

2020 IEEE 11th Sensor Array and Multichannel Signal Processing Workshop (SAM 2020)

**Hangzhou, China
8 – 11 June 2020**



**IEEE Catalog Number: CFP20SAM-POD
ISBN: 978-1-7281-1947-2**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP20SAM-POD
ISBN (Print-On-Demand):	978-1-7281-1947-2
ISBN (Online):	978-1-7281-1946-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

LPI PERFORMANCE OPTIMIZATION SCHEME FOR A JOINT RADAR-COMMUNICATIONS SYSTEM	1
<i>Chenguang Shi, Yijie Wang, Fei Wang, Jianjiang Zhou</i>	
COOPERATIVE LPI PERFORMANCE OPTIMIZATION FOR MULTISTATIC RADAR UNDER UNCERTAINTIES: A ROBUST STACKELBERG GAME PERSPECTIVE	6
<i>Chenguang Shi, Lintao Ding, Fei Wang, Jianjiang Zhou</i>	
LPI-BASED OPTIMAL RADAR POWER ALLOCATION FOR TARGET TIME DELAY ESTIMATION IN JOINT RADAR AND COMMUNICATIONS SYSTEM	11
<i>Yijie Wang, Chenguang Shi, Fei Wang, Jianjiang Zhou</i>	
INTERFERENCE EXPLOITATION-BASED HYBRID PRECODING WITH ROBUSTNESS AGAINST CHANNEL ERRORS	15
<i>Yufan Fan, Ganapati Hegde, Christos Masouros, Marius Pesavento</i>	
A GENERAL ESPRIT METHOD FOR NONCIRCULARITY-BASED INCOHERENTLY DISTRIBUTED SOURCES	20
<i>Hua Chen, Yonghong Liu, Qing Wang, Wei Liu, Zongju Peng, Gang Wang</i>	
SIGNAL WAVEFORM DESIGN FOR HIGH RESOLUTION TARGET LOCALIZATION IN THROUGH-THE-WALL RADAR	24
<i>Chen Huang, Hongqing Liu, Lu Gan, Zhen Luo, Yi Zhou</i>	
IMPLEMENTATION OF REAL-TIME AUTOMOTIVE SAR IMAGING	29
<i>Tang Kan, Guo Xin, Liang Xiaowei, Lin Zhongshan</i>	
COUPLED ADVERSARIAL LEARNING FOR SINGLE IMAGE SUPER-RESOLUTION	33
<i>Chih-Chung Hsu, Kuan-Yu Huang</i>	
DISTRIBUTED NONNEGATIVE TENSOR CANONICAL POLYADIC DECOMPOSITION WITH AUTOMATIC RANK DETERMINATION	38
<i>Lei Cheng, Xueke Tong, Yik-Chung Wu</i>	
BEAM PATTERN SYNTHESIS FOR CONFORMAL ARRAY WITH SIDELobe AND POLARIZATION CONTROL: A PENALIZED INEQUALITY APPROACH	43
<i>Tianyu Cao, Wenqiang Pu, Pengyu Zhang, Zhi-Quan Luo</i>	
SPARSE SUBSPACE CLUSTERING WITH LINEAR SUBSPACE-NEIGHBORHOOD-PRESERVING DATA EMBEDDING	48
<i>Jwo-Yuh Wu, Liang-Chi Huang, Wen-Hsuan Li, Hau-Hsiang Chan, Chun-Hung Liu, Rung-Hung Gau</i>	
FLYING RADAR: ALTITUDE OPTIMIZATION, CLUTTER MITIGATION AND SPECTRUM SHARING WITH MIMO COMMUNICATION SYSTEM	53
<i>Mohamed Rihan, Mahmoud M. Selim, Chen Xu, Lei Huang</i>	
JOINT USER SCHEDULING AND BEAM SELECTION IN MMWAVE NETWORKS BASED ON MULTI-AGENT REINFORCEMENT LEARNING	58
<i>Chunmei Xu, Shengheng Liu, Cheng Zhang, Yongming Huang, Luxi Yang</i>	

