

2011 IEEE CIE International Conference on Radar

(Radar 2011)

**Chengdu, China
24 – 27 October 2011**

**Volume 1
Pages 1-962**



**IEEE Catalog Number: CFP11539-PRT
ISBN: 978-1-4244-8444-7**

Table of Contents

Radar 2011 Technical Papers

Plenary Session

Oct.25th, Morning, Chengdu Hall in 5th Floor, California Garden Hotel

- PS—01 Digital Array Radar: Technology and Trends
Manqing Wu
- PS—02 Challenges of Ultra Wideband, Multi-Mode Radar
Mark E Davis
- PS—03 Study on Sparse Microwave Imaging
Yirong Wu
- PS—04 Developments in Bistatic and Networked Radar-
Hugh D Griffiths
- PS—05 Radar HRRP Automatic Target Recognition: Algorithms and Applications -
Hongwei Liu

Session A1----- Radar System 1

Co-Chairs: Wang Dechun, Hugh Griffiths Oct. 25th (14:00—18:00), Room 2

A1—01	Research on Space Target Surveillance Radar Technology-----	1
	Yuan Weiming, Zhang Chunyan, Song Qingpeng, Zhang Bo	
A1—02	On Co-operative Localization Strategies using ESM & Radar on Board Airborne Platforms-----	4
	Stéphane KEMKEMIAN, Myriam NOUVEL-FIANI	
A1—03	The Imaging Method of airborne radar on Hybrid Sampling-----	8
	Xie chao, Wang Dangwei, Ma Xiaoyan, Wang Libao	
A1—04	System Design and Experimental Results of Polarimetric SAR Interferometry-----	13
	Wang Yang, Wu Tao, Zhan Jintong, Ge Jialong, Jiang Kai	
A1—05	Necessary Study on Airborne Radar Network-----	18
	Ma Xia	
A1—06	A Transponder System Dedicating for the On-Orbit Calibration of China's New-Generation Satellite Altimeter and Scatterometer-----	22
	Guo Wei, Gong Xiao-Yan, Xu Xi-Yu, Liu He-Guang, Xu Chuan-Dong, Du Yue-Heng	
A1—07	A Flexible Real-Time SAR Processing Platform for High Resolution Airborne Image Generation-----	26
	Martin Pfitzner, Stefan Langemeyer, Peter Pirsch, Holger Blume	
A1—08	The Study of Realization Method for the Sliding Spotlight Mode in SAR-----	30
	LI Min-hui, Zhu Li	
A1—09	Effects of Earth Rotation on GEO SAR Characteristics Analysis-----	34
	Xichao Dong, Yangte Gao, Cheng Hu, Tao Zeng, Chao Dong	
A1—10	Detection of the Air Maneuvering Target Based on the Reconstruction of Time Sampling in the Airborne Radar-----	38
	Renbiao Wu, Xiaohan Wang, Hai Li	

Session A2-----Bistatic / Multistatic Radar

Co-Chairs: Yang Jianyu, Krzysztof Kulpa Oct. 26th (08:00—12:00), Room 2

A2—01	Multistatic Target Tracking in DAB/DVB-T networks-----	42
	Mounir Adjrad and Karl Woodbridge	
A2—02	3D Bistatic Imaging Geometry Applied to Near Range Microwave System-----	46
	Qi Yao-long, Tan Wei-xian, Wang Yan-ping, Hong Wen	
A2—03	Results of the LORAMbis Bistatic VHF/UHF SAR Experiment for FOPEN-----	51
	Rémi Baqué, Philippe Dreuillet, Olivier Ruault du Plessis, Philippe Martineau, Lars M.H. Ulander,	

	Anders Gustavsson, Tommy Jonsson, Gunnar Stenström	
A2—04	Angle Estimation of Bistatic MIMO Radar in the Presence of Unknown Mutual Coupling-----	55
	Zheng Zhidong, Zhang Jianyun, Niu Chaoyan	
A2—05	Range-Dependent Clutter Cancellation Method in Bistatic MIMO-STAP Radars-----	59
	Jun Li, Guisheng Liao, Hugh Griffiths	
A2—06	A Linear Frequency Modulated Bistatic Radar for On-the-Ground Object Detection-----	63
	M Mohammadpoor, RSA Raja Abdullah, A Ismail, AF Abas	
A2—07	Reduced-dimensional Angle Estimation in Bistatic MIMO Radar System-----	67
	Xiaoli Liu, Guisheng Liao	
A2—08	Target Localization for Bistatic MIMO Radar in Unknown Correlated Noise-----	71
	Hong Jiang, Jian-Kan Zhang, Kon Max Wong	
A2—09	Airborne Bistatic SAR Echo Simulator Based on Multi-GPU Platform-----	76
	Hongbing Chen, Yulin Huang, Jianyu Yang	

Session A3-----MIMO Radar

Co-Chairs: Long Teng, Marc Lesturgie **Oct. 26th (14:00—18:00), Room 2**

A3—01	A New Electronic Reconnaissance Technology for MIMO Radar-----	79
	Xiaowei Tang, Jun Tang, Bo Tang, Zhaozhao Gao, Xin Bi, Jinsong Du	
A3—02	Study on Distributed Aperture Coherence-synthesizing Radar with Several Experiment Results-----	84
	Hongwei Gao, Zhe Cao, Shuliang Wen, Yaobing Lu	
A3—03	Research on Theory and Technology of Distributed MIMO Radar Systems-----	87
	L.H. Yuan, G. Zheng, X.W. Li	
A3—04	A Low-Cost MIMO Radar System Concept Based on Single Transmitter and Single Receiver-----	91
	Yilong Lu, Yue Tang	
A3—05	An angle Estimation Algorithm for MIMO Radar in the Presence of Colored Noise Fields-----	95
	Wei Wang , Xianpeng Wang, Xin Li	
A3—06	Array Optimization For MIMO Radar by Particle Swarm Algorithm-----	99
	Hao Cao Tiezhen Jiang Xuyuan Chen	
A3—07	Collocated MIMO Radar Beamforming with Two Side Adaptivity-----	104
	S.H. Zhou, H.W. Liu, Baochang Liu, Kuiying Yin	
A3—08	Noncoherent Versus Coherent MIMO Radar for Joint Target Position and Velocity Estimation-----	108
	Qian He , Rick S. Blumy, Zishu He	
A3—09	MIMO Localization by Illuminators of Opportunity-----	112
	Mojtaba Radmard, Seyyed Muhammad Karbasi, Muhammad Mahdi Nayebi	
A3—10	MIMO SAR/MTI System Design and Signal Analysis for Moving Target Indiction-----	116
	SUN Long, JIANG Kai, WU Bo-cai, GE Jia-long	
A3—11	Airborne MIMO Radar Clutter Rank Estimation-----	122
	Ying Sun, Zishu He, Hongming Liu, Jun Li	

Session A4----- OTHR / Passive Radar

Co-Chairs: Jiao Peinan, Don Sinnott **Oct. 27th (08:00—12:00), Room 3**

A4—01	An Approach to Correction of Ionospheric Phase Contamination in HF Skywave Radar Systems-----	126
	Chen Jianwen, Luo Huan, Zhao Zhiguo, Bao Zheng	
A4—02	Detection Background Segmentation and Statistical Analysis for High Frequency Surface Wave Radar---	130
	Yang Li, Song Hao, Ning Zhang, Junhao Xie, Shang Shang, Wenyan Tang	
A4—03	Knowledge-based Signal Processing in OTH radar-----	134
	Lei Zhiyong, Ni Jin	
A4—04	Target Initiation of High Frequency Surface Wave Over-the-Horizon Radar Based on Information Entropy Theory-----	138
	Wang Jian	
A4—05	A New Method for Ionospheric Clutter Suppression in HFSWR-----	141
	Shang Shang, Zhang Ning, Li Yang	
A4—06	A Method to Estimate Subspace via Doppler for Ocean Clutter Suppression in Skywave Radars-----	145

	Zhao Zhiguo, Chen Jianwen, Bao Zheng	
A4—07	Concept of Multistatic Passive Radar Based on Wireless Packet Communication Systems-----	149
	Krzesztof Kulpa, Stanisław Rzewuski, Zbigniew Gajo, Mateusz Malanowski	
A4—08	Ground Emitters Localization aboard Deformable Airframes-----	153
	Stéphane KEMKEMIAN, Myriam NOUVEL-FIANI	
A4—09	HF Passive Bistatic Radar Based on DRM Illuminators-----	157
	Wan Xianrong, Zhao Zhixin, Zhang Delei, Shao Qihong	
A4—10	Detection Performance of MIMO Passive Radar Systems Based on FM Signals-----	161
	Jingxu Han, Michael Inggs	
A4—11	Reconstruction of Reference Signal for DTMB-Based Passive Radar Systems-----	165
	Wan Xianrong, Wang Junfang, Hong Sheng, Tang Hui	
A4—12	Signal Analysis of Airborne Passive Radar using Transmissions of Opportunity-----	169
	Danny Kai Pin Tan, Marc Lesturgie, Hongbo Sun, Yilong Lu	

Session A5----- Radar System 2

Co-Chairs:	Wu Renbiao, Marc Davices	Oct. 27th (08:00—12:00), Room 1
A5—01	FOPEN Radar for UGS Applications-----	173
	Sergio Gallone	
A5—02	Multi-channel Target Cooperative Detection in Through-the-Wall-Radar Imaging based on Random Sparse Array-----	176
	Zhuojun Ao, Lingjiang Kong, Yong Jia and Jianyu Yang	
A5—03	Doppler Laser Radar for Measuring Target Range and Speed with High Precision-----	179
	Xuesong Mao, Daisuke Inoue, Satoru Kato, Hiroyuki Matsubara, Manabu Kagami	
A5—04	Void-layer Detection and Depth Determination in Runways based on GPR-----	182
	Weikun He, Renbiao Wu, and Jiaxue Liu	
A5—05	Realization of an Innovative 3D Imaging Digital Beamforming Radar System-----	186
	Marlene Harter, Shameem Chaudhury, Andreas Ziroff, Thomas Zwick	
A5—06	Experimental System and Results for Wide-Band Multi-polarization VHF Radar-----	190
	Chen Baixiao, Zheng Guimei, Yang Minglei, Li Shili, Chen Genhua	
A5—07	An Imaging Method for MIMO Radar based on Compressed Sensing-----	194
	Yueguan Lin, Yin Xiang, Sanchao Liu, Wei Wang, Bingchen Zhang, Wen Hong, Yirong Wu	
A5—08	Polarization Selectivity and Optimization of Thinned Array for Millimeter Wave Radar Seeker with Conformal Phased Array-----	198
	Qi Fei-lin, Liu Jun	
A5—09	Experimental Results of Spaceborne Stripmap SAR Raw Data Imaging via Compressed Sensing-----	202
	Hai Jiang, ChengLong Jiang, BingChen Zhang, Wen Hong, YiRong Wu	
A5—10	High Resolution Radar Imaging based on Compressed Sensing and Adaptive Lp Norm Algorithm-----	206
	Wang Min	
A5—11	An Evaluation Method for Sparse Microwave Imaging Radar System Using Phase Diagrams-----	210
	Ye Tian, Chenglong Jiang, Yueguan Lin, Bingchen Zhang, Wen Hong	

