

## CONTENTS

### ELECTRONICS TECHNOLOGY

- 1 Throughput-based mode switching for MIMO ARQ systems in presence of transmit correlation**  
Zhengyu Zhang and Ling Qiu
- 11 Adaptive median threshold algorithm used in FDIS of DSSS receivers**  
Weijun Yang, Chaojie Zhang, Xiaojun Jin, Zhonghe Jin, and Tieshan Yuan
- 19 Adaptive IIR filtering based on balanced-realization**  
Yongfeng Zhi, Panguo Fan, and Jun Zhang
- 26 Selection of optimal window length using STFT for quantitative SNR analysis of LFM signal**  
Qingbo Yin, Liran Shen, Mingyu Lu, Xiangyang Wang, and Zhi Liu
- 36 Design and simulation of digital channelized receivers in fractional Fourier domain**  
Pengfei Tang, Bin Yuan, Qinglong Bao, and Zengping Chen
- 44 Robust digital receiver for EPC sensor network**  
Cheng Jin and Sung Ho Cho
- 52 Improved MIMO-OFDM scheme for the next generation WLAN**  
Zhanji Wu and Xiang Gao

### DEFENCE ELECTRONICS TECHNOLOGY

- 60 Polyphase orthogonal sequences design for opportunistic array radar via HGA**  
Shufeng Gong, Weijun Long, Hao Huang, De Ben, and Minghai Pan
- 68 Range anomaly suppression based on neighborhood pixels detection in ladar range images**  
Mingbo Zhao, Jun He, Zaiqi Lu, and Qiang Fu
- 76 High sidelobe effects on interferometric coherence for circular SAR imaging geometry**  
Leilei Kou, Xiaoqing Wang, Maosheng Xiang, and Minhui Zhu

**84 Angle estimation in bistatic MIMO radar using improved reduced dimension**

**Capon algorithm**

Xiaofei Zhang and Dazhuan Xu

**90 Multi-target tracking algorithm of boost-phase ballistic missile defense**

Kangsheng Tian and Feng Zhang

**SYSTEMS ENGINEERING**

**101 Intermediate carriers for UAV swarms: problem of fleet composition**

Viacheslav Zotov and Xiaoguang Gao

**CONTROL THEORY AND APPLICATION**

**108 New celestial assisted INS initial alignment method for lunar explorer**

Weiren Wu, Xiaolin Ning, and Lingling Liu

**118 Polytopic LPV modeling and gain-scheduled switching control for a flexible air-breathing hypersonic vehicle**

Yiqing Huang, Changyin Sun, Chengshan Qian, Jingmei Zhang, and Li Wang

**128 Adaptive adjustment of iterative learning control gain matrix in harsh noise environment**

Bingqiang Li, Hui Lin, and Hualing Xing

**135 Modified state prediction algorithm based on UKF**

Zhen Luo and Huajing Fang

**SOFTWARE ALGORITHM AND SIMULATION**

**141 MLP training in a self-organizing state space model using unscented Kalman particle filter**

Yanhui Xi and Hui Peng

**147 Tunable-Q contourlet transform for image representation**

Haijiang Wang, Qinke Yang, Rui Li, and Zhihong Yao

**157 Efficient hybrid neural network for spike sorting**

Hongge Li, Pan Yu, and Tongsheng Xia

**165 Troubleshooting algorithm for solving assignment problem and its applications**

Li Zhou, Hailin Zou, Yancun Yang, and Qian Gao

**RELIABILITY**

**173 Degradation data-driven approach for remaining useful life estimation**

Zhiliang Fan, Guangbin Liu, Xiaosheng Si, Qi Zhang, and Qinghua Zhang