# 2017 7th IEEE International Symposium on Microwave, Antenna, Propagation, and EMC Technologies (MAPE 2017)

**Xi'an, China**
**24-27 October 2017**

**IEEE Catalog Number:** CFP17611-POD
**ISBN:** 978-1-5090-5930-0

**Copyright © 2017 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: CFP17611-POD
ISBN (Print-On-Demand): 978-1-5090-5930-0
ISBN (Online): 978-1-5090-5929-4

**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

# Table of Contents


*AP0460* **Massive MIMO Channel Modeling Using Map-based Ray Tracing Method** ***1***
*Junliang Yao, Haipeng Ren, Qing Liu*

*AP0464* **A LTE/WWAN Folded Antenna for Tablet Computer Application** ***6***
*Yan Lv, Shuang Wu, Jiu-sheng Li*

*AP0468* **Three-Beam Microstrip Antenna Arrays Fed by 3 x 3 Butler Matrix** ***9***
*Slomian Izabela, Rydosz Artur, Gruszczynski Slawomir, Wincza Krzysztof*

*AP0473* **Small Size Antenna with A Matching Network for Tablet Computer Application** ***13***
*Ze-jiang Zhao, Jiu-sheng Li*

*AP0475* **A Compact Monopole Antenna for UWB Application** ***17***
*Yan Lv, Shuang Wu, Jiu-sheng Li*

*AP0484* **Design and Simulation of a P-band Substrate Integrated Waveguide Horn Antenna** ***21***
*Lizhong Song, Sai Li, Bo Sun, Wei Lin*

*AP0491* **Measurement Analysis of Polarization Distribution of Static On-Body Propagation Channels** ***25***
*Lingfeng Liu, Peng Zhang, Xiaonan Wang, Chaoqun Zhang*

*AP0498* **A Novel Dual-band Reflectarray Antenna for X and K Bands** ***30***
*Bing Ma, Yunzhong Han, Wenjun Gao*

*AP0504* **Bandwidth Enhancement Element for Linearly Polarizated Reflectarray Design in Ku-band** ***34***
*Qiang Gao, Junhong Wang*

*AP0505* **Composite Right/Left-Handed Substrate Integrated Waveguide Leaky-Wave Antenna Array with Low Sidelobe Level and High Gain** ***37***
*Qingying Bai, Junhong Wang*

*AP0506* **Leaky Rectangular Waveguide With Deflected Radiation Field** ***41***
*Yazheng Wang, Junhong Wang*

*AP0512* **Broadband low scattering metasurface with randomized phase distribution** ***44***
*Yan Ma, Meie Chen*

*AP0519* **A Well-Designed Sensor Based On Split-Ring Resonators At Microwave Frequencies** ***47***
*Jing Dong, Mingliang Huang, Wei Zhang*

*AP0531* **E-Band Wideband ME-Dipole Antenna Array with Hollow-Waveguide Feed Network** ***49***
*Shan Da,Yujian Li, Junhong Wang*

*AP0532* **Offset-Feeding Cassegrain H-Plane Horn Antenna Based on Substrate Integrated Waveguide** *52*
*Song He, Zheng Li, Junhong Wang*

*AP0534* **The Troposcatter Loss Estimation by the Uniform Path-Loss Model and Power Balance Theory** *56*
*Nan Wang*

*AP0535* **A Co-designed Quasi Yagi Antenna with Coupled Line Filter** *61*
*Chao Ni, Weijun Wu, Qifeng Liu, Hao Li*

*AP0541* **Energy Efficienct Transmission Optimization for Distributed-Antenna Smart Grid Networks** *63*
*Haiyong Wang, Tian Zhou, Mingxia Liu, Wei Xu*

*AP0561* **A Compact Microstrip Patch Antenna with Bandwidth Enhancement** *68*
*Min Feng, Jin-Dong Zhang, Wen Wu*

*AP0564* **A Compact Γ-shaped Antenna with Filtering Characteristics** *71*
*Wei-Jun Wu, Ben Ma, Jun Wang, Qi-Feng Liu*

*AP0566* **Joint Frequency and Time Coded Chipless UWB-RFID Tag for Bit Data Enhancement** *74*
*Jian Liu*

*AP0568* **Optimization Design of Skin Antenna Based on Bayesian Optimization** *78*
*Haitao Li, Jinzhu Zhou, Le Kang, Zhanbiao Yang, Mei Wang*