Session A6----- ECM / ECCM

Co-Chairs:	Zhang Jianyun, Yang Jian,	Oct. 27th (14:00—18:00), Room 1
A6—01	A RFI Suppression Approach Based on Along-Track Interferometric Image-----	214
	Chongyi Fan, Xiaotao Huang, Zhongliang Xu, Tian Jin	
A6—02	UWB Frequency Agility Monopulse Tracking Radar-----	219
	Wang Xiao-hui, Hao Xiao-ning, Yu Ying-chun	
A6—03	ECCM Performance Analysis of Inter-pulses Frequency Agility Application-----	222
	Xudong Cao, Huitao Fan, Xianglin Wu	
A6—04	Improving Range Resolution in Jammed Environment by Phase Coded Waveform-----	226
	Abbas Akbarpour, Davood Mirzahosseini	
A6—05	Signal Feature Analysis and Experimental Verification of Radar Deception Jamming-----	230
	Li Jian-xun, Shen Qi, Yan Hai	

A6—06	Optimum Active Decoy Deployment for Effective Deception of Missile Radars----- E. Vijaya lakshmi, N.N.Sastry, B.Prabhakar Rao	234
A6—07	Integrated Design on Digital Channelized Reconnaissance and Jamming----- Song Libing, Chen Xinnian, Guo Bo	238
A6—08	Individual RFI classification based on chaotic characteristics----- Rongbing Chen, Lichang Qian, JiaXu, Wenfeng Sun, Yingning Peng	242
A6—09	Rescue Radar's Signal Processing Method Based on Doppler Features of Phase Structure an Echo-Signal----- O. Sytnik , I. Vyzmitinov, Ye. Myroshnychenko, A. Kogut	246

Session B1----- T/R Modules

Co-Chairs: Wang Fan, Jeong Ho. Park

Oct. 25th (14:00—18:00), Room 3

B1—01	Modernizing a Radar With a Digital Receiver Leif Lagerkvist	250
B1—02	The integration design of transceiver system of Digital Array Radar based on Software-defined Radio theory Shilian Zheng, Haisheng Xiang, Bing Wang	254
B1—03	Design and Implementation of a Lightweight SAR Transceiver Subsystem Li-jun Fang, Yong Liu, Jian-mei Tan, Jun Ma, Yong Ding	257
B1—04	Design of 300W SiC Wide Band Gap Power Module Yi Zhang, Zhenkun Yu	261
B1—05	12 Bit 1.5 GS/s L-Band ADC on 200 GHz SiGeC Technology Marc Wingender, Nicolas Chantier, Sandrine Nicolas, Khaled Salmi, Richard Morisson, Rémi Laube, Pierre Coquille	265
B1—06	Improving the Reliability of Radar T/RModule with Precise Cleaning Technology LIN Wei-cheng	269
B1—07	FPGA Based Signal Processing Module Design and Implementation for FMCW Vehicle Radar Systems Eugin Hyun, Sang-Dong Kim, Yeong-Hwan Ju, Jong-Hun Lee, Eung-Noh You, Jeong-Ho Park, Dong-Jin Yeom, Sang-Hyun Park, Seung-Gak Kim	273
B1—08	Development of RF Front-End with High T/R Isolation for Ka band Mono-Antenna FMCW Radar Shi Xiu-kun, Huang Jian	276
B1—09	Stripmap Mode SAR Raw Data Generator for Ocean Scene with Large Squint Angle Guojie Diao, Xiaojian Xu	280
B1—10	Development of a Radar Simulator for Monitoring Wake Vortices in Rainy Weather Z. Liu, N. Jeannin, F. Vincent, X. Wang	284
B1—11	Application of Relay Satellite Scheduling Based on STK/X LI Ying-xian, Fang Qing, Tan Jian-bo	288

Session B2----- Digital Array Antenna 1

Co-Chairs: Liao Guisheng, Eli Brookner

Oct. 26th (08:00—12:00), Room 1

B2—01	Design of a Wideband Active Phased Array Antenna Using Open-ended Rectangular Waveguide as Radiating Element-----	292
	Zhou Yiguo, Wang Yanfei, Guo Zheng	
B2—02	A Compact Printed UWB Antenna with Band Notched Function-----	P IC
	Yu Wang, Zi-jing Du, Hiroyuki Deguchi, Mikio Tsuji	
B2—03	A Digital Compensation Technique to the Aperture Effect of the Stepped Chirp Wideband Phased Array Radar-----	300
	Hao-tian YUAN , Shu-liang WEN, Zhen CHENG	
B2—04	Design Approach for Axially Symmetric Dual- Reflector Small Cassegrain Antenna considering Mechanical Implementation Constraints-----	304
	AMIN GORJI B. , B. ZAKERI	
B2—05	A Calibration Method Based on Fusing Multiple Calibrators for UWB-VAR System Using Stepped Frequency-----	308

P.Y. Wang, Z.M. Zhou, Q. Song, T. Jin		
B2—06	A Method of 2-D DOA Estimation of Coherent Signals Based on Uniform Circular Array via Spatial Smoothing-----	312
	Yao Wu, Hui Chen, Yongchao Chen	
B2—07	ESPRIT Matching Pursuit Algorithm for DOA Estimation With Single Snapshot-----	315
	Liu Yin, Wu Shunjun, Wu Mingyu, Li Chunmao	
B2—08	Estimating the Directions of Arrival of Narrow Band Signals using Spatial Tuned Filter-----	319
	Kaluri V. Rangarao, Shridhar Venkatanarasimhan, V. Prathyusha, T. Neela Pavani	
B2—09	Improved Parameter Weight Method Based on SWEDE for 2D DOA Estimation-----	323
	M.L. SUN, J.H. XIE , Y.S. YUAN, S.B. LI	
B2—10	Fast Computation of Real Polynomial Coefficients for Spectral Capon/MUSIC Rooting Algorithm-----	327
	Jianxin Wu, and Tong Wang	
B2—11	Velocity Estimation of Moving Target using Generalized-MUSIC Based on Stepped-Frequency-Pulse-Train Signal-----	331
	Limin Yang, Weimin Su, Hong Gu, Runtong Geng	

Session B3----- Digital Array Antenna 2

Co-Chairs: Wang Yongliang, Huang Lei **Oct. 26th (14:00—18:00), Room 3**

B3—01	Bi-Capon Beamforming for MIMO Radar: A Correlation Matrix-based Method-----	335
	Jie He, Da-zheng Feng, Nicolas H. Younan, Hui Lv	
B3—02	Design of a Radiator Array for One-dimension Wide-Angle Scanning Phased-array Antenna-----	339
	Hou Fuping, Kong Dewu	
B3—03	Phase Array Antenna Pattern Design Using the Minimax Algorithm-----	342
	Meng Qian, James Jen, Zekeriya Aliyazicioglu, H. K. Hwang	
B3—04	Reduced-Dimensional ESPRIT Algorithm for MIMO Radar-----	347
	Minglei Yang, Baixiao Chen, Guimei Zheng, Xiaofang Dang	
B3—05	Fast Algorithm for Three-Dimensional Single Near-Field Source Localization with Uniform Circular Array---	350
	Yuntao Wu, Hai Wang, Longting Huang, H.C.So	
B3—06	Minimum Variance Multi-Frequency Distortionless Restriction for Digital Wideband Beamformer-----	353
	Yipeng Liu, Jia Xu, Qun Wan, Yingning Peng	
B3—07	Robust Covariance Matrix Estimation in Radar Array Processing-----	356
	Xin GUO, Hongbo SUN, Yilong LU, Marc LESTURGIE	
B3—08	Design Considerations for DBF Phased Array 3D Surveillance Radar-----	360
	Ting Shu, Kaizhi Wang, Xingzhao Liu, Wenxian Yu	
B3—09	An Array Calibration Method Using Spatial Correlation Properties for HFSWR-----	364
	Yinsheng Wei1, Xiaoguo Song, Jiubin Tan	
B3—10	Joint Radar Wideband Beamforming and Long-time Coherent Integration Via Radon-Fourier Transform-----	368
	Jia Xu, Ji Yu, Ying-Ning Peng, Xiang-Gen Xia	
B3—11	Digital Array Antenna Measurement and Azimuth Accuracy Analysis Using Real Target's Echoes-----	372
	Shen Xian-jun	

Session C1----- SAR

Co-Chairs: Hong Wen, Young-Kil Kwag **Oct. 25th (14:00—18:00), Room 1**

C1—01	Motion Compensation in Post-PFA Domain for High Resolution Spotlight SAR Imagery-----	376
	Lei Yang, Yi Liao, Lei Zhang, Meng-dao Xing	
C1—02	Downward Looking 3D SAR Based on Uniform Virtual Phase Centre Restricted Symmetrical Distributed Thinned Array-----	380
	Peng Xueming, Wang Yanping, Tan Weixian, Hong Wen, Wu Yirong	
C1—03	Consecutive Images Formation for Airborne SAR-----	384
	Wenge Chang, Jianyang Li, Zhiyong Zhao	
C1—04	Combined Analysis of Time&Frequency Synchronization Error for BiSAR-----	388
	Weiming Tian, Teng Long, Jian Yang, Xiaopeng Yang	
C1—05	Bistatic SAR Experiment, Processing and Results in Spaceborne/Stationary Configuration-----	393

	Wang Rui, Li Feng, Zeng Tao	
C1—06	InSAR Interferometric Phase Estimation Based on Correlation Weight Subspace Projection-----	398
	Hai Li, Renbiao Wu	
C1—07	Robust D-InSAR Deformation Phase Estimation Method Using Joint Processing of Neighboring Pixels-----	402
	Zhiyong Suo, Zhenfang Li	
C1—08	Improving Phase Unwrapping Techniques by the Use of Nonlinear Phase Model-----	406
	Wang Qingsong, Huang Haifeng, Yu Anxi, Dong Zhen	
C1—09	A Novel PGA Technique for Circular SAR Based on Echo Regeneration-----	411
	Yun Lin, Wen Hong, Wei-xian Tan, Yan-ping Wang, Yi-rong Wu	
C1—10	Study on the Method of Parameters Analysis and Scan Mode of Missile-Borne SAR-----	414
	Jie Long, Di Yao, Zegang Ding	

Session C2----- CFAR 1

Co-Chairs:	Wu Jianqi, Hermann Rohling	Oct. 25th (14:00—18:00), Room 4
C2—01	Bayesian Track-Before-Detect for Multisensor Fusion Systems-----	418
	XIA Shuangzhi, LIU Hongwei	
C2—02	A Track-Before-Detect Algorithm Based on Particle Smoothing-----	422
	Yan Junkun, Liu Hongwei, Wang Xu, Bao Zheng	
C2—03	A Realization of TBD in IRST System-----	426
	Zhang Yujie, Chen Huachu, Wang Xiuchun	
C2—04	Focus-Before-Detect for Radar Target Detection-----	430
	Jia Xu, Ji Yu, Ying-Ning Peng, Xiang-Gen Xia	
C2—05	Adaptive Detection in Compound-Gaussian Clutter with Inverse-Gamma texture-----	434
	Pietro Stinco, Maria Greco, Fulvio Gini	
C2—06	Sea Clutter Suppression and Moving Target Detection Method Based on Clutter Map Cancellation in FRFT Domain-----	438
	Xiaolong Chen, Yong Huang, Jian Guan, You He	
C2—07	Periodicity in Contrast with Sidelobe Suppression in Random Signal Radars-----	442
	E. Tohidi, M. Nazari Majd, M. Bahadori, H. Haghshenas Jariani, M.M. Nayebi	
C2—08	A New Detecting Method for Weak Targets in Sea Clutter Based on Multifractal Properties-----	446
	D.T.Zhang, F.Luo	
C2—09	Cyclostationary Detector in Ultra Wideband Impulse Radar-----	450
	S. M. Ali Tayaranian Hosseini, Hamidreza Amindavar	
C2—10	Scatterers Integrator Based on the Maximum Variance of Order Statistics in Non-Gaussian Clutter-----	454
	X. F. Gu, Y. He, T. Jian, X. L. Hao	
C2—11	Peak-to-Sidelobe Level vs. Time-Bandwidth Product Improvement for Complex Radar Signals with Small Base-----	P IC
	M. Łuszczyk	
C2—12	MAR-model-based Adaptive Detection in Space-Time Colored Compound Gaussian Clutter-----	462
	Qi Xu, Xiaochuan Ma, Shefeng Yan, Chengpeng Hao	

