



中文核心期刊
中国计算机用户协会会刊

ISSN 1006-9348

计算机仿真

COMPUTER SIMULATION



ISSN 1006-9348



10 >

9 771006 934033

万方数据

10
2013

目 次

第八届中国系统建模与仿真技术高层论坛开幕词	李国雄(I)
第八届中国系统建模与仿真技术高层论坛闭幕词	蒋鄭平(II)
综述	
生物质有机废弃物水热解技术现状与前景	李大中, 黄佳佳 (1)
军事领域仿真	
弹体侵彻 UHMWPE 软质纤维层的数值仿真研究	黄拱武, 陈爱军, 罗少敏, 刘艳 (6)
聚束式 FMCW-SAR 的波数域成像算法研究	王霖郁, 杜传红 (10)
催泪弹发射器增程设计研究	丁成, 吴占文 (14)
基于主成分分析的装备保障演练综合评价	赵武奎, 张成, 王一波 (18)
无人艇投弹灭雷命中概率仿真分析	马爱民, 崔鹏 (23)
某外能源自动武器虚拟样机技术研究	王靖亚, 周克栋, 赫雷, 刘寅 (27)
自航水雷突防航路优化仿真	周杰, 高洪林, 周文林 (32)
某磁阻型电磁防暴枪发射系统仿真	陈忠礼, 翟晓军, 刘仔明 (36)
电磁发射式催泪武器系统出口速度仿真	刘仔明, 翟晓军, 陈忠礼 (40)
脉冲防暴水炮刺激剂二次雾化仿真研究	袁舟, 战仁军 (44)
喷射管形状对喷射器技术性能影响的仿真研究	杨超, 战仁军 (49)
极化合成孔径雷达图像中的机场检测研究	陈志鹏, 薛惠峰 (53)
瞄准式战斗部有效引爆区分析	韩路杰, 崔少辉, 石志彬, 李永华 (58)
作战仿真中火力分配优化算法研究	罗佳, 薛青, 王之腾, 张宏军 (62)
航空航天领域仿真	
直升机纵向缆位控制系统建模及仿真研究	张晓晨, 王新民, 姚从潮, 黄耀 (67)
基于复杂网络空战体系作战网络拓扑模型分析	杨哲, 李曙林, 周莉, 谢紫龙 (72)
可重复使用运载器复合控制研究	刘超逸, 唐硕, 许志 (76)
有限推力燃料最省共面圆轨道转移研究	陈征, 唐硕, 洋斌峰 (81)
火箭发动机喷管结构优化设计研究	冯海云, 李猛 (85)
小型无人机纵向运动 H ₂ 鲁棒控制器设计	闫放, 董朝轶, 李健, 冀晓萌 (89)
基于相位折叠的串行 GPS L2C 快速捕获算法	胡晓峰, 何文涛, 徐建华, 叶甜春 (95)
基于星间导航系统抗击性能建模与仿真研究	彭湃, 张旺勋, 侯洪涛, 朱一凡 (99)
一种捷联惯导行进间惯性系对准方法的研究	许永强, 王海青, 胡维俭 (103)
机载不定视觉下的图像小目标定位算法仿真	赵大伟, 陈刚 (108)
蒙特卡洛仿真在火箭喷管结构可靠性中的应用	许昊, 鲍福廷, 刘旸, 成沉 (112)
电视制导半实物视线运动仿真误差分析	王斐, 梁晓庚, 王彦奎, 郑强 (116)
介质涂覆目标电磁散射特性计算与仿真	周超, 张小宽, 赵辉 (120)
航空无刷交流发电机三相短路电流仿真研究	薄磊, 伍家驹, 邱智 (124)
支持向量回归机在飞机气动力建模中的应用	吴辰, 姚宏, 彭兴钊, 杜军 (128)
垂直剖面轨迹寻优算法的研究与仿真	李文娟, 贺尔铭, 马存宝, 朱媛婷 (133)
冲压发动机导弹爬升轨迹 / 发动机一体优化设计	施雨阳, 万自明, 徐敏 (138)
能源领域仿真	
基于弹塑性全过程的在役井架承载性能仿真	刘金梅, 周国强, 郭金玉 (143)
基于遗传算法的 600MW 单元机组建模	李晓东, 席东民 (149)
云层随机放电干扰下的电网故障挖掘仿真分析	吴桂峰, 王轩, 陈东雷 (153)
基于暂态主频零模电流的故障选线仿真研究	张新慧, 潘馨雨, 何柏娜, 张昆 (157)
基于神经网络的锅炉燃烧过程多参数软测量	田沛, 游欣佩 (162)
直接空冷系统机理建模研究	张悦, 郑芹, 石硕 (167)
智能压流网在电站仿真机中的应用	焦嵩鸣, 赵云, 卢海松 (171)
基于物理机理的大迟延过程控制方法研究	马平, 李奕杰 (175)
多目标优化机组分配方法的研究与仿真	杜鹃 (180)
交通体系与工具仿真	
典型角度对汽车气动阻力特性影响的仿真分析	王佳, 杨志刚, 朱晖 (184)
基于机器视觉的交通事件检测方法的研究	苑玮琦, 谢昌隆 (189)
城市轨道交通供电弓网系统优化建模与仿真	郝雪, 王世平 (194)
基于 ABAQUS 的橡胶减振器参数化优化设计	余天超, 刘夫云, 孙永厚 (199)
基于近似动态规划的短时交通流控制预测模型	左志红, 李星毅 (203)
基于改进扰动观测器的电力机车粘着控制	黄景春, 任强, 王嵩, 樊小利 (208)
电动汽车电机控制防抱死系统的研究	郑太雄, 邬彪, 古宏鸣 (213)

