

Proceedings

The 2008 International Conference on Risk Management and Engineering Management

ICRMEM 2008

4-6 November 2008 • Beijing, China

Organized by

School of Business Administration, North China Electric Power University
RiskChina Research Center, University of Toronto
Professional Risk Managers' International Association (PRMIA)



Los Alamitos, California
Washington • Tokyo



TABLE OF CONTENTS

ENGINEERING MANAGEMENT THEORY AND APPLICATIONS

Explanation by Evolutionary Game Theory in Evolvement of Surface Treatment Industry Cluster	1
<i>Zhi-da Guo</i>	
Time-Cost Trade-Off Problems of Engineering Project with Running Income	7
<i>Hongxian Li, Hongxiang Ouyang</i>	
Study on Inventory Early-Warning in Supply Chains Based on Rough Sets and BP Neural Network	11
<i>Hua Jiang, Junhu Ruan</i>	
An Optimization Model of Multi-echelon Stochastic Inventory System in the Supply Chain	18
<i>Hua Jiang, Junhu Ruan</i>	
Modeling for Return Policy with Retailer's Combined Decision Bias	24
<i>Jinlou Zhu, Fugen Song</i>	
Game Theory Analysis for the Evolution Of Knowledge-Based Alliance	30
<i>Ke-ying Zhang, Tian Gan, Wenguang Zhou</i>	
A Study of R&D Efficiency of Chinese New High-Tech Industry Based on Stochastic Frontier Analysis	36
<i>Tong-ying Liang, Xiu-de Chen</i>	
Research on Quality Supervision Model for Cooperative Manufacturing Preparing Process in Virtual Enterprise	45
<i>Shuqing Liu, Xiaojun Chen</i>	
Study on Management System of Virtual Supply Chain Based on the Cybermediary in Chinese Automotive Industry	54
<i>Xuehong Liu, Shunsheng Guo</i>	
Game Analysis on Engineering Safety Management	59
<i>Ouyang Jiantao, Ren Hong</i>	
Synthetic Evaluation Model of Traffic Safety Based on Reliability Theory	63
<i>Yong-sheng Qian, Qiong Zeng</i>	
Conflict and Innovation Practice of China Agricultural Chain — The Case Study of "Wen's" Cultivation Service Value Chain	68
<i>Qing Liu, Fengjun Lu</i>	
Optimal Contract under Double-Sided Moral Hazard and Cobb-Douglas Production Technology	74
<i>Shulei Sun</i>	
Study on the Harmonious Operation of Logistics Finance Management of Supply Chain in Ports-Hinterland Based on System Dynamics	80
<i>Yang Wang, Xing-rui Ma, Yuan-zhi Chen</i>	
Study on Cost and Schedule Control in Warship Planned Maintenance	85
<i>Li Xie, Ru xiang Wei, Zi shang chuan Chen</i>	
Research on Supply Chain Contract Coordination Simulation Based on Swarm	89
<i>Xiuguang Bai, Huaying Shu</i>	

Research on Evaluation System for Project Success	94
<i>Bin Yan, Renfu Jia, Zhuofu Wang</i>	
Supplier Selection Model Based on the Grey System Theory	98
<i>Zou Huixia, Yu Tao</i>	
The Optimization of Maintenance Strategy for Repair Systems with Different Safe and Reliability Degrees	103
<i>Xujie Jia , Lirong Cui</i>	
Generalized Operator Model in VMI and TPL Integrated Mode	107
<i>Jianbo Wu, Zhixue Liu, Touping Yang</i>	
Intelligent Engineering and Application in Water Ecology System Model	112
<i>Changhong Zhao, Jiangang Kang, Jing Wang, Jiahai Yuan</i>	
Externality Identification and Quantification of Transmission Construction Projects	118
<i>Jun Dong, Jing Zhang</i>	
Branch and Bound Algorithm for the Order Optimization of Parallel Activities in Project Scheduling	124
<i>Xing-mei Li, Su-fang Zhang</i>	
Research on Construction Projects Decision Based on Life Cycle Engineering Model	130
<i>Ting Wang, Zhiwu Hua</i>	
Rough Programming and Its Application to Production Planning	134
<i>Peng Lv, Peng Chang</i>	
Particle Swarm Optimization for Integer Resource Allocation Problem	139
<i>Qi-Rong Qiu, Yong-Fang Zhang</i>	
Application of Multi-agent Evolutionary Algorithm for Load Optimal Dispatching among Power Plant Units	143
<i>Guolian Hou, Jianhua Zhang, Xin Yang, Beiwen Zhou</i>	

