

# **2010 European Radar Conference**

## **(EuRAD 2010)**

**Paris, France**  
**30 September – 1 October 2010**



**IEEE Catalog Number: CFP10590-PRT**  
**ISBN: 978-1-4244-7234-5**

## EuRAD01 : Focused Session — Sea Clutter and Environmental Effects

Chair: Nicolas Pinel, IREENA Polytech Nantes — Co-Chair: Christophe Bourlier, IREENA Polytech Nantes

Venue: Dickens 3/4, 08:30 - 10:10, Thursday 30 September 2010

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- 1            **Monostatic Scattering from an Object Near an Ocean-Like Surface from an Efficient Fast Numerical Method**  
*Gildas Kubické<sup>1</sup>, Christophe Bourlier<sup>2</sup>*  
<sup>1</sup>DGA, France; <sup>2</sup>IREENA, France
- 5            **Microwave Ocean Scattering at Low-Grazing Angles with the GMoM**  
*Gabriel Soriano<sup>1</sup>, Charles-Antoine Guérin<sup>2</sup>, Marc Saillard<sup>2</sup>*  
<sup>1</sup>Institut Fresnel, France; <sup>2</sup>LSEET, France
- 9            **Backscattering of Wide-Band HF Signals from Evolving Ocean-Like Surface: 2-D Direct Numerical Simulations and Analysis**  
*Jakov V. Toporkov, Mark. A. Sletten, US Naval Research Laboratory, USA*
- 13          **Possibilities of Oil Slick Detection on the Sea Surface Using Radar**  
*S. Ermakov<sup>1</sup>, J.C.B. da Silva<sup>2</sup>, J.M. Magalhaes<sup>2</sup>, I. Sergievskaya<sup>1</sup>*  
<sup>1</sup>Russian Academy of Sciences, Russia; <sup>2</sup>University of Lisbon, Portugal
- 17          **Radar Probing of Steep Gravity Waves — Wave Tank Experiment**  
*I. Sergievskaya, S. Ermakov, I. Kapustin, Russian Academy of Sciences, Russia*

## EuRAD02 : Imaging Radar

Chair: Robert Malmqvist, FOI Swedish Defence Research Agency — Co-Chair: Marco Martorella, University of Pisa

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- 25          **Pseudo-Noise Waveform Synthesis for SAR Applications**  
*Janusz Kulpa, Lukasz Maslikowski, Krzysztof Kulpa, Warsaw University of Technology, Poland*
- 29          **Illumination Properties of Multistatic Planar Arrays in Near-Field Imaging Applications**  
*Sherif Sayed Ahmed<sup>1</sup>, Andreas Schiessl<sup>2</sup>, Lorenz-Peter Schmidt<sup>1</sup>*  
<sup>1</sup>Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; <sup>2</sup>Rohde & Schwarz GmbH & Co. KG, Germany
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*P. Feil<sup>1</sup>, A. Zeitler<sup>2</sup>, T.P. Nguyen<sup>2</sup>, C. Pichot<sup>2</sup>, C. Migliaccio<sup>2</sup>, Wolfgang Menzel<sup>1</sup>*  
<sup>1</sup>Universität Ulm, Germany; <sup>2</sup>LEAT, France
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*Daniele Mecatti, Giovanni Macaluso, Andrea Barucci, Linhsia Noferini, Massimiliano Pieraccini, Carlo Atzeni, Università di Firenze, Italy*

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<sup>1</sup>Thales Systèmes Aéroportés, France; <sup>2</sup>Laboratoire I3S, France
- 45 **Characterisation of Dismounted Combatants Radar Signature from Airborne Platforms**  
*Michael McDonald, Anthony Damini, Defence R&D Canada, Canada*
- 49 **Estimation of Efficiency of a Tree Structured Hierarchical Wavelet Representation of Synthetic Database Applied to Non-Cooperative Target Recognition**  
*Christian Brousseau, IETR, France*
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<sup>1</sup>EADS Deutschland GmbH, Germany; <sup>2</sup>Alpen-Adria-Universität Klagenfurt, Austria
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*Sherif A. Elgamel, John J. Soraghan, University of Strathclyde, UK*

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<sup>1</sup>IEMN, France; <sup>2</sup>INRETS-LEOST, France
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*Stefano Maddio, Alessandro Cidronali, Gianni Giorgetti, Gianfranco Manes, Università di Firenze, Italy*