WAVEFORM DESIGN FOR DUAL-FUNCTION MIMO RADAR-COMMUNICATION SYSTEMS.....	63
<i>Bo Tang, Hai Wang, Lilong Qin, Longxiang Li</i>	
ROBUST ADAPTIVE MONOPULSE PROCESSING FOR MULTIPLE OBSERVATIONS WITH APPLICATIONS TO TS-MIMO RADAR.....	68
<i>Kai-Bor Yu, Manuel F. Fernández</i>	
WAVEFORM DESIGN FOR TRACK-BEFORE-DETECT-BASED COGNITIVE RADARS.....	73
<i>Chaoqun Yang, Xiaofeng Wang, Heng Zhang, Yu Zheng</i>	
A NEW HYPERSPECTRAL COMPRESSED SENSING METHOD FOR EFFICIENT SATELLITE COMMUNICATIONS	78
<i>Chia-Hsiang Lin, José M. Bioucas Dias, Tzu-Hsuan Lin, Yen-Cheng Lin, Chi-Hung Kao</i>	
ON TIME-INVARIANT FDA BEAM-PATTERN DESIGN BASED ON TIME-DEPENDENT FREQUENCY OFFSETS	83
<i>Jiantao Shi</i>	
ROBUST ADAPTIVE BEAMFORMING FOR COPRIME ARRAY BASED ON INTERFERENCE POWER ESTIMATION VIA SUBSPACE	87
<i>Sicong Sun, Zhongfu Ye, Xingyu Zhu</i>	
REDUCED DIMENSIONAL 2-D DOA ESTIMATION VIA LEAST PARTIAL SEARCH WITH AUTOMATIC PAIRING FOR PARALLEL CO-PRIME ARRAYS.....	92
<i>Fenggang Sun, Shengqi Ouyang, Peng Lan, Fengdi Li</i>	
A VARIATIONAL BAYESIAN APPROACH TO DIRECTION FINDING OF CORRELATED TARGETS USING COPRIME ARRAY	97
<i>Jie Yang, Yixin Yang</i>	
3D PARAMETRIC CHANNEL ESTIMATION FOR MULTI-USER MASSIVE-MIMO OFDM SYSTEMS.....	101
<i>Junhui Liang, Jin He, Wenxian Yu</i>	
ADAPTIVE BEAMFORMING USING FREQUENCY DIVERSE MIMO RADAR WITH NONLINEAR FREQUENCY OFFSET.....	106
<i>Ming Tan, Chunyang Wang, Zhihui Li, Juan Bai, Lei Bao</i>	
ROBUST DOA ESTIMATION FOR SOURCES WITH KNOWN WAVEFORMS IN IMPULSIVE NOISE ENVIRONMENTS.....	111
<i>Yang-Yang Dong, Chun-Xi Dong, Zhong-Guo Wu, Jingjing Cai, Hua Chen</i>	
GREEDY COORDINATE DESCENT METHOD ON NON-NEGATIVE QUADRATIC PROGRAMMING.....	116
<i>Chenyu Wu, Yangyang Xu</i>	
MULTICHANNEL LEO SAR IMAGING WITH GEO SAR ILLUMINATOR	121
<i>Junjie Wu, Hongyang An, Zhichao Sun, Jianyu Yang</i>	
RANGE-DOPPLER IMAGING VIA ONE-BIT PMCW RADAR.....	126
<i>Xiaolei Shang, Heng Zhu, Jian Li</i>	
KRONECKER PRODUCT BEAMFORMING WITH MULTIPLE DIFFERENTIAL MICROPHONE ARRAYS	131
<i>Gongping Huang, Israel Cohen, Jacob Benesty, Jingdong Chen</i>	

ENHANCED ONLINE IVA WITH SWITCHED SOURCE PRIOR FOR SPEECH SEPARATION	136
<i>Suleiman Erateb, Jonathon Chambers</i>	
TWO-TIMESCALE BEAMFORMING OPTIMIZATION FOR INTELLIGENT REFLECTING SURFACE ENHANCED WIRELESS NETWORK	141
<i>Ming-Min Zhao, Qingqing Wu, Min-Jian Zhao, Rui Zhang</i>	
NONLINEAR MULTIVIEW ANALYSIS: IDENTIFIABILITY AND NEURAL NETWORK-BASED IMPLEMENTATION	146
<i>Qi Lyu, Xiao Fu</i>	
A SPARSE LEARNING BASED DETECTOR WITH ENHANCED MISMATCHED SIGNALS REJECTION CAPABILITIES	151
<i>Sudan Han, Luca Pallotta, Gaetano Giunta, Wanli Ma, Danilo Orlando</i>	
AN AIRBORNE VIDEOSAR HIGH-RESOLUTION GROUND PLAYBACK SYSTEM BASED ON FPGA	156
<i>Chenwei Liu, Xudong Wang, Daiyin Zhu</i>	
SUPPRESSION OF GHOST TARGETS IN FOCUSING AZIMUTH PERIODICALLY GAPPED SAR RAW DATA WITH COMPLEX ITERATIVE THRESHOLDING ALGORITHM	160
<i>Yulei Qian, Daiyin Zhu</i>	
HIGH DYNAMIC RANGE SENSING USING MULTI-CHANNEL MODULO SAMPLERS.....	164
<i>Lu Gan, Hongqing Liu</i>	
VERTICAL-ARRAY-BASED CONTOUR RECONSTRUCTION ALGORITHM FOR AIRBORNE WEATHER RADAR	169
<i>Yu Wang, Di Wu, Daiyin Zhu, Fanwang Meng</i>	
TARGET REFLECTIVITY CHARACTERIZATION FOR FDA RADAR.....	174
<i>Ronghua Gui, Wen-Qin Wang, Hing-Cheung So, Can Cui</i>	
UNDERDETERMINED LOW-COMPLEXITY WIDEBAND DOA ESTIMATION WITH UNIFORM LINEAR ARRAYS	179
<i>Hantian Wu, Qing Shen, Wei Liu, Wei Cui</i>	
FUSION OF HYPERSPECTRAL AND MULTISPECTRAL INFRARED ASTRONOMICAL IMAGES.....	184
<i>Claire Guilloteau, Thomas Oberlin, Olivier Berné, Nicolas Dobigeon</i>	
BLIND SOURCE SEPARATION METHODS BASED ON OUTPUT NONLINEAR CORRELATION FOR BILINEAR MIXTURES OF AN ARBITRARY NUMBER OF POSSIBLY CORRELATED SIGNALS	189
<i>Yannick Deville, Shahram Hosseini</i>	
APPLICATION OF DIJKSTRA ALGORITHM IN PATH PLANNING FOR GEOMAGNETIC NAVIGATION.....	194
<i>Qingya Liu, Hanchen Xu, Lihui Wang, Jin Chen, Yaoming Li, Lizhang Xu</i>	
MULTI-MODULUS BASED SEMI-BLIND SOURCE SEPARATION FOR MIMO-OFDM COMMUNICATIONS SYSTEMS	198
<i>Ouahbi Rekik, Karim Abed-Meraim, Anissa Mokraoui</i>	
CHANNEL ESTIMATION AND INDOOR POSITIONING FOR WIDEBAND MULTIUSER MILLIMETER WAVE SYSTEMS.....	203
<i>Yuxing Lin, Shi Jin, Michail Matthaiou, Xiaohu You</i>	

