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EuRAD01 : EuRAD Opening Session

Chair: Philippe Eudeline (EuRAD 2019 Chair), Thales Air Systems, France
and Jean-Yves Dauvignac (EuRAD 2019 TPC Chair), LEAT (UMR 7248), France
Co-Chair: Claire Migliaccio (EuRAD 2019 Co-Chair), LEAT (UMR 7248), France
and Stéphane Méric (EuRAD 2019 TPC Co-Chair), IETR (UMR 6164), France
08:30–10:10, Wednesday 2 Oct 2019, N01

(NA) **Electromagnetic Detection and Electronic Warfare Challenges**
Florent Jangal, DGA, France

(NA) **Naval and Landbased Multi-Function Radar**
Thomas Carpentier, Thales LAS, France

EuRAD02 : Innovative Radar Classification Techniques

Chair: Pierfrancesco Lombardo, Università di Roma "La Sapienza", Italy
Co-Chair: Laura Anitori, TNO Defense, Safety and Security, The Netherlands
13:50–15:30, Wednesday 2 Oct 2019, E06

(NA) **Radar System Modelling and Simulation with MATLAB: From RF Modelling to Target Classification**
Gérald Albertini, MathWorks, France

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David Montgomery [1], Gaston Holmén [2], Peter Almers [1], Andreas Jakobsson [3]
[1]Acconeer, Sweden; [2]Sigma, Sweden; [3]Lund University, Sweden

5 **Projection Metric Learning of Updated-Subspaces for Radar Target Classification**
Ryoma Yataka, Kazuki Hirashima, Takafumi Matsuda, Tai Tanaka, Masato Gocho, Masashi Shiraishi, Mitsubishi Electric, Japan

9 **Clutter-Compensating Adaptive Waveforms with Cognitive Radar for Target Classification Using EM-Simulated Ground-Based RCS Responses**
Ben MuWei Bey, Ric A. Romero, Naval Postgraduate School, USA

13 **Learning Dynamic Processes from a Range-Doppler Map Time Series with LSTM Networks**
Marco Altmann [1], Peter Ott [1], Nicolaj C. Stache [1], Christian Waldschmidt [2]
[1]Hochschule Heilbronn, Germany; [2]Universität Ulm, Germany

EuRAD03 : Radar Applications and Target Classification

Chair: Willem A. Hol, Thales, The Netherlands
Co-Chair: Carlos Castillo, Indra Sistemas, Spain
16:10–17:50, Wednesday 2 Oct 2019, E06

(NA) **Flexible Front End Platform for Multiple Radar Sensor Applications**
Charles Nicholls, Nanowave Technologies, Canada

(NA) **Solid State Advantages for UHF Long Range Radar Application**
Pascal Massot, NXP Semiconductors, France

(NA) **Real-Time Passive Millimeter-Wave Imager for Security Applications**
Ettien Kpré, MC2-Technologies, France

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Johannes Iberle, Marc A. Mutschler, Philipp A. Scharf, Thomas Walter, Technische Hochschule Ulm, Germany

21 **Radar Classifier for Small Manned Air Targets**
Gilles Prémel-Cabic [1], Jacco J.M. de Wit [2], Miguel Caro Cuenca [2]
[1]Thales, The Netherlands; [2]TNO, The Netherlands

EuRAD04 : Radar Technology

Chair: Carlos Castillo, Indra Sistemas, Spain
Co-Chair: Stephen Harman, QinetiQ, UK
08:30–10:10, Thursday 3 Oct 2019, E04

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Patrick Langlois, European Defence Agency, Belgium

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Stefan Engelbertz, Christian Krebs, Andries Küter, Reinhold Herschel, Riana Geschke, Dirk Nüßler, Fraunhofer FHR, Germany

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[1] Evoelectronics, Italy; [2] Università di Roma "La Sapienza", Italy

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R.Z. Syeda [1], B.B. Adela [1], M.C. van Beurden [1], P.T.M. van Zeijl [2], A.B. Smolders [1]
[1] Technische Universiteit Eindhoven, The Netherlands; [2] Zelectronix, The Netherlands