## EuRAD05 : EuRAD Opening Session

Chair: P. Eudeline, Thales Air System — Co-Chair: C. Migliaccio, University of Nice Sophia Antipolis

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*<sup>1</sup>PEGASE Systems, France; <sup>2</sup>IES (UMR5214), France*
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*Emmanuel Marquis, Thales Air Systems, France*
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*Domenico Olivadese<sup>1</sup>, Fabrizio Berizzi<sup>1</sup>, Andrea Cacciamano<sup>1</sup>, Amerigo Capria<sup>2</sup>*  
*<sup>1</sup>Università di Pisa, Italy; <sup>2</sup>CNIT, Italy*

## EuRAD07: Multi-Channel Systems

Chair: Krzysztof Kulpa, Warsaw University of Technology — Co-Chair: Paulo Marques, Instituto de Telecomunicações, Lisboa  
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<sup>1</sup>Università di Pisa, Italy; <sup>2</sup>CNIT, Italy
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*Francesco Belfiori<sup>1</sup>, S. Monni<sup>2</sup>, Wim Van Rossum<sup>2</sup>, Peter Hoogeboom<sup>1</sup>*  
<sup>1</sup>Technische Universiteit Delft, The Netherlands; <sup>2</sup>TNO Defence, The Netherlands
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Chair: Gaspare Galati, University of Roma — Co-Chair: Frederic Barbaresco, Thales Air Systems  
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*C. Costes<sup>1</sup>, J.-P. Artis<sup>1</sup>, Frédéric Barbaresco<sup>2</sup>*  
<sup>1</sup>Thales Airborne Systems, France; <sup>2</sup>Thales Air Systems, France
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*Gaspare Galati, Gabriele Pavan, Saverio Scopelliti, Università di Roma "Tor Vergata", Italy*

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Chair: Stephen Harman, QinetiQ — Co-Chair: Jean-Yves Dauvignac, University of Nice-Sophia Antipolis

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*Zhijian Li<sup>1</sup>, L.P. Ligthart<sup>2</sup>, Peikang Huang<sup>3</sup>, Weining Lu<sup>4</sup>, W.F. van der Zwan<sup>2</sup>, Oleg A. Krasnov<sup>2</sup>*  
*<sup>1</sup>Nanjing Electronic Equipment Institute, China; <sup>2</sup>Technische Universiteit Delft, The Netherlands; <sup>3</sup>Second Academy of CASIC, China; <sup>4</sup>First Academy of CASIC, China*

## EuRAD11: Radiation, Propagation and Scattering

Chair: Claire Migliaccio, University of Nice-Sophia Antipolis — Co-Chair: Alexander Yarovoy, Delft University of Technology

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*Michael McDonald<sup>1</sup>, Delphine Cerutti-Maori<sup>2</sup>, Anthony Damini<sup>1</sup>*  
*<sup>1</sup>Defence R&D Canada, Canada; <sup>2</sup>Fraunhofer FHR, Germany*
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*Robert E. Marshall, Katherine H. Horgan, Naval Surface Warfare Center, USA*
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*Wolfgang Menzel, Shady Keyrouz, Jiang Li, Sabine Dieter, Universität Ulm, Germany*
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*Klaus Baur, Marcel Mayer, Victor Rack, Dieter Vogel, Thomas Walter, Hochschule Ulm, Germany*

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Chair: Hermann Rohling, Hamburg University of Technology — Co-Chair: Jacek Misiurewicz, Institute of Electronic Systems, Warsaw

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*Mayazzurra Ruggiano<sup>1</sup>, Piet van Genderen<sup>2</sup>*  
*<sup>1</sup>University of Nottingham, UK; <sup>2</sup>Technische Universiteit Delft, The Netherlands*
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*<sup>1</sup>Thales Airborne Systems, France; <sup>2</sup>Thales Air Systems, France*
- 200      **Sub-Band Phase Calibration in Stepped Frequency GB Noise SAR**  
*Lukasz Maślowski, Mateusz Malanowski, Warsaw University of Technology, Poland*

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Chair: David Daniels, ERA Technology — Co-Chair: Pierre Saulais, Thales Air Systems

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- 212      **Performance of an Ultra Wideband Radar for Detection of Water Accumulation in the Human Bladder**  
*Xuyang Li, Elena Pancera, Lukasz Niestoruk, Wilhelm Stork, Thomas Zwick, KIT, Germany*
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*Lucio Bellomo, Sébastien Pioch, Marc Saillard, LSEET, France*

