

中文综合性科学技术类核心期刊
中国科技核心期刊
RCCSE中国核心学术期刊

ISSN 1671-5489
CN 22-1340/O
CODEN JDXLAW



吉林大学学报

理学版

Journal of Jilin University
Science Edition



1
—
2023

第61卷 第1期
Vol. 61 No. 1
中国·长春
Changchun, China

吉林大学学报(理学版)

Jilin Daxue Xuebao (Lixue Ban)

第 61 卷 第 1 期 2023 年 1 月

目 次

数 学

线性元有限体积元法的一种并行格式	钱皓, 吴丹, 吕俊良	(1)
求解三块变量约束凸优化问题的邻近部分平行分裂算法	申远, 李俊峰	(8)
具有饱和效应的任意阶自催化反应扩散模型的 Turing 不稳定性和 Hopf 分支	郭改慧, 郭飞燕, 李纪纯	(15)
一类非线性 Riemann-Liouville 适型分数阶微分方程正解的存在性	彭钟琪, 李媛, 毕国健, 薛益民	(23)
初值含 Dirac 函数的一个简化趋化性模型的 Riemann 问题	孙寅酉, 郭俐辉, 刘冬冬	(32)
发展型 p -Laplace 方程边界最优控制的存在性	张瀛月, 杜润梅	(41)
Schrödinger 代数的局部导子	王鹏, 唐孝敏	(46)
泛延拓矩阵的极分解与扰动界	何静, 袁晖坪	(53)
Cohen-Macaulay 局部环上的 Canonical 模	路姣姣, 杨晓燕	(61)
两类特殊亚循环群之间的同态数量	任小强, 高百俊	(66)
完全 AC 分解	侯婷婷, 杨晓燕	(73)
5 类图的优美性	唐保祥, 任韩	(79)
$K_n \square K_{m,s}$ 的 r -hued 染色	梁玲梅, 刘凤霞, 赖虹建	(85)

计算机科学

基于语义特征提取与层次结构的问题生成方法	白诗瑶, 吕佳键, 彭涛, 刘露, 崔海	(94)
基于类间损失和多视图融合的深度嵌入聚类	郭晴晴, 王卫卫	(101)
基于对比学习方法的小样本学习	付海涛, 刘烁, 冯宇轩, 朱丽, 张竞吉, 关路	(111)
基于子空间表示和加权低秩张量正则化的高光谱图像混合噪声去除方法	周航, 苏延池, 李占山, 花昀娇	(118)

基于深度强化学习的移动机器人视觉图像分级匹配算法	李晓峰, 任杰, 李东	(127)
基于多尺度特征的视盘分割方法	燕杨, 曹娅迪, 黄文博	(136)

物 理

单量子系统中基于相干度量的态排序	胡晓会, 玄东平, 南华	(143)
------------------	--------------	-------

- 中间特征向量灵敏度的自适应迭代计算 陈锦洪, 钟慧湘, 吴柏生 (148)
3D 打印火箭壳体 Kagome 蜂窝加筋结构压溃性能预测和实验验证
..... 祝雪峰, 杨子康, 徐隆坤, 徐金亭, 胡平 (154)

化 学

- 分级多孔结构 NiO/ZnO 复合材料制备及其甲醛气敏性能 李本政, 郝嘉亮, 冯威 (162)

生命科学

- 蜜环菌 β -1,6-葡聚糖通过调节人源巨噬细胞极化发挥抑制结肠癌作用

..... 任爱, 沈丹阳, 王源宁, 陈磊, 孙琳, 周义发, 程海荣 (172)

环境科学

- 一种新型聚合物 VDE 用于快速吸附水中的硝酸盐 胡伟, 祝凯, 吴汾奇, 李燕 (179)

- 《吉林大学学报(理学版)》征稿简则 (封二)

- Brief Introduction to "Journal of Jilin University (Science Edition)" (封三)

Journal of Jilin University (Science Edition)

Jilin Daxue Xuebao (Lixue Ban)

