

Proceedings

2008 International Workshop on Modelling, Simulation and Optimization

*Hong Kong
27-28 December 2008*

Sponsored by
Hongkong Academy of Science and Technology



Los Alamitos, California
Washington • Tokyo



TABLE OF CONTENTS

Modeling

Wavelet De-noising and Correlation Analysis in GIC Signal during Magnetic Storm	1
<i>Feng-xia He, Xue-ling Mu, Lian-guang Liu</i>	
Urban Electric Load Forecasting in China Using Combined Cellular Automata	5
<i>Yongxiu He, Dezhi Li, Rui Fang, Lifang Yang, Furong Li</i>	
The TOPSIS Method of Multiple Attribute Decision Making Problem with Triangular-fuzzy-valued Weight	9
<i>Yuan-guang Fu</i>	
The Study on Knowledge Flow Efficiency Measure of Weighted RIN	13
<i>Zhan Zheng, Bo-tang Han</i>	
The Study of Electricity Market Monitoring Index System	17
<i>Huiru Zhao, Chao Liang, Zhiqiang Qin</i>	
The Research on Building Enterprise Knowledge Management Performance Evaluating Indicator System	23
<i>Tianyilin</i>	
The Dynamic Model and Acceleration Compensation for the Thrust Measurement System of Attitude/Orbit Rocket	28
<i>Zongjin Ren, Baoyuan Sun, Jun Zhang, Min Qian</i>	
The Continuous CCR Model in DEA	32
<i>Ling Zhen, Ming-qing Xing, Qiang Li</i>	
The Compensation Mechanism for Power Universal Service in China	36
<i>Fuwei Zhang, Luming Yan</i>	
The Comparative Study on Utility Maximizing of the Portfolio Selection Model	40
<i>Ye-ping Chu, Peng Zhang</i>	
Temperature Rising by a High-Speed Train Running Through a Long Tunnel	45
<i>Zhu Yanfeng, Wu Yaping, Yang Changyu</i>	
System Risk Assessment Method on Water Resources Supply	49
<i>Lianqing Xue, Yifeng Wu, Chunling Wu</i>	
SVM-Based Oil Security Pre-warning	53
<i>Yong-bo Sun, Hua Zhang, Yong-heng Lu</i>	
Study on the Network Intrusion Detection Model Based on Genetic Neural Network	58
<i>Jiang Hua, Zhao Xiaofeng</i>	
Study on the Evaluation of Core Competence of Corporation Based on the Human Capital	63
<i>Li-gen Yao, Juan Chen</i>	
Study on the Evaluation of Community Informatization Level Based on Unascertained Measure Model	67
<i>Yang Jing, Jiang Hua</i>	
Structural Equation Model for the Affecting Factors of Safety Management Capability of Coal Mine	72
<i>Tie-zhong Liu, Zhi-xiang Li</i>	

Stability and Guaranteed Cost Control for Quantized Feedback Networked Control system	76
<i>Yiwei Feng, Xiang Zhu, Zhong-ming Liu, Chao-qun Zhu</i>	
Simultaneous Spectrophotometric Determination of O-nitro-aniline, M-nitro-aniline and P-nitro-aniline Using a Wavelet-based Generalized Regression Neural Network	82
<i>Ling Gao, Shouxin Ren, Huizhen zhang</i>	
Simulation of Coupling Characteristic of Hydraulically Driven Stewart Platform Based on Dynamics Model	86
<i>Jianming Ma, Jingfeng He, Haiguo Xiong, Jun-wei Han</i>	
Simulation and System Dynamics Models for Transportation of Patients Following a Disaster	91
<i>Ying Su, Lei Yang, Zhanming Jin</i>	
Semantic Web-Based Context-Aware Service Selection in Task-Computing	95
<i>Runcai Huang, Yiwen Zhuang, Jiliang Zhou, Qiyang Cao</i>	
Resolve of Overlapped Voltammetric Peaks in Using a Wavelet Packet Transform Based Radial Basis Function Network	100
<i>Shouxin Ren, Ling Gao</i>	
Research on Three Dimensional Geo-science Modeling in Digital Mine	104
<i>Zhou Zhao, En-ke Hou, Zhi-hua Zhang, Nian-dong Deng</i>	
Research on the Loading Problem of Piece Goods in Container Basis of Loading Time Window	110
<i>Lei Bu, Chuanzhong Yin</i>	
Research on Purchase Intentions of Residential Product Based on Structural Equation Model	113
<i>Yanhua Zhao</i>	
Research on Prices and Timing of Sequential Merger	117
<i>Tao Zhang, Wenxiu Hu</i>	
Research on Coupling Algorithm between Hierarchical Analysis and Shortest Path Analysis in Tunnel Network	121
<i>Zhi-hua Zhang, En-ke Hou, Zhou Zhao, Nian-dong Deng, Rui-tao Jia</i>	
Research for the Bearing Grinding Temperature On-Line Monitoring System Based on the Infrared Technology	127
<i>Zongxiang Huang</i>	
Portfolio VaR Computation Based on O-GARCH	131
<i>Rongda Chen, Yi Lv, Jianbo Liu</i>	
Polarization Characteristic of Droplet of Water-in-Oil Emulsion in a High Uniform Electric Field	137
<i>Haifeng Gong, Ye Peng</i>	
New Safety Assessment Model for Civil Engineering Structure	141
<i>Yan-cang Li, Juan-juan Suo, Shu-jing Zhou</i>	
New Modeling and Analysis of Three-Stage Electro-Hydraulic Servo Valve	144
<i>Xiaochu Liu, Qitao Huang, Dacheng Cong, Junwei Han, Lin Xiao</i>	
New Model for Total Settlement Process of Municipal Solid Waste Landfill	149
<i>Shuai Zhang, Wei Wang</i>	
Multi-level Modeling for Hybrid Manufacturing Systems Using Arena and MATLAB	153
<i>Shuang Liang, Xifan Yao</i>	