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Chair: Piet van Genderen, Delft University of Technology — Co-Chair: Francois Le Chevalier, Thales

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*Michael Schikorr, EADS Deutschland GmbH, Germany*
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*M. Martorella<sup>1</sup>, B. Haywood<sup>2</sup>, W. Nel<sup>3</sup>, Y. Gaffar<sup>3</sup>, J. Palmer<sup>2</sup>, B. Bates<sup>2</sup>, E. Giusti<sup>1</sup>, Fabrizio Berizzi<sup>1</sup>*  
*<sup>1</sup>Università di Pisa, Italy; <sup>2</sup>DSTO, Australia; <sup>3</sup>CSIR, South Africa*
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*Eldar Aarholt<sup>1</sup>, Clive A. Jackson<sup>2</sup>*  
*<sup>1</sup>Teleplan AS, Norway; <sup>2</sup>BAE Systems Integrated System Technologies Ltd., UK*

## EuRAD15: SAR Processing

Chair: Kristo Kabakchiev, Sofia University — Co-Chair: Mateusz Malanowski, Warsaw University of Technology

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*Angie Fasoula<sup>1</sup>, Hans Driessen<sup>1</sup>, Piet van Genderen<sup>2</sup>*  
*<sup>1</sup>Thales Surface Radar, The Netherlands; <sup>2</sup>Technische Universiteit Delft, The Netherlands*
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*Paulo Marques, Instituto Superior de Engenharia de Lisboa, Portugal*
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*Carmine Clemente, John J. Soraghan, University of Strathclyde, UK*
- 252      **An Extended NLCS Algorithm for Bistatic Fixed-Receiver SAR Imaging**  
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- 256      **Improving SAR Images: Built-In Geometric and Multi-Look Radiometric Corrections**  
*O.O. Bezvesilniy, Ie.M. Gorovyi, S.V. Sosnytskiy, V.V. Vynogradov, D.M. Vavriv, National Academy of Sciences of Ukraine, Ukraine*



## EuRAD16: Detection

Chair: Felix Yanovsky, National Aviation University — Co-Chair: Joachim Ender, Fraunhofer Institute

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*Dingqing Lu, Agilent Technologies, USA*
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*<sup>1</sup>St. Kliment Ohridski University, Bulgaria; <sup>2</sup>State University of Library Studies & Information Technologies, Bulgaria; <sup>3</sup>Institute of Information & Communication Technologies, Bulgaria*
- 272      **Scan-to-Scan Sea-Spikes Filtering for Radar**  
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*<sup>1</sup>University of Birmingham, UK; <sup>2</sup>Moscow Institute of Electronic Technology, Russia*

## EuRAD17: Focused Session — Millimetre and Sub-Millimetre Waves Radar Imaging

Chair: Claire Migliaccio, University of Nice Sophia Antipolis — Co-Chair: Winfried Mayer, Endress+Hauser

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- 292      **Comparison of Multi-Beam Pillbox Antennas Using Leaky-Wave and Slotted Waveguide Radiating Parts for Automotive Radars at Millimeter-Waves**  
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- 296      **Dual-Sided Phase Conjugating Surface Techniques for Imaging**  
*Vincent Fusco, Oleksandr Malyuskin, Queen's University Belfast, UK*

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Chair: P. Lombardo, Università di Roma “La Sapienza” — Co-Chair: Jean-Yves Dauvignac, University of Nice-Sophia Antipolis

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- 300      **A Model-Based Track-Before-Detect Strategy**  
*M. Lops<sup>1</sup>, M. Mancino<sup>2</sup>, D. Orlando<sup>1</sup>, G. Ricci<sup>2</sup>, L. Venturino<sup>1</sup>*  
<sup>1</sup>Università di Cassino, Italy; <sup>2</sup>Università del Salento, Italy
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*Matteo Sedehi, Fabiola Colone, Pierfrancesco Lombardo, Università di Roma “La Sapienza”, Italy*
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*Diego Cristallini, Wolfram Bürger, Fraunhofer FHR, Germany*
- 312      **Design Challenges for Millimeter Wave Active Imaging Systems**  
*I. Ocket<sup>1</sup>, Dominique Schreurs<sup>1</sup>, V. Tavakol<sup>1</sup>, F. Qi<sup>1</sup>, B. Nauwelaers<sup>1</sup>, J. Stiens<sup>2</sup>*  
<sup>1</sup>Katholieke Universiteit Leuven, Belgium; <sup>2</sup>Vrije Universiteit Brussel, Belgium
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<sup>1</sup>Università di Messina, Italy; <sup>2</sup>Katholieke Universiteit Leuven, Belgium; <sup>3</sup>Università di Ferrara, Italy

