



一门科学只有在成功地运用数学时，
才算达到了真正完善的地步。

——马克思

ISSN 1000-0984

CODEN SSHRE8

数学的实践与认识

MATHEMATICS

IN PRACTICE AND THEORY

第四十二卷

Vol. 42

第20期

No. 20

2012

中国数学会刊

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

2012 Vol.42 No.20

Contents

Managed Science

- Unascertained Model of Estimating Duration of Engineering Project SONG Jing-guang(1)
Discussion on the Solution and Judgment of the Shadow Price in Linear Programming FEI Wei(7)
Appraise of Intellective Employee's Loyalty Based on the Theory of Attribute Recognition GUO Qi, ZHAO Ming(17)
Optimal Control Analysis for Assets Investment Systems of Neural Technical Progress with Time Delay JIAO Hong-bing, WU Ji-hui(23)
Performance Analysis for Academic Staff Based on Simplified Principal Component Analysis of Interval-valued Data ZHOU Ning, WANG Hui-wen, HAN Xiao-ting, GUAN Rong (28)
Identifying Price Cycles via Wavelet Analysis: A Case of Natural and Synthetic Rubber Prices LIU Rui-jin, WEI Hong-jie, MO Ye-yong(38)
The Risk Characters and Dynamic Hedging Ratio of China Stock Index Futures: Using an Copula-Based Function TONG Meng-hua, QI Xue-bing, Shuang Han (47)
Liquidity and Capital Structure-Evidence from Chinese Stock Markets ZHU Hong-zhi, PAN Ning-ning, ZHU Hong-quan(60)
Construct Principles and Assessment Method of Index System LI Xiang, XING Qing-hua, WANG Xiao-guang, DONG Tao(69)

Engineering

- Unequal Interval Forecast Grey Model GM(1,1) Based on Residual Error Correction and Application ZHANG Shi-xin, CHEN Chun-liang, LIU Yi-le, DONG Yu-cai, ZHANG Ling(75)

Applications

- Multiple Attribute Decision Making and Its Applications Based on the Expectation of Interval Numbers and the Uncertain Analysis CHANG Yu-bao(82)
The Feasible Area of Effectual Attack of Wire + Wake Homing Torpedo WU Zhi-dong, LI Ben-chang, LI Xiang-ke, ZHANG Jing-kang(88)
Research on Three-phase Boundary of Gas Diffusion Electrode LEI Fan, DONG Bo, LI Qing-yu, XU Xian-zhi(93)
Global Convergence Results for a Memory Gradient Method with Armijo Step Size Rule ZHU Shuai, WANG Xi-yun, WU Shi-yue(98)
Stability of the Energy Supply-Demand Stochastic System WANG Lin-jun, CHEN Xu-mei, SUN Mei, TIAN Li-xin(105)
A DEA Model with Gray Connection-AHP Restraint Cone WANG Jian-hong, LU Zhi-feng(112)
A New Mathematical Model In Graduate Students' Matriculating SUN Xiao-jun, ZHANG Yin-li(117)
Periodic Solution of a Linear Semi-Continuous Dynamical System with Saddle Point GUO Hong-jian, SONG Xin-yu, CHEN Lan-sun(123)
Stochastic Mathematical Model with Enquiring Activities in Teaching Process BI Yu-min, WANG Yu-wen (130)
A Conjecture on Group Test Model GAO Huan-jiang(135)
The Solvability Analysis of the Problem of Businessmen Crossing River SHAO Jian-feng, SHAO Shuo(139)
Analysis of an Siri Epidemic Model with a Nonlinear Incidence Rate GUO Shu-min, LI Xue-zhi, CAI Li-ming (147)

Research

- Multivariate Graded Lagrange Interpolation XU Yan, YE Jin Hua, CUI Li-hong, LI Xin(152)
Infinite Boundary Value Problems for Second-Order Impulsive Differential Equations with "Supremum" SHI Piao-piao, WANG Wen-xia(159)
Periodic Solutions for A Kind of Second-order Neutral Functional Differential Equation With Multiple Deviating Arguments LUO Fang-qiong, YAO Xiao-jie, QIN Fa-jin (167)
Forced Oscillation of Higher Order Impulsive Neutral Partial Functional Differential Equations LUO Li-ping, XIAO Juan, WANG Yan-qun, XIE Zuo-zheng, ZENG Yun-hui (176)
Numerical Solution of the Singularly Perturbed Problem with Integral Boundary Condition LIAN Hai-rong, WANG Yu-peng, ZHAO Lin-lin, CHU Bao-zeng(184)
On Non-restoring Division Algorithm—Mathematical Analysis on Non-restoring Array Divider(I) LI Xiao-xia (191)
Several Algebraic Properties of Switching Graph CHANG Jian, Ayongga(197)
The Improvement and Application of the Hadamard-type Inequality for GA-Convex Functions DENG Zhi-ying, LIU Xiang-qing, SHEN Shi-yun(201)
Some Propertie of Maximal Prefix Codes CHEN Yun-kun(208)
The Adjacent Vertex-Distinguishing Total Coloring of $K_{2s} \times K_{2t}$ ZHANG Chen, ZHANG Ru-qing, LV Wei-dong(213)
Roughness of Filters in Lattice Implication Algebras PENG Jia-yin, MO Zhi-wen(217)
An Empirical Analysis of Sino-US Exchange Rate Based on GARCH Model SUN Ying-hong, CAO Xian-bing (223)
Some Special Sequence and the Computational Problems of its Digital Sum in Decimal Expansion BAI Yi-xue (229)
The Asymptotic Property Analysis to a 2-D Elliptic Equations with Small Parameters WANG Jun-me, DONG Pei-wu, YAO Cui-zhen(234)
On the Limit of a Kind of Nonlinear Recurrent Sequences with Variable Coefficients FAN Shou-fang(239)
A Note on Computable Upper Bound a Posteriori Error Estimates for the Non-Conforming Rotated Q1 Finite Element LIU Jie, YANG Yi-du, BI Hai(245)

