

目 次

· 人工智能 ·

- 稀疏统计学习及其最新研究进展综述 张红英, 董珂臻 (001)
基于非凸惩罚函数的高维协方差矩阵的建模 杨小卜 (013)
基于 AE-LSTM 混合神经网络模型的 NO_x 排放预测 苏盈盈, 张气皓,
罗好, 周昊, 何亚平, 阎垒 (023)

· 数理科学与化学 ·

- 三元变系数 Euler 函数非线性方程的正整数解 戴妍百, 高丽 (032)
几乎完全图是由第二 Immanantal 多项式刻画的 曾晓琳, 吴廷增, 潘佳丽 (037)
单位圆盘上几种 Toeplitz 算子的数值域 丁宣浩, 王章逸, 邵长慧, 李永宁 (045)
河流生态系统中两个相互作用种群的空间模式的形成 喻凤斯, 尹甜, 黄启华 (052)
盐沼生态系统中植物和硫化物相互作用模型的稳定性分析 尹甜, 喻凤斯, 黄启华 (060)
具有一般发生率和潜伏期时滞的水痘传播动力学模型 胡巧, 刘贤宁 (067)
一类位置不变的极值指数估计量 蒲钰瑶, 陈守全 (075)
跳跃因素下原油期货定价模型的理论研究及实证分析 任芳玲, 乔克林, 张少峰 (080)

· 资源与环境科学 ·

- 重庆市生态系统生产总值与城镇化耦合协调关系及空间特征研究 王昌博, 何志明,
何俊, 闻记影, 陈棋 (090)
城镇化进程中河北省居民生活消费碳排放特征及其影响因素 李双江, 陈艺璇,
王肖娅, 韩冬旭, 刘子耀, 王晨光 (101)
我国旅游业高质量发展研究综述 刘亚男, 余瑶, 董宇, 陈鹏 (109)

· 教学研究与改革 ·

- 导学式电子实验报告的探索设计与实践 龚成斌, 杨于瑶, 石燕, 高意, 唐倩 (117)
以实践育人为导向的西南大学-道合园林校企联合培养模式探索 孙松林, 刘磊,
邢佑浩, 张建林, 秦华 (123)

**JOURNAL OF SOUTHWEST CHINA
NORMAL UNIVERSITY
(NATURAL SCIENCE EDITION)**

Vol. 48 No. 4

Total No. 313

Apr. 20, 2023

CONTENTS

A Review of Sparse Statistical Learning and Its Recent Research Progress ZHANG Hongying, DONG Kezhen (001)

Modeling of High-dimensional Covariance Matrix Based on Non-convex Penalty Function YANG Xiaobo (013)

NO_x Emission Forecasting Based on AE-LSTM Hybrid Neural Network

..... SU Yingying, ZHANG Qihao, LUO Yu, ZHOU Hao, HE Yaping, YAN Lei (023)

Positive Integer Solutions of Nonlinear Equations of Ternary Variable Coefficients Euler Functions

..... DAI Yanbai, GAO Li (032)

Almost Complete Graphs are Determined by the Second Immanantal Polynomials

..... ZENG Xiaolin, WU Tingzeng, PAN Jiali (037)

Numerical Domains of Several Toeplitz Operators on the Unit Disk

..... DING Xuanhao, WANG Zhangyi, SHAO Changhui, LI Yongning (045)

Spatial Pattern Formation of Two Interacting Populations in a River Ecosystem

..... YU Fengsi, YIN Tian, HUANG Qihua (052)

..... YIN Tian, YU Feng Si, HUANG Qihua (060)

A Dynamic Model of Varicella Transmission with General Incidence and Latency Time Delay

..... HU Qiao, LIU Xianning (067)

A Class of Location-Invariant Extreme Value Index Estimators PU Yuyao, CHEN Shouquan (075)

Theoretical Study and Empirical Analysis on Crude Oil Futures Pricing Model under Jump Factors

..... REN Fangling, QIAO Kelin, ZHANG Shaofeng (080)

Coupling Coordination Mechanism and Spatial-Temporal Relationship Between Gross Ecosystem Product and

Urbanization in Chongqing WANG Changbo, HE Zhiming, HE Jun, RUN Jiying, CHEN Qi (090)

Characteristics and Impacts of Carbon Emission on Residents' Living Consumption of Hebei Province in Urbanization

..... LI Shuangjiang, CHEN Yixuan, WANG Xiaoya, HAN Dongxu, LIU Ziyao, WANG Chenguang (101)

A Summary of Research on High-Quality Development of Tourism in China

..... LIU Yanan, YU Yao, DONG Yu, CHEN Peng (109)

Exploration, Design and Teaching Practices of "Guided Learning" Electronic Experiment Report

..... GONG Chengbin, YANG Yuyao, SHI Yan, GAO Yi, TANG Qian (117)

Exploration of the Joint Cultivation Model of Southwest University and DONEHOME Guided by Practical Education

..... SUN Songlin, LIU Lei, XING Youhao, ZHANG Jianlin, QIN Hua (123)