*AP0570* **A Novel Lotus-Leaf-Shaped Wide-Band Wide-Beam Antenna Design** *84*
*Yan Zhang, Shi-tong Jia, Honglei Qin, Shanwei Lü,Tao Dong, Jie Yin*

*AP0577* **A Dual Broad Band Antenna with Different Circular Polarization** *87*
*Hong-Lin Zhang, Lizhao Lin, BinJie Hu*

*AP0590* **Designing Band Notch Features in Ultra-Wideband Antenna** *92*
*Mian Muhammad Kamal,Inam Ullah,Adnan Ashraf,Naveed Ullah*

*AP0593* **Reduced Side Lobe Level of Sparse Linear Antenna Array by Optimized Spacing And Excitation Amplitude Using Particle Swarm Optimization** *96*
*Naveed Ullah, Zhao Huiling, Tariq Rahim, Saeed ur Rehman, Mian MuhammadKama*

*AP0594* **A High Efficiency Wireless Charging Antenna with Embedded Magnetic Core of Segmented Two-turns Loop** *100*
*Yong Song, Kaihong Song, Xianliang Wu, Zhixiang Huang, Xiaojing Kuang, Yanyan Zhu*

*AP0607* **Wide-band EM Scattering from Multiple Dielectric Targets above a Dielectric Rough Sea Surface Based on Maehly Approximation** *103*
*Ran Bao, Anqi Wang, Zhixiang Huang*

*AP0625* **PRF Selection for Tracking of MPRF Mode** *106*
*Jeong-Min Seo, Xueyang Zhang, Joon-Ho Lee*

*AP0654* **The Realizing of Radiation Null for a SSPPs Leaky-Wave Antenna** ***110***
*Xuyang Chen, Zheng Li, Junhong Wang*

*AP0665* **A CPW-Fed Implantable Antenna Operating at ISM Band** ***113***
*Ju-Qing Ran, Zu-Hang Li, Jun-Xi Wang, Yu Liu, Wei-Hua Zong, Shandong Li, Cheng-Zhu Du*

*AP0669* **Compact Leaf Shaped UWB Monopole antenna** ***115***
*Ludan Song, Hang Wu, Yuhuan Wang, Shuxian Dong, Xue Pan, Weihua Zong, Zhejun Jin*

*AP0687* **Substrate Integrated Waveguide Leaky-Wave Antenna for Fixed-Frequency Beam Steering** ***118***
*Yunjie Geng, Junhong Wang*

*CI0471* **Research on Novel Fountain Code for UAV Formation Flight Control in UV Communication** ***120***
*Taifei Zhao, Ying Xie, Xue Liu, Peng Song*

*CI0517* **Performance Analysis and Comparison of GPP-based SDR Systems** ***124***
*Zhiming Geng, Xingguang Wei, Haitao Liu, Rongtao Xu, Kan Zheng*

*CI0523* **Formal Verification of Active-standby Switchover on Safety Computer in Next Generation Train Control Syste** ***130***
*Shiyang Yu, Lianchuan Ma, Yuan Cao*

*CI0529* **Modeling and Verification of Train-ground Communication of the Next Generation of CBTC System** ***136***
*DongYing Yang, Lianchuan Ma, Yuan Cao*

*CI0537* **Real-time Optimization Analysis and Design of Communication on the Safety Computer of Train Control System** ***143***
*YiFan Du, Lianchuan Ma, Yuan Cao*

*CI0589* **Data-Driven Approach for the Prediction of Remaining Useful Life** ***150***
*Guo Xie, Xin Li, Chunli Zhang, Xinhong Hei, Fucai Qian, Shaolin Hu, Yuan Cao, Baigen Cai*

*CI0644* **A Self-Organized Intelligent Tutoring Model for Cloud Based Education Services** ***156***
*Linlin Li, Xiangfu Meng*

*CI0645* **A Self-similar Traffic Generation Model Based on Time** ***160***
*Ye Tian, Dongqi Han, Lishi Liu, Yu Fu*

*CI0649* **Design of Big Data Processing System for Spacecraft Testing Experiment** ***164***
*Bo Sun, Lei Zhang, Yongheng Chen*

*CI0650* **Research on MAC Protocol of Pseudorandom Sequence Time Slice Based on Industrial Wireless Sensor Networks** ***168***
*Luping Geng, Ying Liang, Wei Zhao*

