

# 火力与指挥控制

HUOLI YU ZHIHUI KONGZHI

第 35 卷 第 12 期 (总第 189 期) 卷终 月刊 1976 年创刊 国内外公开发行

## 目次

综 述	
C <sup>4</sup> ISR 系统互操作试验平台构建..... 王 伟 (1)	面向识别的雷达目标回波仿真技术校验分析..... 陈秋菊, 莫翠琼 (97)
通信对抗在要地防御中的应用..... 金 飙 (4)	干扰机掩护炮兵阵地的分析与计算..... 吴小坡, 刘湘伟 (101)
理论研究	机-机双基地雷达接收波束形成..... 王 喜, 王辰辰, 刘文辉 (104)
基于 SVR 弹药消耗数量的预测建模..... 张 彤, 刘 楠, 徐浩军, 等 (8)	一种 LPI 雷达宽带信号 DOA 估计算法..... 梁 森, 李 勇, 郝亮飞, 等 (107)
基于熵权 TOPSIS 的场站飞行后勤保障计划优选..... 田 丰, 邢清华, 廖玉忠 (11)	改进的变步长 LMS 自适应滤波算法分析..... 刘明国, 徐松涛, 刘 凯, 等 (110)
基于关联分析的频谱感知信息加权融合算法..... 申 涛, 胡中豫, 李高峰, 等 (14)	基于 SD 模型和信息化条件下部队战斗力量子化分析..... 闫家传, 张仁友, 全庭强, 等 (113)
对地观测卫星动态能力评估系统..... 姚 锋, 李菊芳, 李 文, 等 (18)	工程实践
基于混沌序列的动态双频跳频同步方案..... 刘爱惠, 盛利元, 李 娟 (22)	地面微型网域武器攻击方案..... 杨 卫, 闫俊杰, 林 都, 等 (116)
基于概率神经网络的空袭目标识别..... 蔡继亮, 叶 微 (25)	基于目标函数的综合航电系统性能评价..... 李晓光, 高晓光, 张建东, 等 (119)
引入平衡因子的模糊可靠性分配优化方法..... 翟定军, 刘玲艳, 吴晓平, 等 (28)	自行火炮随动系统模拟训练装置..... 李志宁, 何忠波, 石志勇 (123)
基于量子粒子群优化的无人飞行器路径规划..... 过金超, 崔光照, 王延峰 (31)	火控系统仿真软件设计与开发..... 刘 恒, 梅 卫 (126)
基于 SLAM 的地磁导航定位..... 王仕成, 孙大为, 张金生, 等 (34)	电子装备测试性验证的超几何分布法..... 李 刚, 马彦恒, 薛 嘉, 等 (129)
基于灰色关联决策的地面防空部署方案..... 刘 健, 郭蓬松 (38)	基于特殊矩阵的同时定位与地图构建..... 徐则中 (134)
基于网络中心制导的防空导弹武器系统可靠性建模..... 龙光正, 刘 铭, 张宏亮 (42)	改进的最速跟踪微分器滤波效果仿真..... 夏卫星, 雷明良, 杨晓东 (138)
基于复杂系统理论的指挥控制结构效能分析..... 冉 东, 柳少军 (45)	基于 Petri 网的维修资源运用策略..... 曲长征, 张 柳, 王永辉, 等 (141)
扁平式探测巡航导弹体系结构..... 开 强, 丁建江, 丰富宝 (50)	改进的 GRA 及其在地对空雷达对抗训练中的应用..... 郭金卫, 邢焕革 (145)
武器射程的一种新估算方法..... 赵定峰, 朱 江, 丁 劲 (53)	基于 DSP 的 CAN_ARINC429 接口转换设计..... 王兆伟, 王 锐 (149)
基于认知的武器系统能力描述模式..... 余 滨, 贺 鹰, 叶剑良, 等 (56)	复杂条件下舰载雷达有源压制干扰最小压制距离..... 景康渊, 韦 韬, 于 夫 (152)
基于本体的一体化辅助决策平台模型检索模式..... 施爱博, 周献中, 吴 奎, 等 (61)	基于虚拟阵列的信号源数估计算法..... 赵江强, 张玉萍, 赵 波, 等 (156)
战术数据链作战效能定量评估方法..... 黄金才, 张 勇, 杨 磊, 等 (66)	基于自适应无迹卡尔曼滤波的小波网络算法及其应用..... 薛博文, 张志峰, 何靖卿, 等 (159)
着靶速度对彻彻膨胀弹横向效应的影响..... 常变红, 王志军, 尹建平, 等 (69)	数据耕种技术在装备体系技术联合试验中的应用..... 刘亚杰, 刘新亮, 郭 波 (163)
蒸发波导伪折射率模型特性..... 田 斌, 蔡 豪, 李 杰, 等 (73)	基于 C <sup>4</sup> ISR 体系结构的防空导弹指挥系统设计..... 程 彬, 冀翔林 (167)
现代反坦克阵地多层防御服务概率模型及仿真..... 赵成旺, 王护利, 何 伟, 等 (76)	试验技术
战斗机近距离格斗时航炮命中评估..... 王 健, 吴军基, 陶 钢 (80)	基于特性指标故障森林模型的软件关键件识别..... 盛洁涛, 吴海昕, 黄志刚 (171)
编队护航 HVU 反潜威胁轴..... 吴金平, 杨必率, 刘国光 (83)	坦克炮控系统三维实体建模..... 杨宗民, 马晓军, 张双喜, 等 (174)
空空武器射后有效性分析..... 高晓光, 罗鹏升, 田省民, 等 (86)	虚拟战场环境特殊效果仿真..... 孙少斌, 李大鹏, 陈 璐 (177)
外测实时数据处理并行计算模式..... 徐 宁, 李志武, 项树林 (90)	研究简报
基于灰关联分析的目标分级排序模型..... 佟涛鹏, 刘晓静, 马廷明 (93)	MIMO 雷达的 MUSIC 算法应用..... 郑志东, 张剑云, 屈金佑 (181)
	基于 RTX 的空面导弹制导控制系统快速原型仿真..... 许 志, 林永生, 解永锋, 等 (184)
	下期要目 (75)
	投稿须知 (188)
	2010 年第 35 卷总目次 (I-IX)

