm and Processing Techniques for Multi-Monostatic Portal-Based Scanners**<br>Kurt Jaisle and Carey Rappaport (Northeastern University, USA) |
| **11:50** | **T06-7.3**<br>**Feasability of Compact Dual-Polarized Phased Antenna Array Radars**<br>Mariana G Pralon, Leandro Pralon, Bruno Pompeo and Gabriel Beltrão (CTEx, Brazil); Arismar Cerqueira S. Jr. (INATEL, Brazil); Edson Reis (BRADAR, Brazil); Reiner S. Thomä (Ilmenau University of Technology, Germany) |
| **12:10** | **T06-7.4**<br>**Automotive Radar and Radome Calibration to Improve the Direction of Arrival Detection Performance**<br>Santi Buitrago, Sebastian Blanch Boris and Jordi Romeu (Universitat Politècnica de Catalunya, Spain) |

| | |
|---|---|
| **12:30** | **T06-7.5**<br>**A Technique for Measuring the RCS of Free-Flying Honeybees with a 24 GHz CW Doppler Radar**<br>Herbert Aumann (University of Maine, USA); Kristan Tuttle (MIT Lincoln Laboratory, USA) |
| **CS34: Silicon-Based Integrated Antennas for mm-Wave Wireless Communications**<br>Ultra-High Data Rate Communications \| Convened Session \| Antennas<br>Room: Room 14<br>Chairs: Professor Bart Smolders (Eindhoven University of Technology, The Netherlands) and Professor Guy Vandenbosch (University of Leuven (KU Leuven), Belgium) | |
| **11:10** | **CS34.6**<br>**Partially Molded Antenna-in-Package Concept for 122 GHz SiGe Radar Sensor**<br>Akanksha Bhutani, Jochen Schäfer and Thomas Zwick (Karlsruhe Institute of Technology, Germany); Benjamin Goettel (Wellenzahl Radar- und Sensortechnik GmbH & Co KG, Germany) |
| **11:30** | **CS34.7**<br>**Antenna-on-Chip Integration in Mainstream Silicon Semiconductor Technologies**<br>Ulf Johannsen and A B Smolders (Eindhoven University of Technology, The Netherlands) |
| **11:50** | **CS34.8**<br>**Challenges of Millimeter-Wave Active Antenna Systems in 5G**<br>Ulf Gustavsson, Martin Johansson, Fredrik Athley and Ali Zaidi (Ericsson AB, Sweden) |
| **12:10** | **CS34.9**<br>**A High-Efficiency Broadband WR3 Bond Wire On-Chip Antenna**<br>Daniel Müller, Jochen Schäfer, Andreas Lipp and Thomas Zwick (Karlsruhe Institute of Technology, Germany); Arnulf Leuther (Fraunhofer Institute for Applied Solid State Physics, Germany); Ingmar Kallfass (University of Stuttgart, Germany) |
| **12:30** | **CS34.10**<br>**Reconfigurable Antennas for Ultra Low-Power Radio Platforms Based on System-on-Chip**<br>Simone Ciccia (Politecnico di Torino and Istituto Superiore Mario Boella, Italy); Giorgio Giordanengo (Istituto Superiore Mario Boella, Italy); Giuseppe Vecchi (Politecnico di Torino, Italy) |
| **CS17: Propagation Channels for Wide-Sense Vehicle-to-X Communications**<br>Connected Objects \| Convened Session \| Propagation<br>Room: Room 13<br>Chairs: Dr Ke Guan (Beijing Jiaotong University, P.R. China) and Professor Uwe-Carsten Fiebig (German Aerospace Center (DLR), Germany) | |
| **11:10** | **CS17.6**<br>**Vehicle-to-Vehicle Channel Characteristics in Municipal Lake Scenarios at 5.9 GHz**<br>Kun Yang (Super Radio AS, Norway); Fuxing Chang, Wei Chen, Changzhen Li and Junyi Yu (Wuhan University of Technology, P.R. China) |

| | |
|---|---|
| **11:30** | **CS17.7**<br>**Detection and Localization of Non-Cooperative Road Users Based on Propagation Measurements at C-Band**<br>Martin Schmidhammer, Fabian de Ponte Müller, Stephan Sand and Ibrahim Rashdan (German Aerospace Center (DLR), Germany) |
| **11:50** | **CS17.8**<br>**Ray-Tracing Simulations and Millimeter Wave Massive MIMO Performance Evaluation for Rail Traffic Scenarios**<br>Yichuan Lin, Ke Guan, Danping He and Zhangdui Zhong (Beijing Jiaotong University, P.R. China); Li Tian and Jianwu Dou (ZTE Corporation, P.R.China) |
| **12:10** | **CS17.9**<br>**Channel Modeling for Low-Altitude UAV in Suburban Environments Based on Ray Tracer**<br>Xi Chu and Xuefeng Yin (Tongji University, P.R.China); Cesar Briso (Technical University of Madrid, Spain); Danping He (Beijing Jiaotong University, P.R. China); Xuefeng Yin (Beijing Jiaotong University, P.R. China); Jianwu Dou (ZTE Corporation, P.R. China) |
| **12:30** | **CS17.10**<br>**Wideband Vehicle to Pedestrian Propagation Channel Characterization and Modeling**<br>Gloria Makhoul (CEA-LETI and Universite Grenoble-Alpes, France and Université Catholique de Louvain, Belgium); Raffaele D'Errico (CEA-LETI and Universite Grenoble-Alpes, France); Claude Oestges (Université Catholique de Louvain, Belgium) |
| **T09-6: Satellite Reflector Systems**<br>Space Applications \| Regular Session \| Antennas<br>Room: Room 6<br>Chairs: Dr Tao Huang (Oxford Space Systems, United Kingdom) and Peter de Maagt (ESA, The Netherlands) | |
| **11:10** | **T09-6.1**<br>**Planar Metasurface for Reconfigurable Reflector Antennas**<br>Badreddine Ratni and Shah Nawaz Burokur (Univ Paris Nanterre, France); André de Lustrac (Université Paris-Sud, France); Gérard-Pascal Piau (Airbus, France) |
| **11:30** | **T09-6.2**<br>**Large Deployable Antennas Benchmark for Contoured Beam Mission in C Band**<br>Jakob Rosenkrantz de Lasson, Min Zhou and Cecilia Cappellin (TICRA, Denmark) |
| **11:50** | **T09-6.3**<br>**Uncertainty Quantification for Reflector Antennas**<br>Oscar Borries, Erik Jørgensen, Peter Meincke, Niels Vesterdal, Michael Palvig and Tonny Rubæk (TICRA, Denmark) |
| **12:10** | **T09-6.4**<br>**Compact Dielectric Filled Septum Polarizer Feeder for a Dual Pol MTS Antenna**<br>Amagoia Tellechea, Juan Carlos Iriarte, Jorge Teniente, Iñigo Ederra and Ramon Gonzalo (Public University of Navarra, Spain) |

| | |
|---|---|
| **12:30** | **T09-6.5**<br>**High-Gain Reflector Feed for Multibeam Coverage**<br>Ronis T. Maximidis and A. B. Smolders (Eindhoven University of Technology, The Netherlands); Diego Caratelli (The Antenna Company, The Netherlands); Giovanni Toso (European Space Agency, The Netherlands) |
| **T09-4: Space Aperture Antennas**<br>Space Applications \| Regular Session \| Antennas<br>Room: Room 4<br>Chairs: Dr Cecilia Cappellin (TICRA, Demark) | |
| **11:10** | **T09-4.1**<br>**Circularly Polarized Fabry-Perot Antenna Fed by an Arbitrarily-Rotated Source**<br>Antoine Calleau, Ronan Sauleau and Mauro Ettorre (Universite de Rennes 1, France); María García-Vigueras (IETR-INSA Rennes, France); Hervé Legay (Thalès Alenia Space, France) |
| **11:30** | **T09-4.2**<br>**Compact Frequency Reconfigurable Magneto-Electric Crossed Dipole in VHF Band**<br>Abdul sattar Kaddour, Serge Bories and Christophe Delaveaud (CEA, France); Anthony Bellion (CNES, France) |
| **11:50** | **T09-4.3**<br>**Additive Manufacturing of Ku Band Horn Antennas for Telecommunications Space Applications**<br>Yann Cailloce, Philippe Hourlay and Florent Lebrun (Thalès Alenia Space, France); Baptiste Palacin (CNES, France) |
| **12:10** | **T09-4.4**<br>**3D-Metal-Printed 60 GHz Offset Dual-Reflector Antenna with Integrated Conical Feed Horn and Circular-to-Rectangular Waveguide Transition**<br>Ruben Tena Sanchez, Olav Breinbjerg and Oleksiy S. Kim (Technical University of Denmark, Denmark) |
| **12:30** | **T09-4.5**<br>**Large Aperture Metal-Mesh Lenses for THz Astronomy**<br>Paul Moseley and Peter Ade (Cardiff University, United Kingdom); Giorgio Savini (University College London, United Kingdom) |
| **CS20: Inverse Problems: Theory, Techniques, and Applications**<br>Software Tools & Instruments \| Convened Session \| Propagation<br>Room: Room 3<br>Chairs: Professor Paolo Rocca (DISI - ELEDIA Research Center, Italy) and Ioan E. Lager (Delft University of Technology, The Netherlands) | |
| **11:10** | **CS20.6**<br>**Model Based Inversion Strategy Dedicated to Non-destructive Testing Applications**<br>Christophe Reboud, Roberto Miorelli, Florian Le Bourdais, Xavier Artusi and Pierre Calmon (CEA LIST, France) |

| | |
|---|---|
| **11:30** | **CS20.7**<br>**Exploiting the Orthogonality Sampling Method to Design Virtual Scattering Experiments**<br>Martina Teresa Bevacqua, Roberta Palmeri and Tommaso Isernia (University of Reggio Calabria, Italy); Lorenzo Crocco (CNR - National Research Council of Italy, Italy) |
| **11:50** | **CS20.8**<br>**High Capacity and Efficiency Optimization of Compressive Antennas for Imaging Applications**<br>Jose Martinez-Lorenzo and Richard Obermeier (Northeastern University, USA) |
| **12:10** | **CS20.9**<br>**Comparison of Bowtie Slot and Rectangular Waveguide-Based Antennas for Microwave Medical Imaging**<br>Ilja Merunka (Czech Technical University in Prague, Czech Republic); Jan Vrba, Ondrej Fiser, Jr. and David Vrba (ELEDIA Czech Technical University, Prague and Faculty of Biomedical Engineering, Czech Republic) |
| **12:30** | **CS20.10**<br>**Experimental Validation of a Novel Multistatic Toroidal Reflector Nearfield Imaging System for Concealed Threat Detection**<br>Mohammad Hossein Nemati, Carey Rappaport, Spiros Mantzavinos, Dan. Busuioc, Nicholas Pelepchan, Thurston Brevett and Jacob Londa (Northeastern University, USA) |
| **CS08: Advances in Antenna Design and Analysis Using Characteristic Modes**<br>Future Applications \| Regular Session \| Antennas<br>Room: Room 2<br>Chairs: Dr Kurt Schab (North Carolina State University, USA) and Dr Eva Antonino Daviu (Universitat Politècnica de València, Spain) | |
| **11:10** | **CS08.6**<br>**Impact of Capacitive Coupling Element Design on Antenna Bandwidth**<br>Hanieh Aliakbari and Buon Kiong Lau (Lund University, Sweden) |
| **11:30** | **CS08.7**<br>**Modal Efficiency of Dipole Arrays Above Ground**<br>Pavel Hazdra, Tomas Lonsky and Jan Kracek (Czech Technical University in Prague, Czech Republic) |
| **11:50** | **CS08.8**<br>**Stored Energy Evaluation of Metamaterials Based on Theory of Characteristic Mode**<br>Chukwuka Ozuem, Divitha Seetharamdoo, M. Hassanein Rabah and Hedi Sakli (IFSTTAR & University Lille 1, France) |
| **12:10** | **CS08.9**<br>**Sorting the Characteristic Modes of PEC Objects not Electrically Small**<br>Hamad Alroughani (Penn State University, USA); Derek McNamara (University of Ottawa, Canada) |

| | |
|---|---|
| **12:30** | **CS08.10**<br>**Antenna System Design for Multicopter UAVs Utilizing Characteristic Modes**<br>Zhichao Li, Safieddin Safavi-Naeini and William Melek (University of Waterloo, Canada); George Shaker (University of Waterloo and Spark Tech Labs, Canada); Raj Mittra (University of Central Florida, USA) |
| **CS13: Academic and Industrial Advances in Microwave Medical Technologies within European COST Action TD1301 – MiMed**<br>Biomedical \| Convened Session \| Antennas<br>Room: Room1<br>Chairs: Dr Lorenzo Crocco (CNR-IREA, National Research Council of Italy, Italy) and Dr Maria Koutsoupidou (King's College London, United Kingdom) | |
| **11:10** | **CS13.6**<br>**Recent Advancements in Time-Domain Breast Health Screening: Observations on the Phantom Stability and Wearable Hardware**<br>Lena Kranold, Mariana Perez Santa Maria, Mark Coates and Milica Popović (McGill University, Canada) |
| **11:30** | **CS13.7**<br>**Advanced Physical Phantoms for Evaluation of Medical Antennas and Devices**<br>Koichi Ito (Chiba University, Japan) |
| **11:50** | **CS13.8**<br>**Preliminary Investigations for Reliable Temperature Dependent UWB Dielectric Spectroscopy of Tissues and Tissue Mimicking Phantom Materials**<br>Sebastian Ley, Marko Helbig and Jürgen Sachs (Technische Universität Ilmenau, Germany); Ondrej Fiser, Jr. and Ilja Merunka and Jan Vrba (Czech Technical University, Czech Republic) |
| **12:10** | **CS13.9**<br>**Phantom Study of a Flat-Faceted Air-Based Microwave Breast Imaging System**<br>Joe LoVetri, Mohammad Asefi, Ian Jeffrey, Kevin Brown, Nicholas Geddert and Nasim Abdollahi (University of Manitoba, Canada) |
| **12:30** | **CS13.10**<br>**FDTD Based Simulation Study of a Classification Based Haemorrhagic Stroke Detector**<br>Andreas Fhager, Stefan Candefjord and Mikael Persson (Chalmers University of Technology, Sweden) |

## Wednesday 11 April 2018 15:00 – 16:00

### Invited Speakers Session

Room: Room 7

Chairs: Professor Koichi Ito (Chiba University, Japan) and Professor John Batchelor (University of Kent, United Kingdom)

| | |
|---|---|
| **15:00** | **Metrology for 5G and Emerging Wireless Technologies**<br>Professor Tian Hong Loh, NPL, United Kingdom |
| **15:30** | **Medical Thermal Therapy and Monitoring Using Advanced Inverse Scattering Techniques**<br>Professor Mahta Moghaddam, University of Southern California, USA |
| **Invited Speakers Session**<br>Room: Room 12<br>Chairs: Professor J (Yiannis) C Vardaxoglou (Loughborough University, United Kingdom) and Eva Rajo Iglesias (University Carlos III of Madrid, Spain) | |
| **15:00** | **Mm-Wave Antenna-System Designs Dedicated to High-Data Rate Communications**<br>Professor Cyril Luxey, University of Nice, France |
| **15:30** | **Advanced Communications Technologies in Support of NASA Mission**<br>Dr Felix Miranda, NASA, USA |

## Wednesday 11 April 2018 16:30 – 18:10

| | |
|---|---|
| **T01-6: Radio Propagation Channel - 2**<br>Cellular Networks & 5G \| Regular Session \| Propagation<br>Room: Room 7<br>Chairs: Professor Zhipeng Wu (Manchester University, United Kingdom) and Professor Xiaoming Chen (Xi'an Jiaotong University, P.R. China) | |
| **16:30** | **T01-6.1**<br>**A Set of Propagation Models for Site-Specific Predictions**<br>Henrik Asplund, Martin Johansson, Magnus Lundevall and Niklas Jalden (Ericsson Research, Ericsson AB, Sweden) |
| **16:50** | **T01-6.2**<br>**Polarimetric Wideband Directional Channel Measurement and Analysis for Outdoor Small Cell Scenarios at 32 GHz and 39 GHz**<br>Mohsen Khalily, Mir Ghoraishi and Sohail Taheri, Sohail Payami, Rahim Tafazolli (University of Surrey, United Kingdom) |
| **17:10** | **T01-6.3**<br>**Path Loss Model Modification for Various Gains and Directions of Antennas**<br>Jan M. Kelner and Cezary Ziółkowski (Military University of Technology, Poland) |
| **17:30** | **T01-6.4**<br>**Broadband Mm-Wave OFDM Communications in Doubly Selective Channel: Performance Evaluation Using Measured Mm-Wave Channel**<br>Xiaoming Chen, Shitao Zhu, Jianxing Li, Ying Zhang and Anxue Zhang (Xi'an Jiaotong University, P.R. China); Wei Fan and Gert Pedersen (Aalborg University, Denmark) |

| | |
|---|---|
| **17:50** | **T01-6.5**<br>**Propagation Measurements for Device-to-Device Communication in Forest Terrain**<br>Johannes Hejselbæk, Jesper Ø Nielsen, Wei Fan and Gert Pedersen (Aalborg University, Denmark); Christian Drewes (Intel Mobile Communications, Germany) |
| **T01-3: MIMO Antennas for 5G Communications**<br>Cellular Networks & 5G \| Regular Session \| Propagation<br>Room: Room 12<br>Chairs: Dr Hassan Tariq Chattha (Islamic University of Madinah, Saudi Arabia) and Professor Xiaowei Zhu (Southeast University, P.R. China) | |
| **16:30** | **T01-3.1**<br>**Compact Folded Fresnel Zone Plate Lens Antenna for 5G Point-to-Point Communications**<br>Mohammad Reza Dehghani Kodnoeih (Université de Nantes, France); Yoann Letestu and André Doll (RFS, France); Ronan Sauleau (University of Rennes 1, France); Eduardo Motta Cruz (Université de Nantes, France) |
| **16:50** | **T01-3.2**<br>**A Two-Port Dual-Polarized Ring Antenna for Massive MIMO**<br>Kushmanda Saurav and Yahia Antar (Royal Military College of Canada, Canada); Nazih Khaddaj Mallat (Al Ain University of Science and Technology, United Arab Emirates) |
| **17:10** | **T01-3.3**<br>**Compact Quadruple Band MIMO Antenna for 5G Mobile Applications**<br>Xueliang Shi, Ming Zhang, Huailin Wen and Jun Wang (Huawei Technologies Co. Ltd, P.R. China) |
| **17:30** | **T01-3.4**<br>**28 GHz Waveguide Antennas with Fan-Shaped Patterns for Base Stations MIMO Applications**<br>Andrey Mozharovskiy, Sergey Churkin, Alexey Artemenko and Roman Maslennikov (Radio Gigabit LLC and InfiNet Wireless, Russia) |
| **17:50** | **T01-3.5**<br>**Influence of On-Wafer Probes in Mm-Wave Antenna Measurements**<br>Qiang Liu, Ad Reniers, Ulf Johannsen, Martijn van Beurden and A. B. Smolders (Eindhoven University of Technology, The Netherlands) |
| **CS41: Additive Manufacturing; an Electromagnetic Perspective**<br>Future Applications \| Convened Session \| Measurement<br>Room: Room 17<br>Chairs: Professor Hao Xin (University of Arizona, USA) and Patrick Bradley (Dublin City University, Ireland) | |
| **16:30** | **CS41.1**<br>**3D Printed Index Modulated Dielectric Medium in Partially Reflecting Surface for Beam Steering**<br>Badreddine Ratni and Shah Nawaz Burokur (Univ Paris Nanterre, France); André de Lustrac (Univ Paris Nanterre and Université Paris-Sud, France); Gérard-Pascal Piau (Airbus, France); Ourdia Kessi Sayad (Université Paris-Sud, France) |

| | |
|---|---|
| **16:50** | **CS41.2 (CANCELLED)**<br>**Microwave Metamaterials and Devices Made by Fused Deposition 3D Printing of a Highly Conductive Copper-Based Filament**<br>Steven Cummer and Yangbo Xie (Duke University, USA); Shengrong Ye and Allen Gray (Multi3D, LLC, USA); John Barrett (Lockheed Martin, USA); Benjamin Wiley (Duke University, USA) |
| **17:10** | **CS41.3**<br>**3D-printed Optical Devices with Refractive Index Control for Microwave Applications**<br>Dmitry Isakov, Yingwei Wu, Ben Allen, Christopher Stevens and Patrick Grant (University of Oxford, United Kingdom) |
| **17:30** | **CS41.4**<br>**Enabling Extrusion Based Additive Manufacturing for RF Applications: Challenges and Opportunities**<br>Shiyu Zhang, Darren Cadman, William Whittow and J (Yiannis) Vardaxoglou (Loughborough University, United Kingdom) |
| **17:50** | **CS41.5**<br>**A W-Band Slotted Waveguide Array Antenna Based on 3D Printing Technology**<br>Adnan Kantemur, Yashika Sharma, Jinpil Tak and Hao Xin (University of Arizona, USA) |