*CI0651* **A Simulation Method of 16QAM Modulation and Demodulation Based on Matlab Platform** ***172***
*Dayong Hu*

*CT0689* **Modeling and Optimization for Balise Coupling Process in High Speed Railway** ***176***
*Tong Wang, Lin-hai Zhao*

*EC0476* **Compact Dual-band Bandpass Filter Using a Stepped Impedance Resonator for WLAN/WiMAX Application** ***180***
*Shuang Wu, Yan Lv, Jiusheng Li*

*EC0486* **Summary of Electrostatic Sensitivity of EED and Anti-electrostatic Measures** ***184***
*Maosong Yang, Yongwei Sun, Zhicheng Meng, Lidong Zhou*

*EC0488* **A SPICE Model for Incident Field Coupling to Lossy Overhead Transmission Line** ***187***
*Ziweihua Du, Yanzhao Xie*

*EC0502* **The Research of Current Injection Probe Based on Electromagnetic Model** ***191***
*Wenjing Zhao, Zhaowen Yan, Wei Liu*

*EC0503* **A Study on Calibration Compensation and Perturbation of Electromagnetic Probes** ***195***
*Wei Liu, Zhaowen Yan, Wenjing Zhao*

*EC0509* **Comparative Experimental Research on the LEMP Protection Effects of RF Surge Arresters with Low-pass and Band-pass Frequency Characteristics** ***200***
*Dongdong Wang, Xi Chen, Lan Gao*

*EC0518* **Simulation and Optimization of Multi-Antenna Layout on the Electrically Large Carrier** ***203***
*Zheng Liang, Yubing Han*

*EC0520* **Simulation and Analysis of A Shielding Cavity in On-site Radiated Emission Measurement** ***206***
*Ceyi Ma, Hefei Cao*

*EC0536* **A Device for Radiation Emission Testing in the Outdoor Environment** ***209***
*Yuhan Liu, Jie Ren, Kesheng Zhou*

*EC0550* **Research on Filter for Dual-Channel Blind Signal Measurement Receiver** ***212***
*Chuangchuang Zhang,Yinghong Wen,Jianjun Xiao*

*EC0551* **Radiation Simulation on Antenna by Strong Electromagnetic Pulse** ***216***
*Rui Hu, Hefei Cao, Ziliang Wang*

*EC0558* **Research on the Influence of PIN Diode on Limiter Performance in Power Limite** ***220***
*Ziliang Wang, Hefei Cao, Chuangchuang Zhang*

*EC0565* **Wideband Pulse Response of Compact Filter-Antenna under Impact of an EMP** ***224***
*Qi-Feng Liu, Weijun Wu, Yu Zuo, Jingwei Liu*

*EC0573* **Electromagnetic Analysis of Pantograph Catenary Off-line in Train over Neutral-zone** ***228***
*Xiaokang Sun, Kesheng Zhou*

*EC0576* **Analysis of High-Speed Train Electromagnetic Measurement Data Based on SVM** ***232***
*Xiaoying Sun, Guodong Wang*

*EC0600* **High-order Method of Moments for Solving Bodies of Revolution Using Asymmetric Wavelet Transform** *236*
*Yanyan Zhu, Meng Kong, Ming sheng Chen*

*EC0616* **One of Ways to Choose UWB Pulse Repetition Rate for Assessment of the Electronic Devices Immunity** *240*
*Vladimir M. Chepelev, Yury V. Parfenov, Yanzhao Xie*

*EC0638* **Prediction and Test Research on Isolation between Transmitting and Receiving Station for Distributed Radar** *243*
*Wei Tan, Guangliang Dong, Nan Wang*

*EC0653* **Research on Electromagnetic Compatibility of Traction Converter of Speed 350KM** *247*
*Yuanzhi Tao*

*EC0658* **Research on Electromagnetic Disturbance and its Radiation Level of an EMUs' Traction Inverter** *252*
*Song Chen, Jiaxiang Rao*

*EC0659* **4-Channel Baseband Real-time Spectrum Analyzer for Crosstalk Measurement** *256*
*Song Chen, Shimin Zhu*

*EC0674* **Interpolate the Magnetic Field Data During the Geomagnetic Storm** *260*
*Qing Liu, Kangkang Han, Ting Xu*