Session C3----- CFAR 2

Co-Chairs:	Tao Ran, Mojtaba Mohammad poor	Oct. 26th (08:00—12:00), Room 3
C3—01	Analysis of Radon-Fourier Transform in Clutter Background and Optimal Weight Processing-----	467
	Jun-Jiang Lu, Jun Tang, Ning Li, Jin-Song Du	
C3—02	Order-Statistic-Based Subspace Detector for Range and Doppler Distributed Target-----	472
	Yunlong Dong, Xiaoli Zhang, Yong Huang, Jian Guan, You He	
C3—03	Monopulse Estimation of Swerling I-II Extended Targets-----	476
	Ulrich R.O. Nickel, Eric Chaumette, Pascal Larzabal	
C3—04	Knowledge-aided Bayesian Rao and Wald tests for Radar Adaptive Detection in Heterogeneous Environment-----	481
	Yu Zhou, Lin-rang Zhang	
C3—05	Statistical Analysis of Sidelobes in Random Phase-Modulated Radars-----	485
	H. Haghshenas Jariani, M. Bahadori, E. Tohidi, M. Nazari Majd, M.M. Nayebi	

C3—06	Automatic Target Detection in Search and Rescue based on Yamaguchi Polarimetric Decomposition-----	490
Zhang Tao, Han Ping, Wang Xiaoliang, Wu Renbiao		
C3—07	The Impact of Phase Noise Parameters on Target Signal Detection in FMCW-Radar System Simulations for Automotive Applications-----	494
M. Dudek, I. Nasr, D. Kissinger, R. Weigel, G. Fischer		
C3—08	Weak Target Detection Based on the Membership Degree of the IMFs Energy-----	498
Y. L Dong, J. Zhang, J. Guan, Y. He		
C3—09	Noncoherent Integration of HRR RADAR Signals for Detection of Fluctuating Targets in non Gaussian Clutter Using the Hough Transform-----	502
Fariba Haghjoo, A.R. Mallahzadeh, Vahid Riazi, A. Sheikhi		
C3—10	Target Detection Algorithm for Polarimetric SAR Images Using GOPCE-----	507
Wenting Ma, Jian Yang		

Session C4----- Invited Session--ISAR

Co-Chairs: Victor C Chen, Marco Martorella	Oct. 26th (14:00—18:00), Room 1	
C4—01	SAR Signal Modeling and Imaging of a Moving Target-----	510
A.D. Lazarov, T.P. Kostadinov		
C4—02	Multiple Moving Targets Imaging for Millimeter-Wave InISAR Based on Time-Frequency Transform-----	514
LIU Bo, PAN Zhou-hao, TENG Xiu-min, LI Dao-jing, QIAO Ming		
C4—03	Efficient Construction of Training Database for Identification of Aircraft ISAR Images-----	520
G.-G. Choi, S.-K. Han, K.-T. Kim		
C4—04	A Method for Extracting Micro-Motion Feature of Target with Rotating Parts Based on Bi-ISAR System-----	524
D. H. Deng, J. He, M. Wang, Q. Zhang, P. Bai		
C4—05	Multi-Angle Distributed ISAR with Stepped-Frequency Waveforms for Surveillance and Recognition-----	528
D. Pastina, F. Santi, M. Bucciarelli		
C4—06	Algorithms for Compressed ISAR Autofocusing-----	533
Daiyin Zhu, Xiang Yu, Zhaoda Zhu		
C4—07	Combining Time-Frequency Transforms to Create a Sequence of Instantaneous Range-Doppler Images in ISAR Processing-----	537
Vincent Corretja, Eric Grivel, Yannick Berthoumieu, Jean-Michel Quellec, Thierry Sfez, Stéphane Kemkemian		
C4—08	A Time Domain Phase-Gradient Based ISAR Autofocus Algorithm-----	541
W. Nel, E. Giusti, M. Martorella, M.Y Abdul Gaffar		
C4—09	Super-resolution ISAR Imaging via Statistical Compressive Sensing-----	545
Shun-jun Wu, Lei Zhang, Meng-dao Xing		
C4—10	A Prototype of High Resolution ISAR Imaging System at Millimetre-Wave Band-----	551
J. Grajal, B. Mencia-Oliva, O. A. Yeste-Ojeda, A. F. García-Fernández, G. Rubio-Cidre		

Session C5----- Waveform Design / Optimization

Co-Chairs: Gu Hong, Sun Hongbo	Oct. 26th (14:00—18:00), Room 4	
C5—01	Phase-Coded Interrupted Continuous Waveform for Two HF Radars Sharing the Same Frequency-----	555
Zhisheng Yan, Biyang Wen, Ke Sun, Yingwei Tian		
C5—02	Optimal Waveform Design for MIMO Radar Detection With Clutter and Noise-----	559
Junliang Qu, Xu Jia, Yingning Peng, Xiutan Wang		
C5—03	Waveform Design with Low Sidelobe and Low Correlation Properties for MIMO radar-----	564
Xu Wang, Hongwei Liu, Junkun Yan, Liangbing Hu, Zheng Bao		
C5—04	Copula Method Constant Modulus Waveform Synthesis for MIMO Radar-----	568
Kamal Shadi, Fereidoon Behnia, Babak Aghili		
C5—05	Adaptive Waveform Design for Detecting Distributed Target in Heavy Sea Clutter-----	572
Tianxian Zhang, Lingjiang Kong, Xiaobo Yang, Xiaofei Shuai		
C5—06	Optimal waveform for detecting rank-one targets in waveform-dependent interference-----	576
Xiaobo Deng, Xiaoming Li		
C5—07	5Multi-objective Waveform Design for Cognitive Radar-----	580
J.D. Zhang, D.Y. Zhu, G. Zhang		

C5—08	Matched Illumination Waveforms Design for Rangespread Target in Heterogeneous Clutter plus Noise-----	584
	Fengzhou Dai, Hongwei Liu	
C5—09	Study on Method of Selecting Meter-wave Resonance Radar Operation Frequency Point Based on ADBF-----	588
	QIANG Yong, YOU Jun, ZHANG Yating, ZHANG Yuanan	
C5—10	OPCDM-LFM Waveforms Design for Formation-Flying Satellite Radar System-----	592
	Zhulin Zong, Jianhao Hu, Lidong Zhu	
C5—11	Designing Sparse Frequency Waveform with Low Range Sidelobes for HFSWR-----	596
	Shanna Zhuang, Yapeng He, Xiaohua Zhu	

Session C6-----ATR

Co-Chairs: Liu Hongwei, Karl Woodbridge **Oct. 27th (08:00—12:00), Room 2**

C6—01	Analysis of Micro-Doppler Signatures of Moving Vehicles by Using Empirical Mode Decomposition-----	600
	Yanbing Li, Lan Du, Hongwei Liu	
C6—02	A Novel Micro-motion Model for Ballistic Missile Targets Identification-----	604
	Yuli Zhao, Xiaofeng Shen, Jing Liang	
C6—03	Feature Extraction of Rotating Target Based on Bistatic Micro-Doppler Analysis-----	609
	Ai Xiaofeng, Zou Xiaohai, Yang Jianhua, Liu Jin, Li Yongzhen	
C6—04	Parametric Estimation of Micro-Doppler on Spatial Precession Cone-----	613
	Honghua Yan, Xiongjun Fu, Xuehui Lei, Ping Li, Meiguo Gao	
C6—05	Joint Feature Selection and Classifier Design for Radar Targets-----	617
	Danlei Xu, Lan Du, Hongwei Liu	
C6—06	Target Classification System Based on the Characterization of Targets by Subspaces-----	621
	Jonathan Pisane, Marc Lesturgie, Jacques Verly	
C6—07	Radar Target Recognition Based on Some Invariant Properties of the Polarization Scattering Matrix-----	626
	Fuyou Wang, Rujiang Guo, Yinhe Huang	
C6—08	Extraction and Analysis of Structural Features of Ships in High Resolution SAR Images-----	630
	Xiaojuan Tian, Chao Wang, Hong Zhang, Fan Wu	
C6—09	Ship Detection Based on Radarsat-2 Full-Polarimetric Images-----	634
	Wu Bingjie, Wang Chao, Zhang Bo, Wu Fan	
C6—10	Targets Detection in SAR Imagery with an Optical Scene Mask through a Change Detector-----	638
	Boli XIONG, Qi CHEN, Yongmei JIANG, Gangyao KUANG	

Session C7----- HRRP / ISAR

Co-Chairs: Wen Shuliang, Eric Grivel **Oct. 27th (08:00—12:00), Room 4**

C7—01	Radar HRRP Target Recognition based on K-SVD Algorithm-----	642
	Bo Feng, Lan Du, Hong-wei Liu, Fei Li	
C7—02	An HRRP Preprocessing Method and Its Application in Radar Target Recognition-----	646
	Zheng Tang-hong, Wang Yang, Li Shi-g	
C7—03	Multi-task Hidden Markov Model for Radar Automatic Target Recognition-----	650
	Mian PAN, Lan DU, Penghui WANG, Hongwei LIU, Zheng BAO	
C7—04	HRRP synthesizing in presence of observation data loss: a new way-----	654
	Rong Fan, Qun Wan, Hongzhi Zhu	
C7—05	Research on Characteristics of Cylinder Tanks in SAR Image-----	658
	Yueling Zhang, Hongzhen Chen, Kan Tang, Wenchang Xiong, Chibiao Ding	
C7—06	Radar HRRP Target Recognition Based on Linear Dynamic Model-----	662
	Wang Penghui, Du Lan, Pan Mian, Zhang Xuefeng, Liu Hongwei	
C7—07	A New Cross-Range Scaling Method for ISAR Based on the Multiple Dominant Scatterers Synthesis-----	666
	Ning Li, Ling Wang	
C7—08	Target radial Velocity Estimation Robust Against Additive Disturbances for ISAR Application-----	670
	Vincent Corretja, Eric Grivel, Yannick Berthoumieu, Jean-Michel Quellec, Thierry Sfez, Stéphane Kemkemian	
C7—09	A Cross-Range Scaling Algorithm for Range Instantaneous Doppler ISAR Imaging-----	674
	Hongchao Liu, Bo Jiu, Hongwei Liu, Zheng Bao	
C7—10	An Improved FOCUSS Algorithm for Multi-Channel FMCW Radar Imaging of Distributed Targets-----	677

	Chenxi Hu, Huadong Meng, Gang Li1, Xiqin Wang	
C7—11	Relevance of the Hölderian Regularity-Based Interpolation for Range-Doppler ISAR Image Post-Processing-----	681
	Vincent Corretja, Pierrick Legrand, Eric Grivel, Jacques Levy-Vehel	
C7—12	Three-Dimensional ISAR Imaging Based On DCFT-----	685
	Weili Wang, Shunsheng Zhang, Lingkun Kong	