路口车辆排队长度检测方法的研究与仿真	周 敏(217)
基于回归分析法的镍氢电池建模与仿真研究	朴昌浩,秦庆勇(220)
城市交通出行路径选择建模与仿真	何 靓,吕建新(224)
汽车发动机故障征兆挖掘技术的研究与仿真	王 锋,孙翠华(229)

信息仿真

小尺度阵列稳健的波束形成方法仿真研究	张天伟,陈 航,马存宝,宋 东(233)
基于极化误差的干涉仪测角性能建模与仿真	戴幻尧,申绪洞,乔会东,崔建岭(237)
复杂空间中散焦能量超临界五次波动方程仿真	侯秀安(241)
一种多核高速数据无损压缩方案及 FPGA 实现	韩 凯,赵思聪,张 利,吴 彪(245)

社会科学领域仿真

基于系统成熟度评价的背景项目投资组合方法	孙 冲,赵金超,曹 强(249)
人才需求组合预测的建模与仿真分析	杨焕海(253)

仿真应用研究

透平膨胀机转子系统在耦合应力下的强度分析	孟再强,刘兴星,李鸿光,孟 光(257)
闭式液压系统冲洗回路压力平稳性仿真研究	杨文彬,胡军科,王子坡(262)
线加速度计高次项系数校准不确定度仿真分析	宁 菲,李明海,陈小伟,王 珏(267)
一种改进型永磁同步电主轴死区补偿算法	于家斌,刘翠玲,秦晓飞,郑 军(271)
雨天井盖缺失的计算机智能识别方法研究仿真	唐录洁(275)
LED 灯用积分球优化光通亮测试的应用仿真	李 凯(279)

建模与验模

含有雾沫夹带现象的精馏塔动态仿真建模	宋阳阳,张贝克,马 昕(283)
基于有限元法的复合海缆温度场的仿真计算	刘频频,安博文,周 灵,周蓉蓉(288)

仿真方法与算法

CT 稀疏角度图像投影重建的 CQ 算法研究	王培元,周海云(293)
------------------------	--------------

仿真软件

回归测试用例优先级排序技术研究	李华莹,胡兢玉(298)
-----------------	--------------

仿真网络化

自动确定聚类数算法在网络入侵检测中的应用	孟 静,吴锡生(302)
无线传感器网络节点密度与功能分类算法	王 璐,赵志文,张瑶瑶,韩钦亭(308)
传感器网络中基于混合通信的数据收集算法	刘泽平,袁辉勇,羊四清(314)
一种优化的机会网络高效路由算法仿真分析	黎 峰,周 丹(318)
一种基于 PSO 辨别树的 P2P 网络入侵检测方法	周 丹,黎 峰(322)
能量优化的无线传感器网络节点路由算法研究	赵金铃,马昕桐(325)
基于 SOA 优化网络控制系统故障检测模型仿真	何来坤,诸 彬,缪健美(329)
基于伪似然估计算法的网络延迟计算仿真	金 意(333)
下一代互连网络入侵检测系统研究	纪祥敏,景 林,舒兆港(337)