Modified Mean Value Model for a Common Rail Marine Diesel Engine	158
<i>Haiyan Wang, Xiaoying Wu</i>	
Modeling and Developing of Wire-electrode Cutting Numerical Control System Based on Windows.....	161
<i>Rongjun Tu</i>	
Matter-element Model for City Eco-security Evaluation	165
<i>Hualin Xie</i>	
Mathematical Model for Shear Stress-strain Relationship of Unsaturated Soil.....	169
<i>Wei Wang, Tinghao Lu</i>	
Game Analysis of Product Innovations Aimed at Differentiation in Markets with Network Externalities.....	173
<i>Ming-qing Xing, Ling Zhen, Lai-sheng Wang</i>	
Fuzzy Reliability Evaluation of Existing Bridge Structures through FAHP	177
<i>Hong Wang, Hong Yuan, Zhitao Yu</i>	
Forecasting Clinker Strength Based on Rough Set & Neural Network	181
<i>Lifang Chen, Liang Chen, Yi Guo</i>	
Evaluation Modelling and Optimization of Investment Options	186
<i>Li-ming Chen</i>	
Evaluation Model for Real Estate Investment Environment Based on SVM	190
<i>Shu-jing Zhou, Li-mei Cao, Yan-cang Li</i>	
Evaluation Model for Grid Safe Production Based on Fuzzy Clustering and Rough Set.....	194
<i>Liyang Zhang, Jianxun Qi</i>	
Evaluating the Mutual Impacts between Global Warming and Industry Economy Based on Structural VAR Model	198
<i>Ning Sun, Lianshui Li</i>	
Estimating the Highway Freight Origin-destination Matrix from Multi-source Data Based on Fuzzy Programming Theory	202
<i>Jin Shan, Xu-hong Li</i>	
Empirical Study on the Competitiveness of Logistics Industry in China's Middle Region.....	208
<i>Xiufang Du, Xiaofei Yan</i>	
Dynamic Fuzzy Kernel Clustering analysis of Enterprises Independent Innovation Capability Based on Artificial Immunity	214
<i>Bin Qu, Hui Wang</i>	
Dispersive Characteristics Analysis and Vibration Isolation Simulation of Floating Slab Track System	219
<i>Jun Yuan, Zhao-bo Meng, Min-zhe Wu, Lin Song</i>	
Differential Equations Model and Reliability Analysis of Work-Related Injury Insurance System of China.....	223
<i>Sifeng Zhang, Lijian Wang</i>	
Design of Activity-based Costing Model Based on the Reciprocal Cost Sharing	227
<i>Suli Hao, Rijia Ding</i>	
Cost Allocation Based on Game Theory in Supply Chain Coordination	231
<i>Shuyong Liu, Yan Chen, Nan Li, Lili Qu</i>	
Cloud Neural Network Algorithm Based on Cloud Transformation	235
<i>Liwei Han, Zongkun Li</i>	

