

2007 Information Decision and Control

**Adelaide, Australia
12-14 February 2007**



IEEE Catalog Number:
ISBN:

07EX1647
1-4244-0901-2

Table of Contents

Acoustic Scattering Problems and Smart Obstacles.....	1
<i>Francesco Zirilli</i>	
Unified Hankel Norm Approximations Using the Divided Difference Operator	5
<i>Voon Siong Wong, Langford B. White, Doug Gray</i>	
Robust Guaranteed Cost State Estimation for Nonlinear Stochastic Uncertain Systems via an IQC Approach	11
<i>Ian R. Petersen</i>	
Design Challenges for an Autonomous Cooperative of UAVs	17
<i>Anthony Finn, Kuba Kabacinski, Samuel Picton Drake</i>	
Ground Target Tracking Using Acoustic Sensors	27
<i>Mats Ekman, Kjell Davstad, Lars Sjöberg</i>	
Adaptive Estimation of Unknown Phase Offset Between Sub-Arrays in Distributed Aperture Systems	33
<i>Ben A. Johnson, Yuri I. Abramovich</i>	
An Approximate Backstepping Control Law for the Global Stabilisation of Symmetric VTOL Vehicles	36
<i>R. Wood, B. Cazzolato</i>	
Optimal Receiver Trajectories for Scan-Based Radar Localization	42
<i>Kutluyil Dogancay</i>	
Error Exponents for Neyman-Pearson Detection of Markov Chains in Noise.....	48
<i>Alex S. Leong, Subhrakanti Dey, Jamie S. Evans</i>	
Data Fusion Without Data Fusion: Localization and Tracking Without Sharing Sensitive Information	54
<i>Matthew Roughan, Jon Arnold</i>	
Enhanced Multi-Target Tracking with Doppler Measurements.....	60
<i>Xuezhi Wang, Darko Musicki, Richard Ellem, Fiona Fletcher</i>	
Cramer-Rao Bound for Multiple Target Tracking Using Intensity Measurements.....	66
<i>Branko Ristic, Mark Morelande</i>	
Accurate Target Geolocation Using Cooperative Observers	72
<i>C.O. Savage, B.F. La Scala</i>	
On Localisation of a Radiological Point Source	78
<i>Ajith Gunatilaka, Branko Ristic, Ralph Gailis</i>	
Towards True UAV Autonomy	84
<i>Mitch Ferry, Ziming Tu, Leesa Stephens, Graham Prickett</i>	
Node Self-Localisation in Large Scale Sensor Networks.....	90
<i>B.F. La Scala, Xuezhi Wang, B. Moran</i>	
A Practical Approach to Dynamic Bayesian Networks	95
<i>Don Gossink, Mofeed Shahin, John Lemmer, Ian Fuss</i>	
Effect of Uncertainties on UCAV Trajectory Optimisation Using Evolutionary Programming	102
<i>Istas F. Nusyirwan, Cees Bil</i>	
UAV Team Formation for Emitter Geolocation	107
<i>Luke Marsh, Don Gossink, Samuel Picton Drake, Greg Calbert</i>	
Predictive Guidance and Control for a Tail-Sitting Unmanned Aerial Vehicle.....	113
<i>Peter Anderson, Hugh Stone</i>	
Design of an Extended Kalman Filter for UAV Localization	119
<i>Guoqiang Mao, Samuel Picton Drake, Brian D.O. Anderson</i>	
Emitter Geolocation with Two UAVs.....	125
<i>Nickens Okello, Darko Musicki</i>	

