

目次

专题：高性能计算

大规模科学数据体绘制技术综述 王华维,何柳,曹轶,肖丽(1)

面向图计算应用的处理器访存通路优化设计与实现 张旭,常轶松,张科,陈明宇(13)

面向大规模集群的并行 I/O 用户层配置优化策略
..... 田鸿运,武林平,董勇,景翠萍,罗红兵,莫则尧(23)

高精度 CFD 程序的内外子区域划分异构并行算法 王巍,徐传福,车永刚(31)

流水的浮点倒数近似值运算部件的设计与实现 何军,王丽(41)

MPI 并行程序中通信等待问题的诊断方法及其应用 武林平,景翠萍,刘旭,田鸿运(47)

高铁大风预警模式挖掘 滕飞,刘鉴竹,祝锦焯,勾红叶(55)

异构混合存储的软硬件协同数据放置策略 李鸿飞,杜溢墨,曾熠,王磊(64)

航天工程·材料科学与工程

二维可压缩流动抽吸流量模型及验证 张宝虎,赵玉新,柳军(72)

导弹结构热防护一体化设计与优化 徐世南,吴催生(78)

基于位置预测的靶场图像实时判读方法 钟立军,于起峰,周颀鑫,郭鹏宇,黄维(85)

混合不确定条件下航空不安全事件量化分析方法 崔利杰,陈浩然,任博,张贾奎(92)

空间双体系绳系统展开阶段末端星姿态动力学分析
..... 陈书敏,王长青,扎伯罗特诺夫·尤里,李爱军(98)

弹(箭)体级间连接结构准静载失效实验与数值预示 袁杰红,田彤辉,关振群,王青文,陈柏生(107)

利用预报误差分布拟合实现卫星历史轨道机动检测的方法 李涛,黄昊,陈磊(114)

采用优化加点 Kriging 模型的助推火箭残骸安全区预示方法
..... 祝学军,卜奎晨,王浩,高峰,赵长见(121)

机械工程·控制科学与工程

多重优化的分布式无线覆盖探测算法 王红军,向庭立,潘继飞(127)

混响背景下基于高阶统计量的动目标检测方法 王晓彤,蔡志明(135)

基于统一理论框架的故障诊断模型及学习进化方法 张士刚,罗旭,骆彦廷,杨拥民(142)

舰炮身管的模态分析与多目标优化 刘国强,陈维义,陈华东,程晗(150)

4 电平 S 类数字功放的电平合成策略 周强,朱蕾,陈剑斌(156)

ASLR 机制脆弱性自动分析方法 黄宁,黄曙光,潘祖烈,常超(162)

数据基故障诊断算法更新问题研究 赵晨旭,涂遗,邱静,刘冠军(171)

考虑非线性退化与随机失效阈值的剩余寿命预测 王泽洲,陈云翔,蔡忠义,罗承昆(177)

面向作战任务的最小风险传感器调度方法 单甘霖,庞策,段修生(186)

采用改进遗传算法的舰载机保障调度方法 刘珏,王能建,罗旭,孟祥雷(194)

弹性轨道磁悬浮控制系统模型降阶研究 刘武斌,王泉(206)

JOURNAL OF NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

Vol. 42 No. 2

April 2020

CONTENTS

Special Topic: High Performance Computing

- A survey of the techniques of volume rendering for large-scale scientific data WANG Huawei, HE Liu, CAO Yi, XIAO Li (1)
- Design and implementation of a novel off-chip memory access path for graph computing
..... ZHANG Xu, CHANG Yisong, ZHANG Ke, CHEN Mingyu (13)
- User-level parallel I/O configuration optimize strategy toward large-scale cluster
..... TIAN Hongyun, WU Linping, DONG Yong, JING Cuiping, LUO Hongbing, MO Zeyao (23)
- Inner-out subdomain dividing heterogeneous parallel algorithm for high order CFD solver WANG Wei, XU Chuanfu, CHE Yonggang (31)
- Design and implementation of pipelined floating-point reciprocal approximation operation unit HE Jun, WANG Li (41)
- Diagnostic methods for communication waiting in MPI parallel programs and applications
..... WU Linping, JING Cuiping, LIU Xu, TIAN Hongyun (47)
- Pattern mining of gale warning for high-speed railway TENG Fei, LIU Jianzhu, ZHU Jinye, GOU Hongye (55)
- Software and hardware co-design of data placement in heterogeneous hybrid store LI Hongfei, DU Yimo, ZENG Yi, WANG Lei (64)

Aerospace Engineering · Materials Science and Engineering

- Model and validation of two-dimensional compressible bleed flow ZHANG Baohu, ZHAO Yuxin, LIU Jun (72)
- Design and optimization of structure-thermal protection integrated for missile XU Shinan, WU Cuisheng (78)
- Real-time interpretation method for range image based on position prediction
..... ZHONG Lijun, YU Qifeng, ZHOU Jiexin, GUO Pengyu, HUANG Wei (85)
- Quantitative analysis method of aviation unsafe events under mixed uncertain conditions
..... CUI Lijie, CHEN Haoran, REN Bo, ZHANG Jiakui (92)
- Attitude dynamic analysis of the end-bodies of space tether system in deployment
..... CHEN Shumin, WANG Changqing, Zabolotnov Yuriy, LI Aijun (98)
- Experimental and numerical prophetic study on the failure of the connection structure between stages of the missiles(rockets) under quasi-static load
..... YUAN Jiehong, TIAN Tonghui, GUAN Zhenqun, WANG Qingwen, CHEN Baisheng (107)
- Method to detect satellite historical orbit maneuver based on fitting of prediction error distribution LI Tao, HUANG Hao, CHEN Lei (114)
- Prediction method for booster rocket's debris safety control zone based on infill-sampling Kriging model
..... ZHU Xuejun, BU Kuichen, WANG Hao, GAO Feng, ZHAO Changjian (121)

Mechanical Engineering · Control Science and Engineering

- Distributed wireless coverage detection algorithm based on multiple optimization WANG Hongjun, XIANG Tingli, PAN Jifei (127)
- Moving target detection method of reverberation background based on high-order statistics WANG Xiaotong, CAI Zhiming (135)
- Fault diagnosis models and evolution method based on a unified theory framework
..... ZHANG Shigang, LUO Xu, LUO Yanting, YANG Yongmin (142)
- Modal analysis and multi-objective optimization of the naval gun barrel ... LIU Guoqiang, CHEN Weiyi, CHEN Huadong, CHENG Han (150)
- Level synthesis strategy for 4-level class-S digital power amplifier ZHOU Qiang, ZHU Lei, CHEN Jianbin (156)
- Automatic analysis to vulnerability of ASLR HUANG Ning, HUANG Shuguang, PAN Zulie, CHANG Chao (162)
- Study of data based fault diagnosis algorithm update problem ZHAO Chenxu, TU Yi, QIU Jing, LIU Guanjun (171)
- Remaining useful lifetime prediction based on nonlinear degradation processes with random failure threshold
..... WANG Zezhou, CHEN Yunxiang, CAI Zhongyi, LUO Chengkun (177)
- Sensor scheduling method based on minimum risk facing the combat task SHAN Ganlin, PANG Ce, DUAN Xiusheng (186)
- Deck operation scheduling method of carrier-based aircraft based on improved genetic algorithm
..... LIU Jue, WANG Nengjian, LUO Xu, MENG Xianglei (194)
- Research on model reduction of maglev control system under elastic track LIU Wubin, WANG Quan (206)