MITIGATING OUTLIERS FOR BAYESIAN MIXTURE OF FACTOR ANALYZERS.....	208
<i>Zhongtao Chen, Lei Cheng</i>	
WAVENUMBER DOMAIN SAR IMAGING ALGORITHM BASED ON THE PRINCIPLE OF CHIRP SCALING.....	213
<i>Wei Wei, Daiyin Zhu, Di Wu</i>	
DOA ESTIMATION FOR COEXISTENCE OF CIRCULAR AND NON-CIRCULAR SIGNALS BASED ON ATOMIC NORM MINIMIZATION.....	217
<i>Liping Teng, Qing Wang, Hua Chen, Wei-Ping Zhu, Wei Liu, Jingjing Cai</i>	
PRECODING FOR RADCOMM SYSTEMS BASED ON HYBRID ANTENNA ARRAYS	222
<i>Freddy Y. P. Feng, Lei Huang</i>	
POPLAR: PARAFAC2 DECOMPOSITION USING AUXILIARY INFORMATION.....	226
<i>Ekta Gujral, Georgios Theodorou, Evangelos E. Papalexakis</i>	
MAINLOBE JAMMING SUPPRESSION VIA INDEPENDENT COMPONENT ANALYSIS FOR POLARIMETRIC SIMO RADAR.....	231
<i>Mengmeng Ge, Guolong Cui, Zhenghong Zhang, Lin Zhou, Xianxiang Yu, Feng Yang, Lingjiang Kong</i>	
IMPROVED MODEL-BASED CHANNEL TRACKING FOR UNDERWATER ACOUSTIC COMMUNICATIONS.....	236
<i>Yuxing Wang, Jun Tao, Le Yang, Fei Yu, Chunguo Li, Xiao Han</i>	
EFFICIENT BEAMFORMING TRAINING AND CHANNEL ESTIMATION FOR MMWAVE MIMO-OFDM SYSTEMS.....	241
<i>Hanyu Wang, Jun Fang, Huiping Duan, Hongbin Li</i>	
LOW-RANK AND ANGULAR STRUCTURES AIDED MMWAVE MIMO CHANNEL ESTIMATION WITH FEW-BIT ADCS.....	246
<i>Jiang Zhu, Zhennan Liu, Chunyi Song, Zhiwei Xu, Caijun Zhong</i>	
ON THE CONVERGENCE OF JACOBI-TYPE ALGORITHMS FOR INDEPENDENT COMPONENT ANALYSIS	251
<i>Jianze Li, Konstantin Usevich, Pierre Comon</i>	
MULTI-CHANNEL SPACEBORNE SAR IMAGING METHOD FOR MARITIME SCENARIOS	256
<i>Xiaolan Qiu, Junying Yang, Mingyang Shang, Lihua Zhong, Chibiao Ding</i>	
ROBUST ADAPTIVE BEAMFORMING OF LFM SIGNALS BASED ON INTERFERENCE- PLUS-NOISE COVARIANCE MATRIX RECONSTRUCTION IN FRACTIONAL FOURIER DOMAIN	261
<i>Jian Lu, Jian Yang, Xinxin Liu</i>	
A PERSYMMETRIC AMF FOR RANGE LOCALIZATION IN PARTIALLY HOMOGENOUS ENVIRONMENT.....	266
<i>Linjie Yan, Congan Xu, Da Xu, Chengpeng Hao</i>	
GRIDLESS SPARSITY-BASED LOCALIZATION FOR NEAR-FIELD SOURCES WITH SYMMETRIC LINEAR ARRAY.....	271
<i>Weiliang Zuo, Jingmin Xin, Tong Xiao, Nanning Zheng, Akira Sano</i>	
PERFORMANCE EVALUATION OF BLUETOOTH IN A WIRELESS BODY AREA NETWORK FOR PRACTICAL APPLICATIONS.....	276
<i>Olaf Reich, Erik Hübner, Bogdan Ghita, Matthias Wagner, Jörg Schäfer</i>	