Session C8----- STAP / GMTI

Co-Chairs:	Liao Guisheng, François Le Chevalier	Oct. 27th (14:00—18:00), Room 2
C8—01	Estimation of Transition Range Bin in Clutter Edge for Space Time Adaptive Processing-----	688
	Bo Tang, Jun Tang, Yingning Peng, Junjiang Lu	
C8—02	Polarization-Space-Time Joint Domain Processing for Clutter Suppression in Subspace-----	692
	Leakage Environments Dijun Wu, Zhenhai Xu, Ziyuan Xiong, Liang Zhang, Shunping Xiao	
C8—03	Comparative Analysis of Toeplitz Covariance Matrix Estimation Methods for Space-Time Adaptive Signal Processing-----	696
	A.V. Semeniaka, D. I. Lekhovitskiy, D.S. Rachkov	
C8—04	One Implementation Method for Beam Control Subsystem of Two Dimensional Phased Array Radar-----	700
	Yue-qian Zhuang	
C8—05	Improved STAP GMTI Algorithm and Its Analysis-----	703
	Yang Jie	
C8—06	Multi-Channel Equalization for SAR/GMTI System with Small Time-Bandwidth Chirp Signal-----	707
	LEI Pengzheng, ZHOU Hong, HUANG Xiaotao	
C8—07	DPCA Motion Compensation Technique Based on Multiple Phase Centers-----	711
	Chen Yi, Qian Bo, Wang Shengli	
C8—08	Experimental Investigation of Iterative Adaptive Approach for Ground Moving Target Indication-----	715
	Hongbo SUN, Yilong LU, Marc LESTURGIE	
C8—09	Ground Moving Targets Detection and Relocation in Heterogeneous Environment for Airborne Radar Based on Tri-channel Real Data-----	719
	S.Q. Zhu, G.S. Liao, H.H. Tao	
C8—10	Sum and Difference Doppler Filter Banks Canceller for GMTI in Airborne Radar-----	723
	Yongliang Wang, Wenchong Xie, Keqing Duan, Hui Chen	

Session C9----- SAR Data Handling

Co-Chairs:	Sun Hong, Wang Chao	Oct. 27th (14:00—18:00), Room 3
C9—01	Applying the Log-Cumulants of Texture Parameter to Fully Polarimetric SAR Classification Using Support Vector Machines Classifier-----	728
	Meng Liu, Hong Zhang, Chao Wang	
C9—02	A One-Class-Extraction Framework for High Resolution SAR Image Classification-----	732
	Bin Liu, Chenxian Zhu, Kaizhi Wang, Xingzhao Liu, Wenxian Yu	
C9—03	Potential of Human Detection with SAR-----	736
	Olivier Ruault du Plessis, Philippe Martineau, Colette Coulombeix, Jean François Nouvel, Xavier Dupuis, Gregory Bonin.	
C9—04	SAR Target Configuration Recognition Using Locality Preserving Projections-----	740
	Ming Liu, Yan Wu, Quan Zhao, Lu Gan	
C9—05	Crashed Plane Detection Based on the Fusion of CFAR Detection and Polarimetric Decomposition-----	744
	Han Ping, Ge Peng, Wu Renbiao	
C9—06	Investigation on Compact Polarimetry in SAR Interferometry Using CETC38 Airborne Data-----	748
	Ying Liu, Wen Yang, Xin Xu, Mingsheng Liao	
C9—07	Ocean Dynamic Information Obtaining Based On SAR Ocean Images Matching-----	752
	Haiqing Sun, Xiaoqing Wang, Jinsong Chong	
C9—08	PolSAR Image Speckle Reduction Based on Polarimetric Decomposition and Classification-----	756
	Ping Han, Fei Dong, Renbiao Wu	

C9—09	Hyper Parameter Estimation in MRF-based SAR Chip Image Segmentation-----	760
	Zhang Zebing, Hu Weidong	
C9—10	Target Position for Squint-Looking SAR Based on Doppler Parameter Estimation-----	764
	Yuan Liao, Jia Xu, Ying-Ning Peng, Xiu-Tan Wang	

Session D1----- Tracking

Co-Chairs: Zhu Daiyin, Mounir Adjrad **Oct. 26th (08:00—12:00), Room 4**

D1—01	A Method of Track Association with Systematic Error-----	769
	Liu Dehao, Wang Guohong, Chen Zhonghua	
D1—02	Accuracy of Height Estimation by a System of 2-D Netted Radars-----	773
	F. Amato, G. Golino	
D1—03	The Knowledge-based Tracking Using Geographic Information-----	777
	Qinghua Li, Lingjiang Kong, Xiaobo Yang	
D1—04	Ground Moving Vehicles Velocity Monitoring Using a GSM Based Passive Bistatic Radar-----	781
	P. Krysik, K. Kulpa, M. Baczyk, Ł. Maślikowski, P. Samczynski	
D1—05	A new reduced-dimension GSC for target tracking and interference suppression-----	785
	Yongfei Kong, Cao Zeng, Guisheng Liao, HaiHong Tao	
D1—06	The Ballistic Missile Tracking Method Using Dynamic Model-----	789
	ZHANG Feng, TIAN Kang-sheng, XI Mu-lin	
D1—07	Two-stage Algorithm for Extended Target Tracking by Multistatic UWB Radar-----	795
	Yuan He, Timofey Savelyev, Alexander Yarovoy	
D1—08	Feature Aided Gaussian Mixture Probability Hypothesis Density Filter with Modified 2D Assignment-----	800
	Chen Ying, Cheng Zhen, Wen Shuliang	
D1—09	Adaptive-Update-Rate Tracking based on Modified IMM-PDA-----	804
	Cheng Ting, He Zishu, Li Yaxing	
D1—10	Design and Implementation of Signal Processing Algorithm for High Altitude Pulse Compression Radar Altimeter-----	808
	LIU Jian-xin, Chen Peng, Yang Fei,	

Session D2----- Clutter / Modeling

Co-Chairs: Wang Guohong, Manuel Dude **Oct. 27th (14:00—18:00), Room 4**

D2—01	Propagation Modelling over Variable Terrain Using the Two-Way PE Method-----	812
	LI De-xin, NIU Qing-gao, LIU Yong-bo, MU Cheng-xin	
D2—02	Statistical Analysis of Monostatic and Bistatic Sea Clutter Doppler Spectrum-----	816
	M.A. Ritchie , W.A. Al-Ashwal , A.G. Stovey, K. Woodbridge , H.D. Griffiths	
D2—03	Sea State Parameters Extraction from Radar Images: System Design and Implementation-----	821
	Ding Hao, Huang Yong, Song Jie, Guan Jian, He You	
D2—04	Wave Model Based Enhancement of SAR Ocean Images-----	825
	Zhang Wen-yi, Li Fang-fang, Hu Dong-hui, Ding Chi-biao, Zhong Li-hua1	
D2—05	Airborne Weather Radar Application for Measurement of the Water Surface Backscattering Signature-----	P IC
	Alexey Nekrasov	
D2—06	SAR Raw Data 2-D Imaging Model and Simulation of GEOCSAR-----	833
	Liu Qi, Wei-xian Tan, Yun Lin, Yan-ping Wang, Wen Hong, Yi-rong Wu	
D2—07	Measurement and Analysis of the Radar Signature of a New Type of Wind Turbine-----	837
	Hugh Griffiths, Yuji Ohya , Alessio Balleri, Kenneth Tong, Allan Al-armaghany, Takashi Matsuura , Takashi Karasudani	
D2—08	System-Level Simulation of the Full-Polarimetric Radar System-----	841
	Zongbo Wang, Zhijian Li, Oleg Krasnov, Leo P.Lighthart, Fred van der Zwan	
D2—09	On Spreading Chaff Cloud for Countering the Terminal Guidance Missile-----	845
	Peilin Sun, Qian Cai, Jun Tang, Ning Li, Jinsong Du	
D2—10	Radar Signal Simulation by Stochastic Modification of Its Experimental Records-----	850
	W.Czarnecki, M.Pasternak, J.Pietrasinski	

Session P1----- Systems

Co-Chairs: Zhou Zhimin, George Schmidt

**Oct. 25th (16:00—18:00),
Exhibition/Poster Room**

P1—01	Airborne Bistatic SAR Imaging for Parallel translational variant Configuration-----	854
	Wu Yongjun, Huang Ye	
P1—02	Design of a miniature wideband radar experimental system-----	858
	Zhang Xiao-wei, Li Ming, Zuo Lei	
P1—03	High Resolution Imaging with Airborne MIMO-SAR-----	862
	Faxiang PENG, Hongwei LI, Bin CAI, Donghu DENG	
P1—04	Trajectory Optimization for Missile-Borne SAR Imaging Phase Via Gauss Pseudospectral Method-----	867
	ZHANG Gang, ZHU Ming-bo, ZHAO Zhen-bo, LI Xiang-ping	
P1—05	A Target Reference Template Generation Method for Image Matching Guidance with Missile-borne SAR-----	871
	DONG Wei, ZHU Ming-bo, ZOU Jian-wu	
P1—06	Analysis of Diving Squint SAR Resolution-----	875
	Zengliang Li, Xin Zhao, Zegang Ding	
P1—07	Internal and External Calibration of POLINSAR-----	879
	Wang Yang, Chen Xi, Ge Jialong, Jiang Kai	
P1—08	Real-Time Beam Position Design for High-Dynamic Platform SAR System-----	883
	Xi Longmei	
P1—09	Design and Implement of A Spaceborne MIMO SAR Simulation Software-----	887
	Anxi Yu, He Feng, Dong Zhen, Sun Xilong, Ma Xile	
P1—10	Attitude Control Accuracy Allocation for the Spaceborne SAR-----	891
	Xiaoguang Zhang	
P1—11	An Optimization Beam-Position Selection Method based on Genetic Algorithm for Distributed Satellite-borne SAR System-----	895
	Li Wei, Chen Junli, Shi Xinhua, Liu Anna	
P1—12	Orbit Determination of Multiple Spatial Targets Based on Space-borne Phased Array Radar-----	899
	Weilin Tan, Guisheng Liao, Cao Zeng, Zhiwei Yang	
P1—13	Space-surface Bistatic SAR-GMTI-----	903
	Liao Yi, Qian Jiang, Yang Lei, Xing Mengdao	
P1—14	Doppler Centroid Estimation for Space-Surface BiSAR-----	907
	Weiming Tian, Teng Long, Jian Yang, Xiaopeng Yang	
P1—15	X-band Core T/R Module with LTCC Technology-----	911
	Zhou Jun, Wenbin Dou, Shen Ya	
P1—16	Spaceborne-Airborne Bistatic Radar Clutter Modeling and Analysis-----	915
	Jinhui Liu, Guisheng Liao	
P1—17	A Signal-to-Noise Ratio Enhancement Method for Non-cooperative Bistatic Radar System-----	919
	LI Hui, HE You, ZHOU Hong-qing, TANG Xixo-ming	
P1—18	System Characteristics of UWB Bistatic Through-Wall SAR-----	924
	LI Xin, HUANG Xiao-tao, FAN Chong-yi, LIU Wen-yan, PENG Shi-ru	
P1—19	A Direct-Path Interference Suppressing Algorithm for Shared-Spectrum Multistatic Radar-----	929
	Bin Zhao, Lingjiang Kong, Mei Yang and Guolong Cui	
P1—20	Radar Netting Technology & its Development-----	933
	Zheng Gaoqian, Zheng Ying	
P1—21	Landmine Bistatic Scattering Function Estimation from Virtual Aperture Radar Image-----	938
	Tian JIN, Lou JUN, Qian SONG, Zhimin ZHOU	
P1—22	Dual-Channel DPCA Technique in Bistatic Forward-looking SAR For Moving Target Detection and Imaging-----	942
	Zhongyu Li, Junjie Wu, Wenchao Li, Yulin Huang, Jianyu Yang	
P1—23	The Simulation software of Bistatic Forward-looking SAR-----	946
	Ye Yuan, Yulin Huang, Jianyu Yang	
P1—24	The Accurate Model for Beam Synchronization in Spaceborne/Airborne Hybrid Bistatic SAR-----	950
	Wang Hongyan, Wu Yanhong	
P1—25	Online Synchronization Technique of Bistatic SAR and Flight Trial-----	954