Chinese Patent Infringement Retrieval Based on Model the Structure Information of Patent's Claims	239
<i>Xue-feng Wang, Yu-qin Liu, Dong-hua Zhu</i>	
Bidding Decision on Open Group-buying Online Auction Based on Multi-price Levels	245
<i>Xiao-hong Bai, Gui-shi Deng</i>	
Balance between Managerial Inertia and Managerial Flexibility During Organizational Change: A Dynamic Model	249
<i>Chang-zheng Zhang, Jin Kong</i>	
Assessment of Environmental Effect of Chinese Foreign Trade Based on Rough Sets and SVM	254
<i>Jinana Zhao, Zhuozheng Wu, Zhao Xu</i>	
Approximate Analysis of a Serial Manufacturing System with Inserting Process	258
<i>Li Qiu, Huaigang Zang</i>	
Analysis on Route Choice Behavior in Seamless Transfer Urban Rail Transit Network	262
<i>Yun Bai, Jian-feng Liu, Zhuang-zhi Sun, Bao-hua Mao</i>	
Analysis of Transfer Mode of Airport Passengers Based on Decision Tree	266
<i>Huang Jia, Zhang Ning</i>	
Analysis of Quality Contract in Multi-Echelon Supply Chain under Double-Sided Moral Hazard Condition	271
<i>Jun Hu, Jian-xin You, Rui Zhang</i>	
An Evaluation Method of Operational Capability Based on T-A-S	275
<i>Yan-Yan Huang, Chun Yin, Yuewei Dai, Jianyu Wang</i>	
An Analysis of the Impact of Safety Production Regulation on Coal Mining Industry's Behavior Evolution Based on Multi-agent Model	279
<i>Qiang Mei, Zhao Li, Jian-guo Du, Shou-wei Li</i>	
Algorithm for Finding Second Critical Path by Safety Float	283
<i>Lihui Zhang, Xiaoli Liu, Gang Zhong</i>	
A Practical Calculating Model Including Multi-Mode Contributions for Along-Wind Responses of Lattice Towers	287
<i>Guo-Huan Liu, Hong-Nan Li, Yang Wang</i>	
A New Optimization Algorithm for Grounding Grid Fault Diagnosis	292
<i>Qi-rong Qiu, Peng Wang</i>	
A New Implicit Enumeration Method for Linear 0-1 Programming	296
<i>Wenwu Shao, Wangbin Hu, Xunjiang Huang</i>	
A Cooperative Game Theory Analysis for Modular Manufacturing Network	300
<i>Zhida Guo</i>	

Simulation

VISSIM-Based Simulation Approach to Evaluation of Design and Operational Performance of U-turn at Intersection in China	304
<i>Junqiang Leng, Yaping Zhang, Mengqi Sun</i>	
The Virtual Simulation System of Numerical Control Machining	308
<i>Shuang Sun, Lufeng Luo, Guoqin Li, Xiangjun Zou, Jingfeng Yang</i>	
The Small Partition Experiment and Numerical Simulation Used to Explosive RDX-8701	314
<i>Huan Shi, Tao Weijun, Guoping Jiang</i>	