ENERGY ECONOMY AND DEVELOPMENT STRATEGIES

Research on the Optimal Regulation Model of Electricity Transmission and Distribution Price	149
<i>Zhou Liang, Ting Zhang, Zhi-yong Xu</i>	
Comprehensive Evaluation of Energy Saving Social Construction of Jiangsu Province	155
<i>Ling-ling Zhang, Zong-zhi Wang</i>	
Long-Term Security of Supply Assessment under Open Electricity Market - Energy Policy Impacts in Slovenia	160
<i>Iztok Zlatar, Borut Kozan, Andrej F. Gubina</i>	
Comprehensive Post-Evaluation of Rural Electric Network Reformation Based on Fuzzy Interval Number AHP	167
<i>Cheng-ren Li</i>	
Oil Consumption and Economic Growth in China: A Multivariate Cointegration Analysis	174
<i>Chang-hong Zhao, Jiahai Yuan, Jian-gang Kang</i>	

Optimized Purchasing Strategy of Electric Power Distributers Based on the Markowitz Theory	180
<i>Wen Chen, Chun-jie Li, Hui-ru Zhao</i>	
Research on Application of Gray Target Model Based on Linear Combination Weights in Security Assessment of Power Production	186
<i>Yun-hui Chen, Dong-xiao Niu, Zhi-hong Gu, Yun-yun Zhang</i>	
Composite Evaluation of Replacing Small Generation Units with Large Ones in the Electricity Sector in China	191
<i>Jun Dong, Jing Zhang</i>	
The Markov Error Correcting Method in Gray Neural Network for Power Load Forecasting	198
<i>Dongxiao Niu, Jialiang Lv</i>	
The Options Relations in DG Integrated Power System Classification and Pricing	202
<i>Jun Fang, Hai-feng Wang</i>	
Comparative Research on Power Input and Efficiency of China's Typical Cities Based on Extension Model of DEA	207
<i>Yong-xiu He, Li-fang Yang, Yan Li, Shuo Liu, Yu Zhang</i>	
Research on Relationship between Cycles of Electric Power and the Economy Growth in Chinese Typical Cities Based on Maximum Entropy Method	212
<i>Yongxiu He, Dezhi Li, Lifang Yang</i>	
Gray Neural Network Forecasting Model of Power Load Based on Ant Colony Algorithm Method	218
<i>Dong-xiao Niu, Jia-liang Lv, Jian-rong Jia</i>	
Study on Intelligent Optimization Model Based on Grey Relational Grade in Long-Medium Term Power Load Rolling Forecasting	223
<i>Dong-xiao Niu, Jian-rong Jia, Jia-liang Lv, Yuan Zhang</i>	
The Error Correcting Markov Chains Study on Medium/Long Term Load Rolling Forecasting of SVM Based on Grey Relational Grade	229
<i>Dong-xiao Niu, Yuan Zhang, Jia-liang Lv, Jian-rong Jia</i>	
Electricity Load Forecasting Using Rough Set Attribute Reduction Algorithm Based on Immune Genetic Algorithm and Support Vector Machines	235
<i>Jingmin Wang, Zejian Liu, Pan Lu</i>	
Power Grid Safety Evaluation Based on Rough Set Neural Network	241
<i>Jinying Li, Yuzhi Zhao, Jinchao Li</i>	
Policy Support and Effectiveness Analysis of Wind Power Concession in China	246
<i>Erdong Zhao, Liwei Liu</i>	
Research and Prediction of Coal Price in China	251
<i>Shuo Liu, Wenjie Huang, Guanghong Zhang</i>	
Two-Way Coupling Optimization of Power Source Structure Based on the Constraint of SO₂ Emission	256
<i>Ying-ling Shi, Yuan-yuan Liu, Hong-song Yang</i>	
The Analysis of China Regional Power Demand Cycle Existence	261
<i>ShuXia Yang</i>	
Coordination Research on Key Parameters in Generation Competition Based on Dynamic Simulation	265
<i>Lin Xiao, Jun Dong, Jing Zhang</i>	