Vol. 61 No. 1 Jan 2023

Contents

Mathematics

A Parallel Scheme of Linear Element Finite Volume Element Method	QIAN Hao, WU Dan, LÜ Junliang	(1)
Proximal Partial Parallel Splitting Algorithm for Solving Three Block Variable Constrained Convex Optimization Problems	SHEN Yuan, LI Junyi	(8)
Turing Instability and Hopf Bifurcation for Arbitrary Order Autocatalysis Reaction-Diffusion Model with Saturation Effect	GUO Gaihui, GUO Feiyan, LI Jichun	(15)
Existence of Positive Solutions for a Class of Nonlinear Riemann-Liouville Conformable Fractional Differential Equations	PENG Zhongqi, LI Yuan, BI Guojian, XUE Yimin	(23)
Riemann Problem of a Simplified Chemotaxis Model with Dirac Functions in Initial Value	SUN Yinyou, GUO Lihui, LIU Dongdong	(32)
Existence of Boundary Optimal Control for Evolution p -Laplace Equations	ZHANG Yingyue, DU Runmei	(41)
Local Derivations of Schrödinger Algebras	WANG Peng, TANG Xiaomin	(46)
Polar Factorization and Perturbation Bounds for Universal Extended Matrix	HE Jing, YUAN Huiping	(53)
Canonical Module on Cohen-Macaulay Local Rings	LU Jiaojiao, YANG Xiaoyan	(61)
Number of Homomorphisms between Two Classes of Special Metacyclic Groups	REN Xiaoqiang, GAO Baijun	(66)
Complete AC Resolution	HOU Tingting, YANG Xiaoyan	(73)
Gracefulness of Five Kinds of Graphs	TANG Baoxiang, REN Han	(79)
r -Hued Coloring of $K_n \square K_{m,s}$	LIANG Lingmei, LIU Fengxia, LAI Hongjian	(85)

Computer Science

Question Generation Method Based on Semantic Feature Extraction and Hierarchical Structure	BAI Shiyao, LÜ Jiajian, PENG Tao, LIU Lu, CUI Hai	(94)
Deep Embedding Clustering Based on Inter-Class Loss and Multi-view Fusion	GUO Qingqing, WANG Weiwei	(101)
Few-Shot Learning Based on Contrastive Learning Method	FU Haitao, LIU Shuo, FENG Yuxuan, ZHU Li, ZHANG Jingji, GUAN Lu	(111)
Mixed Noise Removal Method for Hyperspectral Images Based on Subspace Representation and Weighted Low-Rank Tensor Regularization	ZHOU Hang, SU Yanchi, LI Zhanshan, HUA Yunqiao	(118)

- Hierarchical Matching Algorithm of Visual Image for Mobile Robots Based on Deep Reinforcement Learning LI Xiaofeng, REN Jie, LI Dong (127)
- Optic Disc Segmentation Method Based on Multi-scale Features YAN Yang, CAO Yadi, HUANG Wenbo (136)

Physics

- State Ordering Based on Coherence Measure in Single Quantum System HU Xiaohui, XUAN Dongping, NAN Hua (143)
- Adaptive Iterative Calculation of Sensitivity of Mid-Eigenvectors CHEN Jinhong, ZHONG Huixiang, WU Baisheng (148)
- Prediction and Experimental Verification of Collapse Performance of Kagome Honeycomb Stiffened Structures of 3D Printed Rocket Shell ZHU Xuefeng, YANG Zikang, XU Longkun, XU Jinting, HU Ping (154)

Chemistry

- Preparation of Graded Porous NiO/ZnO Composites and Their Formaldehyde Gas-Sensitive Properties LI Benzheng, HAO Jialiang, FENG Wei (162)

Life Science

- Inhibitory Effect on Colon Cancer Cells Proliferation of *Amillariella mellea* β -1,6-glucan by Mediating Human Macrophage Polarization REN Ai, SHEN Danyang, WANG Yuanning, CHEN Lei, SUN Lin, ZHOU Yifa, CHENG Hairong (172)

Environmental Science

- A Novel Polymer VDE for Rapid Adsorption of Nitrate in Water HU Wei, ZHU Kai, WU Fenqi, LI Yan (179)