## CS03: AMTA Session on Antenna Characterisation Challenges in Today's Automotive Industry

Radar Systems | Convened Session | Measurement
Room: Room 16
Chairs: Professor Dirk Heberling (RWTH Aachen University, Germany) and Janet O'Neil (ETS-Lindgren, USA)

| | |
|---|---|
| **16:30** | **CS03.1**<br>**Simulation of V2V Blind Corner Communication Using Measured Vehicular Antenna Pattern**<br>Thomas Kopacz and Dirk Heberling (RWTH Aachen University, Germany) |
| **16:50** | **CS03.2**<br>**Theory and Validation of Reduced Complexity Translated-SWE Algorithm with Applications to Automotive Measurements with Minimum Sampling**<br>Francesco Saccardi, Francesca Mioc and Lars Foged (Microwave Vision Italy, Italy); Per Iversen (Orbit/FR, USA) |
| **17:10** | **CS03.3**<br>**Precision Phase Measurements of Automotive Antennas for Localization in Anechoic Chambers**<br>Frank Wollenschläger, Syed Naser Hasnain, Matthias Hein and Christian Bornkessel (Technische Universität Ilmenau, Germany) |
| **17:30** | **CS03.4**<br>**Chambers for the Evaluation of Vehicle Mounted Antennas**<br>Garth D'Abreu, Zhong Chen and Zubiao Xiong (ETS-Lindgren, Inc., USA) |

| | |
|---|---|
| **17:50** | **CS03.5**<br>**Vehicle-level Antenna Performance Analysis & Test in Intelligent Connected Vehicles**<br>Jianmei Lei, Qingwen Han and Min Chen (State Key Laboratory of Vehicle NVH and Safety Technology and Chongqing Engineering Research Center for Automotive EMC Development, P.R. China); Yang Xu (Chong Qing University, P.R. China); Xiaojiao Li, Rui Chen and Tao Chen (Chongqing Xibu Automobile Proving Ground Management Co. Ltd, P.R. China); Zhida Lai and Yangchun Gao (China Automotive Engineering Research Institute, P.R. China) |
| **T02-3: Antenna and Propagation for High Data Rate Communications**<br>Ultra-High Data Rate Communications \| Regular Session \| Antennas and Propagation<br>Room: Room 14<br>Chairs: Professor Antti V. Räisänen (Aalto University, Finland) and Dr Ioan E. Lager (Delft University of Technology, The Netherlands) | |
| **16:30** | **T02-3.1**<br>**Roll-to-Roll Reverse Offset Printing of Millimeter-wave Transmission Lines and Antennas on Flexible Substrates**<br>Jianfang Zheng, Juha Ala-Laurinaho and Antti V. Räisänen (Aalto University, Finland); Asko Sneck, Tapio Makela and Ari Alastalo (VTT Technical Research Centre of Finland, Finland) |
| **16:50** | **T02-3.2**<br>**A Flat Dual-Polarized Continuous Transverse Stub Antenna Array Based on Substrate Integrated Waveguide**<br>Tian Lou, Xuexia Yang, Lin Li and Elobied Abubaker (Shanghai University, P.R. China) |
| **17:10** | **T02-3.3**<br>**Broadband Circularly-Polarized Slotted Waveguide Array Antenna with Low Axial Ratio**<br>Hong-Tao Zhang, Wei Wang, Mou-Ping Jin and Yong-Qing Zou (No. 38 Research Institute of CETC, P.R. China) |
| **17:30** | **T02-3.4**<br>**Simplified Molecular Absorption Loss Model for 275 - 400 Gigahertz Frequency Band**<br>Joonas Kokkoniemi, Janne Lehtomäki and Markku Juntti (University of Oulu, Finland) |
| **17:50** | **T02-3.5**<br>**Modified Kirchhoff Diffraction of Pulsed EM Waves Radiated from a Slot-Excited Fabry-Pérot Resonator Antenna**<br>Martin Štumpf (Brno University of Technology, Czech Republic); Guy Vandenbosch (Katholieke Universiteit Leuven (KU Leuven), Belgium); Ioan E. Lager (Delft University of Technology, The Netherlands) |
| **T04-3 Wireless Connectivity and IoT**<br>Connected Objects \| Regular Session \| Antennas<br>Room: Room 13<br>Chairs: Professor Vincent Fusco (Queen's University Belfast, United Kingdom) and Professor Jan Steckel (University of Antwerp and Flanders Make Strategic Research Centre, Belguim) | |
| **16:30** | **T04-3.1**<br>**Distributed OFDM Transmitter Scheme for Internet of Things**<br>Yuan Ding (Heriot-Watt University, United Kingdom); Vincent Fusco (Queen's University Belfast, United Kingdom); Junqing Zhang (University of Liverpool, United Kingdom) |

| | |
|---|---|
| **16:50** | **T04-3.2**<br>**Statistical Study of Coupling in Randomly Distributed Dipole Sets**<br>Imad Adjali, Ayichatou Gueye, Benoit Poussot, Laheurte Jean Marc, Shermila Mostarshedi and Florence Nadal (Université Paris-Est, France) |
| **17:10** | **T04-3.3**<br>**Semi-Platform Tolerant 20-Bit Chipless RFID Tag Composed of Dipole Array Closely Coupled to Plate**<br>Milan Polivka, Milan Svanda, Jaroslav Havlíček and Jan Macháč (Czech Technical University in Prague, Czech Republic) |
| **17:30** | **T04-3.4**<br>**Feasibility of an RFID-based Transcutaneous Wireless Communication for the Control of Upper-limb Myoelectric Prosthesis**<br>Gaetano Marrocco, Carolina Miozzi, Giovanni Saggio and Silvia Guido (University of Rome Tor Vergata, Italy); Emanuele Gruppioni (INAIL Centro Protesi, Italy) |
| **17:50** | **T04-3.5**<br>**Synchronization of Multiple Independent Sub-Array Antennas for IoT Applications**<br>Noori BniLam and Maarten Weyn (Universtiy of Antwerp, Belgium); Jan Steckel (University of Antwerp and Flanders Make Strategic Research Centre, Belguim) |
| **CS40: Electromagnetic Methods for Direct and Inverse Scattering Involving Stratified Media**<br>Defence & Security \| Convened Session \| Propagation<br>Room: Room 6<br>Chairs: Professor Matteo Pastorino (University of Genoa, Italy) and Professor Giuseppe Schettini (Roma Tre University, Italy) | |
| **16:30** | **CS40.1**<br>**A Numerical Analysis of the Two-Dimensional Green's Function for Elliptically Stratified Media**<br>Alessandro Fedeli, Matteo Pastorino, Mirco Raffetto and Andrea Randazzo (University of Genoa, Italy) |
| **16:50** | **CS40.2**<br>**Realization of True Logic Gates Using Coupled Photonic Crystal Waveguides Based on Bandgap Transmission Phenomenon**<br>Vakhtang Jandieri and Daniel Erni (University of Duisburg-Essen, Germany); Ramaz Khomeriki (Tbilisi State University, Georgia) |
| **17:10** | **CS40.3**<br>**Through-the-Wall Short-Range Sensing by Bessel Beams Sources**<br>Sandra Costanzo, Giuseppe Di Massa, Antonio Raffo and Antonio Borgia (University of Calabria, Italy) |
| **17:30** | **CS40.4**<br>**Scattering and Transmission of Pulsed Electromagnetic Waves with the CWA**<br>Cristina Ponti, Massimo Santarsiero and Giuseppe Schettini (Roma Tre University, Italy) |

| | |
|---|---|
| **17:50** | **CS40.5**<br>**A Kirchhoff Scattering Model for Millimetre Wavelength Wireless Links**<br>Lawrence Sayer, Alberto Loaiza Freire, Andrew Nix and Evangelos Mellios (University of Bristol, United Kingdom) |
| **CS16: Multibeam Antennas for Space Applications**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 4<br>Chairs: Eric Amyotte (MDA Corporation, Canada) and Peter Webster (Airbus, United Kingdom) | |
| **16:30** | **CS16.1**<br>**Statistical Assessments of High Throughput Satellite Performance**<br>Markus Gross, Javier Trujillo and Carlos Vieira (SES, Luxembourg) |
| **16:50** | **CS16.2**<br>**Multibeam Reflector Antennas for Space Applications: Current Trends and Future Perspectives in Europe**<br>Jean-Christophe Angevain, Nelson Fonseca, Dennis T. Schobert, Giovanni Toso, Peter de Maagt and Cyril Mangenot (European Space Agency, The Netherlands) |
| **17:10** | **CS16.3**<br>**Feed Development for Multispot Beam Antennas**<br>Christian Hartwanger, Ralf Gehring, Un Pyo Hong, Michael Kilian, Michael Schneider and Alexander Sommer (Airbus Defence and Space, Germany) |
| **17:30** | **CS16.4**<br>**The QUANTUM ELSA+ Active Multibeam Receive Antenna**<br>Rafael Caballero, Eduardo Gonzalez, M Bustamante, S Arenas, D Pena, F Pacheco, J Rodriguez and P Rubiales (Airbus DS, Spain); A Martin, A Gualo, A Le Pera, I Roberts, G Tomlinson, S Amos and H French (PTCAN, Spain); J P Roux and A Martin-Polegre (ESA-ESTEC, The Netherlands); E Granell (Airbus, United Kingdom) |
| **17:50** | **CS16.5**<br>**Flexibility in Multi-Beam Satellite Antennas Requirements, Challenges and Solutions**<br>Hector T. Fenech and Sonya Amos (Eutelsat, France) |
| **T10-4: Numerical Techniques**<br>Software Tools & Instruments \| Regular Session \| Antennas<br>Room: Room 3<br>Chairs: Yong Wang (Remcom Inc., USA) and Francisco Mesa (University of Sevilla, Spain) | |
| **16:30** | **T10-4.1**<br>**Circuit-Model Approach for Polarizing Surfaces Based on Stacked Meander-Line Gratings**<br>Carlos Molero Jiménez and María García-Vigueras (IETR-INSA Rennes, France); Raúl Rodríguez-Berral and Francisco Mesa (University of Seville, Spain) |

| | |
|---|---|
| **16:50** | **T10-4.2**<br>**Combined EM Solver and Equivalent Circuit Approach to Deal with Slot-like Stacked FSSs**<br>Francisco Mesa, Alejandro Javier Martinez-Ros, Raúl Rodríguez-Berral and Francisco Medina (University of Sevilla, Spain) |
| **17:10** | **T10-4.3**<br>**An Eigenmode Method with Improved Accuracy for Guided Waves**<br>Yong Wang and Scott Langdon (Remcom Inc., USA) |
| **17:30** | **T10-4.4**<br>**Modal Tracking Based on Group Theory**<br>Michal Masek, Miloslav Capek and Lukas Jelinek (Czech Technical University in Prague, Czech Republic) |
| **17:50** | **T10-4.5**<br>**Error Control in MLFMA with Multiple-Precision Arithmetic**<br>Mert Kalfa and Vakur Erturk (Bilkent University, Turkey); Ozgur Ergul (Middle East Technical University, Turkey) |
| **T11-6: Special Material Antennas and Devices**<br>Future Applications \| Regular Session \| Antennas<br>Room: Room 2<br>Chairs: Xu-Cheng Wang (Aalto University, Finland) and Francesco Verni (Politecnico di Torino, Italy) | |
| **16:30** | **T11-6.1**<br>**Bulk Ferroelectric Materials for Reconfigurable Antenna Applications**<br>Henry Giddens, Hangfeng Zhang, Chuying Yu and Yang Hao (Queen Mary University of London, United Kingdom) |
| **16:50** | **T11-6.2**<br>**A Gain and Bandwidth Enhancement for SIW Cavity Array Antenna**<br>Jun Xiao, Zihang Qi, Xiuping Li and Hua Zhu (Beijing University of Post Telecommunications, P.R. China) |
| **17:10** | **T11-6.3**<br>**Liquid-crystal Reconfigurable Lens-Enhanced Millimeter-Wave Phased Array**<br>Senglee Foo (Huawei Technologies Canada, Canada) |
| **17:30** | **T11-6.4**<br>**Polarization Control of Bulk Acoustic Wave-Mediated Multiferroic Antennas Based on Thickness Shear Modes**<br>Rui-Fu Xu and Shih-Yuan Chen (National Taiwan University, Taiwan); Sidhant Tiwari and Robert Candler (University of California, USA) |

| | |
|---|---|
| **17:50** | **T11-6.5**<br>**All-metallic Epsilon-near-zero Graded-index Converging Lens at Terahertz Frequencies**<br>Victor Pacheco-Peña (Universidad Publica de Navarra, Spain and University of Pennsylvania, USA); Nader Engheta (University of Pennsylvania, USA); Sergei Kuznetsov (Novosibirsk State University and Institute of Semiconductor Physics, Russia); Alexandr Gentselev (Budker Institute of Nuclear Physics, Russia); Miguel Beruete (Universidad Publica de Navarra, Spain) |
| **T05-3 Imaging and Propagation for Biomedical Applications**<br>Biomedical \| Regular Session \| Propagation<br>Room: Room1<br>Chairs: Dr Shouhei Kidera (University of Electro-Communications, Japan) and Professor Robin Augustine (Uppsala University, Sweden) | |
| **16:30** | **T05-3.1**<br>**Boundary Extraction Enhanced Inverse Scattering Method for Microwave Mammography**<br>Kazuki Noritake and Shouhei Kidera (University of Electro-Communications, Japan) |
| **16:50** | **T05-3.2**<br>**A Liquid with Tuneable Dielectric Properties for Wideband Microwave Sensing of Biological Targets**<br>Dallan Byrne, Ian Craddock and David Gibbins (University of Bristol, United Kingdom); Tommy Henriksson (EMTensor, United Kingdom) |
| **17:10** | **T05-3.3**<br>**Enhancing the Sensitivity of Harmonic Motion Microwave Doppler Imaging Using Main Signal Cancellation Circuit**<br>Ümit İrgin (Middle East Technical University and ASELSAN, Turkey); Can Baris Top (ASELSAN, Turkey); Damla Alptekin and Nevzat Gençer (Middle East Technical University, Turkey) |
| **17:30** | **T05-3.4**<br>**Exploitation of Frequency Diversity in GPR Imaging Through an Innovative Constrained-BCS Method**<br>Marco Salucci and Angelo Gelmini (University of Trento, Italy); Giacomo Oliveri (University of Trento and ELEDIA Research Center, Italy); Andrea Massa (University of Trento and ELEDIA Research Center, Italy and Universidad Carol III de Madrid, Spain) |
| **17:50** | **T05-3.5**<br>**Multi-Functional Phantom Model to Validate Microwave Sensors for Health Monitoring Applications**<br>Jacob Velander, Syaiful Redzwan Mohd Shah, Mauricio D Perez, Noor Badariah Asan and Robin Augustine (Uppsala University, Sweden); Taco Blokhuis (University Medical Center Maastricht, The Netherlands) |

**Wednesday 11 April 2018 13:30 – 15:00, P2 Posters**
**Room: Capital Hall**
**A: Antennas**
**M: Measurements**
**O: Other subjects**
**P: Propagation**
**S: Simulations**

**P2.2 (A-T01)**
**A Low-Profile 2D Tilted-Beam Resonant Cavity Antenna**
Shufeng Zheng, Yapeng Li, Luyu Zhao, Wei Hu and Yuanming Cai (Xidian University, P.R. China); Steven Gao, Qi Luo and Chao Gu (University of Kent, United Kingdom )

**P2.3 (A-T01)**
**Optimization of the VSWR of Reconfigurable Antennas with a Coupled Multielement Concept**
H Alzein, J Milbrandt, C Menudier, M Thevenot and T Monediere (Univeristy of Limoges, France)

**P2.4 (A-T01)**
**A Bespoke Lens for a Slot Log-Spiral Excitation**
Mahsa Ebrahimpouri and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden)

**P2.5 (A-T01)**
**A Compact Substrate Integrated Waveguide Cavity Backed Antenna with Stable Radiation Patterns for Dual-Band Applications**
Mohammad Mahdi Honari, Hossein Saghlatoon and Pedram Mousavi (University of Alberta, Canada), Rashid Mirzavand, (University of Alberta, Canada and Amirkabir University of Technology, Iran)

**P2.6 (A-T01)**
**Design of a Phased-Array Antenna for 5G Base Station Applications in the 3.4-3.8 GHz Band**
Robbert Schulpen, Ulf Johannsen and Bart Smolders (Eindhoven University of Technology, The Netherlands); Sergio Pires (Ampleon Netherlands BV, The Netherlands)

**P2.7 (A-T01)**
**Compact Printed Log-Periodic Dipole Arrays Fed by SIW Horn**
Qiao Chen (KTH Royal Institute of Technology, Sweden and Southeast University, P.R. China); Xiaoxing Yin (Southeast University, P.R. China); Lei Wang (KTH Royal Institute of Technology, Sweden and Hamburg University of Technology, Germany)

**P2.8 (A-T01)**
**High Isolation Spiral Antenna Configurations for Full-Duplex Communications**
Prafulla Deo and Dariush Mirshekar-Syahkal (University of Essex, United Kingdom); Gan Zheng (Loughborough University, United Kingdom)

**P2.9 (A-T01)**

**A Low-Complexity Array of Directly Phase Modulating Antennas**

Stephen Henthorn, Kenneth Lee Ford and Timothy O'Farrell (University of Sheffield, United Kingdom)

**P2.10 (A-T01)**

**Optimal Synthesis of Wideband Planar Phased Arrays with Maximum Bandwidth**

Le Trong Phuoc Bui, Mohammad Adbul Hannan, Nicola Anselmi, Lorenzo Poli and Paolo Rocca (University of Trento, Italy)

**P2.11 (A-T01)**

**A Wideband Beam-Tilted Dual-Polarized Slot Antenna Array for the Millimeter-Wave Communications**

Zhijiao Chen, Mengjing He, Limei Qi, Yuan Yao and Junsheng Yu (Beijing University of Posts and Telecommunications, P.R.China); Xiaodong Chen (Queen Mary University of London, United Kingdom)

**P2.12 (A-T01)**

**Broadband Antenna Design for New Mobile Communication Systems**

Sergio Martin-Anton and Daniel Segovia-Vargas (Universidad Carlos III de Madrid, Spain)

**P2.13 (A-T01)**

**A Wide Beam Dipole Antenna in the E- and H-Plane with a Novel Structure**

Guangwei Yang, Jian-ying Li, YangXiao Qi, Jiangjun Yang and Rui X (Northwestern Polytechnical University, P.R.China)

**P2.14 (A-T01)**

**Layered Patch Antenna Structure for Gain Enhancement of 4 × 4 System**

Yun Sik Kim and Dong-Ho Cho (Korea Advanced Institute of Science and Technology, Korea)

**P2.15 (A-T01)**

**A High-Gain Low Coupling 8-Port MIMO Antenna Array Working at 28 GHz with Compact Size**

Dazhi Piao, Junping Song, Hailong Yu and Yajin Wang (Communication University of China, P.R.China)

**P2.17 (A-T01)**

**Integration of a Non-Resonant Antenna in a Smartphone for Multiband Operation**

Aurora Andújar (Fractus Antennas, Spain); Jaume Anguera (Fractus Antennas and Universitat Ramon Llull, Spain)

**P2.18 (A-T01)**

**A Wideband High-Gain and High-Efficiency Slot Array Antenna Based on Groove Gap Waveguide**

Ali Farahbakhsh (Kerman Graduate University of Advanced Technology, Iran); Davood Zarifi (University of Kashan, Iran); Ashraf Uz Zaman (Chalmers University of Technology, Sweden)

**P2.18.a (A-T01)**

**A Two-Stage Optimization Technique for Multiband Antenna Design**

Yen-Sheng Chen (National Taipei University of Technology, Taiwan)

**P2.19 (A-T02)**

**A 60-GHz CMOS Quasi-Yagi Antenna with Enhanced Radiation Properties**

Kamel Sultan, Haythem Abdullah and Esmat Abdallah (Electronics Research Institute, Egypt); Mohamed Basha (University of Waterloo, Egypt) Hadia El-Hennawy (Ain Shams University, Egypt)

**P2.20 (A-T02)**

**Far-Field Radiation Properties of Impedance-Loaded Loop Antennas from Rf to Optical Frequencies**

Jogender Nagar and Douglas H Werner (The Pennsylvania State University, USA); Arnold McKinley (University College London, United Kingdom)

**P2.22 (A-T02)**

**Automatic Design of a Rhcp Linear Slot Array in Substrate Integrated Waveguide**

Santi Concetto Pavone and Matteo Albani (University of Siena, Italy); Massimiliano Casaletti (Sorbonne Universités UPMC, France)

**P2.23 (A-T02)**

**Circularly Polarized Brick-Wall Nantenna Array for Optical Communications**

Mai Sallam (The American University in Cairo, Egypt, KU Leuven, Belgium and Ahram Canadian University, Egypt); Guy Vandenbosch and Georges Gielen (KU Leuven, Belgium); Ezzeldin Soliman (The American University in Cairo, Egypt)

**P2.24 (A-T03)**

**An Integrated Dual-Band Wireless LAN Antenna for Full Metal Chassis Tablet with a Sound-Flow Enhancement Slot**

Kai-Cheng Chi (National Taiwan University and Taiwan & Hewlett Packard Incorporation, Taiwan); Shih-Yuan Chen and Powen Hsu (National Taiwan University, Taiwan)

**P2.27 (A-T03)**

**Frequency Tunable Miniaturized Quarter-Mode SIW Antenna Based on CRLH-TL**

Shi Chunyue, Yonggang Zhou and Ming Yu (Nanjing University of Aeronautics and Astronautics, P.R.China); Steven Gao (University of Kent, United Kingdom); Geyi Wen (Nanjing University of Information Science and Technology, P.R.China)

**P2.28 (A-T03)**

**A Printed 4×4 MIMO Antenna With High Isolation for WLAN Application**

Sonika Biswal and Sushrut Das (Indian Institute of Technology (ISM), India)

**P2.29 (A-T03)**

**Compact Dual-Band Bow-Tie MIMO Antennas with Fragment-Type Isolation Structure**

Diqun Lu, Lu Wang, Yijun Du and Xiaopo Wu (University of Science and Technology of China, P.R. China); Gang Wang (University of Science and Technology of China and Chinese Academy of Science, P.R. China)

**P2.30 (A-T05)**

**Permittivity Sensors in CMOS Technology**

Harshitha Thippur Shivamurthy, Andrea Neto and Marco Spirito (Delft University of Technology, The Netherlands)

**P2.31 (A-T05)**

**Ultra High Figure-of-Merit Mushroom Nanoantenna Array for Refractive Index Sensing**

Nada Belal, Mohamed Serry and Ezzeldin Soliman (The American University in Cairo, Egypt); Gaurav Jayaswal and Atif Shamim (King Abdullah University of Science and Technology, Saudi Arabia)

**P2.32 (A-T05)**

**New Analytical Model for the Characterisation of Printed Spiral Coils for Wireless Power Transfer**

Sadeque Khan, Sumanth Pavuluri and Marc Desmulliez (Heriot Watt University, United Kingdom)

**P2.33 (A-T05)**

**Compact Yagi Antenna Utilizing Mu-Negative Metamaterial Loading of Director Element**

Sasan Ahdi Rezaeieh and Amin Abbosh (The University of Queensland, Australia); Marco A. Antoniades (University of Cyprus, Cyprus)

**P2.34 (A-T05)**

**A Novel On-Chip Loop Antenna at 2.4 GHz for Short Distance Communication**

Archana S and Bhaskar Manickam (National Institute of Technology, India)

**P2.35 (A-T05)**

**A Flexible 2.45 GHz Rectenna Using Electrically Small Loop Antenna**

Khaled Aljaloud (University College London, United Kingdom); Kin-Fai Tong (King Saud University, Saudi Arabia)

**P2.36 (A-T05)**

**Equivalent Circuit Model for Patch Loaded Coaxial Sensors in CMOS Technology**

Harshitha Thippur Shivamurthy and Andrea Neto (Delft University of Technology, The Netherlands)

**P2.36.a (A-T05)**

**Flexible Dual-Band AMC-Backed PDMS Antenna with Fluidic Metal for WBAN and WLAN**

Muhammad Nazrin Ramli, Ping Jack Soh, Mohd Faizal Jamlos, Azremi Abdullah Al-Hadi, Mohn Firdaus Ibrahim and Herwansyah Lago (Universiti Malaysia Perlis, Malaysia); Sharul Kamal A. Rahim (Universiti Teknologi Malaysia, Malaysia); Niels Kuster (Swiss Federal Institute of Technology, Switzerland)

**P2.37 (A-T06)**

**I-Shaped Resonator (ISR) Phase Shifter for Beam Steering Waveguide Antennas**

Amirhossein Ghasemi and Jean-Jacques Laurin (Ecole Polytechnique de Montrea, Canada)

**P2.38 (A-T06)**

**A Wideband Reconfigurable Reflectarray Antenna Using Single-Layer Varactor-loaded Split Patch Elements**

Guang Liu, Hongjian Wang, Di Zhu and Xiaolong Dong (National Space Science Center, P.R. China); Fei Xue (National Space Science Center and University of Chinese Academy of Sciences, P.R. China)

**P2.39 (A-T06)**

**Compact Omnidirectional Circularly Polarized Antenna**

Chao-Yong Liu and Qing-Xin Chu (South China University of Technology, P.R. China)

**P2.40 (A-T06)**

**Design of UWB Antennas Integrating Geopolymer Material**

Houda Nadir, Michèle Lalande, E Martinod, N Feix, O Tantot, A Gharzouni and S Roddignol (University of Limoges, France); V Bertrand (CISTEME, France)

**P2.41 (A-T06)**

**Combining Linear Boro Arrays into Complex Planar Arrays to Achieve High Gain and Efficiency Printed Antenna Arrays**

Boro Miloje Reljic (IEEE Member, United Kingdom); Aleksa Zejak and Zoran Golubicic (RT-RK, Serbia); Slobodan Simic (MA, Serbia)

**P2.42 (A-T06)**

**Investigation of Mutual Coupling in Vivaldi Antenna Arrays Installed in Airborne Radomes**

Ana Vukovic, Phillip Sewell and Trevor Benson (University of Nottingham, United Kingdom)

**P2.43 (A-T06)**

**Ad-hoc Feed System for Enhanced Features Convex Conformal Reflectarray**

Michele Beccaria and Gianluca Dassano (Politecnico di Torino, Italy); Giuseppe Addamo, Oscar A. Peverini and Giuseppe Virone (Consiglio Nazionale delle Ricerche, Italy); Paola Pirinoli and Mario Orefice (Politecnico di Torino and Consiglio Nazionale delle Ricerche, Italy); Diego Manfredi (IIT, Italy); Flaviana Calignano (DIGEP, Italy)