ENERGY EFFICIENT COMMUNICATION WITH RADAR SPECTRUM SHARING	281
<i>Emanuele Grossi, Marco Lops, Luca Venturino</i>	
IMPROVED SPARSE ERROR RECOVERY APPROACH FOR DETECTING QAM SIGNALS IN OVERLOADED MASSIVE MIMO SYSTEMS	286
<i>Yacine Meslem, Abeldjalil Aïssa-El-Bey, Mustapha Djeddou</i>	
PARALLEL FACTOR DECOMPOSITION CHANNEL ESTIMATION IN RIS-ASSISTED MULTI-USER MISO COMMUNICATION	291
<i>Li Wei, Chongwen Huang, George C. Alexandropoulos, Chau Yuen</i>	
HIGH-RESOLUTION AND WIDE-SWATH MONOSTATIC SAR IMAGING VIA RANDOM BEAM SCANNING	296
<i>Yichang Chen, Yuanqing Zhao, Gang Li, Wantian Wang, Peihao Liu</i>	
HYBRID TRANSCEIVER DESIGN FOR DUAL-FUNCTIONAL RADAR-COMMUNICATION SYSTEM	301
<i>Ziyang Cheng, Bin Liao, Zishu He</i>	
MOVING TARGET DETECTION OF ARRAY ANTENNAS BASED ON TIME REVERSAL	306
<i>Zhaoming Zhang, Baixiao Chen, Minglei Yang, Hui Xu</i>	
PERSYMMETRIC SUBSPACE RAO AND WALD TESTS FOR DISTRIBUTED TARGET IN PARTIALLY HOMOGENEOUS ENVIRONMENT	311
<i>Yongchan Gao, Linlin Mao, Hongbing Ji, Liyan Pan</i>	
A PASSIVE RADAR PROTOTYPE BASED ON MULTI-CHANNEL JOINT DETECTION AND ITS TEST RESULTS	316
<i>Junkang Wei, Junjie Li, Zhihui Cao, Qin Chen, Chunyi Song, Zhiwei Xu</i>	
AN EFFICIENT ISAR IMAGING METHOD BASED ON SLIDING WINDOW STAP	321
<i>Haodong Li, Guisheng Liao, Jingwei Xu, Jun Zhang</i>	
PERFORMANCE IMPROVEMENT IN A COEXISTENT RADAR AND COMMUNICATIONS SYSTEM	326
<i>Yongjun Liu, Guisheng Liao, Shengqi Zhu, Zhiwei Yang, Yufeng Chen, Xiaowen Zhang</i>	
TRANSMIT BEAMPATTERN DESIGN FOR MIMO RADAR WITH ONE-BIT DACS VIA BLOCK-SPARSE SDR	331
<i>Tong Wei, Ping Chu, Ziyang Cheng, Bin Liao</i>	
A BLIND DIRECTION OF ARRIVAL AND MUTUAL COUPLING ESTIMATION SCHEME FOR NESTED ARRAY	336
<i>Jinqing Shen, Jianfeng Li, Beizuo Zhu, Changbo Ye</i>	
OPTIMIZATION INSPIRED LEARNING NETWORK FOR MULTIUSER ROBUST BEAMFORMING	341
<i>Minghe Zhu, Tsung-Hui Chang</i>	
TENSOR-BASED ANGLE ESTIMATION WITH COPRIME MIMO RADAR	346
<i>Junpeng Shi, Dongming Wu, Zhihui Li, Fangqing Wen</i>	
A GRIDLESS WIDEBAND DOA ESTIMATION BASED ON ATOMIC NORM MINIMIZATION	350
<i>Yuanyuan Jiang, Dan Li, Xiaohuan Wu, Wei-Ping Zhu</i>	