ZHANG Jianming, WANG Jingen, Ge Jialong	
P1—26	Fast DOA Estimation for Monostatic MIMO Radar with Arbitrary Array Configurations-----959 Yunhe Cao, Zijing Zhang, Fengzhou Dai, Rong Xie
P1—27	Detection Performance of Non-Coherent MIMO Radar with Phase Synchronization Errors-----963 Ma Peng, Zhang Ke, Zhang Jianyun
P1—28	Sparsity-Based MIMO Radar Imaging Method-----967 Dang-Wei Wang, A-Lei Chen, Jun- Quan Yuan, Xiao-Yan Ma
P1—29	Optimizing thinned Antenna Array Geometry in MIMO Radar Systems Using Multiple Genetic Algorithm-----971 Jie He, Da-zheng Feng, Nicolas H. Younan, Xiao-ming Li
P1—30	An Implementation of MIMO InSAR without Transmitting Orthogonal Signals-----975 Liu Nan, Liu Xin, Zhou Yu, Zhang Linrang
P1—31	MIMO Radar Signal Separation Algorithm in Non-Gaussian Clutter-----979 FENG Xun, WANG Shou-yong, YANG Jun, DU Peng-fei, ZHU Xiao-bo
P1—32	Adaptive Detection and Sidelobe Signal Rejection for MIMO Radar-----984 Juting Wang
P1—33	Angle Rstimation of Coherent Targets for Bistatic MIMO Radar-----989 Juting Wang
P1—34	Cognitive Over-the-Horizon Radar-----993 Kun Lu, Xuyuan Chen
P1—35	A Millimeter-Wave Two-dimensional Active Phased Array Radar-----997 PENG Xiang-long, SHI Xing
P1—36	Radar Embedded Communication Technology Study-----1000 Xing Shi, Xiang Long Peng
P1—37	A Novel PN-Coded FMCW Radar Design and Implementation-----1004 Li Mu, Xiaohui Zhang, Tong Xiangqian, Qing Liu
P1—38	A Study on the Application of Millimeter-Wavelength Cloud Radar-----1008 Fan Hui, Huang Xingyu, Su Tao, Gao Zhonghui
P1—39	Study on Maneuvering Target AdaptiveTtracking Algorithm of 3D Passive Location System-----1012 XIU JianJuan, HE You, XIU JianHua
P1—40	Extracting Weak Signal from Passive Coherent Location Radar System-----1016 Gege Zhang, Jun Wang, Hongwei Li
P1—41	Optimization of Spatial Filter for DPI and Multipath Interferences in Passive Radar-----1020 Jiabing Zhu, Yi Hong
P1—42	System errors estimation of DOA and TDOA jointed locating system using sequential least squares-----1025 Zhu HongWei, Song Qiang, Wang GuoHong, He You
P1—43	Analysis of Amplitude Modulation Effect on Pulsed Passive Coherent Location System-----1029 Zhang Caisheng, Tang Xiaoming, He You, Ding Jiahui
P1—44	Maneuvering Target Tracking Using IMMPF in Passive Coherent Location Radar with Glint Noise-----1033 Hongwei Li, Jun Wang
P1—45	A novel Taylor series Method for Source and Receiver Localization Using TDOA and FDOA Measurements with Uncertain Receiver Positions-----1037 Wu Hao, Su Wei-min, Gu Hong
P1—46	An improved method to sort and pair TDOA based on the correlation between TDOAs-----1041 Wen-juan Ren, Dong-hui Hu, Chi-biao Ding
P1—47	A BOT Algorithm Based on Sliding Window n-Step Forward Prediction-----1045 Ma Chunshi, Fan Hongqi, Lu Zaiqi
P1—48	Research on cellular radar for low-flying small targets-----1050 Tiezheng Jiang, Dashen Li, Xu Tang
P1—49	Monopulse Estimation with Multipoint Constrained Adaptation in Mainlobe Jamming-----1054 Can Rao, Rongfeng Li, Lingyan Dai
P1—50	Design of Radar ECCM Performance Testing System and Its Semophysical Simulation Experiment-----1058 Ren Mingqiu, Cai Jinyan, Zhu Yuanqing, Han Zhuangzhi
P1—51	The Application of Jamming Analyzing Technique in the Radar System-----1063 Wang Qiang, Zhou Gu
P1—52	Adaptive Biased Weight-Based RGPO/RGPI ECCM Algorithm-----1067

	Gang Lu, Shuangcui Luo, Haiyan Gu, Yongping Li, Bin Tang	
P1—53	Adaptive Cancellation in Transmitted Signal of Repeating Type Jammer Based on Fractional Delay Filter-----1071	
	Naijian Sang, Xuegang Wang, Yun Zhou	
P1—54	Analysis of Mainlobe to Mean Square Sidelobe Ratio in Noise Radar-----1075	
	Yuanbing Cheng, Xiyuan Tang, Wei Zhang, Hong Gu, Weimin Su	
P1—55	Research on Track Generation Technology for Secondary Surveillance Radar(SSR) Interrogator in Interference Environment-----1079	
	Wan Hong-rong	
P1—56	Airborne AESA Radar's ECCM and Self-defense Jamming Analysis-----1082	
	Zou Shun, Jin Xueming, Li Lu	
P1—57	P Band SAR Narrow Band RFI Suppression Methods Research-----1086	
	ZHAO Ning , TAN Lulu , GE Jialong	
P1—58	The X-band Sub-array Building Block for Active Scalable Array Antenna-----1090	
	Wang Zhouhai, Yang Xinghua, Zheng Linhua, Qian lin	
P1—59	Adaptive Generalized DPCA Algorithm for Clutter Suppression in Airborne Radar System-----1093	
	Li Xiao-ming, Luo Ding, Qiu Chao-yang, Li Chunsheng	
P1—60	Modified Direct Data Domain Approach without Space-Time Aperture Loss-----1099	
	He Shun, Yang Zhiwei, Liao Guisheng, Ouyang Shan	
P1—61	Modeling and Suppression of Clutter for Airborne Fire Control Radar with Conformal Antennas Array-----1102	
	K. Q. Duan, W.C. Xie, Y. L. Wang	
P1—62	A new STAP method for MIMO radar based on joint digital beam forming and joint domain localized processing-----1107	
	Yongzhe Li, Zishu He, Hongming Liu, Jun Li	
P1—63	Space-Time Adaptive Processing Based on Beam-Doppler Shift for Bistatic Radar-----1111	
	Li Yingchun, Hu Qingrong, Li Jingwen	
P1—64	Diagonally Loaded Space-Time Adaptive Detection-----1115	
	Weijian Liu, Wenchong Xie, Yongliang Wang	
P1—65	A Time-Varying Space-Time Autoregressive filtering algorithm for space-time adaptive processing-----1120	
	Di Wu, Daiyin Zhu, Zhaoda Zhu	
P1—66	GMTI Performance Analysis of STAP Based SBR-----1124	
	Shi-shan ZHANG, Xue-ming JIN	
P1—67	Cost-Effective Real-Time Motion Compensation of Airborne UWB SAR Based on Single GPS Receiver and PGA-----1127	
	Yan Shaoshi, Li Yueli, Zhou Zhimin	
P1—68	The Influence Factors Analysis on the Steering Performances of Liquid Crystal Optical Phased Array-----1131	
	Zhenhua Lin, Lingjiang Kong, Xiaobo Yang	
P1—69	The Application of Edge Technique in Wind Lidar-----1135	
	HUANG He-song, WANG Ji-qiang, XUE Lin, LIU Kui	

Session P2----- Subsystems / Phenomenology

Co-Chairs: Yu Guangzheng, Andon Dimitrov Lazarov

**Oct. 26th (10:00—12:00),
Exhibition/Poster Room**

P2—01	A New Method for the Synthesis of Sparse Linear Array-----1139	
	Xiao-Zhong LIU, Wan-Lin YANG, Zhao-Zhao GAO, Xiao-Dong ZHANG	
P2—02	A New Phased Array Structure to Realize Limited-2D-Scanning-----1143	
	Li Rui	
P2—03	Joint Fading Coefficient and DOA Estimation with Known Waveforms in Multipath Environment-----1147	
	Chunjing Liu	
P2—04	Design of Scalable Beam Steering System of Phased Array Radar-----1153	
	Zhitao Chen, Junwei Liu, Lin Li	
P2—05	Based on Hybrid Genetic Algorithm for Simulation Research of Antenna Thinned Efficiency-----1157	
	Luo Qilin, Wen Tieniu	
P2—06	Compact Tapered Slot Antenna for Wideband Applications-----1161	
	Feng-Chao Ren, Fu-Shun Zhang, Bo Chen, Qing-Chen Zhou	