本期责任编辑 姚庆辉

[期刊基本参数] CN14-1138/TJ \* 1976 \* m \* A4 \* 188 \* zh \* P \* ¥20.00 \* 2 000 \* 53 \* 2010-12

# Fire Control & Command Control

Vol. 35 No. 12 Dec. 2010

## Contents

### SURVEY

- Study on Establishment of C<sup>4</sup>ISR Interoperability Testbed ..... *WANG Wei*, et al. (1)  
Application of Communication Countermeasures to Point  
Place Defense ..... *JIN Biao*, et al. (4)

### THEORY RESEARCH

- Forecast Modeling of Ammo Wastage Based on SVR  
..... *ZHANG Tong*, et al. (8)  
Optimum Seeking for Flight Logistic Support Plan of  
Airfield Station Based on TOPSIS Method with Entropy  
Weight ..... *TIAN Feng*, et al. (11)  
An Algorithm of Weighted Spectrum Sensing Data Fusion  
Based on Grey Correlation Analysis  
..... *SHEN Tao*, et al. (14)  
Study on Dynamic Capability Assessment System of Earth  
Observation Satellites ..... *YAO Feng*, et al. (18)  
The Synchronous Method of Dynamic Double Frequency  
Hopping Communication System Based on Chaotic  
Sequence ..... *LIU Ai-hui*, et al. (22)  
Air-raid Target Identification Based on Probabilistic  
Neural Network ..... *CAI Ji-liang*, et al. (25)  
A Method for Optimizing the Fuzzy Reliability Allocation  
by Introducing Balance Factor  
..... *ZHAI Ding-jun*, et al. (28)  
Unpiloted Aircraft Path Planning Based on Quantum  
Particle Swarm Optimization  
..... *GUO Jin-chao*, et al. (31)  
Research on Geomagnetism Navigation and Localization  
Based on SLAM ..... *WANG Shi-cheng*, et al. (34)  
A Method of Ground Air-defense Operation Disposition  
Schemes Evaluation Based on Grey Incidence Decision-  
making ..... *LIU Jian*, et al. (38)  
Study on Reliability Modeling of Air-defense Missile  
Weapon Systems Based on Network-centric Guidance  
..... *LONG Guang-zheng*, et al. (42)  
A Method for Analysing the Effectiveness of Command  
and Control Structure Analyse Based on Complex  
System ..... *RAN Dong*, et al. (45)  
A Radar Early Warning System with Flat Architecture for  
Detecting the Cruise Missile  
..... *QI Qiang*, et al. (50)  
A New Estimation Method for Computing Effective Fire  
Range of Weapon ..... *ZHAO Ding-feng*, et al. (53)  
A Pattern for Describing the Capabilities of Weapon  
System Based on Cognition ..... *YU Bin*, et al. (56)  
Study on the Model Retrieval Modes of the Integrated  
Aided-decision Platform Based on Ontology  
..... *SHI Ai-bo*, et al. (61)  
A Quantitative Evaluation Method for Operation Efficiency  
of Tactical Data Link  
..... *HUANG Jin-cai*, et al. (66)  
The Influence of Impact Speed on the Penetrator with  
Enhanced Lateral Effect  
..... *CHANG Bian-hong*, et al. (69)  
Study on the Characteristic of Pseudo-Refraction  
Evaporation Duct Model ..... *TIAN Bin*, et al. (73)  
Research on Service Probability Model for Multiple  
Layered Defence of Modern Tank Defense Position  
..... *ZHAO Cheng-wang*, et al. (76)  
Hitting Evaluation of Aircraft Gun under Fighter Short  
Range Grapple ..... *WANG Jian*, et al. (80)  
Research on Anti-submarine Threat Axes of Formation  
Escorting HVU ..... *WU Jin-ping*, et al. (83)  
Study on Dynamic Evaluate Technology of Long or  
Middle-range Air-to-air Missile Launched  
..... *GAO Xiao-guang*, et al. (86)  
Study of Parallel Computing Mode for Real-time Data  
Processing of Trajectory Measurement  
..... *XU Ning*, et al. (90)

