

SSPD2016 Thursday 22nd September

8:30 Registration and Refreshments

9:00 Welcome and opening

Mike Davies, University of Edinburgh / Jonathon Chambers, Newcastle University

9:10 Plenary Keynote: Sparse Sensing for Statistical Inference

Geert Leus, Delft University of Technology

Session 1: Tracking and Detection

10:10 1.0 Invited Speaker: Asymmetric threat: challenges & perspectives

Dann Laneuville, DCNS Research and Technology Centre

10:40 1.1 An Adaptive Receiver Search Strategy for Electronic Support

Sabine Apfeld¹, Alexander Charlish¹, Wolfgang Koch², ¹Fraunhofer, ²Fraunhofer/University of Bonn

11:05 Refreshments

11:30 1.2 New environmental dependent modeling with Gaussian particle filtering based implementation for ground vehicle tracking

Miao Yu¹, Yali Xue¹, Runxiao Ding¹, Hyondong Oh¹, Wen-Hua Chen¹, Jonathon Chambers², Loughborough University¹, Newcastle University²

11:55 1.3 Robust Detection of micro-UAS drones with L-band 3-D Holographic Radar

¹Mohammed Jahangir, ¹Chris Baker, Aveillant Ltd¹

12:20 1.4 Direction Finding Antenna Arrays with Improved Accuracy and Reduced Complexity and Size

¹Houcem Gazzah, University of Sharjah¹

12:45 Lunch

Session 2: Signal Processing Challenges – Industrial Perspective – Chair, Paul Thomas, Dstl

13:40 Industrial Speakers and Panel Discussion

Session 3: Poster Session

14:40 Posters and Refreshments available

16:10 4.0 Invited Speaker: Transmit Adaptivity in Radar

Antonio De Maio, University of Naples Federico II

16:40 4.1 Experimental Study on Full-Polarization Micro-Doppler of Space Precession Target in Microwave Anechoic Chamber

Jin Liu¹, Qihua Wu, Xiaofeng Ai¹, Feng Zhao¹, Jian'an Chen¹, ¹National University of Defense Technology

17:05 4.2 Fractional Fourier Transform Based Co-Radar Waveform: Experimental Validation

Domenico Gaglione¹, Carmine Clemente¹, Adriano Rosario Persico¹, Christos V. Ilioudis¹, Ian Proudler², John J Soraghan¹, ¹University of Strathclyde, ²Loughborough University

17:30 Close and End of Day 1

19:30 Wine Reception and Meal (Prince Philip Building, Royal College of Surgeons)

SSPD2016 Friday 23rd September

8:45 Registration and Refreshments

9:15 Welcome to day 2

Mike Davies, University of Edinburgh / Jonathon Chambers, Newcastle University

9:25 Plenary Keynote: Taming the Torrent: Future Military Signal Processing and Information Fusion

Philip Perconti, US Army Research Laboratory

Session 4 cont.: Radar and Lidar

10:25 4.3 Discriminating Underwater LiDAR Target Signatures using Sparse Multi-spectral Depth Codes

Puneet S Chhabra¹, Aurora Maccarone¹, Aongus McCarthy¹, Andrew M Wallace¹, Gerald Buller¹,
¹Heriot-Watt University

10:50 4.4 Efficient Range Estimation and Material Quantification from Multispectral Lidar Waveforms

Yoann Altmann¹, Aurora Maccarone¹, Abderrahim Halimi¹, Aongus McCarthy¹, Gerald Buller¹, Steve McLaughlin¹, ¹Heriot-Watt University

11:15 Refreshments

Session 5: Signal Processing Challenges – Military User Perspective - Chair, Paul Thomas, Dstl

11:45 MOD Speakers and Panel Discussion

12:45 Lunch

Session 6: Synthetic Aperture Imaging

14:00 6.1 GMTI in circular SAR data using STAP

Emiliano Casalini¹, Daniel Henke¹, Erich H. Meier¹, ¹University of Zurich

14:25 6.2 Digital Elevation Model Aided SAR-based GMTI Processing in Urban Environments

Di Wu¹, Mehrdad Yaghoobi¹, Mike Davies¹, ¹University of Edinburgh

14:50 Refreshments

15:10 6.3 A Multi-Family GLRT for Detection in Polarimetric SAR Images

Luca Pallotta¹, Carmine Clemente², Antonio De Maio¹, Danilo Orlando³, ¹University of Naples Federico II, ²Strathclyde University, ³Niccolò Cusano University

15:35 6.4 A Novel Motion Compensation Approach for SAS

Salvatore Caporale¹, Yvan Petillot¹, ¹Heriot-Watt University

16:00 Close

Poster Session – Thursday 22nd September

NB. All the posters will be on display in the afternoon session (session 3) of day 1 of the Conference.