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Alexander Orth, Patrick Kwiatkowski, Nils Pohl, Ruhr-Universität Bochum, Germany

EuRAD05 : Signal Processing for Positioning, Calibration and Antenna Steering

Chair: Laurent Ferro-Famil, IETR (UMR 6164), France
Co-Chair: Debora Pastina, Università di Roma "La Sapienza", Italy
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[1] Fraunhofer ITWM, Germany; [2] Technische Universität Kaiserslautern, Germany

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[1] FAU Erlangen-Nürnberg, Germany; [2] Siemens, Germany

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Xiangrong Wang, Qian Long, Beihang University, China

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Chair: Jean-Yves Dauvignac, LEAT (UMR 7248), France
Co-Chair: Stéphane Méric, IETR (UMR 6164), France
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[1] KACST, Saudi Arabia; [2] University of Edinburgh, UK

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[1] National Chung Cheng University, Taiwan; [2] National Chia-Yi University, Taiwan

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[1] Technische Hochschule Ulm, Germany; [2] Universität Ulm, Germany

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[1] Ruhr-Universität Bochum, Germany; [2] Fraunhofer FHR, Germany

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[1] Technische Universiteit Delft, The Netherlands; [2] TÜBİTAK SAGE, Turkey; [3] Technische Universiteit Eindhoven, The Netherlands

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Chair: Mario Pauli, KIT, Germany
Co-Chair: Christian Sturm, Valeo Schalter und Sensoren, Germany
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[1] Heriot-Watt University, UK; [2] University of Edinburgh, UK; [3] SAIT, Korea

EuRAD08 : Advanced Detection for Distributed Radar Systems

Chair: Kevin Cinglant, ZF, France
Co-Chair: Stéphane Méric, IETR (UMR 6164), France
16:10–17:50, Thursday 3 Oct 2019, E02

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[1] Fraunhofer IIS, Germany; [2] Technische Universität Ilmenau, Germany

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[1] Université libre de Bruxelles, Belgium; [2] imec, Belgium; [3] Université catholique de Louvain, Belgium

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[1] Scuola Superiore Sant'Anna, Italy; [2] CNIT, Italy

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[1] Technische Universiteit Delft, The Netherlands; [2] Thales, The Netherlands

EuRAD09: FMCW and Radar Communications

Chair: Mateo Burgos-García, Universidad Politécnica de Madrid, Spain
Co-Chair: Reinhard Feger, Johannes Kepler Universität Linz, Austria
16:10–17:50, Thursday 3 Oct 2019, E03

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Franz Lampel, R. Firat Tigrek, Alex Alvarado, Frans M.J. Willems, Technische Universiteit Eindhoven, The Netherlands

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Hasan Can Yildirim [1], Marc Bauduin [2], André Bourdoux [2], François Horlin [1]
[1] Université libre de Bruxelles, Belgium; [2] imec, Belgium

EuRAD10: Radar Micro-Doppler Detection and Classification

Chair: Jacco J.M. de Wit, TNO, The Netherlands
Co-Chair: Ronny Harmanny, Thales, The Netherlands
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Yefeng Cai, Oleg Krasnov, Alexander Yarovoy, Technische Universiteit Delft, The Netherlands

189 **Micro-Doppler Based Mini-UAV Detection with Low-Cost Distributed Radar in Dense Urban Environment**
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[1] Thales Solutions Asia, Singapore; [2] Thales, The Netherlands

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René Petervari, Fabio Giovanneschi, Winfried Johannes, María A. González-Huici, Fraunhofer FHR, Germany

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[1] University of Glasgow, UK; [2] Thales, The Netherlands

201 **Target/Clutter Disentanglement Using Deep Adversarial Training on Micro-Doppler Signatures**
L. Cifola, R.I.A. Harmanny, Thales, The Netherlands

EuRAD11 : Material Characterization using Radar Methods

Chair: Mayazzurra Ruggiano, Thales, The Netherlands
Co-Chair: Felix Yanovsky, National Aviation University, Ukraine
08:30–10:10, Friday 4 Oct 2019, E01