**P2.44 (A-T06)**

**Agile Method for Antenna Polarization Characterization Based on Amplitude Measurements**

María Vera-Isasa, Veronica Santalla del Rio, Isabel Expósito and Brais Sánchez-Rama (University of Vigo, Spain)

**P2.45 (A-T06)**

**Deconvolution of Antennas with Long Ringdown Time for Improved Range Resolution**

Zhong Chen and Zubiao Xiong (ETS-Lindgren, Inc., USA)

**P2.47 (A-T08)**

**Electronically Reconfigurable Microstrip Array Antenna with Reflective Phase Shifters at Ku Band**

Eduardo Garcia-Marin, Pablo Sanchez-Olivares, Javier Herranz-Alpanseque, Alejandro Juan Martín Trueba, Jose Luis Masa-Campos and Juan Córcoles (Universidad Autónoma de Madrid, Spain)

**P2.49 (A-T08)**

**Dual-Circularly Polarized Patch Antenna Using Simple Isolation Techniques and Its Array Application**

Paul Le Bihan and María García-Vigueras (Institut d'Electronique et de Télécommunications de Rennes, France); Yelzhas Zhaksylyk (University College of Southeast Norway, Norway); Pascual Hilario Re, Symon K. Podilchak and George Goussetis (Heriot-Watt University, United Kingdom)

**P2.50 (A-T09)**

**Beam-Steering Ka-Band Phase Rotation Cells-Based Transmit-Array for Circular-Polarization**

Parinaz Naseri and Carlos A. Fernandes (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal); Sergio Matos and Jorge R. Costa (Instituto de Telecomunicações and ISCTE-IUL, Portugal)

**P2.51 (A-T09)**

**High Gain K-Band Patch Antenna for Low Earth Orbit Interlink Between Nanosatellites**

Paolo Squadrito, Shuai Zhang and Gert Pedersen (Aalborg University, Denmark)

**P2.52 (A-T09)**

**Conical Surface Mount Short Horn for Circular Polarized Patch Antennas**

Vignesh Shanmugam Bhaskar and Eng Leong Tan (Nanyang Technological University, Singapore)

**P2.53 (A-T09)**

**Origami Folding Technique Using Flexible Substrate with Arrays of Vivaldi Antennas**

Calvin Chun Hin Ng and Paul Robert Young (University of Kent, United Kingdom)

**P2.54 (A-T09)**

**Ku-Band RF Aperture Assembly for Airborne SOTM**

Ana Rosa Ruiz, Alberto Pellón, Ignacio Montesinos-Ortego and Manuel J Gonzalez (TTI, Spain)

**P2.55 (A-T09)**

**Design Methodology for Single Layer Dual-Band Leaky Wave Antennas**

Nausika Memeletzoglou and Eva Rajo Iglesias (University Carlos III of Madrid, Spain); Darwin Blanco Montero (TUDelft, Germany)

**P2.56 (A-T09)**

**Single-feed Dual-wideband Monopolar Stacked Patch Antenna for Satellite Communication Application**

Xiaojun Li, Shuo Liu and Shiwei Dong (China Academy of Space Technology, P.R. China)

**P2.57 (A-T09)**

**Design of a Microstrip Multi-Patch End-Fired Antenna for Collision Avoiding System of Aircraft**

Debajit De (National Institute of Technology, India); Prasanna Kumar Sahu (N.I.T. India)

**P2.58 (A-T09)**

**Simultaneous s/ka Feed System and 7.5M Diameter Antenna Concept**

Christophe Granet (Lyrebird Antenna Research Pty Ltd, Australia); John Kot (Young & Kot Engineering Research, Australia); John Ness and Glen Callaghan (EM Solutions Pty Ltd, Australia)

**P2.59 (A-T09)**

**Design of a G-band 2×2 Pixel Sideband Separation Array Receiver with Integrated Local Oscillator**

Xiang Chen and Yongning He (Xi'an Institute of Space Radio Technology, P.R.China); Zhenhua Chen (Nanjing University of information Science and Technology, P.R.China)

**P2.60 (A-T09)**

**A Novel 1-Bit Reconfigurable Element for Wideband And Multi-Polarization Reflectarray**

Yifeng Fan, Yongzhi Sun and Zhijian Li (Nanjing Institute of Electronic Equipment, P.R. China); Yunfei Yu (State Grid Corporation, P.R. China)

**P2.61 (A-T09)**

**Wideband Cavity-Backed CubeSat Antenna in S Band**

Miroslav Veljovic and Anja K. Skrivervik (EPFL, Switzerland)

**P2.62 (A-T10)**

**Broadband Rectangular Waveguide Launcher Design Using Dual Source Excitation**

Daniel Koch and Michael J Havrilla (Air Force Institute of Technology, USA)

**P2.63 (A-T10)**

**Closed-to-Open Conversion of a mm-Wave Gaussian Horn Antenna**

Giuseppe Torrisi, Gino Sorbello, Ornella Leonardi, Luigi Celona and Santo Gammino (INFN-LNS, Italy); Giorgio Mauro (Istituto Nazionale di Fisica Nucleare and Universit`a degli Studi Mediterranea di Reggio Calabria Salita Melissari, Italy); Giovanni Castorina and Bruno Spataro (Istituto Nazionale di Fisica Nucleare, Italy); Valery Dolgashev (SLAC National Accelerator Laboratory, USA)

**P2.65 (A-T11)**

**Loop Antennas for Underwater Communications**

Andrea Massaccesi and Paola Pirinoli (Politecnico di Torino, Italy)

**P2.66 (A-T11)**

**Textile Wearable Antenna Sensors Based on Open Ring Resonators**

Bahareh Moradi, Raul Fernandez-Garcia and Ignacio Gil (Universitat Politècnica de Catalunya, Spain)

**P2.67 (A-T11)**

**User Identification Through Wearable Antenna Characteristics at 2.45 GHz**

Waqar Saadat, Sumit Raurale, Gareth Conway and John McAllister (Queen's University Belfast, United Kingdom)

**P2.68 (A-T11)**

**Isolation Enhancement Between Two Closely Spaced Rectangular Patches for MIMO Applications**

Ali Hammoodi and Mariofanna Milanova (University of Arkansas at Little Rock, USA); Mustafa Bakr (Technical University Graz, Austria); Haider Khaleel Raad (Xavier University, USA)

**P2.69 (A-T11)**

**Bandwidth Enhancement of Rectangular Dielectric Resonator Antenna Using Circular and Sector Slot Coupled Technique**

Raed A Abd-Alhameed (University of Bradford, United Kingdom ); Chemseddine Zebiri (Ferhat Abbas University of Setif, Algeria); Issa Elfergani (Instituto de Telecomunicações, Portugal); Mohamed Lashab (20 Aout 1955 University, Algeria); Ammar Ali (University of Bradford, United Kingdom); Jonathan Rodriguez (Instituto de Telecomunicações, Portugal); Majid Al Khambashi (Al-Zahra College for Women, Oman)

**P2.70 (A-T11)**

**Discrete Page Spectrum in Analzying Phenomena in Linear Antenna**

Maciej Walkowiak and Anna Witenberg (UTP University of Science and Technology, Poland); Katarzyna Jagodzińska (Koszalin University of Technology, Poland)

**P2.70a (A)**

**Unmanned Aerial System for Antenna Measurement (UASAM)**

Maria Garcia-Fernandez, Yuri Alvarez-Lopez, Fernando Las Heras and Ana Arboleya-Arboleya (University of Vigo, Spain)

**P2.71 (A-T11)**

**Feed Array Breadboard for Future Passive Microwave Radiometer Antennas**

Cecilia Cappellin, Jakob Rosenkrantz de Lasson and Knud Pontoppidan (TICRA, Denmark); Oleg Iupikov and Marianna Ivashina (Chalmers University of Technology, Sweden); Niels Skou (Technical University of Denmark, Denmark); Benedetta Fiorelli (European Space Agency, The Netherlands)

**P2.71.a (A-T11)**

**A Time-Domain Solution for Plane Wave Scattering by a PEC Half-Plane in Relativistic Translational Motion**

Julio Nicolini (Ohio State University, USA); Guilherme S. Rosa and Flavio J. V. Hasselmann (Pontifícia Universidade Católica do Rio de Janeiro, Brazil)

**P2.72 (M-T01)**

**Antenna Reflection Coefficient Measurement Using Bi-Directional Optical Fiber Link Transceiver Up to 40 GHz**

Satoru Kurokawa and Masanobu Hirose (National Institute of Advanced Industrial Science and Technology, Japan)

**P2.73 (M-T01)**

**Urban Mobile Channel Delay Spread Measurements at 700 MHz, 2.5 GHz e 3.5 GHz**

Marcelo Molina Silva, Luiz da Silva Mello, Carlos Rodriguez Ron, Marta Almeida (PUC/RIO, Brazil); Pedro Gonzalez Castellanos (Federal Fluminense University, Brazil)

**P2.74 (M-T02)**

**Penetration Loss Measurement at 300 GHz for Building Entry Loss Estimation**

Hirokazu Sawada, Kentaro Ishizu, Fumihide Kojima, Keizo Inagaki, Hiroyo Ogawa, Katsumi Fujii, Akifumi Kasamatsu and Iwao Hosako (National Institute of Information & Communications Technology, Japan)

**P2.77 (M-T09)**

**Concurent Ka Band RF Measurement and Fish-eye Images for Land Mobile Satellite Propagation Channel**

Sebastien Rougerie and Bouchra Benammar (CNES, France)

**P2.78 (M-T09)**

**Time-Domain Detection of Passive Intermodulation and its Application in PIM Localization of Mesh Reflector Antennas**

Wanzhao Cui and Xiang Chen (Xi'an Institute of Space Radio Technology, P.R. China)

**P2.78.a (M-T11)**

**LTE Ground-to-Air Measurements for UAV-assisted Cellular Networks**

Michael Batistatos, Georgia E. Athanasiadou, Dimitra Zarbouti, George Tsoulos and Nikos C. Sagias (University of Peloponnese, Greece)

**P2.79 (O-T01)**

**Electronically Tunable Phase Shifter with Enhanced Phase Behaviour at Ku Band**

Mohamed Taha El Khorassani, Miguel A. Vaquero, Angel Palomares, Juan Valenzuela-Valdés and Pablo Padilla (University of Granada, Spain); Naima Amar Touhami (Abdelmalek Essaadi University, Morocco)

**P2.80 (O-T01)**

**On the Operating Principle of an LTE Handset Antenna with Multiple Closely-Located Radiators**

Kimmo Rasilainen, Anu Lehtovuori and Ville Viikari (Aalto University, Finland)

**P2.81 (O-T01)**

**A Mode for Predicting Passive Intermodulation Distortion in Microstrip Lines**

Yun He, Qi Wang and Wanxhao Cui (Xi'an Institute of Space Radio Technology, P.R. China); Chunliang Lui (Xi'an Jiaotong University, P.R. China)

**P2.82 (O-T01)**

**Simplified Spatial Division Analog Beamforming Based on Fourier Rotman Lens**

Irina Munina and Pavel A. Turalchuk (St. Petesburg Electrotechnical University LETI, Russia); Dmitry Kozlov and Alexey Shitvov (Queen's University Belfast, United Kingdom)

**P2.84 (O-T01)**

**Capacitive-Coupled Groove Gap Waveguide Filter**

Morteza Rezaee (Hakim Sabzevari University, Iran); Ashraf Uz Zaman (Chalmers University of Technology, Sweden)

**P2.85 (O-T01)**

**Linear LINC Transmitters Using Dual-polarized Power-Combining Antennas**

Tresnawan Dian, A. B. Smolders and Peter Smulders and B. G. M. Ark (Eindhoven University of Technology, The Netherlands)

**P2.86 (O-T01)**

**Polarization Diversity for UAV to Ground Links in Urban Environments**

Eran Greenberg and Pascal Levy (RAFAEL, Israel)

**P2.87 (O-T02)**

**Cellular Networks Backhauling Through Satellite: Performance Evaluation Using Alphasat Site Diversity Experiment in Greece**

Anargyros J. Roumeliotis, Apostolos Z. Papafragkakis, Charilaos Kourogiorgas and Athanasios D. Panagopoulos (National Technical University of Athens, Greece)

**P2.88 (O-T03)**

**Dual Band Frequency Selective Film Design for Indoor Wireless LAN Environment Improvement**

In Gon Lee, Sung-Sil Cho, Sang-Hwa Lee and Ic Pyo Hong (Kongju National University, Korea)

**P2.89 (O-T04)**

**On the Improvement of the Power Transfer Efficiency Between Radiating Apertures**

Siyi Zhou and Mauro Ettorre (Institut d'Électronique et de Télécommunications de Rennes, France)

**P2.90 (O-T06)**

**Broad-band Efficient Linearly Polarization Conversion Ratio (PCR) Metasurfaces**

Marjan jalali Moghadam, Mohammad Akbari and Abdel R. Sebak (Concordia University, Canada)

**P2.91 (O-T06)**

**A Novel Metamaterial Element for Compressed Sensing Imaging System**

Shuncheng Tian, Guangyao Liu and Long Li (Xidian University, P.R. China)

**P2.92 (O-T06)**

**Polarization Scattering Matrix Estimation for Uniform Moving Target**

Li Chao, Yong Yang, Li Yong-zhen and Wang Xue-song (National University of Defence Technology, P.R.China)

**P2.93 (O-T06)**

**Range-Doppler Radar Signature Prediction of Wind Turbine Using SBR**

Stefano M Canta, Robert A Kipp, Shawn Carpenter and Lars Eric Rickard Petersson (ANSYS, Inc., USA)

**P2.94 (O-T06)**

**Electronically Switchable Notch Response for Wideband Bandpass Applications**

Mohamad Ariffin Mutalib, Zahriladha Zakaria and Noor Azwan Shairi (Universiti Teknikal Malaysia Melaka, Malaysia)

**P2.95 (O-T07)**

**A Radial Transmission Line Model for Mantle Cloaking with Impedance Metasurfaces**

Giuseppe Labate, Barbara Cappello and Ladislau Matekovits (Politecnico di Torino, Italy)

**P2.96 (O-T07)**

**Broadband Polarization Conversion Metasurface for RCS Reduction**

Fereshteh Samadi, Mohammad Akbari and Abdel R. Sebak (Concordia University, Canada); Reza Chaharmir (Communications Research Centre Canada, Canada)

**P2.97 (O-T08)**

**A Perturbation-Based Method to Model Electromagnetic Logging Sensors in Eccentric Boreholes via Conformal Transformation Optics**

Guilherme S. Rosa and Jose R Bergmann (PUC-Rio, Brazil); Fernando Teixeira (The Ohio State University, USA); Marcela Novo (Federal University of Bahia, Brazil)

**P2.99 (O-T08)**

**AOA/Range Estimation Method for UHF RFID Tags Located in Near-Field Region of Reader Antennas**

Yassine Mohamedatni, Benbaghdad Mohammed and Belkacem Fergani (USTHB, Algeria); Jean-Marc Laheurte and Benoit Poussot (Université Paris-Est Marne-la-Vallée, France)

**P2.100 (O-T11)**

**Broadband Superluminal Transmission Line with Non-Foster Negative Capacitor**

Anna Niang (Université Paris Sud, France); André de Lustrac (UPL and Université Paris-Sud, France); Shah Nawaz Burokur (LEME, France)

**P2.101 (O-T11)**

**Ultra-wide Stopband Low-pass Filter Using Spoof Surface Plasmon Polaritons**

Wenxuan Tang, Hao Chi Zhang, Qiang Cheng, Jie Xu and Tie Jun Cui (Southeast University, P.R. China)

**P2.102 (O-T11)**

**Design of a 4-Bit Spoof Surface Plasmon Polariton Phase Shifter for the Terahertz Band**

Muhammed Unutmaz and Mehmet Unlu (Ankara Yildirim Beyazit University, Turkey)

**P2.103 (O-T11)**

**A V-band Branch Guide 3-dB Coupler Based on Gap Waveguide for Use in Antenna Array**

Davood Zarifi (University of Kashan, Iran); Ashraf Uz Zaman (Chalmers University of Technology, Sweden); Ali Farahbakhsh (Graduate University of Advanced Technology, Iran)

**P2.105 (O-T04)**

**Passive RFID System for Object Shape Estimation**

Guillermo Alvarez Narciandi, Jaime Laviada, Marcos Pino and Fernando Las-Heras (Universidad de Oviedo, Spain)

**P2.106 (O-T04)**

**A Multi-resonant Circuit Based on Dual-band Matryoshka Resonator for Chipless RFID Tag**

Hillner de Paiva Almeida Ferreira and Alexandre Serres (UFCG, Brazil); Francisco Marcos Assis (Federal University of Campina Grande, Brazil); Joabson Nogueira de Carvalho (GTEMA-IFPB, Brazil)

**P2.107 (P-T01)**

**26 GHz Indoor Wideband Directional Channel Measurement and Analysis in LoS and NLoS Scenarios**

Mohsen Khalily, Sohail Taheri, Pei Xiao, Fariborz Entezami, Timothy Hill and Rahim Tafazolli (University of Surrey, United Kingdom)

**P2.108 (P-T01)**

**Effect of Diffuse Scattering for Reflections and Diffractions in Ray Launching at 5.4GHz**

Andres Navarro (Universidad Icesi, Colombia); Dinael Guevara and Marlon Lizarazo (Francisco de Paula Santander University, Colombia)

**P2.109 (P-T04)**

**Persistent Q Anti-collision Algorithm for RFID**

Xiaofang Jin and Chang Yu-xi (Communications University of China, China); Robert Michael Edwards and Zhan Wang (Loughborough University, United Kingdom)

**P2.111 (P-T06)**

**Space-Frequency Propagator Method for Time-Reversal Imaging**

Bin Hu, LinXi Zhang and Zuxun Song (Northwestern Polytechnical University, P. R. China)

**P2.112 (P-T06)**

**Consideration of Diffraction Effect in Iterative Physical Optics Combining Physical Theory of Diffraction for Conducting Body**

Hyunsoo Lee and Il-Suek Koh (Inha University, Korea)

**P2.113 (P-T09)**

**Numerical Weather Prediction Models for the Estimate of Clear-Sky Attenuation Level in Alphasat Beacon Measurement**

Laurent Quibus and Danielle Vanhoenacker-Janvier (Université catholique de Louvain, Belgium); Lorenzo Luini and Carlo Riva (Politecnico di Milano, Italy)

**P2.114 (P-T09)**

**Classification of Rainfall Events and Evaluation of Drop Size Distributions Using a K-band Doppler Radar**

Nicolás Gil-de-Vergara, Jose M Riera, Santiago Pérez-Peña and Ana Benarroch (Universidad Politécnica de Madrid, Spain); Jose Garcia-Rubia (Virginia International University, USA)

**P2.115 (P-T09)**

**Cloud Attenuation Prediction Statistics for GEO and NGSO Satellite Communication Systems Operating at Q/V Band and Above**

Athanasios D. Panagopoulos, Nikolaos Lyras and Charilaos Kourogiorgas (National Technical University of Athens, Greece)

**P2.116 (P-T09)**

**Annual Hourly Variability of Rain Attenuation and Rainfall Rate for Improved Earth-Space Links Design**

Flávio Jorge and Armando Rocha (University of Aveiro and Instituto de Telecomunicações, Portugal); Carlo Riva (Politecnico di Milano, Italy)

**P2.117 (S-T01)**

**A Comparative Study Between SSPE Methods and a HO-FDTD Algorithm for EM Propagation over Lossy Terrains**

Diego Parada Rozo and Cássio Rego (Federal University of Minas Gerais, Brazil); Claudio Garcia Batista and Glaucio L. Ramos (Federal University of São João Del-Rei, Brazil)

**P2.119 (S-T09)**

**Analysis of Microstrip Antennas on Multilayer Uniaxial Anisotropic Substrate with Discrete Mode Matching Method**

Veenu Kamra and Achim Dreher (German Aerospace Center (DLR), Germany)

**P2.121 (S-T10)**

**A Novel Technique for Improving the Accuracy of Antenna Gain Measurements in the Near-Field Zone**

Liliana Anchidin and Razvan D. Tamas (Constanta Maritime University, Romania)

**P2.122 (S-T10)**

**Application of MoM-based Waveguide Port Approach to the Analysis of EM Coupling Problems Related to Microwave Antennas**

Faik G. Bogdanov (EMCoS and Georgian Technical University, Georgia); Anna Gheonjian (EMCoS Ltd., Georgia); Lily Svanidze, Diana Eremyan, Zviad Kutchadze and Roman Jobava (EMCoS and Javakhishvili Tbilisi State University, Georgia)

**P2.123 (S-T10)**

**Adaptive Cross Approximation Algorithm Accelerated Inverse Equivalent Current Method for near Field Antenna Measurement**

Yiling Wang and Zaiping Nie (University of Electronic Science and Technology of China, P. R. China)

**P2.124 (S-T10)**

**A Boundary Element Tearing and Interconnecting Method Using Two Lagrange Multipliers**

Kristof Cools (University of Nottingham, United Kingdom ); Francesco Andriulli (Ecole Nationale Superieure des Telecomunications de Bretagne, France)

**P2.125 (S-T10)**

**Accelerating a Ray Launching Model Using GPU with CUDA**

Zhuangzhuang Dai and Robert J Watson (University of Bath, United Kingdom)

**P2.126 (S-T10)**

**Equivalent Circuit Modelling of Meta-atoms**

Tom Whittaker, J (Yiannis) Vardaxoglou and William Whittow (Loughborough University, United Kingdom)

**P2.127 (S-T10)**

**An Acceleration Method for Ray-Tracing Simulation Based on Channel Quasi-Stationarity Regions**

Zhuangzhuang Cui, Zhangdui Zhong, Ke Guan and Danping He (Beijing Jiaotong University, P.R. China and Technische Universität Braunschweig, Germany)