P01 Spectral Library Clustering Using a Bayesian Information Criterion

Jonathan Piper¹, John Duseelis², ¹Dstl, ²AFRL

P02 Detection of manoeuvring low SNR objects in receiver arrays

Kimin Kim¹, Murat Uney¹, Bernard Mulgrew¹, ¹University of Edinburgh

P03 A Modified Spectral Line Camera for Low Cost Anomaly Detection

Oscar Somsen¹, ¹Netherlands Defense Agency

P04 Bistatic Micro-Doppler Characteristics of Preprocessing Targets

Xiaofeng Ai¹, Jin Liu, Feng Zhao¹, Jianhua Yang¹, Jian'an Chen¹, ¹National University of Defense Technology

P05 High Dynamic Range Spectral Estimation for Incomplete Time Series

Mike Newman¹, David Harvey¹, ¹Thales UK

P06 Tracking small UAVs using a Bernoulli filter

David Cormack¹, Daniel Clark², ¹Heriot-Watt University/Selex ES, ²Heriot-Watt University

P07 Robust Unmixing Algorithms for Hyperspectral Imagery

Abderrahim Halimi¹, Yoann Altmann¹, Gerald Buller¹, Steve McLaughlin¹, William Oxford², Damien Clarke², Jonathan Piper², ¹Heriot-Watt University, ²Dstl

P8 Radar Filters Design in the Presence of Target Doppler Frequency and Interference Covariance Matrix Uncertainties

Augusto Aubry¹, Antonio De Maio², Yongwei Huang³, Marco Piezzo⁴, ¹Universita degli studi di Napoli, ²University of Naples Federico II, ³The Hong Kong University of Science and Technology, ⁴Electronica S.p.A.

P09 Experimental Analysis of Time Deviation on a Passive Localization System

Hugo Seute¹, Ali Khenchaf², Jean-Christophe Cexus², Jean-François Grandin³, Cyrille Enderli³, ¹Thales Airborne Systems/ENSTA Bretagne, ²ENSTA Bretagne, ³Thales Airborne Systems

P10 Beampattern and polarisation synthesis of 3D RF-seeker antenna arrays

Luc Fourtinon¹, Alessio Balleri², Yves Quéré³, Christian Person⁴, Annaig Martin-Guennou³, Eric Rius, Guillaume Lesueur⁵, Thomas Merlet⁵, ¹Cranfield University/Telecom-Bretagne, ²Cranfield University, ³Université de Brest, ⁴Lab-STICC/MOM UMR CNRS, ⁵Thales Air Systems

P11 Adaptive M-estimation for Robust Cubature Kalman Filtering

Changliang Zhang¹, Ruirui Zhi¹, Tiancheng Li², Juan Corchado², ¹Northwestern Polytechnical University, ²University of Salamanca

P12 Fractional Fourier Based Sparse channel estimation for multicarrier underwater acoustic communication system

Yixin Chen¹, John J Soraghan¹, Carmine Clemente¹, Stephan Weiss¹, ¹University of Strathclyde

P13 Multiple Spherical Arrays Design for Acoustic Source localization

Xi Pan¹, Huayang Wang¹, Fangzhou Wang¹, Chengtian Song¹, ¹Beijing Institute of Technology

P14 Likelihood modelling of the Space Geodesy Facility laser ranging sensor for Bayesian filtering

Christy Simpson¹, Andrew Hunter¹, Sergei Vorgul¹, Emmanuel D. Delande¹, Jose Franco¹, Daniel Clark¹, ¹Heriot-Watt University

P15 Cramer-Rao Bounds for Distributed System Size Estimation Using Consensus Algorithms

Sai Zhang¹, Cihan Tepedelenlioglu¹, Jongmin Lee¹, Henry Braun¹, Andreas Spanias¹, ¹Arizona State University

P16 Joint Array and Spatial Sparsity Based Optimisation for DoA Estimation

Mingyang Chen¹, Mark Barnard¹, Wenwu Wang¹, ¹University of Surrey

P17 Scanning Emitter TMA by Two Fixed Observers using Time of Interception

Zhang Yifei¹, Zhang Min¹, Fucheng Guo¹, ¹National University of Defense Technology

P18 Enhanced-Range Intrusion Detection Using Pyroelectric Infrared Sensors

Sami A Aldalahmeh¹, Amer Hamdan¹, Mounir Ghogho², Desmond McLernon³, ¹Al-Zaytoonah University of Jordan, ²University of Leeds/International University of Rabat, ³University of Leeds

P19 Knowledge-aided Adaptive Detection with Multipath Exploitation Radar

Harun Hayvaci¹, Utku Kumbul¹, ¹TOBB University of Economics and Technology