## EuRAD19: Reconfigurable Radar

Chair: Winfried Mayer, Endress+Hauser — Co-Chair: Naruto Yonemoto, Electronic Navigation Research Institute

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*David Kwapisz, Michaël Hafner, Sylvain Queloz, Meggitt Sensing Systems, Switzerland*
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- 328      **Radar and Electronic Warfare Cooperation: Aboard a Single or Multiple Cooperative Platforms**  
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- 332      **Reconfigurable Digital Receiver for Polarimetric Radar with Dual-Orthogonal Signals**  
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<sup>1</sup>CNIT, Italy; <sup>2</sup>Università di Pisa, Italy; <sup>3</sup>Scuola Superiore Sant’Anna, Italy

## EuRAD20: Passive Radar and System Aspects

Chair: Hugh Griffiths, University College London — Co-Chair: Dominique Poullin, ONERA

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<sup>1</sup>SELEX Sistemi Integrati S.p.A., Italy; <sup>2</sup>Università di Roma “La Sapienza”, Italy
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<sup>1</sup>ONERA, France; <sup>2</sup>Thales Air Systems, France
- 348 **A 94-GHz Receiver Front End for Passive Millimeter-Wave Imaging**  
*Tae-Jong Baek, Sang-Jin Lee, Yong-Hyun Baek, Dong-Sik Ko, Min Han, Seok-Gyu Choi, Hyun-Jun Lim, Yeon-Sik Chae, Jin-Koo Rhee, Dongguk University, Korea*
- 352 **Sentinel-1 C-SAR Calibration**  
*Paul Snoeij, Evert Attema, Ignacio Navas Traver, Ramon Torres, European Space Agency, The Netherlands*
- 356 **W-Band Antenna-Reflector Combined in a Lens**  
*Akiko Kohmura<sup>1</sup>, Shunichi Futatsumori<sup>1</sup>, Naruto Yonemoto<sup>1</sup>, Motoharu Matsuzaki<sup>2</sup>*  
<sup>1</sup>ENRI, Japan; <sup>2</sup>LENSTAR Co. Ltd., Japan

## EuRAD21: Ultra Wideband Radar Processing

Chair: Duncan Robertson, University of St Andrews — Co-Chair: Francois Le Chevalier, Thales

Venue: Dupin 2, 10:50 – 12:30, Friday 1 October 2010

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- 360 **Comparison of the Time-Reversal and SEABED Imaging Algorithms Applied on Ultra-Wideband Experimental SPR Data**  
*A. Cresp<sup>1</sup>, M.J. Yedlin<sup>2</sup>, T. Sakamoto<sup>3</sup>, I. Aliferis<sup>1</sup>, T. Sato<sup>3</sup>, J.-Y. Dauvignac<sup>1</sup>, C. Pichot<sup>1</sup>*  
<sup>1</sup>LEAT, France; <sup>2</sup>University of British Columbia, Canada; <sup>3</sup>Kyoto University, Japan
- 364 **Real-Time Buried Object Detection Using LMMSE Estimation**  
*Ahmet Burak Yoldemir, Mehmet Sezgin, TÜBİTAK UEKAE, Turkey*
- 368 **Characterization of Underground Objects in UWB GPR by Range Profiling of Phase**  
*Valeri Mikhnev<sup>1</sup>, Pertti Vainikainen<sup>2</sup>*  
<sup>1</sup>National Academy of Sciences of Belarus, Belarus; <sup>2</sup>Aalto University, Finland
- 372 **UWB Radar Signal Processing for Through Wall Tracking of Multiple Moving Targets**  
*Jana Rovňáková, Dušan Kocur, Technical University of Košice, Slovak Republic*
- 376 **Study on Velocity Estimation of MCPC Signal in Wideband Radar**  
*Bin Sun, Xi-zhang Wei, Xiang Li, NUDT, China*