仿真智能化

不确定性倒立摆系统的自适应模糊滑模控制	张蛟龙,张 伟(341)
混合智能算法的控制图模式识别仿真研究	李 诚,张宏烈,赵 鑫(345)
蝙蝠算法在多目标多选择背包问题中的应用	李枝勇,马 良,张惠珍(350)
基于最小二乘支持向量机的高炉铁水温度预测	崔桂梅,孙 彤,张 勇(354)
模糊—证据理论信息融合算法	赵乃杰,李 辉(358)
实验基于资源预先分类的云计算任务调度算法	封良良,夏晓燕,贾振红,张 陶(363)
基于自适应小波阈值的心电信号去噪算法	李庆华,山拜·达拉拜,孙全富(368)
改进免疫 PID 在双容水箱控制中的优化研究	李 琦,尚文斌(372)
基于反步法的欠驱动船舶镇定控制	丁福光,吴 静,隋玉峰(377)
小麦产量预测模型的仿真研究	杨 梅,李 广(382)
基于模糊相轨迹模型的 Smith 预估控制	齐朝阳,郑恩让(386)
基于改进单纯形的互信息配准方法研究	王 玉,王明泉,张志杰(390)
鲁棒预测 - PID 复合控制在变风量空调中的应用	邢丽娟,杨世忠(394)
基于多维 cube 海量零售关键数据挖掘模型仿真	邹 琛,熊 婷(399)
海量基因特征中早期癌症生物标记识别仿真	关 伟,陆慧娟(403)
基于 CA - PSO 算法的云计算资源调度策略	孟令玺,李洪亮(406)

仿真虚拟化

三维图像中运动行为判断算法的仿真分析	蒲永华,朱清新,唐东明(411)
基于正交基函数神经网络的图像加密算法仿真	林 青,戴慧珺,马文涛(416)
基于信誉机制的云计算资源预留算法研究	张治斌,刘丽丽(422)

仿真服务化

切换系统非脆弱保性能 H_∞ 控制器设计与仿真	卢军锋,吴钟鸣,向峰岐(427)
生物乙醇供应链中的原料库存优化研究	黎玉婷,董 明(433)
超宽带昆虫雷达的信号处理与仿真	熊新农,焦忠建,黄长干,涂海华(438)