205 **Experimental Validation of Algorithms Used by Radar Remote-Sensing Systems for Oil-Spill Detection and Thickness Estimation**
Bilal Hammoud [1], Kassem Jomaa [1], Fabien Ndagijimana [1], Ghaleb Faour [2], Hussam Ayad [3], Jalal Jomaah [3]
[1]Université Grenoble Alpes, France; [2]CNRS-L, Lebanon; [3]Lebanese University, Lebanon

209 **Layer Determination of Building Structures with SAR in Near Field Environment**
Alexander Haas, Markus Peichl, Stephan Dill, DLR, Germany

213 **SAR Based Non-Destructive Evaluation of Irregularly Shaped Objects with Simultaneous Estimation of Geometry and Permittivity**
I. Ullmann, J. Adametz, Martin Vossiek, FAU Erlangen-Nürnberg, Germany

(NA) **Delamination Thickness Estimation Using Time Domain Microwave Non-Destructive Testing**
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[1]Universiti Sains Malaysia, Malaysia; [2]University of Baghdad, Iraq; [3]SIRIM, Malaysia; [4]University of Manchester, UK

221 **Noninvasive Binary Gas Mixture Measurements with a Millimeter-Wave Low-Cost FMCW Radar System**
Andreas Och [1], Jochen O. Schrattenecker [2], Stefan Schuster [3], Patrick A. Hölzl [1], Philipp F. Freidl [1], Robert Weigel [4]
[1]Infineon Technologies, Austria; [2]Independent Researcher, Austria; [3]voestalpine Stahl, Austria; [4]FAU Erlangen-Nürnberg, Germany

EuRAD12 : Waveforms and Radar Networks

Chair: Stéphane Méric, IETR (UMR 6164), France
Co-Chair: Krzysztof Kulpa, Warsaw University of Technology, Poland
10:50–12:30, Friday 4 Oct 2019, N01

225 **OFDM Waveform for Distributed Radar Sensing in Automotive Scenarios**
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[1]Technische Universität Ilmenau, Germany; [2]Fraunhofer IIS, Germany; [3]Huawei Technologies, Germany

229 **Synchronization of Radar Sensors in a Network Based on Inter-Sensor Interference**
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[1]Universität Ulm, Germany; [2]FAU Erlangen-Nürnberg, Germany

233 **CDMA-Based MIMO FMCW Radar System Performance Using Intra-Pulse Phase Modulation**
Marie Mbeutcha, Viktor Krozer, Goethe-Universität Frankfurt, Germany

237 **A Fast Algorithm for Target Adaptive Waveform Design for Imaging with Experimental Validation**
Marcel Warnke, Stefan Brüggenwirth, Fraunhofer FHR, Germany

241 **Instantaneous Target Velocity Estimation Using a Network of a Radar and Repeater Elements**
Benedikt Meinecke, Maximilian Steiner, Johannes Schlichenmaier, Christian Waldschmidt, Universität Ulm, Germany

EuRAD13: Automotive MIMO and Back-Projection

Chair: Christian Sturm, Valeo Schalter und Sensoren, Germany
Co-Chair: Willem A. Hol, Thales, The Netherlands
10:50–12:30, Friday 4 Oct 2019, E01

245 **Automotive Radar Doppler Division MIMO with Velocity Ambiguity Resolving Capabilities**
F.G. Jansen, NXP Semiconductors, The Netherlands

249 **Sparse Array Design for Automotive MIMO Radar**
David Mateos-Núñez [1], María A. González-Huici [1], Renato Simoni [1], Farhan Bin Khalid [2], Maximilian Eschbaumer [2], Andre Roger [2]
[1]Fraunhofer FHR, Germany; [2]Infineon Technologies, Germany

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[1]Universität Ulm, Germany; [2]Daimler, Germany

257 **Radar-Based Near Field Environment Perception Using Back Projection Algorithm**
Patrick Zaumseil, Dagmar Steinhauser, Patrick Held, Alexander Kamann, Thomas Brandmeier, Technische Hochschule Ingolstadt, Germany

261 **Adaption of Fast Factorized Back-Projection to Automotive SAR Applications**
Masoud Farhadi [1], Reinhard Feger [1], Johannes Fink [2], Markus Gonser [2], Jürgen Hasch [2], Andreas Stelzer [1]
[1]Johannes Kepler Universität Linz, Austria; [2]Robert Bosch, Germany

