

# 火力与指挥控制

## HUOLI YU ZHIHUI KONGZHI

第 36 卷 第 3 期 (总第 192 期) 月刊 1976 年创刊 国内外公开发行

### 目 次

综 述	
战争复杂系统面临的挑战	
..... 陈 超, 毛赤龙, 沙基昌 (1)	
地察空间武器装备体系集成新概念	
..... 胡占春, 胡春健, 郭迎红 (7)	
理论研究	
基于云重心评判的战场态势评估方法	
..... 冯增辉, 张金成, 张 凯, 等 (13)	
基于组合赋权 TOPSIS 法的空战多目标威胁评估	
..... 耿 涛, 张 安, 郝兴国 (16)	
基于模糊共识的武器装备体系能力生成研究	
..... 黄 魏, 梁晓庆, 谭跃进 (20)	
面向使命任务的武器装备体系能力关联分析	
..... 赵青松, 鲁延京, 李善飞 (24)	
一种基于扩展 Petri 网的过程集成方法	
..... 刘俊先, 舒 振, 罗雪山, 等 (28)	
未知环境下的多机器人协作围捕方法	
..... 郝 博, 秦丽娟, 赵慧静 (32)	
回转体表面不同尺寸脊状结构的减阻数值仿真	
..... 黄桥高, 潘 光, 胡海豹, 等 (35)	
多波段光电伪装武器系统射击指挥控制模型	
..... 朱安国, 王朝晖, 张继春, 等 (39)	
一种慢速运动目标 ISAR 子孔径拼接方法	
..... 黄 燕, 李安平, 朱 丰, 等 (42)	
管内高压气体冲击静态液柱的 CFD 模拟	
..... 汪 送, 战仁军, 张 威, 等 (45)	
一种色噪声下的自适应 Kalman 跟踪滤波器	
..... 孙 强, 扈晓滨, 黄 鹤 (49)	
高炮应急方式下三种诸元求解方法的命中概率	
..... 刘 锐, 张 蛟, 盛安冬 (52)	
基于 NSGA-II 的防空部署优化方法	
..... 吴家明, 乔士东, 黄金才 (57)	
双基地逆合成孔径雷达成像平面分析	
..... 董 健, 尚朝轩, 高梅国, 等 (62)	
基于 STK 的小卫星编队飞行仿真	
..... 冯永新, 武金花 (67)	
改进 ADC 法指控系统效能评估的 C 矩阵模型研究	
..... 闫永玲, 张庆波, 辛永平 (71)	
对机动目标的滤波和预测 (下) ... 王孟军, 朱庆和 (74)	
多传感器信息融合的水下航行器组合导航方法	
..... 范 欣, 张福斌, 张永清, 等 (78)	
基于独立分量分析的 ISAR 图像特征提取方法	
..... 苏国东, 黄小红, 陈曾平 (82)	
海上信息栅格信息分发技术	
..... 樊 兴, 张国平, 夏学知 (85)	
多普勒雷达测速信号滤波方法分析	
..... 白宏阳, 薛晓中, 陈 帅, 等 (89)	
压制干扰条件下雷达组网检测概率建模与仿真	
..... 向 龙, 丁建江, 杨大志, 等 (92)	
基于 UKF 的主动段弹道跟踪算法	
..... 张学润, 王中东, 何 珂, 等 (95)	
基于最小二乘支持向量机的测控数据融合	
..... 苏 恩, 姜礼平, 邹 明 (98)	
滑翔增程炮弹的气动布局与外形参数优化设计分析	
..... 肖 亮, 王中原, 史金光 (101)	
基于先验信息的海洋移动目标卫星成像侦察任务规划	
..... 王慧林, 邱泳珊, 马满好, 等 (105)	
舰艇编队 Ad Hoc 网络信任模型	
..... 陈 涛, 周学广 (111)	
炮火突击条件下目标战斗力的动态评估	
..... 汪文革, 王鹏华 (115)	
基于 GS 算法的圆柱共形微带阵列自适应零点形成	
..... 王俊鸣, 齐会来, 张子华, 等 (118)	
基于拓展灰色关联分析的舰炮制导炮弹方案评估	
..... 吴 杰, 曹廷杰, 吴福初 (121)	
JTIDS 传输性能的仿真与分析	
..... 王琛琨, 毛玉泉, 丁亮亮, 等 (124)	
装备战场抢修任务优先度排序决策研究	
..... 牛天林, 王 洁, 杜燕波, 等 (127)	
改进 TOPSIS 群决策方法及在舰船论证中的应用	
..... 方志刚, 许永平, 王 磊, 等 (131)	
基于 HLA 的空战仿真技术研究	
..... 吴礼广 (135)	
基于 SysML 的联合火力打击方案建模方法	
..... 朱延广, 胡良胜, 朱一凡 (139)	
工程实践	
基于 TMS320F2812 的数据采集监测系统设计	
..... 郭 涛, 张英祥, 陈 峰 (144)	
一种轨道实时修正的空间目标定位算法	
..... 李军辉, 程咏梅, 杨 峰, 等 (147)	
基于簇的 Ad Hoc 网络密钥管理机制研究	
..... 王新颖, 吴 钊, 王 毅 (150)	
武器装备建设方案的组合分析方法	
..... 卜广志 (154)	
基于 HLA/RUP 的舰潜对抗仿真系统框架开发方法	
..... 张生晓, 康凤举, 段世梅 (159)	
基于蚁群算法的径向基网络漏磁信号二维反演	
..... 雷良金, 王长龙, 孙世宇, 等 (163)	
无人机硬件回路仿真系统的设计	
..... 冯庆端, 裴海龙 (166)	
坦克交流全电式炮控系统低速性能研究	
..... 朱志昆, 李年裕, 王文军 (169)	
地理空间情报中遥感影像压缩处理系统的设计	
..... 王珂敏, 田春鸣 (173)	
基于模糊决策的预防性维修间隔期评判方法	
..... 滕红智, 殷军辉, 李 锋, 等 (177)	
一种基于动态矢量匹配的兵力部署估计方法	
..... 刘水泉, 陶化成, 张长东, 等 (180)	
海岸防御战斗海防师炮兵优化兵器区分的实现	
..... 单晓东, 栗 强, 肖业云 (184)	
SOA 在军事栅格中的应用	
..... 耿伟波, 张永红 (186)	
PSO 算法及在二自由度 PID 调节器优化设计中的应用	
..... 王海稳, 张井岗, 戴跃伟 (190)	
试验技术	
一种新窄相关技术在 GPS 接收机中的应用	
..... 吴兴存, 刘 巍, 王 勇, 等 (194)	
下期要目 (138)	
征文启示 (198)	