Teaching Field

- The Formula for Integration by Parts and Taylor's Formula ZHAO Hong, TANG Yu(256)
Properties and Applications of Dirichlet Kernel in Calculus MENG Fan-you, JIN Jun, WANG Bing(260)
Generalized Fuzzy Volterra Integral Equations and Strong Fuzzy Henstock Integrals SHAO Ya-bin, GONG Zeng-tai, ZHANG Huan-huan(268)

数学的实践与认识

2012年第42卷第20期

目 次

管理科学

- 工程项目工期预测的未确知模型 宋晶光(1)
线性规划影子价格的求解判断方法探讨 费威(7)
基于属性识别理论的知识型员工忠诚度评价 郭奇, 赵铭(17)
带有时滞中性技术进步资产投资系统的最优控制分析 焦红兵, 吴冀徽(23)
基于简化的区间数据主成分分析的高校教师绩效分析 周宁, 王惠文, 韩小汀, 关蓉(28)
基于小波分析的价格周期识别——以天然橡胶和合成橡胶价格为例 刘锐金, 魏宏杰, 莫业勇(38)
基于Copula函数的我国股指期货风险及套期保值实证研究 佟孟华, 邱学兵, Shuang Han(47)
股票流动性与资本结构——基于中国证券市场的分析 朱宏志, 潘宁宁, 朱宏泉(60)
指标体系的构建原理与评价方法研究 李响, 邢清华, 王小光, 董涛(69)

工 程

- 基于残差修正的非等时距 GM(1,1) 模型及其应用 张仕新, 陈春良, 刘义乐, 董玉才, 张玲(75)
应 用

- 基于区间数期望和不确定性分析的多属性决策方法与应用 常玉宝(82)
线导+尾流自导鱼雷的有效射击可行域 武志东, 李本昌, 李祥珂, 张靖康(88)
气体扩散电极中三相交界线的研究 雷凡, 董博, 李清宇, 徐献芝(93)
结合 Armijo 步长搜索的一类新的记忆梯度算法及其收敛特征 朱帅, 王希云, 吴世跃(98)
能源供需随机系统的稳定性研究 王林君, 陈旭梅, 孙梅, 田立新(105)
带有灰色关联-AHP 约束锥的 DEA 模型 王建宏, 陆志峰(112)
研究生录取问题的一种新数学模型 孙小军, 张银利(117)
一类鞍点型线性半连续动力系统的周期解 郭红建, 宋新宇, 陈兰荪(123)
含探究活动的教学过程的随机数学模型 毕渔民, 王玉文(130)
关于分组化验模型的一个猜想 高焕江(135)
商人渡河问题有解性分析 邵建峰, 邵硕(139)
具有非线性传染率的疱疹动力学模型分析 郭树敏, 李学志, 蔡礼明(147)

研 究

- 多元分次 Lagrange 插值 徐艳, 野金花, 崔利宏, 李欣(152)
带有“上确界”的二阶脉冲微分方程的无穷边值问题 石漂漂, 王文霞(159)
一类具有多个偏差变元的二阶中立型泛函微分方程的周期解 罗芳琼, 姚晓洁, 秦发金(167)
高阶脉冲中立型偏泛函微分方程的强迫振动性 罗李平, 肖娟, 王艳群, 谢作政, 曾云辉(176)
具有积分边界条件的常微分方程边值问题的数值解 廉海荣, 王玉鹏, 赵琳琳, 褚宝增(184)
什么是不恢复余数法——阵列除法器的数学分析(I) 李小霞(191)
开关图的几个代数性质 常建, 阿勇嘎(197)
GA-凸函数的 Hadamard 型不等式的改进和应用 邓志颖, 刘祥清, 沈世云(201)
极大前缀码的一些性质 陈云坤(208)
 $K_{2a} \times K_{2b}$ 的邻点可区别全染色 张琛, 张如清, 吕卫东(213)
格蕴涵代数滤子的粗糙性 彭家寅, 莫智文(217)
基于 GARCH 模型的中美汇率实证分析 孙映宏, 曹显兵(223)
一些特殊数列数字和的计算问题 白益雪(229)
一个带有小参数的二维椭圆方程的渐近性分析 王军梅, 董沛武, 姚翠珍(234)
变系数非线性递归序列的极限 樊守芳(239)
关于非协调 Q_1^{rot} 元可计算上界后验误差估计的一个注记 刘杰, 杨一都, 闭海(245)

教学园地

- 分部积分与 Taylor 公式 赵虹, 汤宇(256)
在微积分中 Dirichlet 核的性质及应用 孟凡友, 金俊, 王冰(260)
广义模糊 Volterra 积分方程与强模糊 Henstock 积分 邵亚斌, 巍增泰, 张环环(268)