## Thursday 12 April 2018

## Thursday 12 April 2018 09:00 – 10:40

### CS23: OTA Characterization of Antennas and Wireless Devices

Cellular Networks & 5G | Convened Session | Measurement
Room: Room 7
Chairs: Dr Andrés Alayón Glazunov (Chalmers University of Technology, Sweden) and Dr Maria Becker (NIST, USA)

| | |
|---|---|
| **09:00** | **CS23.1**<br>**MIMO Device Performance Testing with the Wireless Cable Method**<br>Wei Fan, Fengchun Zhang and Gert Pedersen (Aalborg University, Denmark); Pekka Kyösti (Keysight Technologies and University of Oulu, Finland); Lassi Hentila (Keysight Technologies, Finland) |
| **09:20** | **CS23.2**<br>**Spatial Channels for Wireless Over-the-Air Measurements in Reverberation Chambers**<br>Maria Becker, Robert Horansky, Damir Senic, Vincent Neylon and Kate A. Remley (National Institute of Standards and Technology, USA) |
| **09:40** | **CS23.3**<br>**A Numerical Analysis of the Random-LOS Measurement Accuracy for Vehicle Applications**<br>Madeleine Schilliger Kildal, Andrés Alayon Glazunov (Chalmers University of Technology, Sweden); Jan Carlsson (Chalmers University of Technology and Provinn AB, Sweden) |
| **10:00** | **CS23.4**<br>**Mitigation of Double-Rayleigh Fading when using Reverberation Chamber Cascaded with Channel Emulator**<br>John Kvarnstrand, Derek Skousen and Erik Silfverswärd (Bluetest AB, Sweden); Doug Reed and Alfonso Rodriguez-Herrera (Spirent Communications Inc., USA) |
| **10:20** | **CS23.5**<br>**Characterization Challenges for Millimeter-wave Multi-Antenna 5G Devices**<br>Minu Jacob, Todd Marshall, Chris Coleman and Greg Vanwiggeren (Keysight Technologies, USA); Moray Rumney (Keysight Technologies, United Kingdom); Prasadh Ramachandran (Keysight Technologies, Finland) |

| **CS39: Channel Modelling in Railway Environments Towards 5G Applications**<br>Cellular Networks & 5G \| Convened Session \| Propagation<br>Room: Room 12<br>Chairs: Dr Juan Moreno García-Loygorri and Professor Cesar Briso (Technical University of Madrid, Spain) | |
|---|---|
| **09:00** | **CS39.1**<br>**Validation of an LTE Backbone for Inter-Car Communications in Metro Environments**<br>Víctor Díez, Iñaki Val, Joseba García and Aitor Arriola (IK4-Ikerlan Technology Research Centre, Spain); Eneko Echeverria and Igor Lopez (CAF, Spain); Mikel Korta and Iker Zabala (CAF Power & Automation, Spain); Thomas Aubourg (Thales Communications and Security S.A.S, France); Tomáš Tichý (Unicontrols a. s., Czech Republic) |
| **09:20** | **CS39.2**<br>**Field Trial of Millimeter-Wave-based MHN System for Vehicular Communications**<br>Junhyeong Kim (ETRI and KAIST, Korea); Hee Sang Chung, Gosan Noh, Bing Hui and Ilgyu Kim (ETRI, Korea); Youngmin Choi (Cleverlogic, Korea); Youngnam Han (KAIST, Korea) |
| **09:40** | **CS39.3**<br>**Influences of Train Wagon Vibrations on the mmWave Wagon-to-Wagon Channel**<br>Mohammad Soliman, Emanuel Staudinger and Stephan Sand (German Aerospace Center (DLR), Germany); Youssef Dawoud (University of Ulm, Germany); Andreas Schuetz (RWTH Aachen University, Germany); Armin Dekorsy (University of Bremen, Germany) |
| **10:00** | **CS39.4**<br>**Measurement Based Spatial Characteristics of MPCs in Train-to-Train Propagation**<br>Paul Unterhuber, Thomas Jost and Wei Wang (German Aerospace Center (DLR), Germany); Thomas Kürner (Technische Universität Braunschweig, Germany) |
| **10:20** | **CS39.5**<br>**Intra-train Propagation Between 26-40 GHz for 5G Applications**<br>Juan Moreno Garcia-Loygorri, Cesar Briso, César Calvo, Florentino Jimenez and Vicente Gonzalez-Posadas (Universidad Politecnica de Madrid, ETSIS Telecomunicacion, Spain); Israel Arnedo and Mikel Laso (Public University of Navarre, Spain) |
| **CS12: Advances in Theory and Computation of Characteristic Modes**<br>Future Applications \| Convened Session \| Antennas<br>Room: Room 17<br>Chairs: Professor Hiroyuki Arai (Yokohama National University, Japan) and Dr Miloslav Capek (Czech Technical University in Prague, Czech Republic) | |
| **09:00** | **CS12.1**<br>**Characteristic Mode Analysis of Printed Circuit Board Antennas Using Volume-Surface Equation**<br>Qi Wu (Beihang University, P.R. China) |

| | |
|---|---|
| **09:20** | **CS12.2**<br>**Selective Excitation of Characteristic Modes on an Electrically Large Antenna for MIMO Applications**<br>Nikolai Peitzmeier and Dirk Manteuffel (University of Hannover, Germany) |
| **09:40** | **CS12.3**<br>**Accurate Evaluation of Characteristic Modes**<br>Miloslav Capek, Vit Losenicky and Lukas Jelinek (Czech Technical University in Prague, Czech Republic); Doruk Tayli and Mats Gustafsson (Lund University, Sweden); Lamyae Akrou (University of Coimbra, Portugal) |
| **10:00** | **CS12.4**<br>**Benchmark Problem Definition and Cross-Validation for Characteristic Mode Solvers**<br>Yikai Chen (University of Electronic Science and Technology of China, P.R. China); Kurt Schab (North Carolina State University, USA); Miloslav Capek and Michal Masek (Czech Technical University in Prague, Czech Republic); Buon Kiong Lau and Hanieh Aliakbari (Lund University, Sweden); Yigit Haykir (Middle East Technical University, Turkey); Qi Wu (Beihang University, P.R. China); Willem J Strydom (Altair Development S.A. (Pty) Ltd, South Africa); Nikolai Peitzmeier (Leibniz Universitaet Hannover, Germany); Milos M Jovicic (WIPL-D, Serbia); Simone Genovesi and Francesco Alessio Dicandia (University of Pisa, Italy) |
| **10:20** | **CS12.5**<br>**Efficient Techniques for Characteristic Mode Analysis of Complex Structures**<br>Willem J Strydom and Ulrich Jakobus (Altair Development S.A. (Pty) Ltd, South Africa) |
| **T06-8: Emerging Technologies for Radar Systems - 1**<br>Radar Systems \| Regular Session \| Antennas<br>Room: Room 16<br>Chairs: Professor Giovanni Leone (Università della Campania Luigi Vanvitelli, Italy) and Professor Herbert Aumann (University of Maine, USA) | |
| **09:00** | **T06-8.1**<br>**Directivity Enhancement to Antipodal Vivaldi Antenna with Slot Edges Using Zero-Index Metamaterial for S-Band SAR Application**<br>Mark Clemente Arenas and Diego Penaloza Aponte (INICTEL-UNI, Peru) |
| **09:20** | **T06-8.2**<br>**First Step Towards a Comparison Between 3D Source Geometries for Conformal Antennas**<br>Giovanni Leone, Maria Antonia Maisto and Rocco Pierri (Università della Campania Luigi Vanvitelli, Italy) |

| | |
|---|---|
| **09:40** | **T06-8.3**<br>**Nonradiating Sources, Cloaking Devices and Related Anapole Modes**<br>Giuseppe Labate and Ladislau Matekovits (Politecnico di Torino, Italy); Nikita Nemkov and Alexey Basharin (National University of Science and Technology (MISiS), Russia) |
| **10:00** | **T06-8.4**<br>**Computer Tool for Simulating Frequency Modulated -Continuous Wave Radar Systems in Urban Traffic Scenes**<br>Alvaro Somolinos, Jose-Luis García, Lorena Lozano, Felipe Cátedra and Ivan Gonzalez (Universidad de Alcala, Spain) |
| **10:20** | **T06-8.5**<br>**Retrodirective Metasurface Operating Simultaneously at Multiple Incident Angles**<br>Mohammed Kalaagi and Divitha Seetharamdoo (Université Lille-Nord-de-France, France) |
| **CS44:COST CA15104 (IRACON): Measurements and Simulations in Channel Modelling in Wireless Body Area Networks**<br>Biomedical \| Convened Session \| Propagation<br>Room: Room 15<br>Chairs: Dr Slawomir J. Ambroziak (Gdansk University of Technology, Poland) and Dr Simon L. Cotton (Queen's University Belfast, United Kingdom) | |
| **09:00** | **CS44.1**<br>**Body-worn Channel Characterization Unit for the 868 MHz Band**<br>Patrick Van Torre, Sam Agneessens, Jo Verhaevert and Hendrik Rogier (Ghent University, Belgium) |
| **09:20** | **CS44.2**<br>**Preliminary Path-Loss Measurement of On-Body Wireless Body Area Network at 490 GHz**<br>Taichi Shichijoo and Takahiro Aoyagi (Tokyo Institute of Technology, Japan) |
| **09:40** | **CS44.3**<br>**Fading Characteristics for Dynamic Body-to-Body Channels in Indoor and Outdoor Environments**<br>Kenan Turbic and Luis M. Correia (IST - University of Lisbon and INESC, Portugal); Slawomir J. Ambroziak (Gdansk University of Technology, Poland) |
| **10:00** | **CS44.4**<br>**Full-Spectrum Phantoms for cm-Wave and Medical Wireless Communications**<br>Sergio Castelló-Palacios, Concepcion Garcia-Pardo, Alejandro Fornes-Leal, Narcis Cardona and Ana Valles-Lluch (Universitat Politècnica de València, Spain) |

| | |
|---|---|
| **10:20** | **CS44.5**<br>**Fading Characterization of UE to Ceiling-Mounted Access Point Communications at 60 GHz**<br>Seong Ki Yoo, Simon Cotton, Young Jin Chun and William G. Scanlon (Queen's University Belfast, United Kingdom) |
| **CS35: Advanced Technologies for Wideband Antennas and Arrays**<br>Ultra-High Data Rate Communications \| Convened Session \| Antennas<br>Room: Room 14<br>Chairs: Hang Wong and Professor Kwai Man Luk (City University of Hong Kong, Hong Kong) | |
| **09:00** | **CS35.1**<br>**Compact Wide-band MIMO Antenna with High Port Isolation**<br>Wen Jiang, Ying Liu, Yue Cui, Shuxi Gong and Binbin Wang (Xidian University, P.R. China) |
| **09:20** | **CS35.2**<br>**Pattern Reconfigurable Techniques for LP and CP Antennas with the Broadside and Conical Beams**<br>Wei Lin and Richard Ziolkowski (University of Technology Sydney, Australia); Hang Wong (City University of Hong Kong, Hong Kong) |
| **09:40** | **CS35.3**<br>**A Simple Wideband Slot Antenna**<br>Zhou Changfei and Lawerence Kwan Yeung (The University of Hong Kong, Hong Kong); Hang Wong (City University of Hong Kong, Hong Kong) |
| **10:00** | **CS35.4**<br>**A Wideband Circularly Polarized Patch Antenna**<br>Yongmei Pan and Wanjun Yang (South China University of Technology, P.R. China) |
| **10:20** | **CS35.5**<br>**Compact Butler Matrix for Wideband Beamforming**<br>Qiu Ping Chen, Shao Yong Zheng and Yunliang Long (Sun Yat-Sen University, P.R. China) |
| **CS32: Antenna for IoT Applications**<br>Connected Objects \| Convened Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Yue Gao (Queen Mary University of London, United Kingdom) and Dr Fabien Ferrero (University of Nice Sophia Antipolis, France) | |
| **09:00** | **CS32.1**<br>**Low Cost Antenna for IoT Deployment in Developing Country**<br>Fabien Ferrero (University Nice Sophia Antipolis, France); CongDuc Pham (University of Pau, France) |

| | |
|---|---|
| **09:20** | **CS32.2**<br>**Coplanar Multiband Antenna on Flexible Substrate in Energy Harvesting System for IoT Applications**<br>Do Hanh Ngan Bui (Université de Grenoble-Alpes, France and INSA Lyon, France); Tan-Phu Vuong, Philippe Benech and Bruno Allard (Université de Grenoble-Alpes, France); Jacques Verdier (INSA Lyon, France); Gael Depres (Arjowiggins Creative Papers, France) |
| **09:40** | **CS32.3**<br>**Miniaturization of a Circular Polarized Antenna Using Ferrite Materials**<br>Eric Arnaud, Laure Huitema and Thierry Monediere (Xlim Laboratory, France); Regis Chantalat (CISTEME, France); Anthony Bellion (CNES, France) |
| **10:00** | **CS32.4**<br>**A Digitally Tuned Reconfigurable Semi-Bowtie Antenna for IoT Devices**<br>Fatima Al Zahraa Asadallah and Joseph Costantine (American University of Beirut, Lebanon); Youssef Tawk (Notre Dame University, USA) |
| **10:20** | **CS32.5**<br>**On the Antenna for Long Range Low Power Geographical Monitoring IoT Network**<br>Yuanjun Shen, Linyu Cai, Yu Liu and Kin-Fai Tong (University College London, United Kingdom); Xuyang Ding, Xiangdong Qiu and Ying Liu (PowerChina Chengdu Engineering Co. Ltd., P.R. China) |
| **CS24: Advances in Modelling Design and Implementation of Reflectarrays and Periodic Structures**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 6<br>Chairs: Professor Manuel Arrebola (Universidad de Oviedo, Spain) and George Goussetis (Heriot-Watt University, United Kingdom) | |
| **09:00** | **CS24.1**<br>**Support Vector Machines to Accelerate Reflectarray Analysis and Optimization**<br>Daniel R Prado (Universidad de Oviedo, Spain and Heriot-Watt University, United Kingdom); Jesús López-Fernández, Manuel Arrebola and Fernando Las-Heras (Universidad de Oviedo, Spain) |
| **09:20** | **CS24.2**<br>**Innovative Synthesis of Reflectarrays Within the Non-Radiating Inverse Source Framework**<br>Angelo Gelmini, Marco Salucci and Andrea Massa (University of Trento, Italy); Giacomo Oliveri (University of Trento, Italy and ELEDIA Research Center, France) |
| **09:40** | **CS24.3**<br>**Manufacturable Ultra-Thin Resistive FSS for Challenging EM Mobile Environments**<br>Siti Normi Zabri (Universiti Teknikal Malaysia Melaka, Malaysia); Robert Cahill, Gareth Conway, Niamh McGuigan, Dmitry E Zelenchuk and Raymond Dickie (Queens University Belfast, United Kingdom) |

| | |
|---|---|
| **10:00** | **CS24.4**<br>**FSS Design and Manufacturing Challenges for Future Space Science Missions**<br>Raymond Dickie, Robert Cahill, Paul Baine and Vincent Fusco (Queens University Belfast, United Kingdom) |
| **10:20** | **CS24.5**<br>**Optimisation by Unit-Cell Rotation of Linear-to-Circular Polarising Reflectors for Practical Primary Feeds**<br>Salvador Mercader-Pellicer, George Goussetis and Gabriela Medero (Heriot-Watt University, United Kingdom); Daniele Bresciani and Hervé Legay (Thalès Alenia Space, France); Nelson Fonseca (European Space Agency, The Netherlands) |
| **CS30: Propagation Aspects in Remote Sensing**<br>Space Applications \| Convened Session \| Propagation<br>Room: Room 4<br>Chairs: Dr Michael Schönhuber (Joanneum Research, Austria) and Dr Merhala Thurai-Rajasingam (Colorado State University, USA) | |
| **09:00** | **CS30.1**<br>**Calibration and Use of Microwave Radiometers in Multiple-site EM Wave Propagation Experiments**<br>Lorenzo Luini and Carlo Riva (Politecnico di Milano and IEIIT (CNR), Italy); Roberto Nebuloni and Mario Mauri (IEIIT (CNR), Italy); James Nessel (NASA, USA); Alessandro Fanti (University of Cagliari, Italy) |
| **09:20** | **CS30.2**<br>**Propagation Modeling for Radio Occultation Remote Sensing**<br>Charles-Antoine L'Hour (Université de Toulouse and Onera, France); Vincent Fabbro (ONERA, France); Alexandre Chabory (ENAC, France); Jerome Sokoloff (Université de Toulouse, France) |
| **09:40** | **CS30.3**<br>**Characterisation of the Propagation Channel at Ka and Q/V Bands for Satellite Communication and Earth Observation Systems**<br>Laurent Castanet, Xavier Boulanger and Joel Lemorton (ONERA, France); Bouchra Benammar (Centre National d'Etudes Spatiales (CNES), France) |
| **10:00** | **CS30.4**<br>**Examining the Use of Generalized Gamma Model to Represent the Full Rain Drop Size Distributions**<br>Merhala Thurai and Viswanathan Bringi (Colorado State University, USA) |
| **10:20** | **CS30.5**<br>**Interference in Weather Radars Caused by Windparks: Scattering Model for Weather Radar Signal Processing**<br>Madhukar Chandra (TU-chemnitz, Germany); Frank Gekat (Selex ES GmbH, Germany) |
| **T10-5: Novel Antennas and Material Measurements**<br>Software Tools & Instruments \| Regular Session \| Antennas and Measurement<br>Room: Room 3<br>Chairs: Professor Clive Parini (Queen Mary University of London, United Kingdom) and Olav | |

| | |
|---|---|
| Breinbjerg (Technical University of Denmark, Denmark) | |
| **09:00** | **T10-5.1**<br>**Detailed Design and RF Analysis of a Scatterometer for Material Characterization in the 50-750 GHz Range**<br>Cecilia Cappellin and Per Nielsen (TICRA, Denmark); Roger Appleby (Roger Appleby MMW Consulting Ltd & InnovaSec Ltd, United Kingdom); Richard Wylde (St Andrews University, United Kingdom); Elena Saenz (European Space Agency, The Netherlands) |
| **09:20** | **T10-5.2**<br>**Compensation of Radome Effects in Small Airborne Monopulse Arrays by Convex Optimization**<br>Henrik Frid and Lars Jonsson (KTH Royal Institute of Technology, Sweden) |
| **09:40** | **T10-5.3**<br>**Substrate Integrated Waveguide Groove Sensor Antenna for Permittivity Measurements**<br>Hossein Saghlatoon, Mohammad Mahdi Honari, Rashid Mirzavand and Pedram Mousavi (University of Alberta, Canada) |
| **10:00** | **T10-5.4**<br>**Efficient Uncertainty Evaluation of Vector Network Analyser Measurements Using Two-Tier Bayesian Analysis and Monte Carlo Method**<br>Min Wang (National Physical Laboratory, United Kingdom and Nanjing University of Aeronautics and Astronautics, P.R. China); Tian Hong Loh (National Physical Laboratory, United Kingdom); Yongjiu Zhao, Qian Xu and Yonggang Zhou (Nanjing University of Aeronautics and Astronautics, P.R. China) |
| **10:20** | **T10-5.5**<br>**Planar Sensors for Dielectric and Magnetic Materials Measurement: A Quantitative Sensitivity Comparison**<br>L. A. Bronckers, M. J. R. A. van Rossum and A. B. Smolders (Eindhoven University of Technology, The Netherlands) |
| **CS26: Reconfigurable Antennas and Arrays**<br>Future applications \| Convened Session \| Antennas<br>Room: Room 2<br>Chairs: Professor Xun Gong (University of Central Florida, USA) and Professor Steven Gao (University of Kent, United Kingdom) | |
| **09:00** | **CS26.1**<br>**Wideband Polarization-Reconfigurable Antenna Based on Tightly Coupled Array Mechanism**<br>Ying Liu, Liu Hu and Shuxi Gong (Xidian University, P.R. China) |
| **09:20** | **CS26.2**<br>**Reconfigurable Half-Mode Substrate-Integrated Cavity Antenna Arrays**<br>Nghia Nguyen-Trong (The University of Queensland, Australia); Christophe Fumeaux (The University of Adelaide, Australia) |

| | |
|---|---|
| **09:40** | **CS26.3**<br>**Frequency-Reconfigurable Pattern-Steerable Antenna Using Active Frequency Selective Surface**<br>Chao Gu, Steven Gao, Benito Sanz-Izquierdo and Edward Parker (University of Kent, United Kingdom); Geyi Wen (Nanjinh University, P.R.China); Zhiqun Cheng (Hangzhou Dianzi Universtiy, P.R.China) |
| **10:00** | **CS26.4**<br>**28 GHz 5G Dual-Polarized End-fire Antenna with Electrically-Small Profile**<br>Junho Park and Wonbin Hong (Pohang University of Science & Technology, Korea); Dooseok Choi (Samsung Electronics, South Korea) |
| **10:20** | **CS26.5**<br>**Gain Enhancement of Reconfigurable Conformal Antenna Array**<br>Ziheng Ding, Weile Yuan, Yifeng Chen, Ronghong Jin, Junping Geng and Xianling Liang (Shanghai Jiao Tong University, P.R. China) |
| **CS33: Dielectric Properties of Biological Tissues: Achieving Accurate Data as the Basis for Novel Medical Device Development**<br>Biomedical \| Convened Session \| Measurement<br>Room: Room1<br>Chairs: Dr Emily Porter (National University of Ireland, Ireland) and Dr Lourdes Farrugia (University of Malta, Malta) | |
| **09:00** | **CS33.1**<br>**Breast Tumor Tissues Classification Using the Modified Cole-Cole Parameters with Machine Learning Technique**<br>Hang Song, Hikaru Sato, Tetsushi Koide and Takamaro Kikkawa (Hiroshima University, Japan); Koji Arihiro, Morihito Okada and Takayuki Kadoya (Hiroshima University Hospital, Japan) |
| **09:20** | **CS33.2**<br>**Minimum Reporting Requirements for Dielectric Property Measurements of Biological Tissues**<br>Emily Porter, Alessandra La Gioia, Saqib Salahuddin, Atif Shahzad, Muhammad Adnan Elahi and Martin O'Halloran (National University of Ireland, Ireland) |
| **09:40** | **CS33.3**<br>**Dielectric Properties of Biological Tissues: Achieving Accurate Data as the Basis for Novel Medical Device Development**<br>Andrew P Gregory (National Physical Laboratory, United Kingdom) |
| **10:00** | **CS33.4**<br>**Dielectric Methodologies of Coaxial Sensors for Measurement of Biological Tissues Up to 100 GHz**<br>Kensuke Sasaki and Soichi Watanabe (NICT,Japan); Atsuhiro Nishikata (Tokyo Institute of Technology, Japan); Osamu Fujiwara (Nagoya Institute of Technology, Japan) |

| | |
|---|---|
| **10:20** | **CS33.5**<br>**Quality Factor for the Measurement of Dielectric Properties of Biological Tissues**<br>Vanni Lopresto and Rosanna Pinto (ENEA, Italy); Laura Farina and Marta Cavagnaro (Sapienza University of Rome, Italy); Giuseppe Ruvio (National University of Ireland, Ireland); Luca Vannucci (Institute of Microbiology, Czech Academy of Sciences, Czech Republic) |

## Thursday 12 April 2018 11:10 – 12:50

| **CS23: OTA Characterization of Antennas and Wireless Devices**<br>Cellular Networks & 5G \| Convened Session \| Measurement<br>Room: Room 7<br>Chairs: Dr Andrés Alayón Glazunov (Chalmers University of Technology, Sweden) and Dr Maria Becker (NIST, USA) | |
|---|---|
| **11:10** | **CS23.6**<br>**Emulating Dynamic Radio Channels for Radiated Testing of Massive MIMO Devices**<br>Pekka Kyösti (Keysight Technologies and University of Oulu, Finland); Lassi Hentila and Jukka Kyröläinen (Keysight Technologies Finland, Finland); Fengchun Zhang and Wei Fan (Aalborg University, Denmark); Matti Latva-aho (University of Oulu, Finland) |
| **11:30** | **CS23.7**<br>**Massive MIMO Array Testing Using a Programmable Phase Matrix and Channel Emulator**<br>Doug Reed, Alfonso Rodriguez-Herrera and Jukka-Pekka Nuutinen (Spirent Communications, USA) |
| **11:50** | **CS23.8**<br>**EIRP of User Equipment with Beam Forming Capabilities at 28 GHz**<br>Kun Zhao (KTH Royal Institute of Technology and Sony Mobile Communication AB, Sweden); Thomas Bolin, Olof Zander and Zhinong Ying (Sony Mobile Communications AB, Sweden) |
| **12:10** | **CS23.9**<br>**Performance Testing of Massive MIMO Base Station with Multi-Probe Anechoic Chamber Setups**<br>Fengchun Zhang, Wei Fan, Yilin Ji and Gert Pedersen (Aalborg University, Denmark); Mattias Gustafsson, Tommi Jamsa and Gerhard Steinbock (Huawei Technologies Sweden AB, Sweden); Pekka Kyösti (Keysight Technologies and University of Oulu, Finland) |

| | |
|---|---|
| **12:30** | **CS23.10**<br>**On Modeling OTA Channel Emulation Systems**<br>Mario Lorenz, Giovanni Del Galdo and Wim A. Th. Kotterman (Technische Universität Ilmenau, Germany) |