EuRAD14: Focus Session Modern Advances in Imaging at Microwave, Millimeter-Wave and Terahertz Frequencies

Chair: Thomas Fromenteze, XLIM (UMR 7252), France
Co-Chair: Okan Yurduseven, Queen's University Belfast, UK
10:50–12:30, Friday 4 Oct 2019, E02

265 **MMW Imaging Using Polarimetric Measurements**
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[1]LEAT (UMR 7248), France; [2]Institut Fresnel (UMR 7249), France; [3]BOWEN-ERTE, France

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[1]CUHK, China; [2]UESTC, China; [3]Peking University, China

273 **40-GHz Active Interferometric Imaging with Noise Transmitters**
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[1]Michigan State University, USA; [2]University of New South Wales, Australia

277 **C-Band Microwave Photonic MIMO Imaging System**
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281 **Improving Quantitative Microwave Holography Through Simultaneous Use of the Born and Rytov Approximations**
Daniel Tajik, Natalia K. Nikolova, Michael D. Noseworthy, McMaster University, Canada

EuRAD15: EuRAD Closing Session

Chair: Philippe Eudeline, Thales Air Systems, France
Co-Chair: Claire Migliaccio, LEAT (UMR 7248), France
13:50–15:30, Friday 4 Oct 2019, N01

(NA) **Applications for Staring Holographic Radar**
Dominic Walker, Aveillant, UK

EuMC/EuRAD01 : Diverse Radar Applications

Chair: Mehmet Karaaslan, Teledyne e2v, UK
Co-Chair: Korkut Yegin, Ege University, Turkey
10:50–12:30, Wednesday 2 Oct 2019, E01

285 **Transient Waveforms Shaping for Frequency Diversity Radar Applications**
G. Reineix, J. Hyvernaud, R. Négrier, V. Couderc, J. Andrieu, M. Lalande, *XLIM (UMR 7252), France*

289 **An Original UWB Radar Platform Based on Coherent Interleaving Sampling Technique**
O. Hamdi [1], M. Schutz [1], B. Lenoir [2], S. Farah [3], S. Reynaud [3], A. Delias [4], Guillaume Neveux [1], Cyril Decroze [1], Denis Barataud [1]
[1]XLIM (UMR 7252), France; [2]INOVEOS, France; [3]CISTEME, France; [4]AMCAD Engineering, France

293 **Clutter-Resistant Vital Sign Detection Using Amplitude-Based Demodulation by EEMD-PCA-Correlation Algorithm for FMCW Radar Systems**
Ching-Yao Huang, Guan-Wei Fang, Huey-Ru Chuang, Chin-Lung Yang, *National Cheng Kung University, Taiwan*

297 **Time-Domain Analysis of Microwave Signal Propagating Along FRPM Pipe Walls and Application to Nondestructive Inspection**
S. Matsukawa [1], K. Yoshida [2], Y. Nishimura [2], T. Okuda [3], M. Hazama [3], Satoru Kurokawa [1], H. Murata [2]
[1]AIST, Japan; [2]Mie University, Japan; [3]Kurimoto, Japan

301 **Guided Wave Tank Level Sensor**
Alexander Kaineder [1], Christof Michenthaler [2], Dirk Hammerschmidt [2], Andreas Stelzer [1]
[1]Johannes Kepler Universität Linz, Austria; [2]Infineon Technologies, Austria

EuMC/EuRAD02 : Antennas for Radar Application

Chair: Matthias Geissler, IMST, Germany
Co-Chair: Józef Modelski, Warsaw University of Technology, Poland
10:50–12:30, Wednesday 2 Oct 2019, E07

305 **Investigation of Bent PCB Laminates for Conformal Antennas at 80GHz**
Jonathan Mayer [1], Manuel Martina [2], Jerzy Kowalewski [1], Thomas Zwick [1]
[1]KIT, Germany; [2]Schweizer Electronic, Germany