本期责任编辑 王丽华

[期刊基本参数] CN14-1138/TJ \* 1976 \* m \* A4 \* 200 \* zh \* P \* ￥20.00 \* 2 000 \* 52 \* 2011-03

# Fire Control & Command Control

Vol. 36 No. 3 Mar. 2011

## Contents

### SURVEY

- Challenges to War Complex System and its Solution Strategy ..... *CHEN Chao, et al.* (1)  
The New Concept Discussion of System Integration of Weapon in Geocyberspace ..... *HU Zhan-chun, et al.* (7)

### THEORY RESEARCH

- Techniques for Battlefield Situation Assessment Based on Cloud-gravity-center Assessing ..... *FENG Zeng-hui, et al.* (13)  
Multi-target Threat Assessment in Air Combat Based on Combination Determining Weights TOPSIS ..... *GENG Tao, et al.* (16)  
Research on the Capability Generation of Weapon System-of-Systems Based on Fuzzy Consensus ..... *HUANG Wei, et al.* (20)  
Capability Association Analysis of Weapon System of System for Mission and Task ..... *ZHAO Qing-song, et al.* (24)  
Process Integration Based on a kind of Extended Petri Nets ..... *LIU Jun-zian, et al.* (28)  
Research on Coordinative Hunting for Multi-robot under Unknown Environment ..... *HAO Bo, et al.* (32)  
Numerical Simulation Research on Drag Reduction over Riblet Structure with Different Size of Gyroidal Object ..... *HUANG Qiao-gao, et al.* (35)  
Fire Command Control Model for Multi-Waveband Photoelectrical Camouflage Weapon System ..... *ZHU An-guo, et al.* (39)  
Analysis of Phase Compensation Principle and Application of ISAR Sub-aperture Connection for Targets with Low-velocity ..... *HUANG Yan, et al.* (42)  
CFD Simulation of High-pressure Gas Impinging Onto Static Water-pole in Pipe ..... *WANG Song, et al.* (45)  
An Adaptive Kalman Tracking Filter with Colored Noises ..... *SUN Qiang, et al.* (49)  
Analysis on the Hit Probabilities of Antiaircraft Emergency Shooting for Three Methods of Firing Equation Solution ..... *LIU Rui, et al.* (52)  
Optimization of Air Defense Disposition Based on NSGA-II ..... *WU Jia-ming, et al.* (57)  
The Imaging Plane Analysis of Bistatic ISAR ..... *DONG Jian, et al.* (62)  
The Research of Small Satellite Formation Flying Simulation Based on STK ..... *FENG Yong-xin, et al.* (67)  
The Effectiveness Evaluation of the C<sup>1</sup>ISR System Based on the ADC Method ..... *YAN Yong-ling, et al.* (71)  
On the Filtering and Predicating Maneuvering Target ..... *WANG Meng-jun, et al.* (74)  
Information Fusion Technology and its Application in Multi-sensor Integrated Navigation System for Autonomous Underwater Vehicle ..... *FAN Xin, et al.* (78)  
Extracting Features from ISAR Images Based on ICA ..... *SU Guo-dong, et al.* (82)  
Information Dissemination Technology for Marine Information Grid ..... *FAN Xing, et al.* (85)  
The Analysis of Data Filter for Doppler Radar ..... *BAI Hong-yang, et al.* (89)  
Modeling and Simulation on Detection Probability of Netted Radar In Suppression Jamming Environment ..... *XIANG Long, et al.* (92)  
Trajectory Tracking in Boost Phase Based on Unscented Kalman Filter ..... *ZHANG Xue-ran, et al.* (95)  
Data Fusion Research on Fusion of Measurement and Control Data Based on Least Square-Support Vector