**CS39: Channel Modelling in Railway Environments Towards 5G Applications**
Cellular Networks & 5G | Convened Session | Propagation
Room: Room 12
Chairs: Dr Juan Moreno García-Loygorri and Professor Cesar Briso (Technical University of Madrid, Spain)

| | |
|---|---|
| **11:10** | **CS39.6**<br>**Spatial Mode Approaches to Enhancing Transport Communications Capacities**<br>Timothy Drysdale (The Open University, United Kingdom); Ben Allen and Justin P Coon (University of Oxford, United Kingdom) |
| **11:30** | **CS39.7**<br>**Angular Spread Characteristics in High-speed Railway Scenarios in Millimeter-Wave Band**<br>Xue Lin, Bo Ai, Danping He, Ke Guan and Zhangdui Zhong (Beijing Jiaotong University and Beijing Engineering Research Center of High-speed Railway Broadband Mobile Communications, P.R.China); Chen Zhao (Beijing Jiaotong University, P.R.China) |
| **11:50** | **CS39.8**<br>**Stochastic Channel Modeling for High-Speed Railway Viaduct Scenario at 93.2 GHz**<br>Longhe Wang, Bo Ai, Ke Guan, Danping He and Zhangdui Zhong (Beijing Jiaotong University and State Key Lab of Rail Traffic Control and Safety, P.R.China); Li Tian and Jianwu Dou (ZTE Corporation, P.R.China) |
| **12:10** | **CS39.9**<br>**Radio-wave Penetration Modelling Through Composite Train Bodies and Heat-Absorbing Glazing**<br>Divitha Seetharamdoo, Charbel Amoussou and Yann Cocheril (IFSTTAR, France); Hassan Ghannoum (SNCF, France) |
| **12:30** | **CS39.10**<br>**Analysis and Measurement of Penetration Loss for Train Wagons with Coated Vs Uncoated Windows**<br>Nima Jamaly, Damiano Scanferla, Carine Genoud and Hugo Lehmann (Swisscom, Switzerland) |

**T11-7: Novel Manufacturing Techniques For Antennas And Microwave Devices**
Future Applications | Regular Session | Antennas
Room: Room 17
Chairs: Hans-Dieter Lang (HSR Hochschule für Technik Rapperswil, Switzerland) and Dr Makoto Nagai (National Astronomical Observatory of Japan, Japan)

| | |
|---|---|
| **11:10** | **T11-7.1**<br>**Investigation of the Influence of Build Orientation on the Surface Roughness of the 3D Metal Printed Horn Antenna**<br>Deepak Shamvedi and Paul O'Leary (Waterford Institute of Technology, Ireland); Cyril Danilenkoff and Ramesh Raghavendra (Waterford Institute of Technology, Ireland and SEAM Research Centre, Ireland) |
| **11:30** | **T11-7.2**<br>**Progress in 3D Metal Printed Microwave Components - An Overview**<br>Deepak Shamvedi and Paul O'Leary (Waterford Institute of Technology, Ireland); Oliver McCarthy, Eoghan O' Donoghue and Ramesh Raghavendra (Waterford Institute of Technology, Ireland and SEAM, Ireland) |
| **11:50** | **T11-7.3**<br>**Silver Metallization of 77 GHz 3D Printed Horn Antennas**<br>Koen Staelens, Arnaud Jammes and Edouard des Gayets (Jet Metal Technologies, France); Reinhard Feger, Thomas Lampersberger and Andreas Stelzer (Johannes Kepler University Linz, Austria) |
| **12:10** | **T11-7.4**<br>**A 3-D Printed Compact Dual-Polarized Monopulse Feed-Horn Array**<br>Guan-Long Huang and Tao Yuan (Shenzhen University, P.R. China); Chow-Yen-Desmond Sim (Feng Chia University, Taiwan) |
| **12:30** | **T11-7.5**<br>**Compact 3D-printed Variable-infill Antenna for Snow Cover Monitoring**<br>Pedro Fidel Espin Lopez and Marco Pasian (University of Pavia, Italy) |
| **T06-9: Emerging Technologies for Radar Systems -2**<br>Radar Systems \| Regular Session \| Antennas<br>Room: Room 16<br>Chairs: Professor Il-Suek Koh (INHA University, Korea) | |
| **11:10** | **T06-9.1**<br>**Accuracy Test of Iterative Physical Optics for Analyzing Scattering by Nonperfectly Conducting Bodies Using Impedance Boundary**<br>Jae-Won Rim and Il-Suek Koh (INHA University, Korea) |
| **11:30** | **T06-9.2**<br>**Large Conformal Array Diagnostics by Fast Matrix Method**<br>Giuseppe Di Massa and Sandra Costanzo (University of Calabria, Italy) |

| | |
|---|---|
| **11:50** | **T06-9.3**<br>**Mitigating Internal Resonances of the Magnetic-Field Integral Equation via Double-Layer Modeling**<br>Sadri Guler, Hande Ibili and Ozgur Ergul (Middle East Technical University, Turkey) |
| **12:10** | **T06-9.4**<br>**Multistatic Radar for Continuous Wind Turbine Blades Inspection: Results from a Field Study**<br>Jochen Moll, Moritz Mälzer, Jonas Simon and Viktor Krozer (Goethe University Frankfurt, Germany); Dimitry Pozdniakov and Rahmi Salman (HF Systems Engineering GmbH and Co. KG, Germany); Manfred Dürr (Volta Windkraft GmbH, Germany); Michael Feulner, Herbert Friedmann, Andreas Nuber and Christian Kramer (Wölfel Engineering GmbH and Co. KG, Germany) |
| **12:30** | **T06-9.5**<br>**A Statistical Model for Assessing the Effect of Position Error of Antenna Elements on Array RCS**<br>Shuai Yuan and Congsi Wang (Xidian University, P.R. China); Wei Gao (The University of New South Wales, Australia); Zhihai Wang (CETC No 38 Research Institute, P.R. China); Baofu Tang (Nanjing Research Institute of Electronics Technology, P.R. China); Shaoxi Wang (Northwestern Polytechnical University, P.R. China) |
| **CS45: COST CA15104 (IRACON) Session on Frequency Dependency Modelling of Radio Channels**<br>Ultra-High Data Rate Communications \| Convened Session \| Propagation<br>Room: Room 14<br>Chairs: Professor Sana Salous (Durham University, United Kingdom) and Professor Katsuyuki Haneda (Aalto University, Finland) | |
| **11:10** | **CS45.1**<br>**Frequency Dependency Analysis of SHF Band Directional Propagation Channel in Indoor Environment**<br>Kentaro Saito, Panawit Hanpinitsak and Jun-ichi Takada (Tokyo Institute of Technology, Japan); Wei Fan and Gert Pedersen (Aalborg University, Denmark) |
| **11:30** | **CS45.2**<br>**Characterization of sub-THz and mmWave Propagation Channel for Indoor Scenarios**<br>Raffaele D'Errico and Laura Pometcu (Minatec University, France) |
| **11:50** | **CS45.3**<br>**Antenna Aperture Impact on Channel Delay Spread in an Urban Outdoor Scenario at 17 and 60 GHz**<br>Cheikh Diakhate (Université Paris-Saclay and Orange Labs, France); Jean-Marc Conrat (Orange Labs, France); Jean Cristophe Cousin and Alain Sibille (Université Paris-Saclay, France) |
| **12:10** | **CS45.4**<br>**On the Frequency Dependency of Radio Channel's Delay Spread: Analyses and Findings from mmMAGIC Multi-frequency Channel Sounding**<br>Sinh Nguyen, Aki Karttunen and Katsuyuki Haneda (Aalto University, Finland); Jonas Medbo (Ericsson Research, Sweden); Michael Peter (Fraunhofer HHI, Germany); Aliou Bamba and Raffaele D'Errico (Minatec, University, France); Naveed Iqbal (Huawei Technologies, Germany); Cheikh Diakhate and Jean-Marc Conrat (Orange Labs, France) |

| | |
|---|---|
| **12:30** | **CS45.5**<br>**Building Entry Loss for Traditional and Thermally Efficient Houses Between 0.4 and 73 GHz**<br>Sana Salous, Xavier Raimundo, Jack Towers and Adnan Cheema (Durham University, United Kingdom) |
| **CS32: Antenna for IoT Applications**<br>Connected Objects \| Convened Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Yue Gao (Queen Mary University of London, United Kingdom) and Dr Fabien Ferrero (University Nice Sophia Antipolis, France) | |
| **11:10** | **CS32.6**<br>**Embedded Antenna Design on LoRa Radio for IoT Applications**<br>Qianyun Zhang and Yue Gao (Queen Mary University of London, United Kingdom) |
| **11:30** | **CS32.7**<br>**Investigation of Antenna on Glass for Telematics Applications**<br>Narimane Mislmani, Georgette Mrad and Remi Sarkis (Université Antonine, Lebanon) |
| **11:50** | **CS32.8**<br>**Low-Cost Transfer Printing of Antennas for Smart Textiles**<br>Jonathan Atkinson, Yushi Cao, George Shaker and Irene Goldthorpe (University of Waterloo, Canada) |
| **12:10** | **CS32.9**<br>**Design Guidelines for Printable Magnetic Shielding Films for NFC Tags on Metal**<br>Badredin M Turki and John Batchelor (University of Kent, United Kingdom) |
| **12:30** | **CS32.10**<br>**Spatially Efficient Chipless RFID Tag Screen-printed on Flexible Substrate**<br>Sika Shrestha, Ramprakash Yerramilli and Nemai Karmakar (MONASH University, Australia) |
| **CS24: Advances in Modelling Design and Implementation of Reflectarrays and Periodic Structures**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 6<br>Chairs: Professor Manuel Arrebola (Universidad de Oviedo, Spain) and George Goussetis (Heriot-Watt University, United Kingdom) | |

| | |
|---|---|
| **11:10** | **CS24.6**<br>**Reflectarray Synthesis on GPUs**<br>Amedeo Capozzoli, Claudio Curcio and Angelo Liseno (Università di Napoli Federico II, Italy) |
| **11:30** | **CS24.7**<br>**Bifocal Technique Applied to Dual Transmitarray Antennas**<br>Eduardo Martinez-de-Rioja and Jose A. Encinar (Universidad Politecnica de Madrid, Spain); Antonio Pino and Borja Gonzalez-Valdes (University of Vigo, Spain); Sean V Hum (University of Toronto, Canada); Carolina Tienda (Airbus Defence and Space, United Kingdom); Giovanni Toso (European Space Agency, The Netherlands) |
| **11:50** | **CS24.8**<br>**Design of High-Performance Antenna Systems with Quasi-Periodic Surfaces**<br>Min Zhou, Erik Jørgensen, Niels Vesterdal, Oscar Borries, Stig Sørensen and Peter Meincke (TICRA, Denmark); Massimiliano Simeoni and Giovanni Toso (European Space Agency, The Netherlands) |
| **12:10** | **CS24.9**<br>**Experimental Evaluation of a High Gain Dual-Band Beam Steerable Transmit-Array**<br>Sergio Matos (Instituto Universitário de Lisboa, Portugal); Eduardo B. Lima and Carlos A. Fernandes (Instituto de Telecomunicações, Portugal); Jorge R. Costa (Instituto de Telecomunicações and ISCTE-IUL, Portugal); Nelson Fonseca (European Space Agency, The Netherlands) |
| **12:30** | **CS24.10**<br>**Single Polarization Reflectarray Design Based on an Element with Seven Parallel Dipoles to Generate Independent Beams in Three Frequency Bands**<br>Rafael Florencio, Gerardo Perez-Palomino, Jose A. Encinar (Universidad Politecnica de Madrid, Spain); Rafael R. Boix (University of Seville, Spain) |
| **CS31: Antenna Design and Signal Processing for High Sensitivity Astronomical Receivers**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 4<br>Chairs: Professor Karl F. Warnick (Brigham Young University, USA) and Eloy de Lera Acedo (Cambridge Universtiy, United Kingdom) | |
| **11:10** | **CS31.1**<br>**Exploring the Next Generation of Array Receivers and Signal Processing Systems for Radio Astronomy**<br>Grant Hampson, John Bunton, Andrew Brown, John Tuthill and Ron Beresford (CSIRO, Australia); Jan Geralt Bij de Vaate and Gijs Schoonderbeek (ASTRON, The Netherlands) |
| **11:30** | **CS31.2**<br>**Commissioning Observations with the Focal L-band Array on the Green Bank Telescope (FLAG)**<br>Karl Warnick, M Ruzindana, B Jeffs, R Black and M Burnett (Brigham Young University, USA); E Pisano, D Lorimer, N Pingel and K Rajwade (West Virginia University, USA); R Prestage, S White, B Simon and L Hawkins (Green Bank Observatory, USA); W Shillue and D Roshi (National Radio Astronomy Observatory CDL, USA) |

| | |
|---|---|
| **11:50** | **CS31.3**<br>**Efficient Analysis of a 3D Antenna Installed on a Finite Ground Plane**<br>Jean Cavillot, Ha Bui Van and Christophe Craeye (Université Catholique de Louvain & ICTEAM, Belgium); Hardie Pienaar and Eloy de Lera Acedo (University of Cambridge, United Kingdom) |
| **12:10** | **CS31.4**<br>**A Large Phased Array Feed with CMOS Low-Noise Amplifiers**<br>Tom Burgess and Bruce Veidt (NRC Herzberg, Canada); Leonid Belostotski, Aaron Beaulieu, Eugene Zailer and James Haslett (University of Calgary, Canada) |
| **12:30** | **CS31.5**<br>**Differential Phase Patterns of the LOFAR LBA Array Measured in Situ**<br>Fabio Paonessa, Giuseppe Virone and Stefania Matteoli (Consiglio Nazionale delle Ricerche, Italy); Pietro Bolli (Osservatorio Astrofisico di Arcetri, Italy); Giuseppe Pupillo (INAF IRA, Italy); Stefan J. Wijnholds (ASTRON, The Netherlands) |

## CS28: AMTA Session on Post Processing Techniques in Antenna Measurements

Software Tools & Instruments | Convened Session | Measurement
Room: Room 3
Chairs: Dr Sergiy Pivnenko (Antenna Systems Solutions, Spain) and Jeff Guerrieri (National Institute of Standards and Technology, USA)

| | |
|---|---|
| **11:10** | **CS28.1**<br>**Accurate Determination of Radiation Patterns from Near-Field Measurements in Highly Reflective Environments**<br>Josef Knapp and Thomas F. Eibert (Technische Universität München, Germany) |
| **11:30** | **CS28.2**<br>**A SVD Approach to Compensate Probe Positioning Errors in a Non-Conventional Plane-Rectangular Near-to-Far-Field Transformation**<br>Francesco D'Agostino, Flaminio Ferrara, Claudio Gennarelli, Rocco Guerriero and Massimo Migliozzi (University of Salerno, Italy) |
| **11:50** | **CS28.3**<br>**Full Probe Corrected Spherical near Field Measurement Technique Using Standard Wideband Antennas as Probes**<br>Francesco Saccardi, Andrea Giacomini and Lars Foged (Microwave Vision Italy, Italy); Luca Tancioni (ORBIT/FR Europe GmbH, Germany) |
| **12:10** | **CS28.4**<br>**Evaluation of an Unmanned Aerial System for Antenna Diagnostics and Characterization**<br>María García Fernández, Yuri Álvarez and Fernando Las-Heras (Universidad de Oviedo, Spain) |

| | |
|---|---|
| **12:30** | **CS28.5**<br>**Optimized near Field with an Optimized Controller**<br>Amedeo Capozzoli, Laura Celentano, Claudio Curcio, Angelo Liseno and Salvatore Savarese (Università di Napoli Federico II, Italy) |
| **CS26: Reconfigurable Antennas and Arrays**<br>Future Applications \| Convened Session \| Antennas<br>Room: Room 2<br>Chairs: Professor Xun Gong (University of Central Florida, USA) and Professor Steven Gao (University of Kent, United Kingdom) | |
| **11:10** | **CS26.6**<br>**A Reconfigurable S/C-band Antenna Array with Full-Band Coverage and Dual Polarization**<br>Mahmoud Shirazi, Junyi Huang and Xun Gong (University of Central Florida, USA) |
| **11:30** | **CS26.7**<br>**Evaluation of a Wideband Pattern-Reconfigurable Multiple Antenna System for Vehicular Applications**<br>Jerzy Kowalewski, Jonathan Mayer, Tobias Mahler and Thomas Zwick (Karlsruhe Institute of Technology (KIT), Germany) |
| **11:50** | **CS26.8**<br>**Reconfigurable Reflectarrays and Transmitarrays: From Antenna Designs to System Applications**<br>Fan Yang, Shenheng Xu, Xiaotian Pan, Xue Yang, Jun Luo, Min Wang, Yu Wang and Maokun Li (Tsinghua University, P.R. China) |
| **12:10** | **CS26.9**<br>**5G Reconfigurable Antennas**<br>Qiang Bai, Lanxin Li, Sajid Asif, Ravinder Singh, Kenneth Lee Ford, Richard Langley and Timothy O'Farrell (University of Sheffield, United Kingdom) |
| **12:30** | **CS26.10**<br>**Impact of Deficient Array Antenna Elements on Downlink Massive MIMO Performance in RIMP and Random-LOS Channels**<br>Andrés Alayon Glazunov (Chalmers University of Technology, Sweden) |
| **CS33: Dielectric Properties of Biological Tissues: Achieving Accurate Data as the Basis for Novel Medical Device Development**<br>Biomedical \| Convened Session \| Measurement<br>Room: Room1<br>Chairs: Dr Emily Porter (National University of Ireland, Ireland) and Dr Lourdes Farrugia (University of Malta, Malta) | |

| | |
|---|---|
| **11:10** | **CS33.6**<br>**Effect of Network Analyzer Trace Noise on Dielectric Measurements with an Open-ended Coaxial Probe**<br>Mykolas Ragulskis, Manuel Kasper, Ferry Kienberger and Ivan Alic (Keysight Technologies, Austria); Alessandra La Gioia, Emily Porter and Martin O'Halloran (National University of Ireland, Ireland) |
| **11:30** | **CS33.7**<br>**Advances in Multi-Target FOCO for Hyperthermia Treatment Planning: A Robustness Assessment**<br>Gennaro G. Bellizzi and Tommaso Isernia (Mediterranea University of Reggio Calabria and IREA - National Research Council, Italy); Tomas Drizdal, Gerard C. van Rhoon and Margarethus M. Paulides (Erasmus University Medical Center, The Netherlands); Lorenzo Crocco (CNR - National Research Council of Italy, Italy) |
| **11:50** | **CS33.8**<br>**Dielectric Properties of Breast Tissues: Experimental Results Up to 50 GHz**<br>Simona Di Meo, Pedro Fidel Espin Lopez, Andrea Martellosio, Marco Pasian, Maurizio Bozzi, Luca Perregrini, Andrea Mazzanti and Francesco Svelto (University of Pavia, Italy); Paul Summers, Giuseppe Renne and Massimo Bellomi (European Institute of Oncology, Italy); Lorenzo Preda (University of Pavia, Italy) |
| **12:10** | **CS33.9**<br>**Feasibility of Microwave Dielectric Sensing to Monitor Potassium Concentration in Blood**<br>Lijo Thomas, Martin O'Halloran, Atif Shahzad and Muhammad Adnan Elahi (National University of Ireland, Ireland) |
| **12:30** | **CS33.10**<br>**Self-calibration Algorithms for Microwave Hyperthermia Antenna Arrays**<br>Massimiliano Zanoli, Mikael Persson and Hana Dobšíček Trefná (Chalmers University of Technology, Sweden) |

## Thursday 12 April 2018 15:00 – 16:00

| **Invited Speakers Session**<br>Room: Room 7<br>Chairs: Raj Mittra (University of Central Florida in Orlando, USA) and Professor Zhi Ning Chen (NUS, Singapore) | |
|---|---|
| **15:00** | **Optimising RF Instrumentation for Challenging Measurements**<br>Steve Nichols, NSI-MI Technologies, United Kingdom |
| **15:30** | **Efficient and Accurate Analysis of Real-Life Multi-Scale Antenna Problems via Integral Equations**<br>Professor Francesca Vipiana, Politecnico di Torino, Italy |

| **Invited Speakers Session**<br>Room: Room 12<br>Chairs: Rob Lewis (BAE Systems, United Kingdom) and Professor Hisamatsu Nakano (Hosei University, Japan) | |
|---|---|
| **15:00** | **Recent Advances in the Comprehension of Mutual Coupling in Antenna Arrays**<br>Professor Trevor Bird, CSIRO (retired), Australia |
| 15:30 | **RF-DC Conversion Efficiency of a Rectenna - Rectifying Antenna**<br>Professor Naoki Shinohara, University of Kyoto, Japan |

## Thursday 12 April 2018 16:30 – 18:10

| **T01 - 7: Radio Propagation Channel - 3**<br>Cellular Networks & 5G \| Regular Session \| Propagation<br>Room: Room 7<br>Chairs: Dr Jonas Medbo (Ericsson, Sweden) and Professor Reiner S. Thomä (Technische Universität Ilmenau, Germany) | |
|---|---|
| **16:30** | **T01-7.1**<br>**Estimation and Characterization of Multipath Clusters in Urban Scenarios**<br>Christian Schneider, Jonas Gedschold, Martin Käske, Reiner S. Thomä and Giovanni Del Galdo (Technische Universität Ilmenau, Germany) |
| **16:50** | **T01-7.2**<br>**Location Variability Statistics Based on Mobile Measurements Below 6 GHz**<br>Clare Allen, Frances Riddoch and Afzal Lodhi (Ofcom, United Kingdom) |
| **17:10** | **T01-7.3**<br>**Elevation Angle Dependence of Building Entry Loss**<br>Satyam Dwivedi, Jonas Medbo and Dennis Sundman (Ericsson, Sweden) |
| **17:30** | **T01-7.4**<br>**Spatial Correlation of C-V2X Antennas Measured in the Virtual Road Simulation and Test Area**<br>Philipp Berlt, Frank Wollenschläger, Christian Bornkessel and Matthias Hein (Ilmenau University of Technology, Germany) |

| | |
|---|---|
| **17:50** | **T01-7.5**<br>**Centimeter-Wave Path Loss and Beam Combining Gain Analysis for Belo Horizonte and Manaus Environments in Brazil**<br>Glaucio L. Ramos and Mateus H. B. Rezende (GAPEA and UFSJ/CEFET-MG, Brazil); Paulo Tibúrcio Pereira (GAPEA); Robson Domingos Vieira (Ektrum, Brazil); Alexandre Figueiredo Loureiro (IESB, Brazil); Cássio Rego (Federal University of Minas Gerais, Brazil) |
| **T01-4: MM-wave Propagation and Measurements**<br>Cellular Networks & 5G \| Regular Session \| Propagation<br>Room: Room 12<br>Chairs: Dr Pavel Valtr (Czech Technical University in Prague, Czech Republic) and Dr Mohsen Khalily (University of Surrey, United Kingdom) | |
| **16:30** | **T01-4.1**<br>**Path Loss Measurements and Models at 28 GHz for 90% Indoor Coverage**<br>Dmitry Chizhik, Jinfeng Du and Reinaldo Valenzuela (Nokia Bell Labs, USA); Guillermo Castro and Mauricio Rodríguez (Pontificia Universidad Católica de Valparaíso, Chile); Rodolfo Feick (Universidad Técnica Federico Santa María, Chile) |
| **16:50** | **T01-4.2**<br>**Millimeter-Wave Directional Path Loss Models in the 26 GHz, 32 GHz, and 39 GHz Bands for Small Cell 5G Cellular System**<br>Mohsen Khalily, Mir Ghoraishi, Sohail Taheri, Sohail Payami and Rahim Tafazolli (University of Surrey, United Kingdom) |
| **17:10** | **T01-4.3**<br>**Comparison of Measured and Theoretically Predicted Rain Attenuation at 32 GHz and 38 GHz**<br>Pavel Valtr, Martin Fencl, Vojtech Bares and Pavel Pechac (Czech Technical University in Prague, Czech Republic) |
| **17:30** | **T01-4.4**<br>**EM Wave Propagation Experiment at E Band and D Band for 5G Wireless Systems: Preliminary Results**<br>Lorenzo Luini and Carlo Riva (Politecnico di Milano, Italy); Giuseppe Roveda, Maurizio Zaffaroni and Mario Costa (Huawei Microwave Centre, Italy) |
| **17:50** | **T01-4.5**<br>**Indoor Millimetre Wave Channel Measurements for 5G Wireless Systems**<br>Andrew C M Austin, Michael J Neve and Damla Guven (The University of Auckland, New Zealand) |
| **T11-8: Novel Antenna Design Techniques**<br>Future Applications \| Regular Session \| Antennas<br>Room: Room 17<br>Chairs: T Chaoyun Song (University of Liverpool, United Kingdom) | |