309 **Evaluation of Antenna Calibration and DOA Estimation Algorithms for FMCW Radars**
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[1]FAU Erlangen-Nürnberg, Germany; [2]Polytechnique Montréal, Canada

313 **A 3D-Printed Coaxial-Fed Waveguide 2-Slot Array for an AESA Radar Application in the Ku-Band**
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[1]Lab-STICC (UMR 6285), France; [2]Thales LAS, France; [3]Elliptika, France

317 **Design of a Horizontally Polarized Slotted Waveguide Antenna Element for Airborne Ka-PolInSAR System**
Alicja Kość, Markus Limbach, Bernd Gabler, Andreas Reigber, *DLR, Germany*

321 **Millimeter-Wave Stepped Series Array with LTCC**
Sabin Kumar Karki [1], Juha Ala-Laurinaho [1], Jianfang Zheng [1], Markku Lahti [2], Ville Viikari [1]
[1]Aalto University, Finland; [2]VTT Technical Research Centre of Finland, Finland

EuMC/EuRAD03 : Space and UAV applications

Chair: César Barquinero, Indra Sistemas, Spain
Co-Chair: Angel Mediavilla, Universidad de Cantabria, Spain
13:50–15:30, Wednesday 2 Oct 2019, E01

(NA) **New Trends on Telecom Satellites and Their Consequences on Microwave Units**
Jean-François Villemazet, Thales Alenia Space, France

(NA) **Science Instruments for CubeSats and SmallSats**
Goutam Chattopadhyay, Jet Propulsion Laboratory, USA

325 **A New Radiospectrometer to Study the CMB Distortions Between 10–20GHz**
Paz Alonso-Arias [1], Roger Hoyland [1], Javier De Miguel-Hernández [1], J. Alberto Rubiño-Martín [1], Francesco Cuttaia [2], Luca Terenzi [2]
[1]IAC, Spain; [2]INAF, Italy

329 **Comparison Between Mixer and Track and Hold UWB Receivers for SATCOM Applications**
Arij Battikh [1], Abhijeet Dasgupta [1], Guillaume Neveux [1], Denis Barataud [1], Cédric Chambon [2]
[1]XLIM (UMR 7252), France; [2]Callisto, France

333 **Design Study for UAV-Mounted GPR**
M. Schutz [1], Cyril Decroze [1], M. Lalande [1], B. Lenoir [2]
[1]XLIM (UMR 7252), France; [2]INOVEOS, France

EuMC/EuRAD04 : mmW Systems

Chair: Philippe Eudeline, Thales Air Systems, France
Co-Chair: Jean-Luc Polleux, ESYCOM, France
08:30–10:10, Thursday 3 Oct 2019, E02

337 **EM Analysis of a Propagation Channel in the Sub-THz Band for Many-Core Architectures**
Ihsan El Masri, Thierry Le Gouguec, Pierre-Marie Martin, Rozenn Allanic, Cédric Quendo, Lab-STICC (UMR 6285), France

341 **Performance Analysis of Real-Time Full-Duplex E-Band Link**
Seyyid M. Dilek, Benjamin Schoch, Ingmar Kallfass, Universität Stuttgart, Germany

345 **Experimental Evaluation of a 60GHz Beamforming Solution with 32-Dipole Printed Array**
Nebojsa Maletic [1], Andrea Malignaggi [1], Bogdan Antonovici [2], Jordan Bozmarov [3], Mohamed Elkhouly [4], Jesús Gutiérrez [1], Vladimir Petrovic [5], Eckhard Grass [1]
[1]IHP, Germany; [2]Balluff, Germany; [3]TES Electronic Solutions, Germany; [4]Nokia Bell Labs, USA; [5]Robert Bosch, Germany

349 **On the Calibration of mm-Wave MIMO Radars Using Sparse Antenna Arrays for DoA Estimation**
André Dürr, Dominik Schwarz, Fabian Roos, Philipp Hügler, Stephan Bucher, Patrik Grüner, Christian Waldschmidt, Universität Ulm, Germany