- Classified Sequencing Model of Target Based on Grey  
Relation Analysis ..... *TONG Hai-peng*, et al. (93)  
The Validation for Recognition-oriented Radar Target  
Echo Simulation ..... *CHEN Qiu-ju*, et al. (97)  
The Analysis and Calculation of Jammer Shielding the  
Artillery Position ..... *WU Xiao-po*, et al. (101)  
Research on Receiving Beam Direction of Bistatic Radar on  
Airborne Plat ..... *WANG Xi*, et al. (104)  
A DOA Estimation Algorithm for Design of Wide-band  
LPI Radar Signal ..... *LIANG Sen*, et al. (107)  
Performance Analysis of an Improved Variable Step Size  
LMS Algorithm ..... *LIU Ming-yuan*, et al. (110)  
Quantum Analysis of Combat Power of Troops under the  
Informatized Condition Based on System Dynamics  
Model ..... *YAN Jia-chuan*, et al. (113)  
**ENGINEERING PRACTICE**  
The Research of Attack Scheme about Grounding Micro-  
net Weapon ..... *YANG Wei*, et al. (116)  
Performance Evaluation of Integrated Avionics System  
Based on Target Function  
..... *Ji Xiao-guang*, et al. (119)  
Training Simulator of the Self-Propelled Gun Servo  
System ..... *LI Zhi-ning*, et al. (123)  
Design and Development of Simulation Software for  
Antiaircraft Gun Fire Control System  
..... *LIU Heng*, et al. (126)  
Study on Hypergeometric Distribution Method for  
Electronic Equipment Testability Demonstration  
..... *LI Gang*, et al. (129)  
A Solution to Simultaneous Localization and Map Building  
Based on Special Matrix ..... *XU Ze-zhong*. (134)  
Filtering Simulation of the Improved Steepest Tracking-  
differentiator ..... *XIA Wei-zing*, et al. (138)  
Research on Maintenance Resource Scheduling Strategy  
Based on Petri Net  
..... *QU Chang-zheng*, et al. (141)  
Improved Grey Relation Analysis and Its Application to  
Training Level of Ground-to-Air Radar EW  
..... *GUO Jin-wei*, et al. (145)  
Design of the CAN \_ ARINC429 Interface Transformation  
Based on DSP ..... *WANG Zhao-wei*, et al. (149)  
Research on Least Jamming Distance of Ship-borne Radar  
under the Complicated Environment  
..... *JING Kang-yuan*, et al. (152)  
Source Number Estimation Methods Based on the Virtual  
Array ..... *ZHAO Hui-qiang*, et al. (156)  
Wavelet Neural Network Algorithm Based on Adaptive  
Unscented Kalman Filter and Its Applications  
..... *XUE Bo-wen*, et al. (159)  
Research on Weapon System-of-Systems Technology Joint  
Test Based on Data Farming  
..... *LIU Ya-jie*, et al. (163)  
The design of Field Aerial Defence Missile Command and  
Control System Base on C<sup>4</sup>ISR  
..... *CHENG Bin*, et al. (167)  
**TEST TECHNIQUE**  
Recognition of the Software Key Component Based on the  
Characteristic Index Fault Forest Model  
..... *SHENG Jie-xu*, et al. (171)  
Research on Solid Modeling for the Tank Gun Control  
System ..... *YANG Zong-min*, et al. (174)  
Study on Special Effects Simulation in Virtual Battlefield  
Environment ..... *SUN Shao-bin*, et al. (177)  
**RESEARCH BULLEING**  
Research on MIMO Radar with Application of MUSIC  
Algorithm ..... *ZHENG Zhi-dong*, et al. (181)  
Guidance and Control Prototyping Simulation for Air-  
surface Missile Based on RTX  
..... *XU Zhi*, et al. (184)