| | |
|---|---|
| **16:30** | **T11-8.1**<br>**Analysis of Large Complex Metasurfaces Antennas with the Fast Synthetic Approach**<br>Francesco Vernì (Polytechnic University of Turin and Istituto Superiore Mario Boella, Italy); Marco Righero (Istituto Superiore Mario Boella, Italy); Giuseppe Vecchi (Politecnico di Torino, Italy) |
| **16:50** | **T11-8.2**<br>**A High-Gain Shared-Aperture Dual-Band OAM Antenna with Parabolic Reflector**<br>Fan Qin, Jianjia Yi, Wenchi Cheng, Yi Liu and Hailin Zhang (Xidian University, P.R. China); Steven Gao (University of Kent, United Kingdom) |
| **17:10** | **T11-8.3**<br>**Semidefinite Relaxation-Based Optimization of Yagi-Uda Array Antennas**<br>Hans-Dieter Lang and Costas D Sarris (University of Toronto, Canada) |
| **17:30** | **T11-8.4**<br>**Antenna Effective Area for Spherical Waves**<br>Makoto Nagai (National Astronomical Observatory of Japan, Japan); Hiroaki Imada (Japan Aerospace Exploration Agency, Japan) |
| **17:50** | **T11-8.5**<br>**Miniaturization of Circularly Polarized Ring Slot Antenna Etched on Finite Ground Plane Using Characteristic Modes**<br>Arka Bhattacharyya and Bhaskar Gupta (Jadavpur University, India) |
| **T06-10: Millimeter Wave Antennas for Radar Systems**<br>Radar Systems \| Regular Session \| Antennas \| Propagation<br>Room: Room 16<br>Chairs: Professor Costas Constantinou (University of Birmingham, United Kingdom) and Professor Il-Suek Koh (INHA University, Korea) | |
| **16:30** | **T06-10.1**<br>**Hybrid Thin Film Multilayer Antenna for Automotive Radar at 77 GHz**<br>Osama Khan, Johannes Meyer, Klaus Baur and Saeed Arafat (Robert Bosch GmbH, Germany); Christian Waldschmidt (University of Ulm, Germany) |
| **16:50** | **T06-10.2**<br>**Design of Filter-Horn Antenna Based on Groove Gap Waveguide Technology for V-Band Application**<br>Homayoon Oraizi, Amrollah Amini and Mahsa Hamedani (Iran University of Science and Technology, Iran); Davoud Zarifi (University of Kashan, Iran) |

| | |
|---|---|
| **17:10** | **T06-10.3**<br>**Monopulse RLSA Antenna Based on a Gap Waveguide Butler Matrix with a Feeding Cavity at 94 GHz**<br>Adrián Tamayo-Domínguez, Yasar Kurdi, José-Manuel Fernández-González and Manuel Sierra-Castañer (Universidad Politécnica de Madrid, Spain) |
| **17:30** | **T06-10.4**<br>**A Complex Low-RCS Antenna System for the Placement of mm-Wave Automotive Radars Behind Car Bumpers**<br>Claudia Vasanelli, Frank Bögelsack and Christian Waldschmidt (Ulm University, Germany) |
| **17:50** | **T06-10.5**<br>**Low-THz Transmission Through Liquid Contaminants on Antenna Radome**<br>Fatemeh Norouzian, Rui Du, Emidio Marchetti, Marina S. Gashinova, Edward Hoare, Costas Constantinou, Peter Gardner and Mikhail Cherniakov (University of Birmingham, United Kingdom) |
| **T01-2: Mobile Base-Station Antennas**<br>Cellular Networks & 5G \| Regular Session \| Antennas<br>Room: Room 14<br>Chairs: Ahmed Alieldin (University of Liverpool, United Kingdom) and Professor Yejun He (Shenzhen University, P.R. China) | |
| **16:30** | **T01-2.1**<br>**Design of Dual-Band Dual-Polarized Swastika-Shaped Antenna for Mobile Communication Base Stations**<br>Ahmed Alieldin, Yi Huang and Manoj Stanley (University of Liverpool, United Kingdom) |
| **16:50** | **T01-2.2**<br>**A Wideband Base Station Antenna with Reduced Beam Squint**<br>Haihan Sun, Can Ding and Y. Jay Guo (University of Technology, Australia) |
| **17:10** | **T01-2.3**<br>**A General Design and Optimization Method of Tightly-Coupled Cross-Dipoles for Base Station**<br>Can Ding, Haihan Sun and Y. Jay Guo (University of Technology, Australia); Rick Ziolkowski (The University of Arizona, USA) |
| **17:30** | **T01-2.4**<br>**Base Station Antenna Array with Calibration Structure**<br>Jaakko Haarla, Anu Lehtovuori and Ville Viikari (Aalto University, Finland) |

| | |
|---|---|
| **17:50** | **T01-2.5**<br>**A Compact Broadband Dual-Polarized Antenna Element for 2G/3G/4G Base Station Applications**<br>Yejun He, Wei Tian, Jian Qiao and Long Zhang (Shenzhen University, P.R. China) |
| **T04-4 Design and Modelling for Wireless Connectivity**<br>Connected Objects \| Regular Session \| Propagation<br>Room: Room 13<br>Chairs: Zhi Ning Chen (NUS, Singapore) and Dr Philipp Gentner (Kathrein-Werke, Germany) | |
| **16:30** | **T04-4.1**<br>**Design and Optimization of A Two-Element Huygens Source Based Superdirective Array**<br>Alexandre Debard, Antonio Clemente and Christophe Delaveaud (University of Grenoble Alpes and CEA-LETI, France); Christopher Djoma, Patrick Potier and Pouliguen Philippe (DGA, France) |
| **16:50** | **T04-4.2**<br>**Simulation Model for Chassis Antenna Cavities Made from Carbon Fiber Reinforced Polymer**<br>Gerald Artner, Robert Langwieser and Christoph F Mecklenbräuker (Vienna University of Technology, Austria) Philipp Gentner (Kathrein-Werke, Germany); |
| **17:10** | **T04-4.3**<br>**Array-Antenna Decoupling Surface for A Circularly-Polarized Circular Array**<br>Ke-Li Wu and Zhen-Yuan Zhang (The Chinese University of Hong Kong, Hong Kong); Weixing Sheng (Nanjing University of Science and Technology, P.R. China) |
| **17:30** | **T04-4.4**<br>**3D Coupled Resonators for Enhanced Filter Design**<br>Andrea I Vallecchi, Christopher Stevens and Ekaterina Shamonina (University of Oxford, United Kingdom) |
| **17:50** | **T04-4.5**<br>**Novel Implementation for a Broadband Cavity-Backed Slot Fed in Transmission Configuration**<br>Alberto Hernández-Escobar, Elena Abdo-Sánchez and Carlos Camacho-Peñalosa (University of Málaga, Spain) |
| **CS18:New Optimization and Realization of UWB Feed Technologies for Future Radio Telescopes**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 6<br>Chairs: Professor Jian Yang (Chalmers University, Sweden) and Professor Sander Weinreb (California Institute of Technology, USA) | |

| | |
|---|---|
| **16:30** | **CS18.1**<br>**BRAND: Ultra-Wideband Feed Development for the European VLBI Network - A Dielectrically Loaded Decade Bandwidth Quad-Ridge Flared Horn**<br>Jonas Flygare, Miroslav Pantaleev and Simon Olvhammar (Chalmers University of Technology, Sweden) |
| **16:50** | **CS18.2**<br>**Optimization of the Quad-Ridged Horn for the Geodetic VGOS Station of the Yebes Observatory**<br>Félix Tercero, Óscar García-Pérez, Jose Manuel Serna, Samuel López-Ruiz and Beatriz Vaquero (IGN Spain, Spain); Rocio Sanchez-Montero (University of Alcala, Spain) |
| **17:10** | **CS18.3**<br>**Design of an Asymmetrical Quadruple-ridge Flared Horn Feed: A Solution to Eliminate Polarization Discrepancy in the Offset Reflecting Systems**<br>Bin Dong (National Astronomical Observatories, Chinese Academy of Sciences, P.R. China); Jian Yang (Chalmers University of Technology, Sweden); Miroslav Pantaleev, Jonas Flygare and Bhushan Billade (Onsala Space Observatory and Chalmers University of Technology, Sweden) |
| **17:30** | **CS18.4**<br>**EMI Modelling of an 80 kHz to 80 MHz Wideband Antenna and Low-Noise Amplifier for Radio Astronomy in Space**<br>Albert Jan Boonstra, Mark Ruiter, David S Prinsloo, Hans van der Marel, Michel Arts, Gert Kruithof and Michael Wise (ASTRON, The Netherlands); Heino Falcke and Marc Klein-Wolt (Radboud University, The Netherlands); Hanna Rothkaehl (Space Research Centre - Polish Academy of Sciences, Poland); Baptiste Cecconi, Moustapha Dekkali and Jinsong Ping (NAOC, P.R. China) |
| **17:50** | **CS18.5**<br>**Cryogenic 1.2 to 116 GHz Receiver for Large Arrays**<br>Sander Weinreb (California Institute of Technology, USA); Hamdi Mani (ASU, USA); Weiye Zhong (CAS, China); Jonas Flygare and Bushan Billade (Chalmers Universtiy, Sweden); Ahmed Akgiray (Ozyegin University, Turkey); Li Dong (CETC, P.R.China) |
| **T09-7: Antennas and Devices for Space Applications**<br>Space Applications \| Regular Session \| Antennas<br>Room: Room 4<br>Chairs: Dr Akram Alomainy (Queen Mary University of London, United Kingdom) and Dr Luca Salghetti Drioli (ESA, The Netherlands) | |
| **16:30** | **T09-7.1**<br>**Directional Coupler with 3 Input / 3 Output Square Waveguide Dual-Polarization Ports**<br>Antonio Morini, Marco Baldelli and Giuseppe Venanzoni (Università Politecnica delle Marche, Italy); Piero Angeletti, Daniele Petrolati and Giovanni Toso (European Space Agency, The Netherlands) |
| **16:50** | **T09-7.2**<br>**Wideband High-Gain Circularly-Polarised Antenna Based on Fabry-Perot Concept and a Conical Horn**<br>Yuehe Ge and Kaiyuan Qin (Huaqiao University, P.R. China) |

| | |
|---|---|
| **17:10** | **T09-7.3**<br>**A Modular Phased Array Transceiver with RF-MEMS SPDT Switches in a 0.25 Um SiGe BiCMOS Technology**<br>Tobias Chaloun and Wolfgang Menzel (University of Ulm, Germany); Mehmet Kaynak and Selin Tolunay Wipf (IHP, Germany); Filipe Tabarani and Hermann Schumacher (University of Ulm, Germany) |
| **17:30** | **T09-7.4**<br>**Focused Superconducting Connected Array for Wideband Sub-mm Spectrometers**<br>Alejandro Pascual Laguna and Jochem Baselmans (Delft University of Technology and SRON, The Netherlands); Daniele Cavallo, Nuria Llombart and Andrea Neto (Delft University of Technology, The Netherlands) |
| **17:50** | **T09-7.5**<br>**Ka-band Multibeam Antenna Development for VHTS**<br>Raffaele Di Bari and Alaa Abunjaileh (Airbus, United Kingdom); Benoit Albert (Airbus, France) |
| **CS09: Beamforming Techniques for Information and Power Transmission – a Joint COST IRACON and COST WiPE Session**<br>Future applications \| Convened Session \| Propagation<br>Room: Room 2<br>Chairs: Professor Vittorio Degli Esposti and Jonathan Pinto (BAE Systems, United Kingdom) | |
| **16:30** | **CS09.1**<br>**Two-Step Angle-of-Arrival Estimation for Terahertz Communications Based on Correlation of Power-Angular Spectra in Frequency**<br>Bile Peng, Ke Guan, Sebastian Rey and Thomas Kürner (Technische Universität Braunschweig, Germany) |
| **16:50** | **CS09.2**<br>**A Multi-Carrier Frequency Diverse Array Design Method for Wireless Power Transmission**<br>A-Min Yao, Nicola Anselmi and Paolo Rocca (University of Trento, Italy) |
| **17:10** | **CS09.3**<br>**Investigation of Effective Range of Focused Gaussian Beam Compared to Focused Uniform Beam in Fresnel Region**<br>Seishiro Kojima and Naoki Shinohara (Kyoto University, Japan) |
| **17:30** | **CS09.4**<br>**Far- and Near-Field Focused WPT Using (Sub) Arrays**<br>Huib J. Visser (IMEC Netherlands, The Netherlands) |

| | |
|---|---|
| **17:50** | **CS09.5**<br>**Influence of System Aspects in Propagation Based Evaluation of Beam-forming at mm-Waves**<br>Diego Dupleich, Eric Schäfer, Giovanni Del Galdo and Reiner S. Thomä (Ilmenau University of Technology, Germany) |
| **T01-15: Cellular Communication Technologies**<br>Cellular Networks & 5G \| Regular Session \| Antennas<br>Room: Room1<br>Chairs: Kenneth Tong (University College London, United Kingdom) and Professor Q. X. Chu (South China University of Technology, P.R. China) | |
| **16:30** | **T01-15.1**<br>**Three-Stage Self-Interference Cancellation for Small Form Factor Realization of In-Band Full Duplex**<br>Chunqing Zhang, Leo Laughlin, Mark Beach, Kevin A Morris and John Haine (University of Bristol, United Kingdom) |
| **16:50** | **T01-15.2**<br>**Enhancing the Bandwidth in Transmitarray Antennas Using Tapered Transmission Line Matching Approach**<br>Andrea Massaccesi and Paola Pirinoli (Politecnico di Torino, Italy) |
| **17:10** | **T01-15.3**<br>**A Fully Planar Substrate Integrated Probe-Based Wideband Orthomode Transducer**<br>Uros Jankovic (University of Westminster, United Kingdom); Djuradj Budimir (University of Westminster, United Kingdom and University of Belgrade, Serbia) |
| **17:30** | **T01-15.4**<br>**Directional Modulation Design Based on Crossed-Dipole Arrays for Two Signals with Orthogonal Polarisations**<br>Bo Zhang, Wei Liu and Xiang Lan (University of Sheffield, United Kingdom) |
| **17:50** | **T01-15.5**<br>**2-Bit Reconfigurable Circularly-Polarized Unit-Cell at Ka-band**<br>Fatimata Diaby, Luca Di Palma, Antonio Clemente and Laurent Dussopt (Université Grenoble-Alpes and CEA, France); Trung Kien Pham and Ronan Sauleau (University of Rennes 1, France); Erwan Fourn (INSA of Rennes, France) |

**Thursday 12 April 2018 13:30 – 15:00, P3 Posters**
**Room: Capital Hall**
**A: Antennas**
**M: Measurements**
**O: Other subjects**
**P: Propagation**
**S: Simulations**

**P3.1 (A-T01)**
**Multiband Antenna Operation with a Non-Resonant Element Using a Reconfigurable Matching Network**
Jaume Anguera, Aurora Andújar and José Leiva (Fractus Antennas and Universitat Ramon Llull, Spain); Cor Schepens and Roberto Gaddi (Cavedish Kinetics Inc, The Netherlands); Sungtek Kahng (Incheon National University, Korea)

**P3.2 (A-T01)**
**A Low Cost Wide Band and Circularly Polarized Modified Half E-shaped Patch Antenna for 5G Mobile Communications**
Sotirios Goudos, Traianos Yioultsis, Krystalia Dalidou and Katherine Siakavara (Aristotle University of Thessaloniki, Greece)

**P3.3 (A-T01)**
**Investigation of User Effects on Mobile Phased Antenna Array from 5 to 6 GHz**
Carla Di Paola, Igor Syrytsin, Shuai Zhang and Gert Pedersen (Aalborg University, Denmark)

**P3.5 (A-T01)**
**A Compact Low Cost High Isolation Substrate Integrated Waveguide Fed Slot Antenna Array at 28 GHz Employing Beamforming and Beam Scanning for 5G Applications**
Jamal Nasir, Mutee Rehman and Wasif Khan (Lahore University of Management Sciences, Pakistan); Ali Hashmi (National Univeristy of Sciences and Technology, Pakistan)

**P3.6 (A-T01)**
**3D-Printed mm-Wave Corrugated Plate Antenna for 5G Communications**
Shaker Alkaraki, Yue Gao and Clive Parini (Queen Mary University Of London, United Kingdom )

**P3.7 (A-T01)**
**Microstrip Patch Antenna Arrays with Fan-Shaped 90 and 45-Degree Wide Radiation Patterns for 28 GHz MIMO Applications**
Sergey Churkin, Andrey Mozharovskiy, Alexey Artemenko and Roman Maslennikov (Radio Gigabit LLC, Russia)

**P3.9 (A-T01)**
**A Compact Vivaldi Antenna Array for 5G Channel Sounding Applications**
Naser Ojaroudi Parchin and Raed Abd-Alhameed (Univeristy of Bradford, United Kingdom)

**P3.10 (A-T01)**

**Anomalous Leaky-Mode Dispersion of Coupled-Cavity Wideband Leaky-Wave Antennas**

Miguel Poveda García, Raúl Guzmán Quirós and Jose-Luis Gómez-Tornero (Technical University of Cartagena, Spain); Samuel Rotenberg, Carolina Mateo-Segura and George Goussetis (Heriot-Watt University, United Kingdom)

**P3.11 (A-T01)**

**On the Use of Focal-Plane Arrays in mm-Wave 5G Base Stations**

Amr Elsakka, Thomas Bressner, Antonius Johannes van den Biggelaar, Ali Al-Rawi, Ulf Johannsen, Marianna Ivashina and A. B. Smolders (Eindhoven University of Technology, The Netherlands)

**P3.12 (A-T01)**

**Dual Band Antenna for Portable Consumer Devices**

Shruti Joshi, Sanket Deshpande and Sudeep Baudha (Birla Institute of Technology and Science, India)

**P3.13 (A-T01)**

**Empty Substrate Integrated Waveguide-Fed MMW Aperture-Coupled Patch Antenna for 5G Applications**

Zia Ullah Khan, Syeda Fizzah Jilani and Akram Alomainy (Queen Mary University of London, United Kingdom); Angel Belenguer (Universidad de Castilla-La Mancha, Spain); Tian Hong Loh (National Physical Laboratory, United Kingdom)

**P3.14 (A-T01)**

**High Gain Dual-Band Millimeter Wave Antenna Using Flexible PET Substrate**

Ali Ghavidel (Iran National Elite Foundation (INEF) and Iran Telecommunication Research Center (ITRC), Iran); Ali Araghi (Iran Telecommunication Research Center (ITRC), Iran); Sami Myllymaki and Marko Sonkki (University of Oulu, Finland)

**P3.15 (A-T01)**

**Transparent and Flexible Y-Shaped Antenna for 5G Wireless Applications**

Sahariar Rahman, Shahed Alam, Majedul Haque, Nazmu Siddique and Md Hasanuzzaman Sagor (BRAC University, Bangladesh)

**P3.16 (A-T01)**

**Dual-Port Dual-Band (28 / 38 GHz) SIW Leaky Wave Antenna for 5G Base Stations**

Reza Yazdani Mianroodi and Hadi Aliakbarian (KN Toosi University of Technology, Iran); Guy Vandenbosch (Katholieke Universiteit Leuven, Belgium)

**P3.17 (A-T01)**

**Multiband Pattern-Reconfigurable PIFA for 5G MIMO Mobile Terminals**

Surentiran Padmanathan, Azremi Abdullah Al-Hadi, Ping Jack Soh, Faizal Jamlos and Sharul Kamal Abdul Rahim (Universiti Malaysia Perlis, Malaysia)

**P3.18 (A-T02)**

**Subarray Design of a Single-Layer Corporate-Fed Dielectric-Filled Waveguide Slot Array Antenna**

Baoquan Duan and Miao Zhang (Xiamen University, P.R. China); Jiro Hirokawa (Tokyo Institute of Technology, Japan); Qing Huo Liu (Duke University, USA)

**P3.19 (A-T02)**

**Design of A Wideband Array Antenna Prototype with Gap Waveguide for W-Band Wireless Links**

Jinlin Liu, Ashraf Uz Zaman and Jian Yang (Chalmers University of Technology, Sweden)

**P3.20 (A-T02)**

**Inverted Microstrip Gap Waveguide Dual-Band Filter Integrated with Slot Antenna**

Luis Inclan-Sanchez (University Carlos III of Madrid, Spain)

**P3.22 (A-T02)**

**Impulse Response with Correlation Study of a Broadband Bended Wearable Monopole Antenna**

Sherif R. Zahran (Arab Academy for Science, Technology and Maritime Transport, Egypt); Mahmoud Abdelrahman Abdalla (MTC, Egypt); Djuradj Budimir (University of Westminster, United Kingdom)

**P3.23 (A-T03)**

**A Circularly Polarized Reconfigurable Dielectric Resonator Antenna**

Zhe Chen and Hang Wong (City University of Hong Kong, Hong Kong)

**P3.25 (A-T03)**

**A Smart and Low-cost Enhanced Antenna System for Industrial Wireless Broadband Communication**

Moh Chuan Tan (University of Glasgow and RFNet Technologies Pte Ltd, Singapore); Minghui Li, Qammer H Abbasi and Muhammad Imran (University of Glasgow, United Kingdom)

**P3.26 (A-T03)**

**Miniaturization of Quad Port Helical Antenna for Wireless 5G Massive MIMO Application**

Fayez Hyjazie and Halim Boutayeb (Huawei Technologies Co. Ltd., Canada)

**P3.27 (A-T04)**

**Utilizing Everyday Metallic Structures as UHF RFID Antennas**

Paul Taylor and John Batchelor (University of Kent, United Kingdom)

**P3.28 (A-T04)**

**Cylindrical Beam Sweeping Antenna Using a New Active FSS Structure**

Muamba Mukendi Leingthone, Nadir Hakem and Taieb Elkarkraoui (Université du Québec en Abitibi-Témiscamingue, Canada)

**P3.30 (A-T04)**

**UHF RFID Tag Antenna Design for Challenging Environment Surfaces**

Abubakar Sharif, Jun Ouyang and Rui Long (University of Electronic Science and Technology China, P.R. China); Hassan Tariq Tariq Chattha (Islamic University Madinah, Saudi Arabia)

**P3.31 (A-T05)**

**Microwave-based Non-invasive Blood Glucose Levels Monitoring Using Flexible UWB Antennas**

Fengzhou Wang (University of Edinburgh, United Kingdom)

**P3.32 (A-T05)**

**Calculating Physical Bounds for In-body Antennas**

Casimir Ehrenborg and Mats Gustafsson (Lund University, Sweden)

**P3.33 (A-T05)**

**Inkjet Printed RF Sensor Array for Lung Disease Detection**

Muhammad Tayyab and Mohammad S. Sharawi (King Fahd University for Petroleum and Minerals (KFUPM), Saudi Arabia); Atif Shamim (King Abdullah University of Science and Technology, Saudi Arabia)

**P3.34 (A-T06)**

**Comparative Study of Compressive Sensing Imaging in Different Array Configurations**

Qiao Cheng, Akram Alomainy and Yang Hao (Queen Mary University of London, United Kingdom)

**P3.35 (A-T06)**

**Antenna Properties of the Modified Luneburg Lens with Backward Radiation**

Sergey Shabunin (Ural Federal University, Russia); Dmitry Denisov (Ural Institute of Communications and Computer Sciences, Russia)

**P3.36 (A-T06)**

**Antenna Range Measurements for Airborne Remote Sensing Antennas**

Bernd Gabler, Alicja Kość and Markus Limbach (German Aerospace Center (DLR), Germany)

**P3.37 (A-T06)**

**Ice Influence on Wideband Dipole Antenna Characteristics**

Aleksey V. Ershov and Nikolay Voytovich (South Ural State University, Russia)