353 **Scalable High-Gaussicity Split-Block Diagonal Horn Antenna for Integration with Sub-THz Devices**
H.M. Santos [1], E.D. Lima [1], Pedro Pinho [2], L.M. Pessoa [1], D. Moro-Melgar [3], H.M. Salgado [1]
[1]INESC TEC, Portugal; [2]Instituto de Telecomunicações, Portugal; [3]ACST, Germany

EuMC/EuRAD05 : Measurement and Modeling of Electromagnetic Field Scattering

Chair: Alexander Yarovoy, Technische Universiteit Delft, The Netherlands
Co-Chair: Marina Gashinova, University of Birmingham, UK
10:50–12:30, Thursday 3 Oct 2019, E02

(NA) **Understanding Stealth : RCS Fundamentals — From Design to Measurements**
Sylvain Morvan, CEA-Cesta, France

357 **Co-Polarized Bi-Static RCS Measurements of Vulnerable Road Users Between 1 and 10GHz**
Andreas Schwind, Sreehari Buddappagari, Willi Hofmann, Ralf Stephan, Reiner S. Thomä, Matthias A. Hein, Technische Universität Ilmenau, Germany

361 **Monostatic RCS Measurements of a Passenger Car Mock-Up at 77GHz Frequency in Virtual Environment**
Sreehari Buddappagari Jayapal Gowdu, Andreas Schwind, Ralf Stephan, Matthias A. Hein, Technische Universität Ilmenau, Germany

365 **Low Terahertz Signal Backscattering from Rough Surfaces**
Aleksandr Bystrov [1], Edward Hoare [1], Marina Gashinova [1], Thuy-Yung Tran [2], Mikhail Cherniakov [1]
[1] University of Birmingham, UK; [2] Jaguar Land Rover Automotive, UK

369 **Permittivity Estimation of Rough Dielectric Surfaces by Means of Polarimetric Bistatic Measurements at Millimeter Wave Frequencies**
Kais Ben Khadhra, Andreas Olk, Oscar Gomez, Andreas Fox, IEE, Luxembourg

EuMC/EuRAD06 : Integrated Antennas and Systems-in-Package

Chair: David Prinsloo, ASTRON, The Netherlands
Co-Chair: Claire Migliaccio, LEAT (UMR 7248), France
10:50–12:30, Thursday 3 Oct 2019, E07

373 **122GHz FMCW Radar System-in-Package in LTCC Technology**
Akanksha Bhutani [1], Benjamin Goettel [2], Mario Pauli [1], Thomas Zwick [1]
[1] KIT, Germany; [2] Wellenzahl, Germany

377 **Subarray Optimization for Compactness Improvement of a 3D Printed Adaptive Phased Array Antenna Operating in Ku-Band**
Sarra Abedrrabba [1], Rozenn Allanic [1], Cédric Quendo [1], Annaig Guennou-Martin [1], Julien Haumant [2], Gwendal Cochet [2], Yves Quéré [1], Thomas Merlet [3]
[1] Lab-STICC (UMR 6285), France; [2] Elliptika, France; [3] Thales LAS, France

381 **Assessment of a Contactless Characterization Method for Integrated Antennas**
A.J. van den Biggelaar, D.P.P. Daverveld, A.C.F. Reniers, Ulf Johannsen, A.B. Smolders, Technische Universiteit Eindhoven, The Netherlands

385 **Performances of Magneto-Electric Dipoles in an Antennas Array with a Reduced Beam Forming Network**
Abdul-Sattar Kaddour [1], Jorick Milbrandt [1], Cyrille Menudier [1], Marc Thévenot [1], Philippe Pouliguen [2], Patrick Potier [2], Maxime Romier [3]
[1] XLIM (UMR 7252), France; [2] DGA, France; [3] CNES, France

389 **Millimeter-Wave System-in-Package (SiP) for Non-Destructive Testing of Metallic Structures Under Multilayered Composites Using Backward-to-Forward Beamscanning Leaky Wave Antenna**
Karthik Thothathri Chandrasekaran [1], Nasimuddin [2], Siew Weng Leong [2], Kuen Sim Chan [2], Bin Luo [2], Muhammad Faeyz Karim [1], Arokiaswami Alphones [1], Kush Agarwal [3], Michael Ling Chuen Ong [2]
*[1] NTU, Singapore; [2] A*STAR, Singapore; [3] WaveScan Technologies, Singapore*