CONTENTS

Technology Present Situation and Prospect of Organic Waste Biomass Pyrolysis in Hot Water	LI Da - zhong, HUANG Jia - jia (1)
Numerical Simulation On Bullet Penetrating UHMWPE Soft Fiber Layer	HUANG Gong - wu, CHEN Ai - jun, et, al (6)
Spotlight FMCW - SAR Imaging Using Wavenumber Domain Algorithm	WANG Lin - yu, DU Chuan - hong (10)
Extended - Range Design of Domestic Tear Bomb Emitter	DING Cheng, WU Zhan - wen (14)
Comprehensive Assessment of Equipment Support Exercise Based on Principle Component Analysis	ZHAO Wu - kui, ZHANG Cheng, et, al (18)
USV Bomb - Dropping Destroy Sea Mine Probability Simulating Analyze	MA Ai - min, CUI Peng (23)
Study on Virtual Prototype Technology of External Energy Automatic Weapon	WANG Jing - ya, ZHOU Ke - dong, et, al (27)
Optimization and Simulation of Self - Propelled Mine Penetration Route	ZHOU Jie, GAO Hong - lin, et, al (32)
Simulation on the Launch System of a Reluctance Electromagnetic Riot Gun	CHEN Zhong - li, ZHAI Xiao - jun, et, al (36)
Outlet Velocity Simulation of Electromagnetic Launch Tear - gas Weapon System	LIU Zi - ming, ZHAI Xiao - jun, et, al (40)
Simulation of Secondary Atomization Process of Pulsed Anti - riots Water Cannon	YUAN Zhou, ZHAN Ren - jun (44)
Simulation of Injection Pipe Shape on Injector Technology Effect	YANG Chao, ZHAN Ren - jun (49)
Airport Area Detection for Polarimetric Synthetic Aperture Radar Image	CHEN Zhi - peng, XUE Hui - feng (53)
Analysis of Useful Booming Area for Gimbaled Warhead	HAN Lu - jie, CUI Shao - hui, et, al (58)
Algorithm Research on Fire Distribution Optimization for Combat Simulation	LUO Jia, XUE Qing, et, al (62)
Modeling and Simulation of Longitudinal Cable Orientation Control System in Helicopter	ZHANG Xiao - chen, WANG Xin - min, et, al (67)
Topological Analysis on Combat Networks of Air Systems Combat Based on Complex Networks	YANG Zhe, LI Shu - lin, et, al (72)
Research on Hybrid Control for Reusable Launch Vehicle	LIU Chao - yi, TANG Shuo, et, al (76)
Finite - Thrust Fuel - Optimal Orbital Transfers Between Coplanar Circular Orbits	CHEN Zheng, TANG Shuo, et, al (81)
Research on Structure Optimization Design of SRM Nozzle	FENG Hai - yun, LI Meng (85)
Study on Tracking Strategy for Small Unmanned Aerial Vehicles Based on H_{∞} Control	YAN Fang, DONG Chao - yi, et, al (89)
Fast Serial Acquisition Algorithm of GPS L2C Based on Phase - Fold Method	HU Xiao - feng, HE Wen - tao, et, al (95)
Analysis of Galileo Navigation System Dilution of Precise Based on Inter Satellites	PENG Pai, ZHANG Wang - xun, et, al (99)
Study on Initial Alignment Method of SINS Based on Inertial Frame on Movement	XU Yong - qiang, WANG Hai - qing, et, al (103)
Simulation on Image Small Target Location Algorithm under Airborne Indefinite Vision	ZHAO Da - wei, CHEN Gang (108)
Monte - Carlo Simulation Application of Structure Reliability Assessment for SRM Nozzle	XU Hao, BAO Fu - ting, et, al (112)