Decomposition of Energy and CO₂ Emission of China between 1980 and 2005	271
<i>Xiaoli Liu, Yongxiu He, Jun Dong</i>	
The Model of Power Plant Selection Based on Improved Fuzzy Neural Network	277
<i>Yanmei Li, Wei Sun</i>	
Transmission Capacity Expansion Investment Decision in Electricity Market	283
<i>Zeng Ming, Tian Kuo</i>	
Performance-Based Regulation Transition Model of Electricity Transmission and Distribution Price in China	289
<i>Ming Zeng, Shengming Quan, Kuo Tian, Na Li</i>	
Time-Sharing Based ARMA-GARCH Hourly Electricity Price Forecasting Approach	295
<i>Ming Zeng, Lianjun Shi, Kuo Tian, Lin Zheng</i>	
Combining KPCA with Support Vector Regression Machine for Short-Term Electricity Load Forecasting	301
<i>Caiqing Zhang, Pan Lu, Zejian Liu</i>	
Gray-Regression Variable Weight Combination Model for Load Forecasting	307
<i>Fuwei Zhang, Xuelian Zhou</i>	
Generation Company Bidding Strategy based on Risk Factors	313
<i>Li-ying Zhang, Jian-xun Qi</i>	
Application of Fuzzy Cluster in the Analysis of Prosperity of Power Consumption Market	319
<i>Su-fang Zhang, Ben Jiang</i>	
Study on the Modeling of Power Market Based on Conjectured Supply Function Equilibrium	324
<i>Yi Zhang, Kuo Tian, Yijun Li, Ming Zeng</i>	
On Site Test and Analysis about the Electric Heat Pump Project of Storage Capacity Mode	330
<i>Zhang Yu, Guan Yong, Bai-ting, Wang He</i>	
The Impact of Electricity Price Adjustment on National Economy Based on SAM Multiplier Analysis	335
<i>Hui-ru Zhao, Pei-pei You</i>	
Study on Mechanism of Electric Universal Service Income Compensation — Lifeline Electricity Price	340
<i>Hui-ru Zhao, Nan-nan Chi, Chun-jie Li</i>	
Short-Term Power Load Forecasting Based on Fuzzy-RBF Neural Network	345
<i>Zheng-yuan Jia, Li Tian</i>	
Application for Short-Term Power Load Forecasting Using Improved Wavelet Neural Networks Based on GA	349
<i>Zheng-yuan Jia, Li Tian, Dan Zhao</i>	
Electricity Consumption Forecasting Based on Improved BP Neural Network	353
<i>Xing-ping Zhang, Jia-hai Yuan</i>	
Research of Electric Power Industry's Production Logistics Model Based on Hybrid Chaos Immune Evolutionary Optimization Algorithm	357
<i>Mian Xing</i>	

Research on the Electricity Customer Credit Evaluation Based on Fuzzy Expected Value Decision-Making Method Modified by Least Squares Support Vector Machine	363
<i>Mian Xing</i>	
Income Growth, Energy Consumption and Carbon Emissions in China	369
<i>Zhi Zhao, Jiahai Yuan</i>	