The Modeling and Simulation of the Car-following Behavior Based on Fuzzy Inference	317
<i>Qiang Gao, Shuliang Hu, Chao Dong</i>	
Study on the Surface Roughness and Surface Shape Simulation Based on STEP-NC Turning	321
<i>Xiusheng Chen, Chengrui Zhang, Riliang Liu, Hongbo Lan</i>	
Study on Radar Reconnaissance Simulation System Based on Queuing Theory	326
<i>Ying Liu, Xudong Chen, Jie Xu</i>	
Study on Multi-field Coupled Model and Numerical Simulation During Excavation of Tunnel	329
<i>Jinlong Wang, Weizhang Wang</i>	
Stability Analysis of Tunnel Support Based on Site Survey and Numerical Simulation	333
<i>Jian-qing Jia, Hong-tu Wang</i>	
Simulation on Traffic Micro-Circulation Organization in Heavy Traffic Networks	337
<i>Yuan-Zhou Yang, Li-Ping Gao, Xu-Jie Feng, Bao-Hua Mao</i>	
Simulation of a Modified Algorithm for SAR Parallel Imaging	341
<i>Jurong Hu, Fei Wang, Ning Cao, Hao Lu</i>	
Simulation Model and Mechanism of Burr Formation	345
<i>Yunming Zhu, Guicheng Wang</i>	
Simulation and Experimental Studies on Similar Material of Rockmass	350
<i>Chang-long Wang, Yan-ming Qi, Kun-peng Zhang</i>	
Simulation and Analysis of Die Behavior During Bulge Forming Using the Finite Element Method	355
<i>Zhenli Gao, Boyan Tang</i>	
Simulation Analysis for the Nonlinear Seismic Response of Seismically Isolated Continuous Bridge	359
<i>Kai Zhang, Eryu Zhu, Yu Li, Kang Gao</i>	
Research on the Impact of Traffic Volume on U-turn at Intersection	363
<i>Junqiang Leng, Yaping Zhang, Hantao Zhao</i>	
Research on Chinese Museum Design Based on Virtual Reality	367
<i>Xia Liu, Jiangang Qiao</i>	
Parametric Study on Seismic Energy Response of Base-Isolated Structures	370
<i>Chenghao Wu, Yu Li, Haoyu Li, Kai Zhang</i>	
Parameter-Sensitivity Simulation and Analysis for the Design of Soft Lunar Lander	374
<i>X.J. Yang, W.L. Wang, H.H. Liu</i>	
Numerical Simulation of Gas Drainage in Low-Permeability Fissured Coal	379
<i>Ming Gao, Yun-liang Tan, Gui-rong Teng</i>	
Numerical Simulation and Dimensional Analysis for Impact Resistant of the Building Structures	383
<i>Guoping Jiang, Weijun Tao, Shi Huan</i>	
Modeling and Simulation of 6-DOF Parallel Manipulator Based on PID Control with Gravity Compensation in Simulink/ADAMS	386
<i>Chifu Yang, Jingfeng He, Hongzhou Jiang, Junwei Han</i>	
Microstructure-Based Computer Simulation and Mechanical Modeling of Particle-Reinforced Composites	391
<i>Liu-Juan Zhu, Wen-Zhong Cai, Shan-Tung Tu, Bo-Qin Gu</i>	

Low-Frequency Vibration Isolation Performance of Floating Slab Track System	395
<i>Jun Yuan, Lin Song, Min-Zhe Wu, Zhao-Bo Meng</i>	
Kinematics Analysis of a 3-dof Rotational Parallel Mechanism	399
<i>Xiaolin Dai, Qitao Huang, Hongzhou Jiang, Junwei Han</i>	
Finite Element Analysis of Head-Ground Collision	403
<i>Gang Lei, Chunyan Bao, Xianjue Liu</i>	
FEM Simulation of the Roll Deformation of Six-High CVC Mill in Cold Strip Rolling	407
<i>Jingna Sun, Fengshan Du, Xuotong Li</i>	
Effects of Variable Message Signs (VMS) for Improving Congestions	411
<i>Shaokuan Chen, Mingjun Liu, Liping Gao, Chao Meng, Wei Li, Jinzi Zheng</i>	
Dynamic Monitoring and Numerical Simulation of Tunnel Under Difficult Ground Condition	415
<i>Haitao Wang, Jinqing Jia</i>	
Analysis and Simulation of the GPS-Pseudolite Signals	419
<i>Lei Zhang, Jianyu Wang, Ning Dai</i>	
All-Digital GPS Signal Simulating and Processing Techniques for High Dynamic Movement	423
<i>Lin Zhao, Jicheng Ding, Shu Yu</i>	

Optimization

Optimizing Sequence of Enhanced External Counter-Pulsation During AEI-CPR Based on Genetic Algorithm	428
<i>Lin Xu, Xiaoming Wu, Yanru Zhang</i>	
Optimal Design of the Speed Change Sheet-Fed Mechanism on Printing Press	432
<i>Fang Rui Ming, Chen Hong</i>	
Lifetime Uncertainty and the Optimal Replacement Rate of Urban Public Pension in China	436
<i>Zaigui Yang</i>	
FEA-based Structure Optimization for the Drive End Housing of an Automotive Starter	440
<i>W.L. Wang</i>	
Experimental Study on Steel Slag and Slag Replacing Sand in Concrete	444
<i>Chang-long Wang, Yan-ming Qi, Jin-yun He</i>	
A New Adaptive Particle Swarm Optimization Algorithm	449
<i>Jinrong Zhu, Jianbao Zhao, Xiaoning Li</i>	
A Variable Step-Size Optimization Algorithm Based on a Special Numerical Method to Solve the System of Nonlinear Equations	452
<i>You-hang Zhou, Jie-huang Lin, Jian-xun Zhang</i>	
A Pool Segmentation Method for Car Rental Industry	457
<i>Yazao Yang, Wenzhou Jin, Xiaoni Hao</i>	

Author Index