Error Analysis of Line - of - Sight Simulating for TV Seeker in Hardware - in - the - Loop	WANG Fei, LIANG Xiao - geng, et, al (116)
Calculation and Simulation of Electromagnetic Scattering Characteristics of Targets Coated with Dielectric Medium	ZHOU Chao, ZHANG Xiao - kuan, et, al (120)
Research on Process Simulation of Aviation Brushless Alternator Three - Phase Short - Circuit	BO Lei , WU Jia - ju , et, al (124)
Application of Support Vector Regression for Aerodynamic Modeling	WU Chen, YAO Hong, et, al (128)
Research and Simulation of Trajectory Optimization Algorithm for Vertical Flight Profile	LI Wen - juan, HE Er - ming, et, al (133)
Integrate Optimization Design of Climb Trajectory and Motor for Ramjet Powered Missile	SHI Yu - yang, WANG Zi - ming, et, al (138)
Simulation for Bearing Capacity Based on Full Range Elastic - plastic Analysis of Oil - Derrick In - Service	LIU Jin - mei , ZHOU Guo - qiang, et, al (143)
Genetic Algorithm Based 600MW Plant Unit Modeling	LI Xiao - dong, XI Dong - min (149)
Simulation Analysis of Grid Fault Mining Technology under Interference of Random Discharge from Clouds	WU Gui - feng , WANG Xuan , et, al (153)
Single - Phase - to - Earth Fault Detection Simulation for Non - Effectively Earthed Network Based on Dominant Transient Frequency Current	ZHANG Xin - hui, PAN Xin - yu, et, al (157)
Multi - Parameter Soft Measurement of Boiler Combustion Process Based on Neural Network	TIAN Pei, YOU Xin - pei (162)
Research on Mechanism Modeling of Direct Air - Cooled System	ZHANG Yue, ZHENG Qin, et, al (167)
Intelligent Fluid Network Application in the Power Plant Simulator	JIAO Song - ming, ZHAO Yun, LU Hai - song (171)
A Control Method of Large Delayed System Based on Physical Mechanism	MA Ping, LI Yi - jie (175)
Multi - Objective Research and Simulation of the Optimized Method	DU Juan (180)
Simulation Analysis of Effect of Typical Angels on Automotive Aerodynamic Drag	WANG Jia, YANG Zhi - gang, et, al (184)
Research on Traffic Incident Detection Method Based on Machine Vision	YUAN Wei - qi, XIE Chang - long (189)
Optimal Modeling and Simulation of Power Supply Pantograph - catenary System in Rail Transit	HAO Xue, WANG Shi - ping (194)
Rubber Shock Absorber Based on ABAQUS Parametric Optimization Design	YU Tian - chao, LIU Fu - yun, et, al (199)
Short - Term Traffic Flow Control Predictive Model Based on Approximate Dynamic Programming	ZUO Zhi - hong, LI Xing - yi (203)
Adhesion Control of Electric Motor Coach Based on Improved Disturbance Observer	HUANG Jing - chun, REN Qiang, et, al (208)
Study on Motor Control of Anti - Lock Braking System of Electric Vehicle	ZHENG Tai - xiong, WU Biao, et, al (213)
Crossroads Vehicle Queue Length Detection Method in the Research and Simulation	ZHOU Min (217)
Studies of NiMH Battery Modeling and Simulation Based on Linear Regression Analysis Method	PIAO Chang - hao, QIN Qing - yong (220)