RISK MANAGEMENT

User Acceptance of Internet Banking in an Uncertain and Risky Environment	374
<i>Gang Liu, Su-Ping Huang, Xin-Kai Zhu</i>	
Empirical Research of Liquidity Risk Based on China's Stock Market	380
<i>Yuanhui Li</i>	
Study on Applying Fault Tree Analysis Based on Fuzzy Reasoning in Risk Analysis of Construction Quality	386
<i>La Shu, Jianping Li, Min Qiu</i>	
The Study on the Loan Risk Pricing of the Bank in Internal Rating-Based Approach	391
<i>Xiu-hua Wang, Ling Liang</i>	
Information Security Risk Assessment Based on Analytic Hierarchy Process and Fuzzy Comprehensive	397
<i>Long Xiao, Yong Qi, Qianmu Li</i>	
Correlation Study Between Individual Risk Models and Collective Risk Models for a Single Period	403
<i>Shun-hua Yang, Xi-cang Zhao</i>	
Technology Innovation and Risks in Outsourcing	409
<i>Yong Yang, NengSheng Luo, Hong Bigang</i>	
Integrated Risk Management of Typhoon Disaster to Light Steel Building	415
<i>Yufen Jin, Qingshan Yang, Qi Li</i>	
The Risk Allocation Method Based on Fuzzy Integrated Evaluation of Construction Projects	421
<i>Yun-li Gao, Lei Jiang</i>	
Design for Early Warning Indexes System of Enterprise Internationalized Business Reputation Risk	426
<i>Guohua Zhang, Jing Yang</i>	
Research of Risk Appraisal of Enterprise Technology Alliance	432
<i>Jian Zhang, Kun Huang</i>	
Research of Real Estate Investment Risk Evaluation Based on Fuzzy Data Envelopment Analysis Method	437
<i>Shu-jing Zhou, Zhong-da Zhang, Yan-cang Li</i>	
The Research on Real Estate Project Risk Evaluation Based on Monte Carlo Simulation and the Theory of Variable Weight	442
<i>Shuang-chen Li, Yu-mei Yang</i>	
Hazards and Dynamic Risk Assessment of Power Supply Enterprise	448
<i>Yanbin Li, Peng Wei</i>	
Research on Optimization of Generation Companies' Profits Risk Management	454
<i>Nansheng Pang, Yingling Shi, Xian Ping</i>	

Application of Fuzzy Comprehensive Evaluation Model Based on Variable Fuzzy Set Method in Construction Enterprises' ERP Project Risk Evaluation	459
<i>Yunna Wu, Zhijun Huang</i>	
Inherent Supply Risk of Electricity Futures to Electricity Market	465
<i>Zhong-qun Wu</i>	
Research on Risk Assessment in Engineering Project Based on Route Analysis and Hierarchical Variable Weight Fuzzy Evaluation	471
<i>Yuansheng Huang, Chengfang Tian</i>	
Research on Credit Risk Assessment Model of Commercial Banks Based on Fuzzy Probabilistic Neural Network	475
<i>Yuansheng Huang, Chengfang Tian</i>	
The Contract Risk Recognition of Construction Project Based on Rough Set Theory and Fuzzy Support Vector Machine	480
<i>Zehong Li, Weibo Liang</i>	
Research on Risk Evaluation of Agent Management Projects Based on Clustering Methodology	485
<i>Nansheng Pang, Changming Ji</i>	
Triangular Fuzzy Number Method for Measuring Risk Element Criticality by Credibility Degree in Project Network	491
<i>Cunbin Li, Jianjun Wang, Li Li, Xueyan Liu</i>	
An Integrated Electric Power Supply Reliability Differential Pricing Model under the Liberalized Market Environment	495
<i>Hai-Yang Jiang, Zhong-fu Tan, Li Li, Fu-cheng Cao</i>	
Tactics Game Analysis in Large Area Blackout Crisis Prevention between the Government and State Grid Companies	501
<i>Jiang-yan Liu, Dong-hua Yang, Zi-li Ning</i>	

SERVICES MANAGEMENT

The Realized Volatilities Research on China A-Stock Returns	507
<i>Jing Chen, Handong Li</i>	
An Analysis on the Temporal Variation of Technology Efficiency in China's Telecommunications Industry	511
<i>Qiang Chen, Weiwei Wu, Bo Yu</i>	
Optimal Investment Decision of Security Investment Fund Based on the Experiment Design	517
<i>Wei Cheng, Jin-yu Wang, Jing-ting Ma</i>	
Real Option Study on Merger and Acquisition Investment and Financing Decisions	521
<i>Shixia Duan, Wenxiu Hu</i>	
Structure Database Strategy for Importance Sampling and Application to Pricing Options	526
<i>Quan-sheng Gao</i>	
A Genetic Fuzzy Neural Network for Bankruptcy Prediction in Chinese Corporations	532
<i>Fu-yuan Huang</i>	