P2—07	A Modified Umbrella-Shaped Monopole Antenna for Multi-Band Operation-----	1164
	Nan Mu, Fushun Zhang, Jian Wang	
P2—08	A Microstrip Reflectarray Antenna with the Properties of Wide Bandwidth and Low Side-lobe level-----	1168
	GUAN Zheng-tao	
P2—09	A Novel Omni-Directional UWB Biconical Antenna with Band-Notched-----	1172
	Ding Yu, Weigang Zhai, Guitao Xie, Longjun Zhang	
P2—10	Design of Diffractive Cassegrain Antenna at W band-----	1176
	Hongfu Meng, Wenbin Dou	
P2—11	Design of An Novel Ultra-Wideband Antenna with Dual Band-Notched Characteristics-----	1179
	Yue Zhang, Fu-Shun Zhang, Rong Zou, Ya-Bing Yang, Fei Ding1	
P2—12	A Novel Elliptical UWB Antenna with Dual Band-notched Characteristics-----	1182
	Wan Pu, Zhang Xiao-Miao, Liao Zhen-Lin	
P2—13	An Optimum Design of Miniaturized High Frequency Inverted-V Log-Periodic Dipole Antenna-----	1185
	Xiao-Lin Zhang, Huo-Tao Gao	
P2—14	Resistively Loaded Ultra-Wideband Dipole Antenna for Narrow Borehole Radar Systems-----	1189
	Yanqing Xu, Yuan Shian gang, Litao Lan, Haoran Zhang, Bingzhong Wang, Zhao Deshuang	
P2—15	A Broadband Antenna with Aperture-coupled Feed-----	1193
	Qing-Cheng Zhou, Fu-Shun Zhang, Jing Feng, and Feng-Chao Ren	
P2—16	A Low Sidelobe Rotman Lens Antenna Feed by H-Plane Waveguide-----	1197
	LI Feng, LIU Yi-zhi, HUANG Wei	
P2—17	Correlation evaluation of Experimental and Numerical modes of the Clamp Structure-----	1201
	Wang Zhi-Hai, Zhu Zhi-Yuan	
P2—18	Design of a Broadband Three-way Power Divider Using Modified Microstrip-Slotline-----	1205
	Zheng Zhang, Yong-Chang Jiao, Shun-Feng Cao, Fu-Shun Zhang,	
P2—19	Integrative Design of a Compact Oil-Filled Radar Transmitter-----	1208
	Huang Jun, Liu Chao	
P2—20	The 1000W Microwave Solid State Power Amplifier at Ku Band-----	1211
	Hu Bei, Feng Yanmin	
P2—21	Multi-physics Simulation of High Power Supply Used in the radar system-----	1215
	Pang Qilong, Huang Chunjiang	
P2—22	A S-Band 50MW Microwave Amplifier's Design-----	1219
	Wang Xuming, Zhang Jianhua, Shang Lei, Tao Xiaohui, Sun Fangli	
P2—23	An Analysis of Circular Waveguide Rotary Joint Design With Coupling TM ₀₁ Mode-----	1224
	Deng Bin, Zhang Hua-lin, HU Ming-chun	
P2—24	Active Phased Antenna subarray Module Development for X-band SAR Applications-----	1228
	Xiao-di Song, Wei Wang, Zhi-hui Zhang	
P2—25	The Applications of Micro- Nanofabrication Technologies in T/R Modules-----	1231
	Liu Longhua, Hu Jun	
P2—26	Time-frequency Quasi-Matched Intelligence Receiver to LPI Radar Signal-----	1235
	Deguo Zeng, Hao Cheng, Keyu Long, Xiaodong Zeng, Haiyan Gu, Xiaodong He, Bin Tang	
P2—27	Speed Measurement of Permanent Magnet Synchronous Motor in Radar Servo System-----	1239
	Huang Linshu , Li Hongke, Cha Hao	
P2—28	Moving Target Parameter Estimation of Spaceborne SAR-GMTI Based on the Analysis of Acceleration-----	1242
	XIA Meng, YANG Xiao-niu	
P2—29	Design and Analysis of Costas/PSK RF Stealth Signal Waveform-----	1247
	Yang Hongbing, Zhou Jianjiang, Wang Fei, Zhang Zhenkai	
P2—30	Development of Frequency Synthesizer Based on DDS+PLL-----	1251
	Mu xuehua, Wang jinzhang	
P2—31	Distinguish the Target and the Towed Decoy Based on Time-Domain Waveform Design-----	1255
	SONG Zhi-yong, ZHU Yi-long, XIAO Huai-tie, LU Zai-qi	
P2—32	Multidimensional WaveformDesign for Multi-Mode and Synthetic Bandwidth SAR Imaging-----	1259
	Wu Yumeng, Chen Zhuming, Xu Fuyuan, Duan Rui, Jiang Chaoshu	
P2—33	Waveform Optimization for Compressive Sensing Radar Imaging-----	1263
	Yapeng He, Xiaohua Zhu, Shanna Zhuang, Hongtao Li, Heng Hu	

P2—34	Sequential waveforms optimization for wideband target recognition radar based on kernel method-----	1267
	B. Jiu, H.W. Liu, Zh. Liu, S.J. Wu	
P2—35	Design of Sea Clutter Data Acquisition and Analysis System with FPGA and USB2.0-----	1272
	Ge Xianjun, Ding Hao, Song Jie, Guan Jian	
P2—36	Analysis of Multifractality for Sea Clutter-----	1276
	Ji Ren, Wen Sheng	
P2—37	Design and Realization of Wideband Radar Signal Simulator-----	1280
	Zhiyong Zhao, Wenge Chang, Xiangyang Li, Feifei Yan	
P2—38	The Research of Amplitude Statistical Distribution of Terrain Return in Vertical Incidence Region-----	1284
	XIA Xue , ZHANG Hai, CHEN Zhu-ming, DUAN Rui, CHENG Bin-bin	
P2—39	A New Amplitude Probability Density Function Estimation Method for IPIX Grimsby Data-----	1288
	Liang Li, Lingjiang Kong, Xiaobo Yang	
P2—40	Based on the Covariance and Coherency Matrix for SAR Sea Oil Spill Observation-----	1291
	Bing Duan, Jinsong Chong	
P2—41	Scattering Characteristic Analysis and Underwater Acoustic Measurement Experiment for Ship Targets-----	1295
	Zemin Xi, Jianbin Lu, Mingmin Zhang, Bingcheng Yuan	
P2—42	Ship Target Recognition Using High Resolution Range Profiles based on FMT and SVM-----	1299
	Jianbin Lu, Zemin Xi, Xianghui Yuan, Guishui Yu, Mingmin Zhang	
P2—43	Analysis of the Impact of Measured UWB RCS on High-Resolution Imaging in Bistatic SAR-----	1303
	Luyi Sun, Cheng Hu, Zegang Ding	
P2—44	Scattering Characteristics Analysis of Radar Antennas in Far Field-----	1307
	Sun Xiao- yang Zhao Hong-zhong	
P2—45	Radar Dynamic Echo Simulation of Ship Targets in Terminal Guidance Based on Quasi-Static Method-----	1311
	Xiaobo Luo, Hongqi Fan, Yilong Zhu, Qiang Fu	
P2—46	Doppler Spectra from Bound Waves in Wind-wave tank-----	1315
	Lei Liu, Xiangzhen Yu, Xiaoqing Wang, Jinsong Chong, Wen Hong	
P2—47	Radar Image Simulation of Complex Targets-----	1319
	Tang kan, Zhang yueting, Chen hongzhen, Xiong wenchang, Wang hongqi	
P2—48	Research on Detection of Hypersonic Weak Target-----	1323
	Li Zhi-huai, Tan Xian-si, Wang Hong, Dong Lai-xin	
P2—49	Through-the-Wall Imaging and Correction Based on the Estimation of Wall Parameters-----	1327
	WANG Han-ning, LU Bi-ying, ZHOU Zhi-min, SONG Qian	
P2—50	Through-wall-radar target localization based on random sparse array-----	1331
	Xiang Yuan, Lingjiang Kong, Yong Jia	
P2—51	Novel Thin Void-layer Thickness Determination Method for Lossy Media Using GPR-----	1335
	Renbiao Wu, Changmiao Duan, Jiaxue Liu	
P2—52	Rebar Echo Detection and Suppression in Runway Using GPR-----	1339
	Rebiao Wu, Yuzhong Zhong, Jiaxue Liu	
P2—53	Cooperative target localization and tracking for random sparse array through-wall-radar-----	1343
	Xiang Yuan, Lingjiang Kong, Yong Jia	
P2—54	Life Detection Based On Cross-Correlation Analysis-----	1346
	Song Yan, Lingjiang Kong, Xiaobo Yang, Yongshun Zhou	
P2—55	Study on Underwater Acoustic Simulation Measurement of Radar HRRP for Ship Targets-----	1349
	Zemin Xi, Jianbin Lu, Mingmin Zhang, Bingcheng Yuan	
P2—56	Detection Ability Modeling of Balloon-Borne Radar Against Cruise Missile-----	1353
	Qiao Yongjie, Liu Jinrong, Ding Hong, Xu Zhongfu, Wei Heng	
P2—57	SAR Imaging Simulation of Shallow Sea Sand Ridges with Finger-like Features-----	1358
	Zejun Li, Xiangzhen Yu, Xiaoqing Wang, Jinsong Chong	
P2—58	Radar Imaging Simulation for Typical Urban Structures Based on Analytical Models-----	1362
	Hongzhen Chen, Yueling Zhang, Kan Tang, Wenchang Xiong, Chibiao Ding	
P2—59	A Method of Detection Performance Modeling in Jamming Condition Based on Radar Network System-----	1366
	SHEN Tong-yun, DING Jian-jiang, DING Yuan, SHI Jian-gui	
P2—60	Motion Platform Forward-looking Real-beam Radar Echo Modeling-----	1370
	Dongye Li, Yulin Huang, Jianyu Yang	

P2—61	Adaptive Targets Detection in Polarimetric High Resolution Radar-----	1374
	Zhao Yinan, Qin Jian, Yin Bin	
P2—62	PolSAR Image Classification Based on Deorientation Theory-----	1378
	Guo Rui, Zang Bo, Zhang Shuangxi, Xing Mengdao	
P2—63	Polar Format Algorithm Wavefront Curvature Compensation under Arbitrary Radar Flight Path-----	1382
	Xinhua Mao, Daiyin Zhu, Zhaoda Zhu	
P2—64	Full-Polarization Scattering Center Extraction Based on Coherent Polarization GTD Model-----	1386
	DAI Da-hai, GE Jia-long, XIAO Shun-ping, WANG Xue-song	
P2—65	Ballistic Target Discrimination Based on Polarimetric Entropy-----	1390
	Xu Cheng, Yong Liu , Yongzhen Li, Xuesong Wang	
P2—66	Improved Three-stage Inversion Process for Forest Height Inversion with PolInSAR Data-----	1394
	Lulu Tan, Zhang Jianming, Dahai Dai, Ruliang Yang	
P2—67	Airborne Polarimetric SAR Experiments With Different Crosstalk Calibration Techniques-----	1398
	Xi Chen, Tao Wu, Xueliang Zhong	
P2—68	Application and Molding Technique Research of Aramid Fiber Composites in Radar Components-----	1402
	Xue Weifeng	
P2—69	Minkowski Fractal Patch Antenna for Size and Radar Cross-Section Reduction-----	1406
	Li-Na Chen, Yong-Chang Jiao, Huan-Huan Xie, Fu-Shun Zhang	

Session P3----- RSP 1

Co-Chairs: Peng Yingning, Stéphane KEMKEMIAN

**Oct. 26th (16:00—18:00),
Exhibition/Poster Room**

P3—01	DOA Estimation of Multiple Sources Based on Multiset Canonical Correlation Analysis-----	1410
	Zemin Xi, Huagang Yu, Gaoming Huang, Jianbin Lu	
P3—02	Robust adaptive beamformer based on convex optimization-----	1414
	Haitao Wang, Jun Wang	
P3—03	High Resolution Beamforming with Promoted Sparsity via Reweighted Methodology-----	1417
	X.Y. Chen, G.H. Zhao, T.J. Zhang, G.M. Shi	
P3—04	Adaptive Super-resolution Algorithm Based on PCA and Wavelet for Passive Millimeter Wave Imaging-----	1421
	Jing Li, Liangchao Li, Jintao Xiong, Jianyu Yang	
P3—05	DOA Estimation Algorithm Based on FFT in Switch Antenna Array-----	1425
	Zhang Ke, Ma Peng, Zhang Jian-yun	
P3—06	Compressive Direction Finding with Robust Sparsity Prior-----	1429
	Guanghui Zhao, Fangfang Shen, Zhengyang Wang, Guangming Shi	
P3—07	A Wideband Spatial Filter Bank Architecture for Synthetic Range Profile-----	1433
	Wei Peng, Honggang Wu, Bin Tang, Xueping Du	
P3—08	Real Beam Radar Imaging Based on Adaptive Lucy-Richardson Algorithm-----	1437
	Dongye Li, Yulin Huang, Jianyu Yang	
P3—09	Phase-only control of antenna shaped patterns with a Genetic Algorithm-----	1441
	Wang Xugang, You Lizhi, Tian Keyan	
P3—10	Aperture Effect Influence and Analysis of Stepped Frequency Wideband Phased Array Radar-----	1444
	Jun Wang, Duoduo Cai, Peng Lei	
P3—11	High Resolution SAR Performance Limitation by the Change of Tropospheric Refractivity-----	1448
	Sun Jinping, Bi Yuekai, Wang Yanping, Hong Wen	
P3—12	An Approach for Sparse Baselines SAR Tomography-----	1452
	Jinfeng Wang, Rui Min	
P3—13	Image Formation Algorithm with Motion Compensation for Forward-Looking Bistatic SAR-----	1456
	Chundong Qi, Tao Zeng, Feng Li	
P3—14	A Novel Despeckling Algorithm of Polarimetric SAR Image Based on SNR and Parameter-Vector Spectrum Amendment-----	1459
	Liu Gaofeng, Li Ming, Wu Yan, Liu Ming	
P3—15	Compressed Sensing in ISAR Imaging with Sparse Sub-Aperture-----	1463