2D DOA ESTIMATION FOR UNIFORM RECTANGULAR ARRAY WITH ONE-BIT MEASUREMENT.....	355
<i>Yang Xiong, Zeyang Li, Fangqing Wen</i>	
RESILIENT MULTITASK DISTRIBUTED ADAPTATION OVER NETWORKS WITH NOISY EXCHANGES.....	360
<i>Chengcheng Wang, Wee Peng Tay, Ye Wei, Yuan Wang</i>	
MIMO RADAR LOCALIZATION OF TARGETS BEHIND L-SHAPED CORNERS.....	365
<i>Shisheng Guo, Songlin Li, Guolong Cui, Shihao Fan, Lingjiang Kong, Xiaobo Yang</i>	
A GRIDLESS METHOD FOR DOA ESTIMATION UNDER THE COEXISTENCE OF MUTUAL COUPLING AND UNKNOWN NONUNIFORM NOISE.....	369
<i>Dan Li, Yuanyuan Jiang, Xiaohuan Wu, Wei-Ping Zhu</i>	
DOA ESTIMATION USING SPARSE BAYESIAN LEARNING FOR COLOCATED MIMO RADAR WITH DYNAMIC WAVEFORMS.....	374
<i>Bingfan Liu, Baixiao Chen, Minglei Yang, Hui Xu</i>	
WAVEFORM DESIGN FOR THE RADAR-COMMUNICATIONS COEXISTENCE WITH GOOD CORRELATION PROPERTIES : (INVITED PAPER).....	378
<i>Yongzhe Li, Ran Tao</i>	
DISTRIBUTED MULTIARRAY NOISE REDUCTION WITH ONLINE ESTIMATION OF MASKS AND SPATIAL FILTERS.....	383
<i>Julitta Bartolewska, Konrad Kowalczyk</i>	
DIRECTION OF ARRIVAL ESTIMATION OF NON-CIRCULAR SIGNALS USING MODIFIED NESTED ARRAY.....	388
<i>Xiaofei Zhang, Yunfei Wang, Wang Zheng</i>	
DESIGN OF ADAPTIVE DETECTORS FOR FDA-MIMO RADAR.....	393
<i>Lan Lan, Angela Marino, Augusto Aubry, Antonio De Maio, Guisheng Liao, Jingwei Xu</i>	
AUTOMATICALLY TUNABLE AMF FOR RADAR DETECTION IN DIFFUSE MULTIPATH.....	398
<i>Yao Rong, Augusto Aubry, Antonio De Maio, Mengjiao Tang</i>	
DEEP RADAR WAVEFORM DESIGN FOR EFFICIENT AUTOMOTIVE RADAR SENSING.....	403
<i>Shahin Khobahi, Arindam Bose, Mojtaba Soltanian</i>	
TRANSMIT BEAMPATTERN DESIGN FOR DUAL-FUNCTION RADAR-COMMUNICATION SYSTEM WITH AN INTERLEAVED ARRAY.....	408
<i>Yufeng Chen, Guisheng Liao, Zhiwei Yang, Shengqi Zhu, Yongjun Liu, Mengchao Jiang</i>	
EFFICIENT DESIGN OF DOPPLER SENSITIVE LONG DISCRETE-PHASE PERIODIC SEQUENCE SETS FOR AUTOMOTIVE RADARS.....	413
<i>Wenjie Huang, Ronghao Lin</i>	
PASSIVE RADAR CHANNEL ESTIMATION BASED ON PN SEQUENCE OF DTMB SIGNAL.....	418
<i>Chen Geng, Tian Bo, Gong Jian, Feng Cunqian</i>	
DOA ESTIMATION BY TWO-DIMENSIONAL INTERPOLATION IN THE PRESENCE OF MUTUAL COUPLING.....	422
<i>Qi Liu, Hui Cao, Yuntao Wu, Changhai Huang</i>	

JOINT OPTIMIZATION OF SUBCARRIER SELECTION AND POWER ALLOCATION FOR DUAL-FUNCTIONAL RADAR-COMMUNICATIONS SYSTEM	427
<i>Chenguang Shi, Yijie Wang, Fei Wang, Hailin Li</i>	
AUTOMOTIVE DUAL-FUNCTION RADAR COMMUNICATIONS SYSTEMS: AN OVERVIEW	432
<i>Dingyou Ma, Nir Shlezinger, Tianyao Huang, Yimin Liu, Yonina C. Eldar</i>	
POWER ALLOCATION STRATEGY FOR OFDM WAVEFORM IN RADCOM SYSTEMS	437
<i>Mohammad A. B. Mohammad, Guolong Cui, Xianxiang Yu, Mohammad Ahmed, Ashenafi Yadessa Gemechu</i>	
CROSS-TRACK ILLUMINATION CORRECTION FOR HYPERSPECTRAL PUSHBROOM SENSORS USING TOTAL VARIATION AND SPARSITY REGULARIZATION	442
<i>Lina Zhuang, Michael K. Ng</i>	
APPROXIMATE JOINT DIAGONALIZATION FOR ARMA DEPENDENT SOURCE SEPARATION	447
<i>Salih Meziani, Adel Belouchrani, Karim Abed-Meraim</i>	
ROBUST COEXISTENCE DESIGN OF MIMO RADAR AND MIMO COMMUNICATION UNDER MODEL UNCERTAINTY	452
<i>Xin He, Lei Huang</i>	
INTEGRATED WAVEFORM DESIGN FOR AN INTEGRATED RADAR AND COMMUNICATION SYSTEM WITH A UNIFORM LINEAR ARRAY	457
<i>Mengchao Jiang, Guisheng Liao, Zhiwei Yang, Yongjun Liu, Yufeng Chen, Haichuan Li</i>	
BLOCK-SPARSE SIGNAL RECOVERY BASED ON ADAPTIVE MATCHING PURSUIT VIA SPIKE AND SLAB PRIOR	462
<i>Fuzai Lv, Changhao Zhang, Zhifeng Tang, Pengfei Zhang</i>	
DIRECT ADAPTIVE EQUALIZATION WITH CFO PRE-COMPENSATION FOR SINGLE-CARRIER UNDERWATER ACOUSTIC COMMUNICATIONS	467
<i>Jun Tao, Fengzhong Qu, Hongtao Zhang</i>	
OUTAGE MINIMIZATION FOR INTELLIGENT REFLECTING SURFACE AIDED MISO COMMUNICATION SYSTEMS VIA STOCHASTIC BEAMFORMING	472
<i>Wenzhi Fang, Min Fu, Yuanming Shi, Yong Zhou</i>	
RANK REGULARIZED BEAMFORMING IN SINGLE GROUP MULTICASTING NETWORKS	477
<i>Dima Taleb, Marius Pesavento</i>	
CHANCE CONSTRAINED BEAMFORMING FOR JOINT RADAR-COMMUNICATION SYSTEMS	482
<i>Ammar Ahmed, Dennis Silage, Yimin D. Zhang</i>	
HIGH-RESOLUTION TARGET SENSING USING MULTI-FREQUENCY SPARSE ARRAY	487
<i>Ammar Ahmed, Dennis Silage, Yimin D. Zhang</i>	
SPECTRAL ALGORITHM FOR SHARED LOW-RANK MATRIX REGRESSIONS	492
<i>Yotam Gigi, Sella Nevo, Gal Elidan, Avinatan Hassidim, Yossi Matias, Ami Wiesel</i>	
LEARNING LATENT FEATURES WITH PAIRWISE PENALTIES IN LOW-RANK MATRIX COMPLETION	497
<i>Kaiyi Ji, Jian Tan, Jinfeng Xu, Yuejie Chi</i>	