**P3.38 (A-T06)**

**Monopoles Excited by an Umbrella-Shaped Transmission Line**

Toru Kawano (National Defense Academy, Japan); Hisamatsu Nakano (Hosei University, Japan)

**P3.39 (A-T09)**

**Circularly Polarised Millimeter Wave Dielectric Resonator Reflectarray**

Shiyu Zhang and Syed Sheheryar Bukhari (Loughborough University, United Kingdom)

**P3.40 (A-T09)**

**Controlling the Gain of Wide Band Open Quad Ridge Antennas**

German Cortes-Medellin (NSI-MI Technologies, USA)

**P3.42 (A-T09)**

**High TRL Achieved for European Large Deployable Reflector Antennas**

Leri Datashvili (Large Space Structures (LSS) GmbH, Germany)

**P3.43 (A-T09)**

**Design of Multiband Circularly Polarized Antenna Arrays for GNSS Applications**

Yuan Yao, Xuan Shao, Ying Li and Junsheng Yu (Beijing University of Posts and Telecommunications, P.R. China); Xiaodong Chen (Queen Mary University of London, United Kingdom)

**P3.45 (A-T11)**

**Spatial Dispersion Analysis of Homogenized Metafurfaces for Terahertz Leaky-Wave Antennas**

Silvia Tofani, Walter Fuscaldo, Paolo Burghignoli and Alessandro Galli (Sapienza University of Rome, Italy); Dimitrios Zografopoulos (CNR-IMM, Italy); Paolo Baccarelli (Roma Tre University, Italy); Romeo Beccherelli (Consiglio Nazionale delle Ricerche, Italy)

**P3.46 (A-T11)**

**All-textile Stripline for Wearable Applications: Practical Interconnection Implementation**

Aris Tsolis, Antonis A Alexandridis and Fotis Lazarakis (NCSR Demokritos, Greece); William Whittow and Yiannis Vardaxoglou (Loughborough University, United Kingdom)

**P3.47 (A-T11)**

**A Novel Mobile Phone Antenna for Effectively Reducing Specific Absorption Rate**

Yejun He, Kun Liang and Jun Li (Shenzhen University, P.R. China); Qammer H Abbasi (University of Glasgow, United Kingdom)

**P3.48 (A-T11)**

**Impact of Surface Roughness on 3D Printed SLS Horn Antennas**

Konstantin Lomakin, Tatiana Pavlenko, Mark Sippel, Gerald Gold, Klaus Helmreich, Markus Ankenbrand, Nikolaus Urban and Jörg Franke (FAU Erlangen-Nürnberg, Germany)

**P3.49 (A-T11)**

**V-Band High-Gain Slot Antenna Using Single Layer Partially Reflective Surface**

Hussien Attia (King Fahd University of Petroleum and Minerals, Saudi Arabia)

**P3.50 (M-T04)**

**Microwave Measurements of High Dielectric Constant Ceramics by Powder Mixture Equations - A Further Study**

Jyh Sheen and Yong-Lin Wang (National Formosa University, Taiwan)

**P3.51 (M-T05)**

**Clinical Investigation of Breast Biopsies: Concurrent UWB Microwave Spectroscopy and Ultrasound Measurements**

Stefanie Goram, Jochen Moll, Dennis Wörtge and Viktor Krozer (Goethe University Frankfurt, Germany); Frank Hübner, Babak Bazrafshan and Thomas Vogl (Goethe University Hospital Frankfurt am Main, Germany)

**P3.52 (M-T08)**

**Analysis of GPS Reflected Signals Based on SNR Measurements: Land Versus Water**

Rameez UR Rahman Lighari, Erkki T. Salonen, Markus Berg and Aarno Pärssinen (University of Oulu, Finland)

**P3.53 (M-T10)**

**An Approach to the Compensation of Inaccuracies in Near-Field Antenna Measurements**

Amur Khashimov (South Ural State University, Russia); R Salikhov (Chelyabinsk, Russian Federation)

**P3.55 (M-T10)**

**Further Refining and Validation of RF Absorber Approximation Equations for Anechoic Chamber Predictions**

Vince Rodriguez (NSI-MI Technologies, LLC. and IEEE-EMC, USA)

**P3.56 (M-T11)**

**A Supersonic Projectile - Embedded OFDM Channel Sounder. First Validation Experimental Results**

Manuel Milla (University of Poitiers, France); Dirk Schmoltzi and Loic Bernard (ISL, France); Hervé Boeglen and Rodolphe Vauzelle (University of Poitiers XLIM Lab, France)

**P3.59 (M, P-T08)**

**Clutter Analysis in a Time-Domain Millimeter-Wave Reflectometry Setup**

Sebastian Heunisch, Lars Ohlsson and Lars-Erik Wernersson (Lund University, Sweden)

**P3.60 (O-T01)**

**Parasitic Inductance Control of Mutli-Layer Ceramic Capacitors using Metamaterials**

Tom Whittaker, William Whittow and Yiannis Vardaxoglou (Loughborough University, United Kingdom)

**P3.61 (O-T01)**

**The Universal Structure of a Segment of the Microstrip Transmission Line as a Basic Element of Compact Microwave Devices**

Denis Letavin and Sergey Shabunin (Ural Federal University, Russia)

**P3.62 (O-T01)**

**Consideration of IEEE 802.11P and Proposed 5G for Holograms in Vehicular Communication**

Merin Thomas, Robert Michael Edwards and Zhan Wang (Loughborough University, United Kingdom)

**P3.63 (O-T01)**

**Compact Double-Frequency Microstrip Coupler**

Denis Letavin and Sergey Shabunin (Ural Federal University, Russia)

**P3.65 (O-T01)**

**A Novel Single Layer Dual Linear Polarization Band-Pass Frequency Selective Surface for Automotive Fully Coated Glass**

Mohamad Oussayran, Remi Sarkis and Tony Makdissy (Antonine University, Lebanon)

**P3.66 (O-T05)**

**Comparing a Time-Domain and Frequency-Domain Based Algorithm in Microwave Tomography**

Tomas Rydholm, Andreas Fhager and Mikael Persson (Chalmers University of Technology, Sweden); Paul M Meaney (Dartmouth College, USA)

**P3.67 (O-T05)**

**Prediction of Tumor Heatability in Microwave Hyperthermia Applicators**

Pegah Takook, Erika Ek, Ellen Eskilsson, Hana Dobšíček Trefná and Mikael Persso (Chalmers University of Technology, Sweden)

**P3.68 (O-T05)**

**Preliminary Study on Microwave Sensor for Bone Healing Follow-up after Cranial Surgery in Newborns**

Mauricio D Perez, George Thomas, Syaiful Redzwan Mohd Shah, Jacob Velander, Noor Badariah Asan and Robin Augustine (Uppsala University, Sweden and National Technological University, Argentina); Parul Mathur (Amrita Univerity, India); Mohammad Nasir and Daniel Nowinski (Akademiska Sjukhuset, Sweden); Dhanesh G. Kurup (Amrita University, Bengaluru Campus, India)

**P3.69 (O-T05)**

**A Multimodal Ultrasound-Microwave Quantitative Imaging Technique for Breast Cancer**

Joe LoVetri, Ian Jeffrey, Nasim Abdollahi and Pedram Mojabi (University of Manitoba, Canada); Elise Fear, Douglas Kurrant and Muhammad Omer (University of Calgary, Canada)

**P3.70 (O-T06)**

**Further Analysis of Retrodirective Cross-Eye Jamming: Polarization Considerations**

Jiazhi Ma, Longfei Shi, Gang Cui and Shunping Xiao (National University of Defense Technology, P.R. China)

**P3.71 (O-T06)**

**High-accuracy Gaussian Process Modelling of Missile RCS with Cost-Based Preferential Training Data Selection**

J. Pieter Jacobs and Warren du Plessis (University of Pretoria, South Africa)

**P3.72 (O-T06)**

**A Linear Perturbation Model with Physical Optics Approximation to Recover Inhomogeneous Surface Impedance**

Simon Loillier and Genevieve Maze-Merceu (CEA CESTA, France); Stéphane Méric and Renaud Loison (Institut of Electronic and Telecommunications of Rennes, France)

**P3.73 (O-T06)**

**Increasing the Range of UWB Radars**

Yury Shestopalov (University of Gävle, Sweden); Alexander Samokhin (Moscow Technological University, Russia); Boris Lagovsky (Moscow State Institute of Radio Engineering and Automation, Russia)

**P3.74 (O-T09)**

**Ultralow Secondary Electron Yield Based on Graphene Nanostructures**

Guibai Xie, Guanghui Miao, Jing Yang and Wanzhao Cui (China Academy of Space Technology, CAST, Xi'an, P.R. China); Rong Yang (Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, CAS, P.R. China) Jianli Xu (Shanghai High School, P.R. China)

**P3.75 (O-T09)**

**Lightweight and Wide-Angle Metamaterial Absorbing Material Concept**

Anne-Claire Lepage, Yenny Pinto, Olivier Rance and Xavier Begaud (Institut Mines-Telecom, Telecom ParisTech, France); Nicolas Capet (CNES, France)

**P3.76 (O-T09)**

**The Observable Field for Multiple Plane Wave Incidence**

Andrea Neto, Arturo Fiorellini Bernardis and Nuria LLombart (Delft University of Technology, The Netherlands); Angelo Freni (University of Florence, Italy)

**P3.78 (O-T11)**

**Compact Broadband Electronically Controllable SIW Phase Shifter for 5G Phased Array Antennas**

Bilal Malik, Viktor Doychinov and Ian Robertson (University of Leeds, United Kingdom)

**P3.79 (O-T11)**

**Gait Speed Tracking System Using UWB Radar**

Bernard Lau and Sahar Haider (University of Waterloo, Canada); Ameneh Boroomand (University of Tehran, Iran); George Shaker (University of Waterloo and Spark Tech Labs, Canada); Jennifer Boger (University of Waterloo and Research Institute for Aging, Canada)

**P3.80 (O-T11)**

**Metasurfaces for Advanced Antenna Systems**

Luigi La Spada and Yang Hao (Queen Mary University of London, United Kingdom)

**P3.81 (O-T11)**

**Novel Transparency Effect in All-Dielectric Metamaterials Due to the Multipoles Annulment**

Anar Ospanova (National University of Science and Technology MISiS and Ben-Gurion University, Russia); Alina Karabchevsky (Ben-Gurion University, Israel); Alexey A. Basharin (University of Science and Technology, Russia)

**P3.82 (P-T01)**

**A Study on the Performance of Over-Roof-Top Propagation Models in Dense Urban Environment**

Enrico M. Vitucci, Franco Fuschini, Marina Barbiroli, Marco Zoli and Vittorio Degli-Esposti (University of Bologna, Italy)

**P3.82.a (P-T01)**

**Analysis of Wave Propagation in Plasmonic Holey Metasurfaces with Cylindrical Holes**

Fatemeh Ghasemifard, Martin Norgren and Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) and Guido Valerio (Sorbonne Universits, France)

**P3.84 (P-T09)**

**Simulating the Reliability of Radio Links During Superior Solar Conjunctions**

Alan Stocker and David Siddle (University of Leicester, United Kingdom); Antonios Argyriou (University of Thessaly, Greece); Andrea Giorgetti, Enrico Paolini, Paolo Tortora and Aurel Zeqaj (University of Bologna, Italy); Javier De Vicente (European Space Agency, Italy); Ricard Abello and Mattia Mercolino (European Space Agency, Germany)

**P3.85 (P-T09)**

**Experimental Optical Satellite Downlink Irradiance Statistics and Turbulence Conditions Estimation**

Nikolaos Lyras, Charilaos Kourogiorgas and Athanasios D. Panagopoulos (National Technical University of Athens, Greece); Konstantinos Liolis (SES, Luxembourg); Zoran Sodnik (ESA, The Netherlands)

**P3.86 (P-T09)**

**Propagation Campaign at Q-band and Ka-band Using the Alphasat and Ka-Sat Satellites**

Armando Rocha, Susana Mota and Flávio M. da Silva Jorge (University of Aveiro & Institute of Telecommunications, Portugal)

**P3.86.a (P-T09)**

**Variability of the 0º Isotherm in the Iberian Peninsula**

Ana Benarroch and Jose M Riera (Universidad Politécnica de Madrid, Spain); Gustavo Siles (Universidad Privada Boliviana, Bolivia)

**P3.87 (P-T11)**

**Experimental Platform for Through-The-Earth Communication**

Henrique Mendes, Adoniran Judson Braga, Josua Carreño, Luis Guilherme, Andre Noll Barreto, Leonardo Aguayo and Uzeda Garcia (Universidade de Brasília, Brazil)

**P3.88 (P-T11)**

**Hybrid Material Based on Metamaterial for Absorption Improvement of Pyramidal Absorbers**

Laura Pometcu, Ala Sharaiha and Ratiba Benzerga (University of Rennes, France); Philippe Pouliguen (DGA, France)

**P3.88.a (P-T11)**

**A W-band Solid-State Source with 2 Watts Continuous Wave Output Power**

Zhenhua Chen (Nanjing University of information Science &Technology, P.R. China); Xiang Chen (Institute of Space Radio Technology, P.R. China)

**P3.89 (P-T11)**

**Waves in Randomly-Stratified Media: Generalities and Applications**

Valentin Freilikher (Bar-Ilan University, Israel); Yury Bliokh (Technion-Israel Institute of Technology, Israel); Yuriy V. Tarasov (Institute for Radiophysics and Electronics NASU, Kharkov, Ukraine); Franco Nori (Center for Emergent Matter Science (CEMS), RIKEN, Japan)

**P3.90 (S-T01)**

**Network Model of a 5G MIMO Base Station Antenna in a Downlink Multi-User Scenario**

Navid Amani, Andrés Alayon Glazunov, Marianna Ivashin and Rob Maaskant (Chalmers University of Technology, Sweden)

**P3.91 (S-T01)**

**Modeling Power Angle Spectrum and Antenna Pattern Directions in Multipath Propagation Environment**

Jan M. Kelner and Cezary Ziółkowski (Military University of Technology, Poland)

**P3.92 (S-T02)**

**Near-to-Far-Field Transform Sample Reduction Through Statistical Analysis**

Franz Camilo (Universidade Federal de Minas Gerais - Brazil); Cássio Rego (Federal University of Minas Gerais, Brazil); Glaucio L. Ramos (Federal University of São João Del-Rei, Brazil)

**P3.94 (S-T03)**

**Phase Sensitivity of the Projection Method for a Beam Tilting Deformed Array**

Francesco Rigobello, Giulia Mansutti, Antonio-D. Capobianco and Andrea Galtaross (University of Padova, Italy)

**P3.95 (S-T05)**

**Simulation of Terahertz Intrabody Wireless Nano Sensor Networks in the Presence of Noise and Interference**

Ratna Indrawijaya (Technische Universität Braunschweig & Institut für Nachrichtentechnik, Germany); Thomas Kürner (Technische Universität Braunschweig, Germany)

**P3.96 (S-T06)**

**FDTD Numerical Dispersion Relation in Spherical Coordinates**

Mohammed F Hadi and Atef Elsherbeni (Colorado School of Mines, USA); Ravi Bollimuntha and Melinda Piket-May (University of Colorado at Boulder, USA)

**P3.97 (S-T06)**

**Simulation of Drone Micro-Doppler Signatures**

Youngwook Kim and Manroop Turna (California State University, Fresno, USA); Daegun Oh (DGIST, USA)

**P3.98 (S-T09)**

**Method of Moments Applied to Quasi-Static Antennas in Media with Dielectric Anisotropy: Convergence Study**

Evgenii Shirokov (Institute of Applied Physics of the Russian Academy of Sciences, Russia)

**P3.99 (S-T10)**

**Fractal-based 3D Model for Propagation in Vegetation at Millimeter-Wave Frequencies**

Nuno R. Leonor and Manuel García Sánchez (Universidade de Vigo, Spain); Rafael F. S. Caldeirinha and Telmo R. Fernandes (Polytechnic Institute of Leiria and Instituto de Telecomunicação (IT), Portugal)

**P3.100 (S-T10)**

**Emulation of Bent Thin-Wire in Cartesian FDTD Mesh by Using Electric Charge Correction on the Staircased Edges**

Tarcísio Fonseca, Sandro Gonçalves, Marcio Afonso and Ursula Resende (Federal Center of Technological Education of Minas Gerais, Brazil)

**P3.101 (S-T10)**

**Model for the Evaluation of the Loss Tangent of a Dielectric Material with a Scanning Split-Ring Resonator Probe**

Andrea I Vallecchi, Dmitry Isakov, Christopher Stevens and Patrick Grant (University of Oxford, United Kingdom)

**P3.102 (S-T10)**

**Higher-Order Basis Functions for an Enhanced Approximation of the Magnetic-Field Integral Equation**

José Gil, Miguel González, Jesús García and Rafael Gómez (Universidad Politécnica de Madrid, Spain)

## Friday 13 April 2018

## Friday 13 April 2018 09:00-10:40

| **CS11: New Developments of mm-Wave GAP Wave Technology**<br>Cellular Networks & 5G \| Convened Session \| Antennas<br>Room: Room 7<br>Chairs: Professor Jian Yang (Chalmers University, Sweden) and Professor Ahmed A. Kishk (Concordia University, Canada) | |
|---|---|
| **09:00** | **CS11.1**<br>**8 x 8 Single-Layer 30-GHz Antenna with a Combined Ridge-Groove Gap Waveguide Network**<br>Miguel Ferrando-Rocher, José Ignacio Herranz-Herruzo, Daniel Sanchez-Escuderos and Alejandro Valero-Nogueira (Universidad Politécnica de Valencia, Spain) |
| **09:20** | **CS11.2**<br>**On the Use of a Metasurface Prism in Gap-waveguide Technology to Reduce the Dispersion of Leaky-wave Antennas**<br>Lei Wang (Hamburg University of Technology, Germany) Jose-Luis Gómez-Tornero (Polytechnic University of Cartagena, Spain); Eva Rajo-Iglesias (University Carlos III of Madrid, Spain); Oscar Quevedo-Teruel (KTH Royal Institute of Technology, Sweden) |
| **09:40** | **CS11.3**<br>**Slot Array Fed by a Butler Matrix in Groove Gap Waveguide Technology at 25 GHz**<br>Felix Julian Gutierrez-Bernal (San Buenaventura University, Colombia); Eva Rajo-Iglesias (University Carlos III of Madrid, Spain) |
| **10:00** | **CS11.4**<br>**Gap Waveguide Based 1-D Steerable Beam Antenna Concept for Millimeter-wave 5G Application**<br>Ashraf Uz Zaman (Chalmers University of Technology, Sweden); Thomas Emanuelsson (CTO, Sweden) |
| **10:20** | **CS11.5**<br>**Developments Towards the Mass-Production of High-Gain GAP-based Planar Antennas for Radio Links**<br>Esperanza Alfonso, Abolfazl Haddadi, Stefan Carlsson, Thomas Emanuelsson and Johan Andren (Gapwaves AB, Gothenburg, Sweden) |

| | |
|---|---|
| **T01-8: Measurement Techniques and Applications**<br>Cellular Networks & 5G \| Regular Session \| Measurement<br>Room: Room 12<br>Chairs: Professor Michael Jensen (Brigham Young University, USA) and Professor Fernando Las-Heras (Universidad de Oviedo, Spain) | |
| **09:00** | **T01-8.1**<br>**Statistical Measurement System Analysis of Over-The-Air Measurements of Antenna Array at 28 GHz**<br>Marko E Leinonen, Marko Sonkki and Aarno Pärssinen (University of Oulu, Finland) |
| **09:20** | **T01-8.2**<br>**Moment Method Analysis of a Reconfigurable OTA Reverberation Chamber**<br>Benjamin Arnold and Michael Jensen (Brigham Young University, USA) |
| **09:40** | **T01-8.3**<br>**The New Large Antenna Positioning System for Over-The-Air Testing at the National Institute of Standards and Technology**<br>Jeffrey Guerrieri, David Novotny, Josh Gordon, Alexandra Curtin and Michael Allman (National Institute of Standards and Technology, USA) |
| **10:00** | **T01-8.4**<br>**Evaluation of Positioning Techniques for Millimeter-Wave Portable Scanners**<br>Jaime Laviada, Miguel Lopez-Portugues and Fernando Las-Heras (Universidad de Oviedo, Spain); Ana Arboleya (University of Nice-Sophia Antipolis, France) |
| **10:20** | **T01-8.5**<br>**Over-the-Air MIMO Channel Emulation for Automotive LTE Radio Systems Using Software Defined Radio**<br>Andreas Schwind, Philipp Berlt, Mario Lorenz, Christian Schneider and Matthias A Hein (Ilmenau University of Technology, Germany) |
| **T11-10: Techniques for RF Energy Harvesting and Wireless Power Transfer**<br>Future Applications \| Regular Session \| Propagation<br>Room: Room 17<br>Chairs: Dr Santi Concetto Pavone (University of Siena, Italy) and Manoj Stanley (University of Liverpool, United Kingdom) | |
| **09:00** | **T11-10.1**<br>**A Novel Dual-Polarized Millimeter-Wave Antenna Array with Harmonic Rejection for Wireless Power Transmission**<br>Sumin David Joseph, Yi Huang, Manoj Stanley, Chaoyun Song (University of Liverpool, United Kingdom) Shuohung Hsu (National Tsinghua University, Taiwan) |

| | |
|---|---|
| **09:20** | **T11-10.2**<br>**A Wideband Rectenna Array for RF Energy Harvesting Applications**<br>Alberto Reyna and Luz Idalia Balderas (Autonomous University of Tamaulipas, Mexico); Marco Panduro (CICESE Research Center, Mexico) |
| **09:40** | **T11-10.3**<br>**Polarization Independent Dual-Band RF Energy Harvester**<br>Mohamed El Badawe, Ali Albishi and Omar M Ramahi (University of Waterloo, Canada) |
| **10:00** | **T11-10.4**<br>**Dual Polarized Metasurface for Microwave Energy Harvesting and Wireless Power Transfer**<br>Thamer Almoneef (Prince Sattam University, Saudi Arabia); Faruk Erkmen, Maged A. Al Dhaeebi and Omar M Ramahi (University of Waterloo, Canada) |
| **10:20** | **T11-10.5**<br>**Multi-Polarization Planar Dipole Array Surface for Electromagnetic Energy Harvesting and Wireless Power Transfer**<br>Ahmed Ashoor and Omar Ramahi (University of Waterloo, Canada) |
| **T01-10: MIMO Performance Evaluation -1**<br>Cellular Networks & 5G \| Regular Session \| Measurement<br>Room: Room 14<br>Chairs: Professor Ying Liu (Xidian University, P.R. China) and Professor Robert Staraj (Universite Cote d'Azur, LEAT, France) | |
| **09:00** | **T01-10.1**<br>**On OTA Throughput Evaluation of 8X8 MIMO Handset Antennas Using 3D Channel Models**<br>Ali Hazmi, Antti O Karilainen, Ruiyuan Tian, Konstantin Sokolov and Zlatoljub Milosavljevic (Huawei Technologies, Finland) |
| **09:20** | **T01-10.2**<br>**Study and Comparison for Different MIMO Antenna Performance Evaluation Methods**<br>Xueliang Shi, Ming Zhang, Huailin Wen and Jun Wang (Huawei Technologies Co. Ltd, P.R. China) |
| **09:40** | **T01-10.3**<br>**Dynamic Range Impact on 3D MIMO Channel Characteristics in Rural-Macro Scenario at 3.5 GHz**<br>Weite Zhang, Lei Tian, Zhongyuan Wu (Beijing University of Posts and Telecommunications and Wireless Technology Innovation Institute, P.R. China); Jianhua Zhang (State Key Lab of Networking and Switching Technology, P.R. China); Yi Zheng (Beijing University, P.R. China); Jingmin Cao (National Key Laboratory of Science and Technology on Blind Signal, P. R. China); Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yi Zheng (China Mobile, P.R. China) |

