

3rd IMA Conference on Mathematics in Defence

Thursday 24 October 2013 Tom Elliott Conference Centre, QinetiQ,
Malvern, UK

08:45	Registration/Poster set-up	
09:30	Introduction	
09:40		
09:40	Key Note Speech 1: Prof. Peter Roberts OBE (Chief Scientist, AWE)	
10:20		
10:20	Key Note Speech 2: Prof. Malcolm Macleod (Chief Scientist, C4ISR, QinetiQ)	
11:00		
11:00	Coffee and Poster Session 1	
12:00		
	Talks Session 1	
	A	B
12:00	J. Barr (BAE Systems) <i>A multi-sensor inference and data fusion method for tracking small, manoeuvrable maritime craft in cluttered regions</i>	C. Clemente (Strathclyde University) <i>Robust Principal Component Analysis for micro-Doppler based automatic target recognition</i>
12:30		
12:30	C. Rogers (Selex ES) <i>Acoustic spectral reflectometry and its application to the analysis of acoustic reflections for the determination of ground mechanical properties</i>	Z. Jones (Imperial College) <i>Wide-Baseline Image Change Detection</i>
13:00		
13:00	Lunch	
14:00		
	Talks Session 2	
	A	B
14:00	S. Hayward (QinetiQ) <i>Reconstruction of radar waveforms with spectral gaps using an Autoregressive model</i>	B. Park (BAE Systems) <i>Soft data fusion of categorical crowdsourced data and its application to urban situation assessment</i>
14:30		
14:30	R. Davidchack (Leicester University) <i>Out-of-band and adjacent-channel interference reduction by analog nonlinear filters</i>	S. Ellis (DOSG) <i>Hypothesis Testing, Confidence Intervals and Acceptance Sampling</i>
15:00		
15:00	Coffee and Poster Session 2	
16:00		
	Talks Session 3	
	A	B
16:00	S. Elvidge (Birmingham University) <i>Improved modelling of upper atmospheric densities multi-model ensembles</i>	N. Courtois (UCL) <i>Advanced Differential Cryptanalysis and GOST Cipher</i>
16:30		
16:30	P. Ridley (NAG) <i>The CABARET Scheme for Scalable High-Resolution Shock Capturing in Turbulent Flows</i>	D. Lowe (Aston University) <i>Analysis of Multibeam SONAR Data using Dissimilarity Representations</i>
17:00		
17:00	Summary and Close	
17:15		

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Coffee and Poster Session 1 (11:00-12:00)

M. Stapleton (AWE Aldermaston)

Muon Scattering Tomography for Cargo Screening

J. Moore (QinetiQ Ltd)

Utility-Based Methods for Acquisition Decisions

P. Westoby (Dstl Porton Down)

Propagation of uncertainty through the hazard chain

J.-P. Nikkarila (PVTT)

A Lagrangian model to analyze time dependent resource allocation inefficiency due to intrinsic responses

A. Balinsky (Cardiff University)

Automatic Text and Data Stream Segmentation Using Weighted Feature Extraction

J. Hudson (Sensor Agility Ltd.)

Adaptive Beamforming with Steering Calibration in Acoustic and Communications Arrays

A. Dawes (AWE)

Synchronised Numerical Methods

Coffee and Poster Session 2 (15:00-16:00)

S. Somasundaram (Thales Underwater Systems)

Robust Krylov-Subspace Methods for Passive Sonar Adaptive Beamforming

S. Ellis (Defence Ordnance Safety Group)

Design and Analysis of Binary Trials

J. Parr (Dstl)

Biosurveillance Data Fusion for Early Warning and Detection of a Disease Outbreak

P. Johnson (University of Manchester)

Optimal Detection of Signal with Known Phase

A. Fügenschuh (Helmut Schmidt University)

The Multiple Traveling Salesmen Problem with Moving Targets

P. Horridge (QinetiQ Ltd)

Fusing Geodetic and Radar measurements for tracking ground-based targets

J.-P. Nikkarila (PVTT)

Optimization of time dependent resource allocation problem