DETERMINISTIC COHERENCE-BASED PERFORMANCE GUARANTEE FOR NOISY SPARSE SUBSPACE CLUSTERING USING GREEDY NEIGHBOR SELECTION	502
<i>Jwo-Yuh Wu, Wen-Hsuan Li, Liang-Chi Huang, Yen-Ping Lin, Chun-Hung Liu, Rung-Hung Gau</i>	
AMBIGUITY FUNCTION-BASED ESPRIT ALGORITHM FOR FDA-MIMO RADAR TARGET LOCALIZATION	507
<i>Ziting Xu, Bang Huang, Huawei Hu, Hui Chen, Wen-Qin Wang</i>	
HYBRID BEAMFORMING DESIGN FOR DOWNLINK MU-MIMO-OFDM MILLIMETER- WAVE SYSTEMS	511
<i>Sepideh Gherekhloo, Khaled Ardah, Martin Haardt</i>	
AIRCRAFT TARGET CLASSIFICATION BASED ON CNN	516
<i>Qingyuan Zhao, Xin Du, Yaobing Lu</i>	
FAST SIGNAL RETRIEVAL OF SONAR IN THE PRESENCE OF IMPULSE NOISE.....	521
<i>Qiang Li, Lei Huang, Liang Zhang, Min Huang, Bo Zhao, Peichang Zhang</i>	
CODED APERTURE IMAGING BASED ON SELECTED REFERENCE MATRIX	526
<i>Chen Wu, Tian Jin, Yongpeng Dai, Daquan He, Peng You</i>	
HYBRID INTERFERENCE MITIGATION USING ANALOG PREWHITENING.....	531
<i>Wei Zhang, Yi Jiang, Bin Zhou, Die Hu</i>	
DOA ESTIMATION USING COARRAY INTERPOLATION ALGORITHM VIA NUCLEAR NORM OPTIMIZATION FOR COPRIME MIMO RADAR	536
<i>Yu Zheng, Muran Guo, Lutao Liu</i>	
ONE-SIDE EXTENDED NESTED ARRAY FOR DEGREE OF FREEDOM ENHANCEMENT.....	541
<i>Shiwei Ren, Wentao Dong, Xiangnan Li, Su Yan, Haixia Wu, Weijiang Wang</i>	
KERNEL INTERPOLATION OF ACOUSTIC TRANSFER FUNCTION BETWEEN REGIONS CONSIDERING RECIPROCITY	546
<i>Juliano G. C. Ribeiro, Natsuki Ueno, Shoichi Koyama, Hiroshi Saruwatari</i>	
DISCRETE-PHASE WAVEFORM DESIGN TO QUADRATIC OPTIMIZATION VIA AN ADPM FRAMEWORK WITH CONVERGENCE GUARANTEE	551
<i>Xianxiang Yu, Guolong Cui, Zhenghong Zhang, Lin Zhou, Jing Yang, Lingjiang Kong</i>	
THE UNDERWATER ACOUSTIC IMAGE MEASUREMENT BASED ON NON-UNIFORM SPATIAL RESAMPLING RL DECONVOLUTION	556
<i>Jidan Mei, Yuqing Pei, Chao Ma, Yunfei Lv, Qiuying Peng</i>	
A COMPRESSIVE SENSING APPROACH FOR SINGLE-SNAPSHOT ADAPTIVE BEAMFORMING	561
<i>Huiping Huang, Abdelhak M. Zoubir, Hing Cheung So</i>	
TOEPLITZ STRUCTURED COVARIANCE MATRIX ESTIMATION FOR RADAR APPLICATIONS.....	566
<i>Xiaolin Du, Augusto Aubry, Antonio De Maio, Guolong Cui</i>	
STUDY ON CODING SCHEME WITH EPC-MIMO RADAR IN CLUTTER-FREE SCENARIO	571
<i>Jingwei Xu, Hing Cheung So</i>	
MAXIMUM PRIVACY UNDER PERFECT UTILITY IN SENSOR NETWORKS	575
<i>Chong Xiao Wang, Wee Peng Tay, Yang Song</i>	