	F. Zhu, Q. Zhang, J.B. Yan, F.F. Gu, S. Liu	
P3—16	A Novel SAR Imaging Algorithm Based on Compressed Sensing-----	1467
	Junfei Chang, Wei Zhang, Shunsheng Zhang, Jing Li	
P3—17	A Novel Autofocusing Algorithm for ISAR Imaging Based on Sparsity-Driven Optimization-----	1471
	Gang Xu, Qian-qian Chen, Shuang-xi Zhang, Lei Zhang	
P3—18	A Method for ISAR Imaging of High Speed Moving Target Based on Phase-Coded Signal-----	1475
	Dong Mei, Zhang huanying, Zhang Shouhong	
P3—19	High Resolution Radar Imaging Using Sparse Signal Representation-----	1479
	QIU Wei, ZHAO Hong-zhong, CHEN Jian-jun, FU Qiang	
P3—20	Research on Pre-processing Method of Motion Compensation for Forward-looking SAR imaging Based on Navigational Data-----	1483
	Zhou Qiang, Yang Jian, Qu Changwen	
P3—21	An Improved CS Imaging Algorithm for Spaceborne/Airborne Hybrid Bistatic SAR-----	1489
	Zheng Sun, Wei Zhang, Shunsheng Zhang	
P3—22	Imaging Algorithm for GEO SAR Based on Series Reversion-----	1493
	Min.Bao, Yi Liao, Zi.Jing.Tian, Meng.Dao.Xing, Ya.Chao.Li	
P3—23	Research on Sub-Pixel Accuracy Displacement Estimation for Passive Millimeter Wave Multi-Frame Imaging-----	1498
	Xiang Shi, Jintao Xiong, Liangchao Li, Jianyu Yang	
P3—24	Azimuth Dependence of Quadratic Range Cell Migration Correction for the High Squint Synthetic Aperture Radar-----	1502
	Zhang Shuangxi, Guo Rui, Xu Gang, Xing Mengdao	
P3—25	New Imaging Approach for MPC-MAB HRWS Synthetic Aperture Radar-----	1506
	Yin Canbin, JIA Xin, Li Yuntao, WU Yanhong, Zhu Weigang	
P3—26	A Novel SAR Imaging Algorithm Based on FrFT and CS-----	152:
	Wu Yongjun, Huang Ye	
P3—27	A New Method for Parallel Processing of Real-time Range Compression-----	1514
	Hui Yu, Wanming Lei	
P3—28	Azimuth Multi-channel Spotlight SAR Imaging-----	1518
	Ma Xile, Jin Guanghu, Chen Qi, Sun Zaoyu, Dong Zhen	
P3—29	Sparse Reconstruction for Linear Array SAR 3-D Imaging Based on Bayesian Estimation-----	1522
	Shun-Jun Wei, Xiao-Ling Zhang, Jun Shi	
P3—30	Frequency-Coded Pulse Radar Imaging via Compressive Sensing-----	1526
	Yapeng He, Shanna Zhuang, Hongtao Li, Xiaohua Zhu	
P3—31	Planar Array ISAR Imaging and Anti-jamming Performance Analyzation-----	1531
	Yuntao LI, Yanhong WU, Canbin YIN, Zhennan WANG	
P3—32	Man-made structure height estimation via a single VHR SAR intensity image-----	1535
	Li-bing Jiang, Wei-wei Guo, Zhuang Wang, Wen-xian Yu	
P3—33	Realization Of DBS Imaging Algorithm based on FPGA and DSP-----	1539
	Zhuang Meng, Li Yachao, Xing Mengdao, Li Qing	
P3—34	A Motion Compensation Technique for Stepped-frequency Radar with Phase Slope Analysis-----	1543
	Chao Ma, Xiaojian Xu	
P3—35	ISAR Imaging Based On Antenna Array and Compressed Sensing-----	1547
	Zhong Li-hua, Hu Dong-hui, Ding Chi-biao	
P3—36	A Novel Two-Dimensional Frequency Spectrum for Bistatic SAR Processing-----	1551
	Chunyang Dai, Xiaoling Zhang	
P3—37	Research on Registration of PMMW and Visible Images Using Silhouette Extraction and Multi-peak Search Based on Fourier-Mellin Transform-----	1554
	Ding Yang, Jintao Xiong, Liangchao Li, Jianyu Yang	
P3—38	Unsupervised Change Detection for Remote Sensing Images Using Multiscale Decomposition and Treelet Fusing: a Level Set Approach-----	1558
	Guiting Wang, Min Zhang, Xiaolin Tian, LC Jiao	
P3—39	Forward Looking SAR Imaging Algorithm via CS-----	1562
	Wang Jian, Zong Zhu-lin	

P3—40	Improved Quantum-Inspired Immune Clonal Clustering Algorithm Applied to SAR Image Segmentation-----	1566
	Y.Y. Li, N.N.Wu, R.C. Liu	
P3—41	Block-wise Bivariate Shrinkage Functions for Speckle Reduction-----	1570
	Zhang Xiaohua, Li Zhichao, Jiao L C, Zhang Yang	
P3—42	Atmospheric Disturbance Correction in Ground-Based SAR Differential Interferometry-----	1574
	Xiang Zhang, Bi-ying Lu, Qian Song, Meng Leng	
P3—43	Spatial Baseline Decorrelation of Geosynchronous Circular SAR Interferometry-----	1578
	Kou Leilei, Wang Xiaoqing, Xiang Maosheng, Zhu Minhui	
P3—44	3-D Geometric Feature Extraction of Vehicle Target from 2-D High Resolution SAR Imagery Based on Shadow Information-----	1582
	Ji kefeng, Xing xiangwei, Zou huanxin, Li renjie	
P3—45	River Boundaries Extraction in Mountain Areas for SAR Images with Fusing GIS Information-----	1586
	Wang Xiaoliang, Li Chunsheng, Wu Renbiao	
P3—46	A Method of Tie Points Detection in InSAR Block Based on SVD-----	1589
	Jiang Limin, Chen Shuxuan, Xiang Maosheng	
P3—47	Ground Slow Moving Target's Signal Analysis for Interferometric SAR-----	1594
	Chen Shuxuan, Jiang Limin, Xiang Maosheng, Wei Lideng, Zhao Pengbin	
P3—48	Fast Non-local Lee Filter for SAR Image Despeckling Using Directional Projection-----	1600
	Hua Zhong, Lu Lu, Lc Jiao	
P3—49	A Novel Method of ISAR Imaging for High Speed Targets using Stepped-Frequency Chirp Waveform-----	1604
	Lizhi Zhao, Jianchao Mu, Xiong jun Fu, Meiguo Gao	
P3—50	SAR Image Despeckling Method Based on Dual-tree Complex Wavelet-----	1608
	Shuang Wang, Jiao Zhou, Jun Li, Hongxiao Feng	
P3—51	Kullback Leibler Estimation of Distribution Parameters for SAR data-----	1612
	Cao Lanying, Xiong Wei, Hao Zhimei	
P3—52	Image Segmentation Using Directionlet-domain Hidden Markov Tree Models-----	1615
	Jing Bai, Jiaqi Zhao, LC Jiao	
P3—53	A novel range alignment method for ISAR imaging-----	1619
	Tao Zhang, Yicheng Jiang, Yong Wang	
P3—54	Detection Ground Slow Moving Target by Airborne Along- and Across-Track Interferometric SAR-----	1623
	Chen Shuxuan, Jiang Limin, Xiang Maosheng, Wei Lideng, Zhao Pengbin	
P3—55	Segmentation Process for SAR Imagery Based on Graph Cuts Algorithm-----	1627
	Wu Tao, Ding Jianlin, Liu Junwei, Chen Xi, Ruan Xiangwei, Niu Lei	
P3—56	(2D)2k-NNDA: Two-Directional Two-Dimensional k-Nearest Neighbour Discriminant Analysis for Target Recognition-----	1631
	L.P. Hu, C. Wang, H.C. Yin	
P3—57	Relationship between Radar Signatures and Target Motion Modes-----	1635
	Yilong Zhu, Hongqi Fan, Zaiqi Lu	
P3—58	Air Defense Antimissile Target Identification System Architecture Based on Operational View-----	1639
	Yuanquan Tan, Wei Wang, Xue Lv	
P3—59	Detection and Classification of Radar False Targets Based on Transmitted Signal with Random Linear Modulation Frequency Ratio-----	1643
	Xiao Tian, Gang Lu, Yongping Li, Haiyan Gu, Bin Tang	
P3—60	Targets Identification Method Based on Electromagnetic Scattering Analysis-----	1647
	Chen Jialin, Li Shangsheng, Wang min	
P3—61	Analysis and Extraction of Micro-Doppler Features in FMCW-ISAR Using a Modified Extended Hough Transform-----	1652
	Ying Liang, Peng Bai, Qun Zhang, Xiao-peng Zhu, Min Wang	
P3—62	Research on A Novel Method For Identification Friend or Foe Based on Fuzzy C-Means and Dynamic Bayesian Network-----	1656
	Lijia Chen, Jintao Xiong, Liangchao Li, Zongjie Cao, Jianyu Yang	
P3—63	Research on Fusion Identification of Aerial Target Based on Kinematic State and Foe-Friend Attribute-----	1660
	Yuanquan Tan, Lijia Chen, Jianyu Yang, Jintao Xiong	
P3—64	Statistical Feature Selection of Narrowband RCS Sequence Based on Greedy Algorithm-----	1664
	Xuehui Lei, Xiongjun Fu, Cai Wang, Meiguo Gao	

P3—65	Research on Air Target Classification Based on Extraction of Physical Features of High-resolution Radar Range Profiles-----	1668
	Xu Xiaotian, Wen Tieniu	
P3—66	Surface Targets Recognition by Using the Maximum Likelihood Estimator in Remote Sensing Radars-----	1672
	B. Zakeri, E. Kalantari	
P3—67	SAR Imaging of Dominant Scatterers Using Cascading StOMP-----	1676
	Zhixue Liu, Gang Li, Hao Zhang, Xiqin Wang	