*EC0679* **Simulation of the High-Altitude Nuclear EMP by Using a Novel Initial Electron Distribution Method** *264*
*Jin Zang, Ye-Rong Zhang*

*EC0690* **Low Frequency Magnetic Protection Design of Railway Signal Lines on Rail-Road Bridge** *268*
*Lu Xing, Yinghong Wen, Jianjun Xiao, Song Chen, Dan Zhang, Ceyi Ma*

*EF0461* **Controlling Electromagnetic Waves in A Class of Invisible Materials** *273*
*Yangjie Liu, B. Vial, S. A. R. Horsley, T. G. Philbin, Yang Hao*

*EF0467* **A 1-4 GHz Low Noise Amplifier in 0.5-μm E-Mode InGaAs pHEMT Technology** *275*
*Hairui Song, Shu Yu, Yufeng Guo, Shanwen Hu*

*EF0474* **A Compact Dual-Band Bandpass Filter** *279*
*Zejiang Zhao, Jiusheng Li*

*EF0477* **Differentially-Fed Re-Entrant Coupled-Line Directional Couplers** *283*
*Konrad Janisz, S. Odrobina, A. Rydosz, K. Wincza, S. Gruszczynski*

*EF0479* **Compensated 3-dB Lange Directional Coupler in Suspended Microstrip Technique** *288*
*Konrad Janisz, R. Smolarz, A. Rydosz, K. Wincza, S. Gruszczynski*

*EF0493* **The Simulation of Electromagnetic Scattering from a Cluster of Needles Based on Discrete Dipole Approximation** *292*
*Yafang Ding, Dawei Liu, Xinya Qiao*

*EF0513* **High Gain Antenna Design and Doubler Rectifier for Microwave Power Transfer** ***296***
*S. Ahmed, Z. Zakaria, M. N. Husain, I. M. Ibrahim, N. A. Shairi, A. Alhegazi*

*EF0516* **Compact and High Performance UWB Band-Pass Filter Based on Parallel Coupled Line** ***300***
*Ruqi Xiao, Guo Yang, Yi Wang, Wen Wu*

*EF0521* **Empirical Formulas for Propagation Constant Calculation of Leaky Circular Waveguide** ***303***
*Chong Zhang, Junhong Wang, Fan Li, Hua Zhang*

*EF0527* **Investigation of Wireless Power Transfer with 3D Metamaterial for efficiency enhancement** ***309***
*Junfeng Chen, Hui Tan*

*EF0528* **Metamaterial for Wireless Power Transfer System at 13.56MHz with Coil Misalignment** ***313***
*Junfeng Chen, Hui Tan*

*EF0540* **Multicarrier Transmission Design for Wireless Communication in Smart Grid** ***318***
*Wei Lei, Wei Li, Guzheng Qin, Wei Xu, Hua Zhang*

*EF0553* **A Chipless Rfid System Based on Polarization Characteristics** ***324***
*Chunhong Chen, Yunjiao Chen, Tao Li, Yunzhong Yu and Wen Wu*

*EF0560* **Microstrip Switchable Filtering Balun with Three Operating Modes** ***330***
*Shuge Wang, Wei Kang, Wen Wu*

*EF0562* **Two-dimensional curved-surface metamaterial structure in THz frequency band** ***333***
*Ding-e Wen, Mingliang Huang, Ming Zhang, Sheng Li, Chan Qiao*

*EF0567* **The Research on Shielding Effectiveness Measurement for Electromagnetic Shielding Garments** ***336***
*Chaochan Chen, Sang Yu, Yi Miao*

*EF0569* **The Development of Magnetic Shielding Effectiveness Measurement Tester in Near Field** ***341***
*Sang Yu, Chaochan Chen, Yi Miao*

*EF0574* **Study on Time Domain Electromagnetic Sputtering Effect from Low RCS Chessboard Surface with EBG Structure** ***347***
*Haijian Hou, Junhong Wang*

*EF0580* **The X-band Microstrip Filter Design** ***351***
*Huiwen Xu, Weixing Sheng*

*EF0584* **Development of Wide Bandwidth Tripler Based on Composite Right/left-handed transmission lines with embedded HBV for 0.3 THz** ***356***
*Jie Huang, Guoqing Xu*

*EF0585* **Design of Compact Dual-mode Bandpass Filter Based on a New Fractal Resonator** ***360***
*Hongshu Lu, Tao Xie, Jingjian Huang, Naichang Yuan, Qian Li*