KNOWLEDGE-AIDED ADAPTIVE DETECTION OF RADAR TARGET IN GAUSSIAN CLUTTER.....	580
<i>Xinyu Zhang, Jin-Wang Han, Xinliang Zhang</i>	
WEAK TARGET DETECTION IN MIMO RADAR VIA BEAMSPACE CANONICAL CORRELATION.....	585
<i>Mohamed Salah Ibrahim, Nicholas D. Sidiropoulos</i>	
MULTI-BIT DECENTRALIZED DETECTION OF A NON-COOPERATIVE MOVING TARGET THROUGH A GENERALIZED RAO TEST.....	590
<i>Xu Cheng, Domenico Ciuonzo, Pierluigi Salvo Rossi, Xiaodong Wang, Longfei Shi</i>	
DOA ESTIMATION BASED ON ULTRA SPARSE NESTED MIMO ARRAY WITH TWO CO-PRIME FREQUENCIES.....	595
<i>Tianyao Long, Yong Jia, Li Jiang, Binge Yan, Tanzheng Yang</i>	
UNDERDETERMINED DOA ESTIMATION OF QUASI-STATIONARY SIGNALS IN THE PRESENCE OF MALFUNCTIONING SENSORS.....	600
<i>Weize Sun, Chuangxiang Xu, Yingying Huang, Lei Huang</i>	
TARGET DETECTION IN CLUTTER USING RECEIVER WITH REDUCED DOF IN FREQUENCY DOMAIN.....	605
<i>Yang Li, Qian He, Rick S. Blum, Alexander M. Haimovich</i>	
FEASIBLE SPARSE SPECTRUM FITTING OF DOA AND RANGE ESTIMATION FOR COLLOCATED FDA-MIMO RADARS.....	610
<i>Jingyu Cong, Xianpeng Wang, Mengxing Huang, Guoan Bi</i>	
JOINT SPARSITY-INDUCING DOA ESTIMATION FOR STRICTLY NONCIRCULAR SOURCES WITH UNKNOWN MUTUAL COUPLING.....	615
<i>Liangliang Li, Dan Luo, Guoan Bi, Xianpeng Wang, Dandan Meng</i>	
AN IMPROVED SCHEME FOR HIGH-RESOLUTION POINT CLOUD MAP GENERATION BASED ON FMCW RADAR.....	619
<i>Qiangwen Zheng, Yaping Xie, Lijie Yang, Junjie Li, Chunyi Song, Zhiwei Xu, Kai Ding</i>	
ROBUST SUPER-RESOLUTION FREQUENCY DIVISION DUPLEX (FDD) CHANNEL ESTIMATION.....	624
<i>Yan Liu, Xue Jiang</i>	
MITIGATION OF GROUND CLUTTER IN AIRBORNE BISTATIC RADAR SYSTEMS.....	629
<i>Jacob Klintberg, Tomas McKelvey, Patrik Dammert</i>	
TARGET DETECTION BASED ON CANONICAL CORRELATION TECHNIQUE FOR LARGE ARRAY MIMO RADAR IN SPATIALLY CORRELATED NOISE.....	634
<i>Meihan Zhou, Hong Jiang, Siyan Dong</i>	
EXTENDED OBJECT TRACKING USING HIERARCHICAL TRUNCATION MODEL WITH PARTIAL-VIEW MEASUREMENTS.....	639
<i>Yuxuan Xia, Pu Wang, Karl Berntorp, Hassan Mansour, Petros Boufounos, Philip V. Orlik</i>	
A GENERAL FRAMEWORK FOR THE ROBUSTNESS OF STRUCTURED DIFFERENCE COARRAYS TO ELEMENT FAILURES.....	644
<i>Chun-Lin Liu</i>	

BEAMPATTERN SHAPING FOR COEXISTENCE OF COGNITIVE MIMO RADAR AND MIMO COMMUNICATIONS.....	649
<i>Ehsan Raei, Mohammad Alae-Kerahroodi, Bhavani Shankar M. R.</i>	
PARAMETRIC BOOTSTRAPPING OF ARRAY DATA WITH A GENERATIVE ADVERSARIAL NETWORK.....	654
<i>Peter Gerstoft, Herbert Groll, Christoph F. Mecklenbräuer</i>	
SEPARATION OF RECTO-VERSO DOCUMENTS USING COPULA BASED DEPENDENT SOURCE SEPARATION	659
<i>Amor Keziou, Nezha Mamouni, Hassan Fenniri</i>	
DOA ESTIMATION OF QUASI-STATIONARY SIGNALS IN UNIFORM LINEAR ARRAYS WITH MUTUAL COUPLING	664
<i>Ping Chu, Jinfeng Zhang, Bin Liao</i>	
ON THE DOA ESTIMATION PERFORMANCE OF OPTIMUM ARRAYS BASED ON DEEP LEARNING.....	668
<i>Steven Wandale, Koichi Ichige</i>	
CHANNEL ESTIMATION FOR HYBRID MIMO COMMUNICATION WITH (NON-) UNIFORM LINEAR ARRAYS VIA TENSOR DECOMPOSITION	673
<i>Ali Koochakzadeh, Piya Pal</i>	
DIFFERENTIALLY PRIVATE NONLINEAR CANONICAL CORRELATION ANALYSIS.....	678
<i>Yanning Shen</i>	
COMPUTATION OF WEIGHT FUNCTION OF 2QTH ORDER VIRTUAL ARRAY TO ANALYSE THE ESTIMATION PERFORMANCE	683
<i>Payal Gupta, Monika Agrawal</i>	
JOINT TRANSMIT WAVEFORMS AND RECEIVE FILTERS DESIGN FOR LARGE-SCALE MIMO BEAMPATTERN SYNTHESIS	688
<i>Ziping Zhao</i>	
A NOTE ON THE MAXIMUM NUMBER OF SOURCES IN DOA ESTIMATION BY MODE	693
<i>Shohei Hamada, Koichi Ichige</i>	
ITERATIVE TENSOR RECEIVER FOR MIMO-GFDM SYSTEMS.....	697
<i>Damir Rakhimov, Sai Pavan Deram, Bruno Sokal, Kristina Naskovska, André De Almeida, Martin Haardt</i>	
COLLABORATIVE SPECTRUM ALLOCATION AND WAVEFORM DESIGN FOR RADAR COEXISTENCE.....	702
<i>Ishai Eljarat, Joseph Tabrikian, Igal Bilik</i>	
LOW-COST BEAMFORMING-BASED DOA ESTIMATION WITH MODEL ORDER DETERMINATION	707
<i>Elias Aboutanios, Aboulnasr Hassanien</i>	
HYPERSPECTRAL IMAGE CLUSTERING BASED ON VARIATIONAL EXPECTATION MAXIMIZATION.....	712
<i>Yuchen Jiao, Yirong Ma, Yuantao Gu</i>	
GPU-ACCELERATED PARALLEL OPTIMIZATION FOR SPARSE REGULARIZATION	717
<i>Xingran Wang, Tianyi Liu, Minh Trinh-Hoang, Marius Pesavento</i>	

