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Adaptive Dense main lobe Jamming Suppression Method Based on Multiple Measurement Sparse Recovery for Frequency Agile Radar.	1936
<i>Yuze Sun, Huijun Xia and Yao Wei</i>	
RFI Extraction for Synthetic Aperture Radar in 2D Domain Based on Low Rank and Sparsity Property.	1940
<i>Yi Ding, Jinbiao Du, Weiwei Fan, Feng Zhou and Bingbing Lu</i>	
A Novel Image Domain Method of Suppressing Moving Target Interference for the Azimuth Multi-Channel SAR.	1945
<i>Jixiang Xiang, Guangcai Sun, Xiaojie Ding, Mengdao Xing, Zijing Zhang and Yuqi Wang</i>	
Mainlobe Coherent Interference Suppression Method Based on Weighted Spatial Smoothing and Eigen-Projection Matrix Preprocessing.	1949
<i>Haoyu Meng, Xiaodong Qu, Wolin Li and Xiaopeng Yang</i>	
Mainlobe Jamming Suppression Method Based on Combination of Spatial and Polarization Domain for Distributed Array Radar.	1954
<i>Bowen Han, Xiaodong Qu, Xiaopeng Yang and Haoyu Meng</i>	
Simulation Analysis of the influence of electromagnetic Pulse Power on the performance degradation of CMOS Inverter.	1959
<i>Jinfu Lin, Yanning Chen, Dongyan Zhao, Baowei Nie, Hongxia Liu and Shulong Wang</i>	

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FDA-3D-SAR imaging based on Bayesian compressed sensing.	1968
<i>Jing Zhang, KeFeiLiao, WenXinRen and XingXiangShi</i>	
Design of Ridge Gap Waveguide Slot Antenna Array for Millimeter Wave Radar.	1972
<i>Shuai Ma, Hanyu Xie, Haoran Zu and Bian Wu</i>	
Study on Horn Antenna with a High Gaussian Coupling Efficiency.	1976
<i>Li Cheng, Fuwei Wu, Yang Zhou, Dasheng Li, Yuhao Yang and Lin Jin</i>	

Optimization of a Sparse Uniform Linear Array for Cylindrical Wave Synthesis.	1980
<i>Cong Hao and Xiaojian Xu</i>	
A Broadband Reflectarray for Millimeter Wave Applications.	1985
<i>Quan Wang, Bang Jun Che, Li Wei Zhang, Yi Jie Wang and Mou Ping Jin</i>	
Sidelobe Suppression by Phase-only Tapering with Integer Linear Programming.	1989
<i>Ke Miao, Yi Zhang, Chen Yao and Houjun Sun</i>	
Design of A Wideband Low Sidelobe Waveguide Monopulse Antenna in Ka-Band.	1993
<i>Hong-Tao Zhang, Gui-Lin Sun, Yu-Ru Rao, Guang-lin Zhang and Wei Wang</i>	
Design of an Ultra-Wide-Band Polarization Selective Reflectarray.	1997
<i>Jiawei Ren and Hongjian Wang</i>	
A Method to Improve OAM Mode Purity Based on Antenna Array.	2001
<i>Dandan Liu, Wei Wu, Yufang Li, Liangqi Gui and Tao Jiang</i>	
Fast human body scan for security inspection based on multi-mode vortex electromagnetic wave.	2006
<i>Xiankang Zhang, Kun Lv, Hui Ma, Shuai Shao, Jiaqi Wei and HongWei Liu</i>	

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<i>Fuwang Dong, Wei Wang and Bin Xue</i>	
Two-Dimensional DOA Estimation by Using Two Parallel Coprime-Nested Arrays*.	2016
<i>Fenggang Sun and Peng Lan</i>	
Improved DOA Estimation with Extended Coprime MIMO Radar.	2020
<i>Jianfeng Li, Xin Lai, Xiaofei Zhang and Mengxing Huang</i>	
A Robust Coprime Array Interpolation Method for DOA Estimation in Unknown Nonuniform Noise.	2024
<i>Jiawen Yuan, Gong Zhang, Xinhai Wang, Fangqing Wen, Yu Zhang and Changyun Qi</i>	
Robust Beamforming Based on Covariance Matrix Reconstruction and ADMM.	2029
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