*EF0595* **Electric Field Uniformity of Cabin Containing Apertures under Low Level Swept Fields** ***365***
*Zhao Pei, Donglin Su, Guochang Shi, Yi Liao*

*EF0596* **A Two Steps Fast Monostatic Radar Cross Section Simulation Scheme Based on Adaptive Cross Approximation and Singular Value Decomposition** ***369***
*Liangshuai Guo, Yun Lin, ZhengGuo Xue, HuiYuan Zhang*

*EF0597* **ADI-FDTD-Based Microwave Tomography for One-dimensional Breast Model** ***374***
*Biyun Chen, Yerong Zhang, Xin Pan*

*EF0604* **Generation of Multiple Modes Radio Vortex Beams Using Tunable Metamaterial Antenna Radome** ***379***
*Luyi Wang, Hongyu Shi, Jianxing Li, Anxue Zhang, Lumei Li*

*EF0605* **Fast Simulations of Electromagnetic Scattering from 1-D Rough Surface through Adaptively Modified Characteristic Basis Function Method** ***382***
*JingJing Wang, Anqi Wang, Zhixiang Huang*

*EF0609* **Measurement of Radiated Electric Field Caused by VFTO of UHV GIS Circuit Breaker** ***386***
*Songyuan Li, Cong Zhao, Suya Li, Xiao Yu, Junbo Deng, Qing Liu, Le Wang*

*EF0619* **High Frequency Performance and Compact LTCC Bandpass Filter (BPF) with Three Transmission Zeros** ***390***
*Wen Luo, Yalin Guan, Yanfei Li, Pei Wu, Kanghui Liu*

*EF0621* **Radiation Quality of the Multimodular EMP Source Depending on Non-synchronism of Individual Modules Triggering** ***394***
*Vladimir M. Chepelev, Yury V. Parfenov, Yanzhao Xie*

*EF0675* **A Study of Electromagnetic Scattering From Two-Dimensional Rough Sea Surfaces with a Ship-induced Wake** ***397***
*Rui Wu, Pengju Yang , Ye Zhao, Xincheng Ren, Yuqiang Zhang, and Wei Tian*

*EF0676* **A Study of Monomolecular Slicks' Damping Effect on Doppler Spectrum from One Dimensional Time-Varying Rough Sea surfaces** ***401***
*Pengju Yang, Rui Wu, Ye Zhao, Xincheng Ren, and Yuqiang Zhang*

*EF0677* **Influence Coefficient of Three-component Sensor on Underwater Electric Field and Numerical Simulation** ***405***
*Fang He, Xiang-jun Wang*

*EF0681* **The Polarization Characteristics of the Half Space Reflected Wave : Linear Polarized Incident Wave Case** ***411***
*Le Cao, Jingyi Du*

*EF0688* **Study on the Propagation Property of Microwave in Waveguide Filled with Plasma** ***420***
*Xiaoyu Han, Haijian Hou, Junhong Wang*

*GT0525* **Single Interference Direction Finding Algorithm Research Based on Beidou Four-element Rectangular Array and Linear Array** ***423***
*xuqiang Guo, wenfei Gong*

*ME0472* **A Novel Bandpass Filter with Dual-Mode Open-Loop Resonators** ***429***
*Shuang Wu, Yan Lv, Jiusheng Li*

*ME0489* **The Calculation Method of the Inductance for Three-Phase Air Reactors** ***432***
*Liping Zheng, Botao Yang*

*ME0507* **A 0.6-5.5GHz E-PHEMT Broadband High-Gain LNA Designed by ADS** ***437***
*Jun Tang, Zhaowen Yan, Na Wang*

*ME0538* **Hybrid Triplexer Design using Microstrip Coupled Line Resonators for Multiband WiMAX Front End** ***441***
*N. A. Shairi, M. A. Sazali, Z. Zakaria, I. M. Ibrahim, M. K. Zahari, B. H. Ahmad*

*ME0652* **The HIL Simulation Modeling for EMU Main and Auxiliary Integrated Converter System** ***447***
*Wei Jiang*

*RR0496* **The application of 3-D coherent scattering model on bistatic SAR imaging of virtual vegetation** ***454***
*Xinya Qiao, Dawei Liu, Yafang Ding*