Session P4----- RSP 2

Co-Chairs: Wu Shunjun, Qiang Yong

Oct. 27th (10:00—12:00),

Exhibition/Poster Room

P4—01	Application of Neural Network Data Associating Method in the Radar Network System-----	1680
	Wang Lei, Lu Yao-bin, Wu Jian-feng	
P4—02	Bistatic SAR Data Focusing using an Analytical Spectrum Based Frequency Scaling Algorithm in Tandem Configuration-----	1684
	Chen Shichao1, Liu Ming, Yang Lei, Xing Mengdao, Bao Zheng	
P4—03	Detection Technique of the Targets Buried in Blind Doppler Zone Based on Multi -AEW Radar Data Fusion--	1688
	Ying Fu, Ziyue Tang, Yongjian Sun, Lixiao Zhan	
P4—04	Efficient Radar Data Processing Algorithm for Dense Cluttered Environment-----	1692
	Jianhui Guo, Rongtao Zhang	
P4—05	Range-spread Target Detector Based on AD Test for Non-Gaussian Clutter-----	1696
	X. F. Gu, Y. He, T. Jian, C. A. Xu, X. L. Hao	
P4—06	Integration Detection Research for High-Speed and Small Target-----	1700
	Li Zhi-huai, Tan Xian-si, Wang Hong, Yao Yan-jun	
P4—07	An Improved Unsupervised Threshold Determination Method for SAR Image Change Detection-----	1704
	Shiqi Huang, Qingmin Zhang, Zhigang Liu	
P4—08	Knowledge-Aided Adaptive Subspace Detection In Partially Homogeneous Environments-----	1708
	Kun Zou, Xiubin Zhao, Wei Li	
P4—09	A Novel CFAR Threshold Estimated Method for Coherent Integration Detector of PD Radar Seeker-----	1712
	Chen Jian-jun, Zhao Hong-zhong, Qiu Wei, Fu Qiang	
P4—10	An Improved Track-Before-Detection Algorithm Based on Coherent Integration-----	1716
	Yanqun Wang , Jianshu Cao	
P4—11	A CFAR Algorithm for the Non-homogeneous Clutter Background-----	1721
	Shujun Peng, Lingjiang Kong, Xiaobo Yang	
P4—12	Subspace Projection for Adaptive Generalized Likelihood Ratio Detection in Compound-Gaussian Clutter---	1725
	Tianxian Zhang, Lingjiang Kong, Xiaobo Yang, Xiaofei Shuai	
P4—13	Multi-Targets Detection in DBS via Keystone Transform-----	1729
	Jing Tian, Lin Ma, Kun Wang, Siliang Wu	
P4—14	Detection Probability of Early Warning Radar Against Hypersonic Cruise Missile-----	1733
	Qiao Yongjie, Liu Jinrong, Bai Liping, Ding Hong, Li Xiangru	
P4—15	AModified DPA for Weak Target Detection via HPRF Radar-----	1737
	Chunyin Yang, Lingjiang Kong, Xiaobo Yang	
P4—16	Research on Moving Target Detection Algorithm Based on Maximum Mutual Information-----	1741
	Linjun Mao, Jintao Xiong, Liangchao Li, Jianyu Yang	
P4—17	Low Complexity Keystone Transform without Interpolation for Dim Moving Target Detection-----	1745
	Yongbo Zhao, Juan Wang , Lei Huang, Rui Yang	
P4—18	Algorithm Design of Mode S Downlink Signal Processing Based on 20MHZ Sampling Rate-----	1749
	Mingcheng Wen, Chao Zhang	
P4—19	New Nonparametric Detectors under K-Distributed Sea Clutter in Radar Applications-----	1752
	Zhao Zhijian, Xu Ruilai, Huang Yong, Guan Jian	
P4—20	Moving Target Detection for FMCW Radar-----	1756
	Yu QU, Zuxun Song, Lin Shi, Hui Cao	

P4—21	Ubiquitous MIMO Radar Energy Integration Detection Based On Range Synthesis-----	1760
	Wu-Xing Mao, Zhao Zhang , Xiang-Ru Li	
P4—22	Performance Analysis of Noncoherent Processing Radar in Compound-Gaussian Sea Clutter-----	1764
	Guo Wenzhuo	
P4—23	Improved Wiener Filter Super-Resolution Algorithm for Passive Millimeter Wave Imaging-----	1768
	Kang Zhao , Jianguo Wang	
P4—24	A Mixed Target Data Association Algorithm for Wideband Radar-----	1772
	Xin GUO, Gang ZHANG, Qiang ZHANG	
P4—25	A Super-Resolution Algorithm Based on Passive Millimeter Wave Imaging-----	1776
	Yifan Chen, Liangchao Li, Jintao Xiong, Jianyu Yang	
P4—26	Adaptive Pulse Compression for Stepped Frequency Continuous-Wave Radar-----	1780
	Bin Zhao, Lingjiang Kong, Mei Yang and Guolong Cui	
P4—27	Mobile Sensor Registration in ECEF Coordinates Using the MLR Algorithm-----	1784
	Cui yaqi, Xiong wei, He you, Li runze	
P4—28	Spatial Localization of Quasi-Stationary Targets Using Bistatic MIMO Radar-----	1788
	Yi-duo Guo, Yong-shun Zhang, Ning-ning Tong, Di Shen	
P4—29	Range Profile of Extended Target Using Frequency Modulated Stepped Signal-----	1792
	Jing Wei, Huang Jin-jie	
P4—30	An Analysis on Error Sources of Guidance Radar Detection Performance-----	1796
	Liu Zheng, Tang Xing, Fu Qiang	
P4—31	Research on Random PRI PD Radar Target Velocity Estimate Based on NUFFT-----	1801
	Juan Li, Zhuming Chen	
P4—32	A New Method of Regularization Parameter Estimation for Source Localization-----	1804
	Juanru Huang, Mei Dong, Shili Li	
P4—33	Range-Doppler Sidelobe and Clutter Suppression via Time-Range Adaptive Processing-----	1809
	Bin Zhao, Lingjiang Kong, Mei Yang, Guolong Cui	
P4—34	Feature Parameter Extraction Approach with the Stealth S-Cubed Radar Signal-----	1813
	Zeng Xiao-dong , Xiong Ying, Zhang Wei, Zeng De-guo, Li Yong-ping , Luo Shuang-cai , Tang Bin	
P4—35	A Iterative Carrier Frequency Estimate Algorithm Based on High-Order Cyclic Cumulants-----	1817
	LIU Liang Kai, LIU Hong, ZHANG Jian	
P4—36	Knowledge-Aided Small Target Tracking-----	1821
	Minghui Xu, Lingjiang Kong	
P4—37	Design of Digital 2DOF Servo System of Shipboard Tracking Radar-----	1825
	Jigang Duan	
P4—38	Centralized Multisensor General Association Algorithm Based on Data Compress Technique-----	1830
	Wang Hai-peng, Xiong Wei, He You	
P4—39	An Improved Combined Interacting Multiple Models Probabilistic Data Association Algorithm-----	1834
	Yang Xiong, Zhang Shun-sheng, Zhang Wei, Chen Ming-yan	
P4—40	Range-velocity Synchronous Gate-Pull Radar Jamming Suppression with Instantaneous Cross-correlation----	1839
	Gu Haiyan, Xiong Ying, Wang Pei, Luo Shuangcai, Li Yongping, Lu Gang, Tang Bin	
P4—41	Research of Time Delay Estimation Methods in Non-cooperative Bistatic Radar-----	1843
	Song Jie, Ding Hao, Guan Jian, Wang Guoqing	
P4—42	Automatic Bridge Detection in SAR Images Based on Fuzzy Support Vector Machine and Distance Space---	1847
	Wentao Lv, Wenxian Yu, Junfeng Wang, Kaizhi Wang	
P4—43	Compressed Sensing based Ultra-Wideband Radar System-----	1850
	Fangfang Shen, Guanghui Zhao, Guangming Shi, Dongyang Jin	
P4—44	A Quantitive Method to Assess Monopulse Radar Seeker Angle Measurement Performance in The Presence of Noise Jamming-----	1854
	Cao Yuan, Fang Weihua, Li Lin, Tian Keyu, Yang jin	
P4—45	Wideband Scaled Radon-Fourier Transform-----	1859
	Lichang Qian, Jia Xu, Wenfeng Sun, Yingning Peng	
P4—46	Variational Bayesian PARAFAC Decomposition for Multidimensional Harmonic Retrieval-----	1864
	Weiwei Guo, Wenxian Yu	
P4—47	High Angular Resolution Estimation methods For Vehicle FMCW Radar-----	1868
	JunHyeok. Choi, JeongHo. Park, DongJin. Yeom	

P4—48	Research on low-angle altitude measurement of slow target-----	1872
	ShaoFeng Zhang	
P4—49	Evaluations of Keystone Transforms Using Several Interpolation Methods-----	1876
	DENG Tian-di, JIANG Chao-shu	
P4—50	Ground Clutter Censoring for Airborne Weather Radar Employing DEM-----	1879
	Juan Qin, Renbiao Wu , Zhigang Su, Xiaoguang Lu	
P4—51	A Noise Resistant Synchronization method and its application in chaotic radar-----	1883
	Lidong Liu, Jinfeng Hu, Huiyong Li, Jun Li, Zishu He, Chunlin Han	
P4—52	An Analysis and Research on Composite Modulation Algorithm-----	1887
	HUANG Peng-Gang, XU Ying-He	
P4—53	A Novel Alternate Polarization Array and Its Filtering Performance-----	1890
	Xu Zhenhai, Xiong Ziyuan, Xiao Shunping	
P4—55	Clutter Suppression for Bistatic Airborne Radar with Range Ambiguity-----	1893
	Wenchong Xie, Yongliang Wang, Baihua Zhang, Zenghui Zhang	
P4—56	Compressive Sensing for Ground Penetrating Radar Imaging Based on Random Filtering-----	1898
	YunQian Cao, RenBiao Wu, JiaXue Liu, XiaoGuang Lu	
P4—57	Comparison of Two Detection-Based Adaptive Variable Update Rate Algorithms for Tracking Targets with Phased Array Radars-----	1902
	Huan-xin Liu, Bo-yan Zhang	
P4—58	Interacting Multiple Model Target Tracking Algorithm Based on Particle Filtering-----	1907
	De-Ping Yuan, Juan-Yi Zheng	
P4—59	Noise Radar Interception Using the Principle of Signal Matched-Phase-----	1911
	Long Keyu, Cheng Hao, Zeng Deguo, Li Yunhao, He Xiaodong, Tang Bing	
P4—60	Covariance Matrix Estimation Method in Compound Gaussian Sea Clutter-----	1915
	ZHANG Bo, LUO Feng, ZHANG Lin-rang , LIU Gao-gao	
P4—61	Exploiting COSMO-SkyMed spotlight SAR images for GMTI applications-----	1918
	Debora Pastina, Lorenzo Buratta, Fabrizio Turin, Diego Cristallini	
P4—62	SAR Image Despeckling via Spatially Constrained Multiscale Products-----	1922
	X. L. Tian, L. C. Jiao, X. H. Zhang	
P4—63	Speckle Reduction of SAR Image through Dictionary Learning and Point Target Enhancing Approaches-----	1926
	Shuyuan Yang, Yueyuan Zhang, Yue Han	
P4—64	Feature Extraction and Frequency Response Recovery Based on Rational Approximation-----	1930
	YANG Songyan, DENG Weibo, WU Guangxin, WU Xiaochuan, David Ebregbe	
P4—65	Velocity Compensation Method Based on Extended Keystone Transform for Modulated Stepped-frequency Radar-----	1934
	J. Mu, L. Zhao, M. Gao, D. Su	
P4—66	Airborne GMTI Radar Target Tracking by an Effect UKF Filter-----	1939
	Junwei Liu, Qingan Ren, Junqing Niu, Zhihong Wang	
P4—67	Identifying the Fractional-Order Systems with Frequency Responses: A Maximum Likelihood Algorithm-----	1943
	Wang LI, Cheng PENG, Yong WANG	
P4—68	Phase Noise Reduction of Charge Pump PLLs by Using a New Approach-----	1949
	S. Samadi, B. Zakeri, M. Zahabi	