Table of Contents

Track Registration for Multistatic Radars with Multipath	131
<i>Nickens Okello</i>	
Signal Estimation via Averaging of Coarsely Quantised Signals	137
<i>Mark D. McDonnell</i>	
Mobile Platform Self-Localization	143
<i>Hatem Hmam</i>	
Passive Angle Measurement Based Localization Consistency via Geometric Constraints	149
<i>Adrian N. Bishop, Pubudu N. Pathirana, Baris Fidan, Brian D.O. Anderson, Guoqiang Mao</i>	
System Identification and Control of an Aerobot Drive System.....	155
<i>Paul Pounds, Robert Mahony, Peter Corke</i>	
Angle-Only Tracking of Manoeuvring Targets Using Double Sets of Multiple Range Models and Probability Mass Diffusion	161
<i>Thomas Kronhamn</i>	
Tracking Possibly Unresolved Targets with PMHT	167
<i>Samuel J. Davey</i>	
Broadband Source Angle Estimation Using a Sparse Uniform Linear Acoustic Array	173
<i>Kam W. Lo, Brian G. Ferguson</i>	
A New Statistical Measure of Signal Similarity	179
<i>Hugh L. Kennedy</i>	
Control Method for High-Accuracy Fine Steering Mirror Based on Slow Sampling Rate of Tracking Sensor Signal.....	185
<i>Yongmei Huang, Chengyu Fu, Qiliang Bao</i>	
Adaptive Colour Filter Array (CFA) Demosaicking with Mixed Order of Approximation	189
<i>J.S. Jimmy Li, Sharmil Randhawa</i>	
Closed-Loop Pressure Control Based on Smith Predictor for Gas Distribution Network.....	195
<i>Ali Talasaz, Ali Neissi Shooshtari</i>	
Open Interaction Network Model for Recognizing and Predicting Threat Events	201
<i>Alan Steinberg</i>	
Design of a Training Based Fuzzy Controller for Power Plant De-Superheaters	207
<i>Morteza Mohammadzahari, Ley Chen, Ali Ghaffari, Dalile Mehrabi</i>	
Convolution Kernels Based Sequential Monte Carlo Approximation of the Probability Hypothesis Density (PHD) Filter.....	213
<i>Kusha Panta, Ba-Ngu Vo</i>	
Estimating the Number of People in Buildings Using Visual Information	219
<i>Subhash Challa, Khalid Aboura, Konda Ravikanth, Suhrud K. Deshpande</i>	
Robust Adaptive Tracking Using Mixed Normalized/Unnormalized Estimation Errors	225
<i>Hamid R. Koofgar, Javad Askari</i>	
Robust Background Estimator Using IMM	231
<i>Suhrud K. Deshpande, Subhash Challa</i>	
A Particle Swarm Optimisation Approach to Graph Permutations	237
<i>Omar Ilaya, Cees Bil, Michael Evans</i>	
Solving Non Convex Min-Max Predictive Controller.....	243
<i>Bouzouita Badreddine, Bouani Faouzi, Ksouri Mekki</i>	
LDPC Code Aided Phase Ambiguity Resolution	249
<i>Sridhar Karuppasami, William G. Cowley</i>	

Table of Contents

A Rule-Map Based Technique for Information Inconsistency Verification	253
<i>Jun Ma, Jie Lu, Guangquan Zhang</i>	
Analysis of Flip Ambiguities in Distributed Network Localization.....	259
<i>Anushiya A. Kannan, Baris Fidan, Guoqiang Mao, Brian D.O. Anderson</i>	
Intelligent Stolen Vehicle Detection Using Video Sensing.....	265
<i>Rami Al-Hmouz, Subhash Challa</i>	
Multisensor Out-of-Sequence Data Fusion for Estimating the State of Dynamic Systems	271
<i>E. Besada-Portas, J.A. Lopez-Orozco, J.M. de la Cruz</i>	
Vibration and Position Control of a Flexible Manipulator	277
<i>I.A. Mahmood, B. Bhikkaji, S.O.R. Moheimani</i>	
Image Noise Cancellation by Adaptive Filter with Weight-Training Mechanism (AFWTM).....	283
<i>Chuen-Yau Chen, Chih-Wen Hsia</i>	
Sensor Fault Detection for UAVs Using a Nonlinear Dynamic Model and the IMM-UKF Algorithm.....	287
<i>Lennon Cork, Rodney Walker</i>	
A Wireless Sensor Network Protocol for Disaster Management.....	293
<i>Suman Saha, Mitsuji Matsumoto</i>	
A Real-Time Dynamic Programming Decomposition Approach to Resource Allocation	298
<i>Pierrick Plamondon, Brahim Chaib-draa, Abder Rezak Benaskeur</i>	
Parameter Optimization for Load-Optimal Agile Beam Radar Tracking	304
<i>Sun-Mog Hong, Won-Yong Choi, Young-Hun Jung</i>	
Context-Based Bitmapping in a Multi-Agent Receiver	310
<i>John Hefferan</i>	
Decentralised Optimal Control for Reconnaissance.....	315
<i>George M. Mathews, Hugh F. Durrant-Whyte</i>	
Adaptive Predictive Control Application in Gas Distribution Network: A Case Study.....	321
<i>Ali Talasaz, Ali Neissi Shooshtari</i>	
A Comparison of Three Algorithms for Tracking Dim Targets.....	328
<i>Samuel J. Davey, Mark G. Rutten</i>	
High Maneuver Target Tracking Based on Combined Kalman Filter and Fuzzy Logic	334
<i>M.H. Bahari, A. Karsaz, H. Khaloozadeh</i>	
Netted Radar Theory and Experiments.....	340
<i>Yu Teng, Shaun Doughty, Karl Woodbridge, Hugh Griffiths, Chris Baker</i>	
Towards a Situation Awareness Framework Based on Primitive Relations	346
<i>Norbert Baumgartner, Werner Retschitzegger</i>	
Event Location from Noisy Time-of-Arrival Data by Total Least Squares.....	351
<i>G.N. Newsam</i>	
Sufficient Conditions for Stabilization of Sampled-Data Linear Spatially Distributed Parameter Systems via Discrete Time Approximations.....	357
<i>Ying Tan, Dragan Nesic</i>	
Optimising Bistatic HF Radar Configurations for Target and Environmental Signature Discrimination	362
<i>Stuart Anderson</i>	
The Signal and Interference Environment in Passive Bistatic Radar	367
<i>Hugh Griffiths, Chris Baker</i>	