*RR0530* **Accurate Parameter Estimation Using a Frequency Domain Maximum Likelihood Approach for SAR Processing** ***457***
*Tao Chen, Yongfei Ding, Ruifan Pang, Cheng Gong, Dinghai Xu, Hengyang Zhang*

*RR0588* **Multibaseline Phase Unwrapping Through Robust Chinese Remainder Theorem** ***462***
*Zhibiao Jiang, Jian Wang, Qian Song , Zhimin Zhou*

*RR0591* **Compensation of Magnetic Sensor with Electric Compass** ***467***
*Inam ullah, Mian Muhammad Kamal, Ijaz Khan, Syed Kamran Haider*

*RR0606* **Study on scanning Mie lidar profile data standardization method** ***471***
*Hao Chen, Yikun Zhang，Dengxin Hua, Qing Yan, Bo Li*

*RR0672* **Investigation of the Effects of Buried Object Orientation in Subsurface Target Detection by GPR** ***475***
*Mesut Dogan, Gonul Turhan-Sayan*

*RR0682* **FDTD-Based Multipath Exploitation for Through-Wall Radar Imaging in the Framework of CS** ***480***
*Fangfang Wang, Huiying Wu*

*RR0684* **Clutter Suppression for Rough Surface Wall Based on Blind Signal Processing** ***484***
*Tingting Qin, Fangfang Wang*

*RS0608* **Weight-polling Based Task Classification towards Flexible Computing** ***489***
*Yue Kong, Yikun Zhang, Yichuan Wang, Hao Chen, Xinhong Hei*

*RS0611* **Optimized Task Scheduling for Multimedia Application in Cloud** ***495***
*Tong Zhang, Li Zhang, Yichuan Wang, Xinhong Hei*

*RS0646* **A Cost-Benefit Analyzation Framework for Distance Education Platform Planning** ***501***
*Linlin Li, Xiangfu Meng*

*RS0664* **Research on Improved Algorithm for Traffic Information Prediction** ***505***
*Dakai Yang, Li Wang, Jian Wang, Baigen Cai*

*RS0670* **Study on Identification of Welding Robot Based on POE** ***512***
*Yun Shi, Xiaodong Zhang, Yanyan Zhu, Long Li*

*RS0683* **ES-based Full Text Retrieval and Analysis of Railway Accident Fault Tracking Report** ***516***
*Lian-bao Yang, Ping Li, Xiao-ning Ma，Xin-qin Li，Rui Xue，Zhe Wang*

*SP0501* **Pulmonary CT Image Denoising Algorithm Based on Curvelet Transform Criterion** ***520***
*Zhengang Shi, Qinzi Li*

*SP0524* **Balise Uplink-Signal Demodulation Method Based on Adaptive Optimal Kernel Time - Frequency Analysis** ***525***
*Guangxin Liu, Linhai Zhao, Tong Wang*

*SP0545* **The DOA Estimation of Moving Targets Mixed with Stationary Targets** ***530***
*Chuan Wan, Yubing Han, Weixing Sheng, Xiaofeng Ma, Renli Zhang*

*SP0554* **Bayesian Subspace Estimation for Beamforming and RFI Cancellation Using Deflation Technique** ***535***
*Wanfeng Xu, Yubing Han, Weixing Sheng, Xiaofeng Ma, Renli Zhang, Jie Cui*

*SP0613* **A study on the effect of building on the HF direction finding** ***540***
*Chang-Man Moon, Do-Jin An, Joon-Ho Lee*

*SP0614* **Performance Analysis of ML-based DOA Estimation Algorithm in Bistatic MIMO Radar System** ***543***
*Ji Woong Paik, Joon-Ho Lee*

*SP0617* **The Performance of the Algorithm for Estimating the Azimuth Angle Using Data Maxtix Fitting in the Frequency Domain** ***549***
*Xueyang Zhang, Jeong-Min Seo, Joon-Ho Lee*

*SP0618* **Derivation of an Explicit Expression of an Approximate Location Estimate in AOA-based Localization** ***552***
*Do-Jin An, Chang-Man Moon, Joon-Ho Lee*

*SP0680* **Nonlinear Model of Amplifier Based on Frequency Transfer Function** ***556***
*Nankai Wu, Wenbin Zhang, Lifei Meng, Qiongyu Zhang, Jiaxin Deng*

**Author Index** ***561***