

数学的实践与认识



MATHEMATICS IN PRACTICE AND THEORY

第四十三卷

Vol. 43

第15期

No.15

2013



3 2916 3603 7

中国数学会会刊

中国科学院数学与系统科学研究院主办

科学出版社出版

MATHEMATICS IN PRACTICE AND THEORY

2013 Vol.43 No.15

Contents

Modeling

- Mathematical Modeling and Diagnosis of Sucker-rod Pumping System ZHANG Guo-xiang, ZHAO Yi, YANG Kai-zhi, LI Bing-jie, PANG Bo (1)
- Production Liquid Calculation Based on Dynamometer Card Theory in Sucker Rod Pumping FANG Yuan, WANG Shu-hua, LU Ming-jing, YAO Zheng (13)
- The Research on Pump Dynamograph of Sucker-Rod Pumping System Based on Gibbs Model XU Bing, LI Wei, HUANG Xue-feng, MING Hui (20)
- Mathematical Modeling and Diagnosis of Rod Pumping Systems CHEN Yuan-yuan, YOU Jian-wei, WANG Xu-yang (28)
- Study on the Working Condition Diagnosis Method for Suck Rod Pumping System Based on Wavelet Moment Features LIU Zhuo, LUO Ming-liang, LU Xue-jiao, FAN Kun-kun, LIU Fei (41)
- Mathematical Modeling and Diagnosis of Sucker-Rod Pumping System YANG Li-ming, ZHU Chong, WANG Xing, WEN Jie (49)
- Mathematical Modeling and Diagnosis of Sucker-Rod Pumping System PENG You-shun, WANG Yu-zhen, ZHOU Xiao-song (58)
- The Mathematical Modeling and Diagnosis of Sucker-rod Pumping System CHENG Xi-yue, LIU Wei, MA Hui-cai, HUANG Lin-jie (71)
- Mathematical Modeling and Diagnosis of Rod Pumping System based on Energy Convention Principle XU Fang, SUN Ya-xing, WANG Wen-na, XU Gen-jiu (83)
- Review on the Mathematical Modeling and the Diagnosis of the Sucker Rod Pumping System HOU Jin-jun, ZHU Si-ming (94)
- Researches on the Cloud Motion Wind Model HAN Jiang, ZENG Long-ji, YANG Tao, TAO Xiao-feng, CUI Qi-mei, TONG Hui (98)
- Wind Vector Measurement Model Based on Cross-correlation Coefficient FAN Lin-tao, WANG Ming-yu, XU Jia-qing, YAN Wei-ping, SHENG Si-qing (110)
- Research on the Measurement Model and Algorithm of Wind Vector Field Based on Satellite Cloud Images (Cloud Motion Winds) JIANG Wei, LAI Yu-yang, FAN Ying, LIU Ji-zhen, PAN Zhi (123)
- Wind Vector Field Measurement Model and Adaptive Algorithm Based on Satellite Cloud Image CHEN Chong-shuang, CHONG Peng-yun, WANG Ke-ming, XUE Chang-hong (139)
- Model and Algorithms of the Measure Based on the Wind Vector Field of Satellite Cloud (Cloud-Derived Wind) ZHOU Juan, GONG Zheng, CHEN Jian-heng, SONG Zhi-cheng, YANG Yang (150)
- The Preliminary Research on Cloud Motion Wind YANG Ping-lv, LIU Xiang-yu, GUO Fu-cai, PENG Xin-wei, HUANG Si-xun, XIANG Jie (163)
- Remarks on the Problem D in 2012 9th Annual Chinese Graduate Mathematical Modeling Contest JIANG Hui-kun (175)

Managed Science

- Feature Selection and Dimensionality Reduction, Overview, Hot Issues and Prospect ZHAO Yu, HUANG Si-ming, CHEN Rui (179)
- Analysis on Generalized Entropy Principle Based on Risk Aversion Degree LI Hua, WANG Bin, WANG Rui (191)
- Based on Grey Relational Analysis of Relation Between Guangdong Province GDP and industrial structure and prediction of GDP of Mathematical model JI Guang-yue (198)
- Optimal Trading Strategy under Liquidity Constraint and Price Trends LIU Shan-cun, XU Yang, ZHU Yuan-qi, ZHANG Qiang (204)
- An Empirical Analysis on Resampling and Its Application to Portfolio LI Xin, CAO Xian-bing (214)

Information Science

- Internal P-Reasoning and System Fault Detection-Recovery ZHANG Huan-li, LI Xiao-chao, SHI Kai-quan (220)

Applications

- An Algorithm for the General Adjacent Vertex-distinguishing Total Coloring of Some Graph and Realization on the MATLAB TIAN Jing-jing, JIA Wei, CHEN Xiang-en (227)
- Stability Analysis of the Composite Wave for a System of Simplified Chromatography Equations LI De-sheng, SHEN Chun (234)
- Based on the Grey Relational Grade of zhalong Wetland' Monacha Quantity Analysis of Influence Factors LI Yue-qiu, WANG Hong (240)