BLOCK SPARSITY BASED CHIRP TRANSFORM FOR MODELING MARINE MAMMAL WHISTLE CALLS.....	722
<i>Siyuan Cang, Xueli Sheng, Jinglei Yu, Songhai Li, Jingwei Yin</i>	
SAMPLE COMPLEXITY TRADE-OFFS FOR SYNTHETIC APERTURE BASED HIGH-RESOLUTION ESTIMATION AND DETECTION.....	727
<i>Heng Qiao, Pulak Sarangi, Yazeed Alnumay, Piya Pal</i>	
PARAFAC-BASED CHANNEL ESTIMATION FOR INTELLIGENT REFLECTIVE SURFACE ASSISTED MIMO SYSTEM	732
<i>Gilderlan T. De Araújo, André L. F. De Almeida</i>	
A NOVEL NLOS TARGET LOCALIZATION METHOD WITH A SYNTHETIC BISTATIC MMW RADAR	737
<i>Huagui Du, Chongyi Fan, Chun Cao, Zhou Xu, Xiaotao Huang</i>	
ENHANCED DOA ESTIMATION FOR MIMO RADAR IN THE CASE OF LIMITED SNAPSHOTS	742
<i>Yanan Ma, Xianbin Cao, Xiangrong Wang</i>	
AN ANTI-JAMMING METHOD AGAINST FREQUENCY DIVERSE ARRAY FOR ISAR BY SPATIAL LOCATION FEATURE RECOGNITION	747
<i>Zhidong Liu, Kaiming Li, Ying Luo, Qun Zhang, Qingzhu Huang</i>	
MEMORY-BASED NEURAL NETWORK FOR RADAR HRRP NONCOOPERATIVE TARGET RECOGNITION	751
<i>Ying Jia, Bo Chen, Long Tian, Wenchao Chen, Hongwei Liu</i>	
A PARTICLE FILTER TRACK-BEFORE-DETECT METHOD FOR MONOPULSE RADAR IN SPACE AIRCRAFT LAUNCH SITE.....	756
<i>Jian Wang, Zhen-Hua Chen, Liang Zhang</i>	
MIMO RADAR WAVEFORM JOINT OPTIMIZATION DESIGN IN TIME AND FREQUENCY DOMAIN	761
<i>Chun-Hua Chu, Yi-Jun Chen, Qun Zhang, Ying Luo</i>	
A SOFTWARE DEFINED RADIO TESTBED FOR OVER-THE-AIR COGNITIVE CYCLE DEMONSTRATION.....	766
<i>Jiapeng Wu, Panfei Du, Zihao Zhang, Qing Wang</i>	
ONLINE ROBUST REDUCED-RANK REGRESSION.....	770
<i>Yangzhuoran Fin Yang, Ziping Zhao</i>	
MULTI-LINEAR ENCODING AND DECODING FOR MIMO SYSTEMS.....	775
<i>Fazal-E-Asim, André L. F. De Almeida, Martin Haardt, Charles C. Cavalcante, Josef A. Nossek</i>	
DOA ESTIMATION EXPLOITING INTERPOLATED MULTI-FREQUENCY SPARSE ARRAY.....	780
<i>Shuimei Zhang, Ammar Ahmed, Yimin D. Zhang, Shunqiao Sun</i>	
SINGLE-SNAPSHOT BEAMFORMING USING FAST ITERATIVE ADAPTIVE TECHNIQUES	785
<i>Aboulnasr Hassanien, Elias Aboutanios</i>	
DIRECTION-OF-ARRIVAL ESTIMATION FOR COPRIME ARRAYS VIA COARRAY CORRELATION RECONSTRUCTION: A ONE-BIT PERSPECTIVE	789
<i>Chengwei Zhou, Yujie Gu, Zhiguo Shi, Martin Haardt</i>	

Author Index