EuMC/EuRAD07: EuMC/EuRAD Interactive Session 5

Chair: Alexandru Takacs, LAAS, France
Co-Chair: Jean-Yves Dauvignac, LEAT (UMR 7248), France
10:50–12:30, Thursday 3 Oct 2019, Exhibition Hall

393 **Scattering by Infinite Graphene Strip Grating with Brake of Periodicity**
Mstyslav E. Kaliberda [1], Leonid M. Lytvynenko [2], Sergey A. Pogarsky [1]
[1] V.N. Karazin Kharkiv National University, Ukraine; [2] NASU, Ukraine

(NA) **EMC Conducted Emission Analysis of a 3D Multilayer Printed Circuit Board with Kron's Method**
Z. Xu [1], Y. Liu [1], B. Ravelo [1], O. Maurice [2], J. Gantet [3], N. Marier [3], B. Agnus [4], S. Carras [5]
[1] IRSEEM (EA 4353), France; [2] ArianeGroup, France; [3] Valeo, France; [4] SCIENTEAMA, France; [5] Filix, France

401 **Analysis of Microwave Backscattering from Nonlinear Sea Surface with Currents**
Xiang Su [1], Xiaoxiao Zhang [2], Xiaomin Tan [1], Hongxing Dang [1]
[1] CAST, China; [2] XUPT, China

405 **Impact of Non-Idealities on the Performance of Delta-Sigma/Manchester-Modulated Microwave Signals**
Seunghyun Jang, Sunwoo Kong, Hui Dong Lee, Jeehoon Park, Kwang-Seon Kim, Kwang-Chun Lee, ETRI, Korea

409 **Implementation of a Four-Way Amplitude Modulated Mixerless Transmitter**
Peco Gjurovski, Muh-Dey Wei, Renato Negra, RWTH Aachen University, Germany

413 **An Open-Source Speech Codec at 450bit/s with Pseudo-Wideband Mode**
Stefan Erhardt [1], Thomas Kurin [1], Fabian Lurz [1], Robert Weigel [1], Alexander Koelpin [2]
[1] FAU Erlangen-Nürnberg, Germany; [2] Brandenburgische Technische Universität, Germany

417 **Azimuth Pattern Reconfigurable Magnetic Dipole Antenna with Wide-Angle Coverage**
Hyunyoung Cho, Soo-Chang Chae, Jong-Sang Yoo, KwangSeok Kim, Jong-Won Yu, KAIST, Korea

421 **A Compact Magnetic Multipole Antenna for Wide 2-Dimensional Beamwidth**
Ye-Bon Kim, Hyun-Jun Dong, Cheol-Woong Lee, Han Lim Lee, Chung-Ang University, Korea

425 **Influence of Mesh Geometries on the Design of Transparent Antennas at 2.45GHz**
Maxime Wawrzyniak [1], Julien Bras [2], Aurore Denneulin [2], Tân-Phu Vuong [1]
[1] IMEP-LAHC (UMR 5130), France; [2] LGP2 (UMR 5518), France

429 **High Gain and Broadband Quasi Horn Antenna Array for Ku Band Mobile TV Antenna Systems and Monopulse Radiation**
Mehmet Akif Tulum [1], Ahmet Serdar Turk [2]
[1] Neta Electronics, Turkey; [2] Yildiz Technical University, Turkey

433 **Dual-Band Open Metal Waveguide Slot Antennas**
Vladimir Veremey, Qualcomm Atheros, USA

437 **High Self-Interference Mitigation Achieved Thanks to Significant Antenna Isolation and Advanced RF Front-End for In-Band Full-Duplex Communications**
Camille Jouvaud, David Dassonville, Patrick Rosson, CEA-Leti, France

441 **Effect of Nonlinear Distortion and Null Stability on Spatial-Multiplexing Performance Using 4.65-GHz-Band Active Antenna System with DPD**
Makoto Hayakawa, Takuji Mochizuki, Masashi Hirabe, Tomohiro Kikuma, Daisuke Nose, NEC, Japan