| | |
|---|---|
| **10:00** | **T01-10.4**<br>**MIMO Performance of Today's Metal-Covered Handset**<br>Joni Kurvinen, Anu Lehtovuori, Jari-Matti Hannula, Matti Hannula and Ville Viikari (Aalto University and School of Electrical Engineering, Finland) |
| **10:20** | **T01-10.5**<br>**Influence of a Metallic Radiator on a Multiband LTE MIMO Antenna System**<br>Lamia Sadaoui, Georges Kossiavas and Robert Staraj (Universite Cote d'Azur, LEAT, France) |
| **T01-13: Antenna Arrays -1**<br>Cellular Networks & 5G \| Regular Session \| Antennas<br>Room: Room 13<br>Chairs: Dr Hanyang Wang (Huawei Technologies, P.R. China) and Professor Kwai-Man Luk (City University of Hong Kong, P.R China) | |
| **09:00** | **T01-13.1**<br>**High-Gain Series-Fed Phased Array Antenna for Wearable Wireless Applications**<br>Nowrin Chamok, Md Nazmul Alam and Mohammod Ali (University of South Carolina, USA) |
| **09:20** | **T01-13.2**<br>**Dual-Band 5G Millimeter-Wave MIMO Antenna Array for Mobile Phone Application**<br>Anping Zhao and Fuqiang Ai (Shenzhen Sunway Communication Co, Ltd, P.R. China) |
| **09:40** | **T01-13.3**<br>**Beam-Steerable Multi-Band Mm-Wave Bow-Tie Antenna Array for Mobile Terminals**<br>Rocio Rodriguez-Cano, Shuai Zhang and Gert Pedersen (Aalborg University, Denmark) |
| **10:00** | **T01-13.4**<br>**A Millimeter-Wave Dual-Circularly-Polarized Microstrip Antenna Array with a Novel Single Feed Network**<br>Yue Zhao and Kwai-Man Luk (City University of Hong Kong, Hong Kong) |
| **10:20** | **T01-13.5**<br>**A Printed Wideband Array Antenna with 45° Polarization for 5G Applications**<br>Qian Zhu and Chi Hou Chan (City University of Hong Kong, Hong Kong) |
| **CS43: Smart Antennas for Satellite Communications**<br>Space Applications \| Convened Session \| Antennas<br>Room: Room 6<br>Chairs: Professor Steven Gao (University of Kent, United Kingdom) and Professor Xuexia Yang | |

| | |
|---|---|
| (Shanghai University, P.R. China) | |
| **09:00** | **CS43.1**<br>**GaN-Integrated Beam-Switching High-Power Active Array for Satellite Communications**<br>Qi Luo and Steven Gao (University of Kent, United Kingdom); Nuno Borges Carvalho (University of Aveiro/IT Aveiro, Portugal); Konstantin Osipov and Joachim Wuerfl (Ferdinand-Braun-Institut, Germany); Roger Vilaseca (TYRO Aero Space, Spain); Duc Pham-Minh (Airbus Defence and Space SAS, France); Arlindo Marque and Jose Pinto (Engenharia e Sistemas S.A., Portugal); Rodolfo Martins (Evoleo Technologies, Portugal) |
| **09:20** | **CS43.2**<br>**Research Advances in Phased Array Antennas for Satellite Communications**<br>Peng Chen and Wei Hong (Southeast University, P.R. China) |
| **09:40** | **CS43.3**<br>**A Low-Cost Satellite-to-Satellite Link Using Meta-Lens**<br>Huan Yi, Shi-Wei Qu (University of Electronic Science and Technology of China, P.R. China); Kung Bo Ng, Chun Kit Wong and Chi Hou Chan (City University of Hong Kong, Hong Kong) |
| **10:00** | **CS43.4**<br>**A Compact Low-cost Direction Finding System for Unmanned Aerial Vehicles**<br>Attiya Mahmood and Michael Jensen (Brigham Young University, USA); Rashid Mehmood (Wavetronix LLC, USA) |
| **10:20** | **CS43.5**<br>**UHF and S-band Antenna Arrays for Nano-Satellite-Based Data-Relay**<br>Juner M. Vieira, Eduardo Yoshimoto, Filipe Ferreira, Vinícius Pereira and Marcos V. T. Heckler (Federal University of Pampa, Brazil) |
| **T09-8: Satellite Propagation**<br>Space Applications \| Regular Session \| Propagation<br>Room: Room 4<br>Chairs: Dr Franz Teschl (Graz University of Technology, Austria) and Dr. Charilaos Kourogiorgas (STFC/RAL Space, United Kingdom) | |
| **09:00** | **T09-8.1**<br>**Predicting Near-Time Satellite Signal Attenuation at Ka-band Using Tropospheric Weather Forecast Model**<br>Knut Grythe (SINTEF, Norway); Lars Erling Bråten (Norwegian Defence Research Establishment (FFI), Norway); Snorre Stavik Rønning (Norwegian Meteorological Institute, Norway); Terje Tjelta (UiO, Norway) |

| | |
|---|---|
| **09:20** | **T09-8.2**<br>**Channel Modelling for VHF Data Exchange System via Satellite**<br>Lars Erling Bråten, Vegard Arneson, Knut Svenes, Torkild Eriksen and Oystein Olsen (Norwegian Defence Research Establishment (FFI), Norway) |
| **09:40** | **T09-8.3**<br>**Long-Term and Short-Term Atmospheric Impairments Forecasting for High Throughput Satellite Communication Systems**<br>Charilaos Kourogiorgas, Apostolos Z. Papafragkakis and Athanasios D. Panagopoulos (National Technical University of Athens, Greece); Spiros Ventouras (STFC Rutherford Appleton Laboratory, United Kingdom) |
| **10:00** | **T09-8.4**<br>**Ka-band Scintillation on Low-Elevation Satellite-Earth Links in the Arctic; Long-Term Measurements and Improved Modelling**<br>Martin Rytir (Norwegian Defence Research Establishment (FFI), Norway) |
| **10:20** | **T09-8.5**<br>**Measurements and Statistical Characterization of a Dual-Polarized MIMO LMS Channel**<br>Nektarios Moraitis, Sotiria Stathopoulou and Konstantina Nikita (National Technical University of Athens and Institute of Communications and Computers Systems, Greece); Viktor Nikolaidis (University of Piraeus, Greece) |
| **CS21: New Antenna Systems Involving Application of Metamaterials and Metasurfaces**<br>Future Applications \| Convened Session \| Antennas<br>Room:Room 2<br>Chairs: Dr Lee Ford (University of Sheffield, United Kingdom) and Professor Hisamatsu Nakano (Hosei University, Japan) | |
| **09:00** | **CS21.1**<br>**Perfect Anomalous Refraction with Metagratings**<br>Ariel Epstein and Oshri Rabinovich (Technion - Israel Institute of Technology, Israel) |
| **09:20** | **CS21.2**<br>**Application of a Circularly Polarized Metaline to Beam-Steerable Antennas**<br>Hisamatsu Nakano, Tomoki Abe and Junji Yamauchi (Hosei University, Japan); Amit Mehta (Swansea University, United Kingdom) |
| **09:40** | **CS21.3**<br>**A Novel Low-Profile Wideband Reconfigurable CP Antenna Array**<br>Shu-Lin Chen, Wei Lin, Peiyuan Qin and Y. Jay Guo (University of Technology Sydney, Australia); Richard Ziolkowski (University of Technology Sydney, Australia and University of Arizona, USA) |

| | |
|---|---|
| **10:00** | **CS21.4**<br>**AMC-Backed Dipole Array Antenna for Beamforming Less Vulnerable to Nearby Metal Planes**<br>Sungtek Kahng, Dajung Han, Changhyeong Lee and Heejun Park (Incheon National University, Korea); Aurora Andújar (Fractus, Spain); Jaume Anguera (Fractus Antennas and Universitat Ramon Llull, Spain) |
| **10:20** | **CS21.5**<br>**Dual-Band Self-Diplexed Modulated Metasurface Antennas**<br>Marco Faenzi and Stefano Maci (University of Siena, Italy); David González-Ovejero (Centre National de la Recherche Scientifique - CNRS, France); Francesco Caminita (Wave-Up SRL, Italy) |
| **T05- 4 Antennas for Future Applications**<br>Biomedical \| Regular Session \| Antennas<br>Room: Room1<br>Chairs: Professor Francesca Apollonio (Sapienza University of Rome, Italy) and Dr Walter Fuscaldo (Sapienza University of Rome, Italy) | |
| **09:00** | **T05-4.1**<br>**An in Vivo Exposure-System for Wide-Band Electric Pulses**<br>Caterina Merla (ENEA SSPT Division of Health Protection Technologies, Italy); Francesca Apollonio and Alessandra Paffi (Sapienza University of Rome, Italy); P. Thomas Vernier (Franck Reidy Research Center for Bioelectrics, Old Dominion University, Italy); Micaela Liberti (ICEmB at Sapienza University of Rome, Italy) |
| **09:20** | **T05-4.2**<br>**Flat Lenses Design by Closed-Form Ray Tracing**<br>Cristian Della Giovampaola (Wave Up srl and University of Siena, Italy); Mario Mencagli, Jr. and Stefano Maci (University of Siena, Italy); Giovanni Toso (European Space Agency, The Netherlands) |
| **09:40** | **T05-4.3**<br>**Leaky Lens Antenna as Optically Pumped Pulsed THz Source**<br>Alessandro Garufo, Paolo Sberna, Giorgio Carluccio, Nuria LLombart and Andrea Neto (Delft University of Technology, The Netherlands); Juan Bueno (SRON Netherlands Institute for Space Research, The Netherlands); Joshua R Freeman, E. Linfield and Alexander Davies (University of Leeds, United Kingdom) |
| **10:00** | **T05-4.4**<br>**Discrete Bowtie Plasmonic Nanoantenna**<br>Francisco J González and Javier Mendez (University of San Luis Potosi, Mexico); Gabriel Gonzalez (Catedras CONACYT, Mexico); Alexander Cuadrado and Javier Alda (Universidad Complutense de Madrid, Spain) |
| **10:20** | **T05-4.5**<br>**Co-simulation Results of a 60 GHz CMOS LNA Integrated and Packaged in Gap Waveguide Technology**<br>Alhassan Aljarosha, A. B. Smolders, Marion Matters-Kammerer, Bindi Wang, Hao Gao and Rob Maaskant (Eindhoven University of Technology, The Netherlands) |

## Friday 13 April 2018 11:00 – 12:20

### T01-12: Antenna Design and Analysis

Cellular Networks & 5G | Regular Session | Antennas
Room: Room 7
Chairs: Professor Chi Hou Chan (City University of Hong Kong, P.R. China) and Dr Alexandros Feresidis (University of Birmingham, United Kingdom)

| | |
|---|---|
| **11:00** | **T01-12.1**<br>**Design and Analysis of Conformal Antennas for Smart Glasses**<br>Wael Haydar and Sally AlSayah (Université Antonine, Lebanon); Remi Sarkis (Antonine University, Lebanon) |
| **11:20** | **T01-12.2**<br>**Robust Design of Low Side Lobe Level Microstrip Antenna Array by Using Lossy Superstrate**<br>Yin-Hua Yu, Zhi-Yuan Zong, Wen Wu and Da-Gang Fang (Nanjing University of Science and Technology, P.R. China) |
| **11:40** | **T01-12.3**<br>**Design of Millimetre Wave Phase Shifting Periodic Metasurfaces**<br>James Churm, Muhammad S Rabbani and Alexandros Feresidis (University of Birmingham, United Kingdom) |
| **12:00** | **T01-12.4**<br>**Realizable Source That Radiates the Field of a Hertzian Dipole with Complex Source Point**<br>Thorkild Hansen (Seknion Inc, USA) |

### T01-9: Beam Steering Technologies

Cellular Networks & 5G | Regular Session | Antennas
Room: Room 12
Chairs: Jonathan Pinto (BAE Systems, UK) and Gert Pedersen (Aalborg University, Denmark)

| | |
|---|---|
| **11:00** | **T01-9.1**<br>**Receiver Array Thinning Using Digitally Assisted Mills Cross**<br>Muhammad Ali Babar Abbasi (Queen's University Belfast and The Institute of Electronics, Communications and Information Technology (ECIT), United Kingdom); Vincent Fusco (Queen's University Belfast, United Kingdom) |
| **11:20** | **T01-9.2**<br>**Mechanical Beam Steering Circular Patch Antenna**<br>Igor da Costa, Hugo Filgueiras and Arismar Cerqueira S. Jr (National Institute of Telecommunications, Brazil); James Kelly (University of Surrey and Institute for Communication Systems (ICS), United Kingdom) Pei Xiao (University of Surrey, United Kingdom) |

| | |
|---|---|
| **11:40** | **T01-9.3**<br>**E-plane Beam Width Reconfigurable Dipole Antenna with Tunable Parasitic Strip**<br>Jin Zhang, Shuai Zhang and Gert Pedersen (Aalborg University, Denmark) |
| **12:00** | **T01-9.4**<br>**Electronically Steerable Circularly Polarized Planar Antenna**<br>Soumya Sheel and Jacob Coetzee (Queensland University of Technology, Australia) |
| **T11-11: Channel Measurements and Model Verifications**<br>Future Applications \| Regular Session \| Measurement<br>Room: Room 17<br>Chairs: Chinthana Panagamuwa (Loughborough University, United Kingdom) and Jonathan Pinto (BAE Systems, United Kingdom) | |
| **11:00** | **T11-11.1**<br>**Analysis of Fade Dynamics in Site Diversity System in Slovenia**<br>Arsim Kelmendi, Gorazd Kandus, Andrej Hrovat and Andrej Vilhar (Jozef Stefan Institute, Slovenia) |
| **11:20** | **T11-11.2**<br>**Vehicle-to-Pedestrian Channel Characterization: Wideband Measurement Campaign and First Results**<br>Ibrahim Rashdan, Fabian de Ponte Müller, Wei Wang, Martin Schmidhammer and Stephan Sand (German Aerospace Center (DLR), Germany) |
| **11:40** | **T11-11.3**<br>**A Novel Clustering Method Based on Density Peaks and Its Validation by Channel Measurement**<br>Hanqing Xue, Lei Tian, Yuxiang Zhang, Chao Wang and Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (Northern Illinois University, USA); He-Wen Wei (Southwest Electronics and Telecommunication Technology Research Institute, P.R. China) |
| **12:00** | **T11-11.4**<br>**Static and Dynamic Millimeter-Wave Channel Measurements at 60 GHz in a Conference Room**<br>Vasilii Semkin, Sergey Andreev and Yevgeni Koucheryavy (Tampere University of Technology, Finland); Aki Karttunen (Aalto University, Finland); Jan Järveläinen (Aalto University and Premix Finland) |
| **T01-11: MIMO Performance Evaluation -2**<br>Cellular Networks & 5G \| Regular Session \| Measurement<br>Room: Room 14<br>Chairs: Professor Said Mikki (University of New Haven, USA) and Kenneth Tong (University College London, United Kingdom) | |

| | |
|---|---|
| **11:00** | **T01-11.1**<br>**The Stochastic Electromagnetic Theory of Antenna-Antenna Cross-Correlation in MIMO Systems**<br>Said Mikki (University of New Haven, USA); Jocelyn Aulin (Huawei Technologies Sweden AB, Sweden) |
| **11:20** | **T01-11.2**<br>**Evaluation of an Antenna Selection Strategy for Reduced Massive MIMO Complexity**<br>Frédéric Challita, Martine Liénard and Davy Gaillot (University of Lille, France) Maria-Teresa Martinez-Ingles (University Centre of Defence at the Spanish Air Force Academy, MDE-UPCT, Spain); Jose-Maria Molina-Garcia-Pardo (Universidad Politécnica de Cartagena, Spain) |
| **11:40** | **T01-11.3**<br>**On Measurements of Availability Penalty Due to Antenna Separation in a 2X2 LOS-MIMO Link**<br>Lei Bao, Bengt-Erik Olsson and Jonas Hansryd (Ericsson AB, Sweden) |
| **12:00** | **T01-11.4**<br>**Measurement-Based Massive MIMO Channel Characterization in Subway Station**<br>Qi Wang and Bo Ai, Ruisi He, Jianzhi Li, Bei Zhang, Mi Yang and Zhangdui Zhong (Beijing Jiaotong University, P.R. China) |
| **T01-14: Antenna Arrays -2**<br>Cellular Networks & 5G \| Regular Session \| Antennas<br>Room: Room 13<br>Chairs: Professor Shuai Zhang (Aalborg University, Denmark) and Dr Peiyuan Qin (University of Technology Sydney, Australia) | |
| **11:00** | **T01-14.1**<br>**Substrate-Insensitive Phased Array with Improved Circularly-Polarized Scan Angle for 5G Mobile Terminals**<br>Shuai Zhang, Igor Syrytsin and Gert Pedersen (Aalborg University, Denmark) |
| **11:20** | **T01-14.2**<br>**Synthesis of Multiple Beam Linear Arrays with Uniform Amplitudes**<br>Yanki Aslan, Jan Puskely, Antoine Roederer and Alexander Yarovoy (TU Delft, The Netherlands) |
| **11:40** | **T01-14.3**<br>**Finger Ring Phased Antenna Array for 5G IoT and Sensor Networks at 28 GHz**<br>Igor Syrytsin, Shuai Zhang and Gert Pedersen (Aalborg University, Denmark) |

| | |
|---|---|
| **12:00** | **T01-14.4**<br>**SIW Based Antenna Array with Power Equalization in Elevation Plane for 5G Base Stations**<br>Jan Puskely, Yanki Aslan, Antoine Roederer and Alex Yarovoy (Delft University of Technology, The Netherlands) |
| **T09-10: Space Array Antennas**<br>Space Applications \| Regular Session \| Antennas\|<br>Room: Room 6<br>Chairs: Stuart Gregson (Queen Mary University of London, United Kingdom) and Giovanni Toso (ESA, The Netherlands) | |
| **11:00** | **T09-10.1**<br>**Diamond Tiling Optimization for Hexagonal Shaped Phased Arrays**<br>Nicola Anselmi, Lorenzo Poli, Paolo Rocca and Andrea Massa (University of Trento, Italy) |
| **11:20** | **T09-10.2**<br>**Compressive Sensing Approach to the Synthesis of Sparse Antenna Arrays**<br>Giulia Buttazzoni and Roberto Vescovo (University of Trieste, Italy) |
| **11:40** | **T09-10.3**<br>**Space Qualification of a Circularly Polarised High-Power Ku-Band Feed Chain for Telecommunication Satellites**<br>Enrico Reiche, Philipp Kohl, Un Pyo Hong, Christian Hartwanger, Ralf Gehring and Michael Schneider (Airbus, Germany) |
| **12:00** | **T09-10.4**<br>**Radiation Characteristics of Skewed Loaded Dipole Arrays**<br>Cristina Yepes, Ralph van Schelven, Daniele Cavallo and Andrea Neto (Delft University of Technology, The Netherlands); Erio Gandini (TNO, The Netherlands) |
| **T09-9: Satellite Propagation**<br>Space Applications \| Regular Session \| Propagation<br>Room: Room 4<br>Chairs: Dr Franz Teschl (Graz University of Technology, Austria) and Dr Charilaos Kourogiorgas (STFC/RAL Space, United Kingdom) | |
| **11:00** | **T09-9.1**<br>**European W-Band Propagation Campaign Development**<br>Alexios Costouri, George Goussetis and Savvas Kosmopoulo (Heriot-Watt University, United Kingdom); Richard Reeves (Science and Technology Facilities Council and RAL Space, United Kingdom); Spiros Ventouras (STFC Rutherford Appleton Laboratory, United Kingdom); J Mayock and S. Chan (RAL Space, STFC Rutherford Laboratory, United Kingdom); Pantelis-Daniel Arapoglou, Antonio Martellucci, and Václav Valenta (European Space Agency, The Netherlands) |

| | |
|---|---|
| **11:20** | **T09-9.2**<br>**Capacity Evaluation of a Satellite-to-Indoor Narrowband Dual Polarized MIMO Channel**<br>Viktor Nikolaidis and Athanasios G. Kanatas (University of Piraeus, Greece); Nektarios Moraitis (National Technical University of Athens and Institute of Communications and Computers Systems, Greece); Demosthenes Vouyioukas (University of the Aegean, Greece) |
| **11:40** | **T09-9.3**<br>**Reliability of Disdrometer-derived W-Band Attenuation Predictions**<br>Michael Schönhuber, Félix Cuervo, Nikola Knoll and Verena Mitterauer (Joanneum Research, Austria) |
| **12:00** | **T09-9.4**<br>**Antenna and Propagation Aspects of a Future GNSS-Reflectometry Mission**<br>Franz Teschl and Manuela Wenger (Graz University of Technology, Austria); Andreas Dielacher (RUAG Space GmbH, Austria); Reinhard Teschl (Graz University of Technology, Austria) |
| **T11-9 : Metasurface Materials and Techniques**<br>Future applications \| Regular Session \| Propagation<br>Room: Room 2<br>Chairs: Pedro Fidel Espin Lopez (University of Pavia, Italy) and Deepak Shamvedi (Waterford Institute of Technology, Ireland) | |
| **11:00** | **T11-9.1**<br>**Hexaferrite Substrate Versus Impedance Matching for Tuneable Patch Antenna Miniaturisation**<br>Oliver N James, Geoffrey Hilton and Mark Beach (University of Bristol, United Kingdom) |
| **11:20** | **T11-9.2**<br>**Miniaturized Spoof Surface Plasmon Polaritons Transmission Line**<br>Zhixia Xu, Shunli Li, Hongxin Zhao and Xiaoxing Yin (Southeast University, P.R. China); Leilei Liu (Nanjing University of Posts and Telecommunications, P.R. China) |
| **11:40** | **T11-9.3**<br>**Comparison of Near-Field Transforming Metasurfaces with Inhomogeneous and Anisotropic Lenses for Low-Profile Transmitarray Illumination**<br>Eric Whiting, Sawyer D Campbell, J. Daniel Binion, Pingjuan Werner and Douglas H Werner (Pennsylvania State University, USA) |
| **12:00** | **T11-9.4**<br>**A Circularly Polarized Metasurface Antenna**<br>Seyyedeh Fahimeh Babazadeh, Mostafa Khanjarian, Vahid Nayyeri and Mohammad Soleimani (Iran University of Science and Technology, Iran); Mohamed El Badawe and Omar M Ramahi (University of Waterloo, Canada) |
| **T01-16: On and Off Body Communications**<br>Cellular Networks & 5G \| Regular Session \| Antennas<br>Room: Room 1<br>Chairs: Professor William Scanlon (Queen's University Belfast, United Kingdom) and Dr Guan-Long | |

| | |
|---|---|
| Huang (Shenzhen University, P.R.China) | |
| **11:00** | **T01-16.1**<br>**A Multiple Antenna System Design for Wearable Device Using Theory of Characteristic Mode**<br>Jiangcheng Chen, Markus Berg, Hamid Amin and Aarno Pärssinen (University of Oulu, Finland); Vesna Somero (Polar Electro Oy, Finland) |
| **11:20** | **T01-16.2**<br>**On Body and on Body to off Body Communication in the 60 GHz Band for Health Monitoring Scenarios**<br>Sana Salous and Hugo Parrott (Durham University, United Kingdom); Costas Constantinou (University of Birmingham, United Kingdom); Yuri Nechayev (Huawei Technologies, Russia) |
| **11:40** | **T01-16.3**<br>**Multi-band Unbroken Metallic Rim Antenna with 3-D PIFA Branch for Smartwatch Wearable Device**<br>Xianbo Cao, Wen Jiang Shuxi Gong and Peng Liu (Xidian University, P.R. China) |
| **12:00** | **T01-16.4**<br>**The Influence of Elevation Angle on 60 GHz Near-Body Path Gain**<br>Lei Zhang, Adrian D McKernan, Simon Cotton and William G. Scanlon (Queen's University Belfast, United Kingdom) |