- Machine ..... *SU Si, et al.* (98)  
Optimizing Design of Aerodynamic Configuration and Parameters for Glide Extended-range Projectile ..... *XIAO Liang, et al.* (101)  
Research on Mission-planning of Satellite Imaging Reconnaissance for Ocean Moving Targets Based on the Prior Information ..... *WANG Hui-lin, et al.* (105)  
Research on Trustmodel in Ad Hoc Networks for Naval Ships Formation ..... *CHEN Tao, et al.* (111)  
Dynamic Evaluation on Combat Power of Target After Fire Sudden Attack ..... *WANG Wen-ge, et al.* (115)  
Adaptive Null Forming of Cylindrical Conformal Microstrip Antennas Array Based on GS Algorithm ..... *WANG Jun-ming, et al.* (118)  
Scheme Evaluation of Naval Gun Guided Projectile Based on Extend Gray Correlation Analysis ..... *WU Jie, et al.* (121)  
Simulation and Analysis of Transmission Performance of JTIDS ..... *WANG Yuan-kun, et al.* (124)  
Research on Sequencing Decision-making of Priority for Equipment Repair Tasks in Battlefield ..... *NIU Tian-lin, et al.* (127)  
Improved TOPSIS Group Decision-making Approach and its Application to Warship Demonstration ..... *FANG Zhi-gang, et al.* (131)  
Research on Simulation Technique of Air Combat Based on HLA ..... *WU Li-guang, et al.* (135)  
An Approach to SysML-based Joint Fire Strike Alternatives Modeling ..... *ZHU Yan-guang, et al.* (139)

### ENGINEERING PRACTICE

- The Design of Data Acquisition and Monitoring System Based on TMS320F2812 ..... *Guo Tao, et al.* (144)  
Space Target Positioning Method Based Angle and Orbit Information ..... *Li Jun-hui, et al.* (147)  
Research on Cluster-based Key Management Mechanism for Ad Hoc Networks ..... *WANG Xin-ying, et al.* (150)  
A Portfolio-Analysis Method for Selecting Armament Development Candidates ..... *BU Guang-zhi, et al.* (154)  
The Method for Constructing Framework of Warship-to-submarine Counterwork Simulation System Based on HLA/RUP ..... *ZHANG Sheng-xiao, et al.* (159)  
2-D Inversion of MFL Signals of RBF Network Based on Ant Colony Algorithm ..... *LEI Liang-jin, et al.* (163)  
The Design of Hardware-in-the-loop Simulation for UAV ..... *FENG Qing-duan, et al.* (166)  
The Study of the Low Speed Performance of All-electrical Gun Control System ..... *ZHU Zhi-kun, et al.* (169)  
Design of Remote Sensing Image Compression Processing System in GeoINT ..... *WANG Ke-min, et al.* (173)  
Research on Preventive Maintenance Interval Evaluation Method Based on Fuzzy Decision ..... *TENG Hong-zhi, et al.* (177)  
A Combat Disposition Assessment Method Based on Dynamic Vector Matching ..... *LIU Shui-quan, et al.* (180)  
Realization of Coastal Defense Division Artillery Weapon Distribution Optimization in Coastal Defense Operation ..... *SHAN Xiao-quan, et al.* (184)  
Application of SOA to Military Information Grid ..... *GENG Wei-bo, et al.* (186)  
Particle Swarm Optimization Algorithm and its Application to Optimal Designing of Two-degree-of-freedom PID Regulator ..... *WANG Hai-wen, et al.* (190)
- ### TEST TECHNIQUE
- A New Narrow Correlator for GPS Receiver ..... *WU-Xingcun, et al.* (194)