The Application of DEA to the Evaluation of Performance of Corporate Divestiture	537
<i>Binhui Lai, Qiusheng Zhang, Tao Zhang, Feng Zheng</i>	
Empirical Research on Sustainable Development of Industrial Cluster	543
<i>Hui Li, Yang Zhang</i>	
A Bayesian Network Model under Group Decision Making for Evaluating IT Outsourcing Risk	549
<i>Xiu-wu Liao, Tao Wan, Yuan Li</i>	
The Equilibrium of Public Service - An Analysis from the Perspective of Local Government	555
<i>Wei Qi, Xiaojian Chen</i>	
Chinese Open-End Fund Operational Efficiency Appraisal Using Data Envelopment Analysis	560
<i>Guanghui Song, Wenwei Guo</i>	
Business Failure Prediction Using Exponential Smoothing Forecasting and Pattern Recognition	566
<i>Baojun Tang, Wanhua Qiu, Xing Sun</i>	
The Research about Chinese Corporations' Performance Transition from Overseas Technology-Acquiring M&As	572
<i>Qian Wang, Ying-chun Wang, Qi Feng</i>	
Analysis on Evaluating Relative Contribution Effectiveness of Government Leaders' Performance	578
<i>Wei Wang, Yongzhi Yao</i>	
The Relationship Between Organizational Career Management and Job Satisfaction: An Empirical Study on Software R&D Professionals	583
<i>Wenhua Wu</i>	
Analysis of the Game Models between Governments and Enterprises in Cultivating Regional Brands of Industrial Clusters	589
<i>Aihua Xiong, Xiuwen Liu</i>	
Cognizing and Choosing Model for Rural Tourism Development in Nonoptimal Tourism District: A Case Study of Moutuo Village in Qiang Minority Community, Southwestern China	594
<i>De-wei Yang, You-jun Chen, Dao-jie Wang</i>	
A Maximum Entropy Model for Large-Scale Portfolio Optimization	600
<i>Yuxi Jiang, Suyan He, Xingsi Li</i>	
Empirical Study on Effect of Managerial Discretion on CEO Pay-Performance Sensitivity	606
<i>Changzheng Zhang, Jie Xie</i>	
Changes in Consumers Behavior at Fitness Clubs among Chinese Urban Residents - Dalian as an Example	612
<i>Bin Wang, Chunyou Wu</i>	
Research on Person-Post Fit Based on Competency Model	617
<i>Yonggui He, Yan Zhao</i>	
Using Elitist Particle Swarm Optimization to Facilitate Real Estate Portfolio Based on Information Entropy	623
<i>Rui Liu, Xiaoya Wang</i>	

Some Empirical Observations on the Spot and the Forward Exchange Rates in China	629
<i>Dong Sun, Tao Li</i>	
Application of SVM Based on Rough Set in Real Estate Investment Environment Comprehensive Evaluation	634
<i>Ting Wang, Yanqing Li</i>	
Evaluation of Competitiveness of Power Plants Based on Optimized SVM Using GA and AIS	638
<i>Wei Sun, Jie Zhang</i>	
Application of RBF Neural Network Based on Ant Colony Algorithm in Credit Risk Evaluation of Construction Enterprises	643
<i>Yunna Wu, Zhaomin Si</i>	
Research on the Effect of Debt Financing in Electric Power Listed Company	649
<i>Xiao-yan Liu, Tao Li</i>	
A Research on Debt Financing Effects Based on the Power Companies	655
<i>Tao Li, Jianhui Jian</i>	
Research on Determination Method of Financing Lease Margin Money Based on Default Risk	660
<i>Wei Jiang, Wen-jie Huang</i>	
Government Control Level and Cash Dividend Policy - An Empirical Evidence from the China Securities Market	664
<i>Jianhui Jian, Zhongfu Yu, Pinglin He</i>	
Author Index	