Modeling and Simulation on Route Choice Method of Urban Traffic System	HE Liang,LV Jian - xin (224)
Research and Simulation on Mining Technology for Automobile Engine Fault Symptoms	WANG Feng, SUN Cui - hua (229)
Simulation Research on the Directivity Pattern of Miniaturized Linear Array	ZHANG Tian - wei,CHEN Hang,et, al (233)
Interferometer Angle Measurement Performance Modeling and Simulation Based on Polarization Error	DAI Huan - yao,SHEN Xu - jian,et, al (237)
Local Existence Theorem for The Defocusing Energy - supercritical Quintic Nonlinear Wave Equation	HOU Xiu - an (241)
Multi - core Lossless Compression System for High - speed Data and Its FPGA Implementation	HAN Kai,ZHAO Si - cong,et, al (245)
Portfolio Method for Background Projects Based on System Readiness Assessment	SUN Chong,ZHAO Jin - chao,et, al (249)
Intelligent Modeling and Simulation Analysis for Talent Demand Forecasting	YANG Huan - hai (253)
Strength Analysis Based on Coupling Stress of Turbo - Expander Rotor System	MENG Zai - qiang,LIU Xing - xing,et, al (257)
Research on the Stability of Flushing Circuit Pressure in Closed Hydraulic System ... YANG Wen - bin,HU Jun - ke,et, al	(262)
Simulation on Calibration Uncertainty of the High Order Coefficients of Linear Accelerometers	NING Fei,LI Ming - hai,et, al (267)
Improved Dead - Time Compensation Algorithm of Permanent Magnet Synchronous Motor	YU Jia - bin,LIU Cui - ling,et, al (271)
Simulation Analysis of Computer Intelligent Recognition Method for Missing Manhole Cvers in Rainy Days	TANG Lu - jie (275)
LED Lamp with Integrating Sphere Testing Applications	LI Kai (279)
Dynamic Simulation and Modeling of Distiller with Entrainment Phenomenon	SONG Yang - yang,ZHANG Bei - ke ,et, al (283)
Simulation of Temperature Field of Composite Submarine Cable Based on Finite Element Method	LIU Pin - pin,AN Bo - wen,et, al (288)
Sparse Angular CT Image Projection Reconstruction with CQ Algorithm	WANG Pei - yuan,ZHOU Hai - yun (293)
Research on Test Case Prioritization for Regression Testing	LI Hua - ying,HU Jing - yu (298)
Automatic Clustering Number Determination Algorithm in Networks Intrusion Detection	MENG Jing,WU Xi - sheng (302)
Wireless Sensor Network Node Density and Function Classification Algorithm	WANG Lu,ZHAO Zhi - wen,et, al (308)
Algorithm of Data Gathering Based on Hybrid Communication for Sensor Networks	LIU Ze - ping,YUAN Hui - yong,et, al (314)
Simulation and Analysis of Optimized Network Efficient Routing Algorithm	LI Feng,ZHOU Dan (318)
Detection Method of P2P Network Intrusion	ZHOU Dan,LI Feng (322)
Research on Wireless Sensor Network Node Routing Algorithms Based on Energy Optimization	ZHAO Jin - ling,MA Xin - tong (325)
Optimization of Network Control System Fault Detection Model Simulation Based on SOA	HE Lai - kun ,ZHU Bin ,et, al (329)
Simulation of Network Delay Calculation Based on Pseudo Likelihood Estimation Algorithm	JIN Yi (333)
Study on Intrusion Detection System for Next - generation Internet	JI Xiang - min,JING Lin,et, al (337)
Research on Adaptive Fuzzy Sliding Mode Control for Uncertain Inverted Pendulum System	ZHANG Jiao - long,ZHANG Wei (341)
Simulation on Pattern Recognition of Control Chart Based on Hybrid Intelligent Algorithm	LI Cheng,ZHANG Hong - lie,et, al (345)
Application of Bat Algorithm in Multi - Objective and Multi - Choice Knapsack Problem ... LI Zhi - yong,MA Liang,et, al	(350)
Forecast of Blast Furnace Hot Metal Temperature Based on Least Support Vector Machine	CUI Gui - mei,SUN Tong,et, al (354)
Fuzzy - Evidence Theory Information Fusion Algorithm	ZHAO Nai - jie,Li Hui (358)
Task Scheduling Algorithm Based on Improved Particle Swarm Optimization Algorithm in Cloud Computing Environment	FENG Liang - liang,XIA Xiao - yan,et, al (363)
Brige - Massart Policy of Application of ECG Based on Wavelet Threshold De - Noising	LI Qing - hua,Senbai Dalabaev,et, al (368)
Improved Immune PID Optimization in Dual Vessel Water Tank Control	LI Qi,SHANG Wen - bin (372)
Stabilization of Underactuated Surface Vessel Based on Backstepping	DING Fu - guang,WU Jing,et, al (377)
Simulation Study on Forecasting Model of Wheat Yield	YANG Mei,LI Guang (382)
Smith Predictive Control Based on Fuzzy Phase Trajectory Model	QI Zhao - yang,ZHENG En - rang (386)
Study of Mutual Information Registration Based on Modified Simplex Optimization Method	WANG Yu,WANG Ming - quan,et, al (390)
Application of Robust Predictive - PID Compound Control in Variable Air Volume Air Conditioning	XING Li - juan,YANG Shi - zhong (394)
Simulation on Mass Key Retail Data Mining Model Based on Multidimensional Cube	ZOU Xuan,XIONG Ting (399)
Early Cancer Biomarker Identification Simulation in Vast Amounts of Genetic Traits	GUAN Wei,LU Hui - juan (403)
Resource Scheduling Strategy in Cloud Computing Based on Cultural Particle Swarm Optimization Algorithm	MENG Ling - xi,LI Hong - liang (406)
Simulation Analysis of Motion Behavior Judgment Algorithm Based on 3 - D Image	PU Yong - hua ,ZHU Qing - xin,et, al (411)
Simulation of Image Encryption Algorithm Based on Orthogonal Basis Function Neural Network	LIN Qing,DAI Hui - jun,et, al (416)
Reseach on Reputation Mechanism - Based Resource Reservation Algorithm for Cloud Computing	ZHANG Zhi - bin,LIU Li - li (422)
Design and Simulation of Robust Non - fragile Guaranteed Cost H_{∞} Controller for Uncertain Nonlinear Switched Systems	LU Jun - feng,WU Zhong - ming,et, al (427)
Optimization of Feedstock Inventory in Biomass to Ethanol Supply Chain	LI Yu - ting,DONG Ming (433)
Processing and Simulating of Ultra-Wide-Band Insect Radar Signal	XIONG Xin - nong,JIAO Zhong - jian,et, al (438)