## EuRAD22: EuRAD Closing Session

Chair: P. Eudeline, Chair EuRAD 2010, Thales Air System — Co-Chair: A. Brown, Chair EuRAD 2011, Manchester University

Venue: Dickens 5/6, 13:40 – 15:00, Friday 1 October 2010

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- 380 **New Coastal Radar Performances: Evolution or Revolution**  
*Emmanuel Marquis, Thales Air Systems, France*

## EuRAD Poster01 : Radar Architecture and Systems 1

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

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- 384      **Study of Different Configurations of Tapered-Slot Antenna Arrays for Detecting Buried Objects**  
*Yelena Maksimovitch<sup>1</sup>, Valeri Mikhnev<sup>1</sup>, Pertti Vainikainen<sup>2</sup>*  
<sup>1</sup>National Academy of Sciences of Belarus, Belarus; <sup>2</sup>Aalto University, Finland
- 388      **Knowledge Assistance for Ground Target Tracking and Resource Management**  
*Chhabi Nigam, Aparna Rathi, J.P. Vardhani, Electronics & Radar Development Establishment, India*
- 392      **On Wideband MIMO Radar: Extended Signal Model and Spectral Beampattern Design**  
*Pascale Jardin<sup>1</sup>, Florence Nadal<sup>1</sup>, Sarah Middleton<sup>2</sup>*  
<sup>1</sup>ESYCOM, France; <sup>2</sup>University of the Witwatersrand, South Africa
- 396      **Target Localization Methods for Frequency-Only MIMO Radar**  
*Yilmaz Kalkan<sup>1</sup>, Buyurman Baykal<sup>2</sup>*  
<sup>1</sup>Suleyman Demirel University, Turkey; <sup>2</sup>Middle East Technical University, Turkey
- 400      **Through the Wall MIMO Radar Detection with Stepped Frequency Waveforms**  
*B. Boudamouz<sup>1</sup>, P. Millot<sup>1</sup>, C. Pichot<sup>2</sup>*  
<sup>1</sup>ONERA, France; <sup>2</sup>LEAT, France
- 403      **Target Detection and Positioning in Correlated Scattering Using Widely Distributed MIMO Radar**  
*Tuomas Aittomäki, Visa Koivunen, Aalto University, Finland*

## EuRAD Poster02 : Radar Signal Processing and Simulations Systems

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

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- 407      **Fractal Based Detection Using Blind Box-Counting Method in High Resolution Radars**  
*Nima M. PourNejatian, Mohammad Mahdi Nayebi, Sharif University of Technology, Iran*
- 411      **Adaptive and Nonparametric Methods of Signal Detection Against the Background of Non-Gaussian Clutter from Underlying Surface**  
*V.I. Lutsenko, I.V. Lutsenko, I.V. Popov, National Academy of Sciences of Ukraine, Ukraine*
- 415      **Riemannian Median, Geometry of Covariance Matrices and Radar Target Detection**  
*Le Yang<sup>1</sup>, Marc Arnaudon<sup>1</sup>, Frédéric Barbaresco<sup>2</sup>*  
<sup>1</sup>LMA, France; <sup>2</sup>Thales Air Systems, France
- 419      **Passive Detection and Tracking of Maneuvering Targets with Particle Filter Techniques Using DVBT Broadcasting**  
*K. Jishy<sup>1</sup>, F. Lehmann<sup>1</sup>, F. Gosselin<sup>2</sup>, M. Moruzzis<sup>2</sup>, G. Salut<sup>3</sup>*  
<sup>1</sup>Laboratoire CITI, France; <sup>2</sup>Thales Air Systems, France; <sup>3</sup>LAAS, France
- 423      **2D Image Fuzzy Deconvolution and Scattering Centre Detection**  
*Luigi Giubolini<sup>1</sup>, Paul Pazandak<sup>2</sup>*  
<sup>1</sup>Andromeda, Italy; <sup>2</sup>Rockwell Collins, USA
- 427      **2D Image Fuzzy Deconvolution and Scattering Centre Detection: Model and Real-Time FPGA Implementation for Automotive Application**  
*Frantz Bodereau<sup>1</sup>, Luigi Giubolini<sup>2</sup>, Patrice Mallejac<sup>1</sup>, Antonio Pizzardi<sup>2</sup>*  
<sup>1</sup>Autocruise, France; <sup>2</sup>Andromeda, Italy