Research

- Existence of Infinitely Many Solutions for Singular Biharmonic Equation on R^N DU Gang (245)
- $\mathcal{H}$ -Subgroups and the Nilpotency of Finite Groups GUO Gui-rong, PENG Wang-shu, ZHANG Zhong-qun (250)
- Principal Congruence on Hamilton Groups CAO Fa-sheng (255)
- On the Rank of the Semigroup of the Monotone and Compressing Transformations GAO Rong-hai, XU Bo (259)
- The Inverse Problem of Symmetric Orthogonal Anti-Symmetric Matrices with a Sub-matrix Constraint ZHANG Zong-biao, LI Meng, TANG Shu-qiao (263)
- On Three Signed Star Domination Numbers of Graphs ZHOU Zhong-wang, LIU Shu-ying (271)
- On the Multi-parameters Preconditioned AOR Iterative Method for L-matrices LUO Fang (277)
- Sign-invariant and Separation of Variables Solutions of the System of Nonlinear Reaction-diffusion Equations ZHU Xiao-ning, LI Hong, LI Ji-na (283)
- On the Diophantine Equation $x^3 \pm 1 = 1267y^2$ DU Xian-cun, WAN Fei, YANG Hui-zhang (288)
- CGenerators of Reductive Lie Algebras and Local Lie Algebras TANG Li-ming, LIU Wen-de (293)

数学的实践与认识

2013 年第 43 卷第 15 期

目 次

建 模

- 有杆抽油系统的数学建模及诊断·····张国祥, 赵 一, 杨凯陟, 李炳杰, 庞 博(1)
- 基于示功图理论的有杆泵采油产液量计算·····方 圆, 王舒华, 鲁明晶, 姚 征(13)
- 基于 Gibbs 模型的有杆抽油系统泵功图的研究·····徐 冰, 李 威, 黄雪峰, 明 辉(20)
- 有杆抽油系统的数学建模及诊断·····陈源源, 游检卫, 王旭阳(28)
- 有杆抽油系统工况诊断的数学模型研究·····刘 卓, 罗明良, 陆雪皎, 范坤坤, 刘 飞(41)
- 有杆抽油系统的数学建模及诊断·····杨鲤铭, 朱 翀, 王 星, 文 杰(49)
- 有杆抽油系统的数学建模及诊断·····彭友顺, 王玉珍, 周晓松(58)
- 有杆抽油系统的数学建模及诊断·····程曦月, 刘 威, 马会财, 黄林杰(71)
- 基于功能原理的有杆抽油系统的数学建模及诊断·····许 放, 孙亚星, 王文娜, 徐根玖(83)
- “有杆抽油系统的数学建模及诊断”综述·····侯进军, 朱思铭(94)
- 对云导风矢量模型的若干研究·····韩 江, 曾龙基, 杨 涛, 陶小峰, 崔琪楣, 仝 辉(98)
- 基于交叉相关系数的风矢量度量模型·····范林涛, 王明雨, 许加庆, 阎维平, 盛四清(110)
- 基于卫星云图的风矢场(云导风)度量模型与算法探讨·····蒋 薇, 赖宇阳, 范 莹, 刘吉臻, 潘 志(123)
- 基于卫星云图的风矢场度量模型与自适应算法·····陈崇双, 种鹏云, 王恪铭, 薛长虹(139)
- 基于卫星云图的风矢场度量模型与算法探讨·····周 娟, 龚 正, 陈建亨, 宋志成, 杨 扬(150)
- 云导风的初步探究·····杨平吕, 刘祥余, 郭付才, 彭新伟, 黄思训, 项 杰(163)
- 2012 年全国研究生数学建模竞赛 D 题的赛后评述·····江惠坤(175)

管理科学

- 特征选择与空间降维概述、热点及展望·····赵 宇, 黄思明, 陈 锐(179)
- 基于投资者风险厌恶程度的广义熵投资组合模型研究·····李 华, 王 宾, 王 蕊(191)
- 基于灰色关联分析的广东省 GDP 与产业结构之间的关系及 GDP 预测的数学模型·····纪广月(198)
- 基于流动性约束和价格趋势的最优交易策略·····刘善存, 许 杨, 朱元琪, 张 强(204)
- 重抽样方法在投资组合理论中的应用与实证分析·····李 鑫, 曹显兵(214)

信息科学

- 内 P- 推理与系统故障判断恢复·····张环理, 李小朝, 史开泉(220)

应 用

- 若干图类的一般邻点可区别全染色算法及其 MATLAB 实现·····田京京, 贾 伟, 陈祥恩(227)
- 一个简化色谱方程组中复合波的稳定性分析·····李德胜, 沈 春(234)
- 基于灰关联度的扎龙白头鹤停歇数量影响因素分析·····李月秋, 王 红(240)

研 究

- R^N 上一类奇异双调和方程无穷多解的存在性·····杜 刚(245)
- $\mathcal{H}$ -子群与有限群的幂零性·····郭桂容, 彭望书, 张忠群(250)
- Hamilton 群的主同余·····曹发生(255)
- 单调压缩变换半群的秩·····高荣海, 徐 波(259)
- 子矩阵约束下的对称正交反对称矩阵反问题·····张宗标, 李 猛, 唐树乔(263)
- 图的三种符号星控制数·····周仲旺, 刘书英(271)
- L- 矩阵的多参数预条件 AOR 迭代法·····罗 芳(277)
- 非线性反应扩散方程组的符号不变量和变量分离解·····朱晓宁, 李 红, 李吉娜(283)
- 关于丢番图方程 $x^3 + 1 = 1267y^2$ 的整数解·····杜先存, 万 飞, 杨慧章(288)
- 简约李代数和局部李代数的生成元·····唐黎明, 刘文德(293)