## EuRAD Poster03 : Radar Architecture and Systems 2

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

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- 431 **Comparative Analysis of Two Techniques for Moving Target Velocity Estimation**  
*Lyubka Doukovska, Donka Angelova, Bulgarian Academy of Sciences, Bulgaria*
- 435 **3-D Calibration of InSAR Imaging Under a Condition of Phase Ambiguity**  
*Cheng-lan Liu, Feng He, Xun-zhang Gao, NUDT, China*
- 439 **Experimental Characterization of Channel Crosstalk in Interleaved Array Antennas for FMCW Radar**  
*Christian Trampuz, Ioan E. Lager, Massimiliano Simeoni, L.P. Ligthart, Technische Universiteit Delft, The Netherlands*
- 443 **Design of a Passive Radar Network**  
*Matti Isohookana, Jarkko Pyykönen, University of Oulu, Finland*
- 447 **DC-Offset Compensation in a Bistatic 77GHz-FMCW-Radar**  
*Delf Mittelstrass<sup>1</sup>, Dirk Steinbuch<sup>1</sup>, Thomas Walter<sup>2</sup>, Christian Waldschmidt<sup>1</sup>, Robert Weigel<sup>3</sup>*  
<sup>1</sup>Robert BOSCH GmbH, Germany; <sup>2</sup>Hochschule Ulm, Germany;  
<sup>3</sup>Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
- 451 **77GHz FM-CW Radar for FODs Detection**  
*K. Mazouni<sup>1</sup>, Akiko Kohmura<sup>2</sup>, Shunichi Futatsumori<sup>2</sup>, Naruto Yonemoto<sup>2</sup>, J.-Y. Dauvignac<sup>1</sup>, C. Pichot<sup>1</sup>, C. Migliaccio<sup>1</sup>*  
<sup>1</sup>LEAT, France; <sup>2</sup>ENRI, Japan

## EuRAD Poster04 : Radar Applications

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

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- 455 **MMIC Based Phased Array Radar T/R Modules**  
*Douglas J. Carlson, Chris Weigand, T. Boles, M/A-COM Technology Solutions, USA*
- 459 **Modular RF Design for QUASAR Ku-Band Polarimetric SAR System**  
*Javier del Castillo Mena, Saray Sanchez Sevilleja, Juan Ramón Larrañaga Sodupe, INTA, Spain*
- 463 **A Multi-Model Track-Before-Detect Algorithm for Manoeuvring Target Detection for Over-the-Horizon Radar**  
*Zeng-fu Wang, Mei Zhang, Yan Liang, Quan Pan, Northwestern Polytechnical University, China*
- 467 **Multistatic Passive Radar Geometry Optimization for Target 3D Positioning Accuracy**  
*Francesca Gumiero<sup>1</sup>, Cinzia Nucciarone<sup>1</sup>, V. Anastasio<sup>2</sup>, Pierfrancesco Lombardo<sup>1</sup>, Fabiola Colone<sup>1</sup>*  
<sup>1</sup>Università di Roma "La Sapienza", Italy; <sup>2</sup>SELEX Sistemi Integrati S.p.A., Italy
- 471 **Radar Polarimetry for Security Applications**  
*Dave Tahmouh, Jerry Silvius, US Army Research Laboratory, USA*
- 475 **Bio-Radiolocation Method at Chest Wall Motion Analysis During Tidal Breathing**  
*D.A. Korchagina, M.D. Alekhin, L.N. Anishchenko, Bauman Moscow State Technical University, Russia*

## EuRAD Poster05 : Antennas, Scattering and Measurements

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

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- 479      **Digital Antenna Unit for DOA Analysis in ESM Systems**  
*V. Alleva, D. Baccello, M. Bartocci, B. Orobello, Elettronica S.p.A., Italy*
- 483      **Digital Signal Processing Applied to Radar Sensors Operated in Active Defense Systems**  
*Premysl Hudec<sup>1</sup>, Jiri Plasil<sup>2</sup>, Petr Dohnal<sup>3</sup>*  
<sup>1</sup>Czech Technical University in Prague, Czech Republic; <sup>2</sup>ELDIS Pardubice, Czech Republic; <sup>3</sup>VOP-026 Sternberk, Czech Republic
- 487      **Arbitrary Synthetic Aperture Motion Compensation Based on Fast Back Projection**  
*Yanghuan Li, Qian Song, Tian Jin, Zhimin Zhou, NUDT, China*
- 491      **A Kalman Smoothing Approach for Surface Deformation Monitoring in Differential SAR Interferometry**  
*Davide Chirico, Gilda Schirinzi, Università di Napoli "Parthenope", Italy*
- 495      **Using Signals of the Global Navigation Satellites for Diagnostics of Above Land Troposphere Refraction**  
*V.N. Gudkov<sup>1</sup>, V.I. Lutsenko<sup>2</sup>, I.V. Lutsenko<sup>2</sup>, N.X. Anh<sup>3</sup>, I.V. Popov<sup>2</sup>, V.B. Sinitskiy<sup>2</sup>*  
<sup>1</sup>Navis Ukraine, Ukraine; <sup>2</sup>National Academy of Sciences of Ukraine, Ukraine; <sup>3</sup>Vietnamese Academy of Science & Technology, Vietnam
- 499      **Method of Automatic Target Angle Tracking by Sum-and-Difference Monopulse Radar Invariant Against the Polarization Jamming**  
*Evgeny Markin, Intellcom LLC, Russia*

## EuMC/EuRAD01 : Radar and Microwave Developments

Chair: Peter Hoogeboom, Delft University of Technology — Co-Chair: Adriano Meta, German Aerospace Center

Venue: Dickens 1/2, 13:40 - 15:00, Thursday 30 September 2010

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- 503      **A High Resolution 2D Omnidirectional Synthetic Aperture Radar Scanner at K Band**  
*Faiza Ali, Alexander Urban, Martin Vossiek, Technische Universität Clausthal, Germany*
- 507      **A Modular 24GHz Radar Sensor for Digital Beamforming on Transmit and Receive**  
*Marlene Harter<sup>1</sup>, Andreas Kornbichler<sup>2</sup>, Thomas Zwick<sup>1</sup>*  
<sup>1</sup>KIT, Germany; <sup>2</sup>Siemens AG, Germany
- 511      **Spatial (Aperture) Noise Generators**  
*I.V. Bragin, V.P. Sgibnev, I.V. Istuakov, B.N. Savin, E.L. Elizavetova, OKB MEI, Russia*
- 515      **A Complete Indoor Positioning System Implementing Six-Port Interferometers**  
*S.F. Peik, F. Monsees, C. Meyer, R. Szczuka, T. Pötsch, Hochschule Bremen, Germany*

## EuMC/EuRAD02 : Radar Antennas

Chair: Wolfgang Menzel, University of Ulm — Co-Chair: Ioan E. Lager, Delft University of Technology

Venue: Darwin 3, 13:40-15:00, Thursday 30 September 2010

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- 519      **Design of Two Flare UWB Antenna dedicated to the Research of Alive Buried Victims**  
*J.M. Denoual<sup>1</sup>, J.M. Floc'h<sup>1</sup>, J.P. Mutzig<sup>2</sup>, P. Massaloux<sup>3</sup>, F. Ducasse<sup>3</sup>, P. Minvielle<sup>3</sup>,  
C. Labarthe<sup>2</sup>*  
*<sup>1</sup>IETR, France; <sup>2</sup>MARTEC, France; <sup>3</sup>CEA, France*
- 523      **Dual Frequency & Dual-Linear Polarization Integrated Antenna Array for application  
in Synthetic Aperture Radar**  
*Grzegorz Jaworski<sup>1</sup>, Tomasz Maleszka<sup>1</sup>, Sławomir Gruszczyński<sup>2</sup>, Krzysztof Wincza<sup>2</sup>*  
*<sup>1</sup>Wroclaw University of Technology, Poland; <sup>2</sup>AGH University of Science & Technology,  
Poland*
- 527      **Circular Polarization Selectivity of Space-Fed Arrays Using Element Rotation**  
*Rudi H. Phillion, Michal Okoniewski, University of Calgary, Canada*
- 531      **Accurate Time-Domain Modelling of MEMS Antennas for Wireless Telemetry Systems**  
*Diego Caratelli<sup>1</sup>, Alessandro Massaro<sup>2</sup>, Alexander G. Yarovoy<sup>1</sup>, Roberto Cingolani<sup>2</sup>*  
*<sup>1</sup>Technische Universiteit Delft, The Netherlands; <sup>2</sup>IIT, Italy*
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