

2011 International Conference on Engineering and Risk Management

Systems Engineering Procedia Volume 1

**Toronto, Canada
28-30 October 2011**

Editors:

Desheng Dash Wu

ISBN: 978-1-62748-646-0

ISSN: 2211-3819

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com



Contents

Foreword	
John R. Birge	1
Editorial: Risk and Engineering Management	
Desheng Dash Wu	2
Disaster and Safety Engineering	
MapXtreme Resolution for Internet Publication of Natural Disaster Information in Earthquake Engineering Based on ANN	
Qingjie Zhu and Jing Chen	4
Static Test Analysis of a Bridge Structure in Civil Engineering	
Jiamei Zhao, Tao Liu and Yuliang Wang	10
Thermodynamic Analysis of Air Cycle Refrigeration System for Chinese Train Air Conditioning	
Zhenying Zhang, Shengjun Liu and Lili Tian	16
The Experimental Research of Low Strength Concrete Considering Strain Rate under Uniaxial Compression	
Yumin Zhang, Yunfei Jia, Youpo Su and Jingyu Su	23
Ductility and Strength of Hybrid Fiber Reinforced Self-Consolidating Concrete Beam with Low Reinforcement Ratios	
Zhiguo You, Xiangyu Chen and Shuai Dong	28
Experimental Investigation on the Effect of Reinforcement Ratio to Capacity of RC Column to Resist Lateral Impact Loading	
Xingguo Wang, Yumin Zhang, Youpo Su and Yu Feng	35
Finite Element Analysis on Casing Failure Based on ADINA	
Peng Wang, Qingjie Zhu and Xiangying Bu	42
Design Methods of Reinforce-Concrete Frame Structure to Resist Progressive Collapse in Civil Engineering	
Hongyu Wang, Youpo Su and Qingshen Zeng	48
ANN Model for the Estimation of Life Casualties in Earthquake Engineering	
Hai xia Wang, Jin xin Niu and Jiang feng Wu	55
Model Test Study on Vibration Transferring of Dynamic Compaction of Hydraulic Filling Foundation Reinforcement	
Jingsheng Qiao and Loushan Li	61
Experimental Study on Concrete T-Beams Strengthened with Carbon Fiber Reinforced Polymer (CFRP) Sheets on Three Sides	
Guowei Ni, Bo Liu, Xiao Li and Wenshang Yan	69
Model Test Study on Transfer Law of Dynamic Stress Produced by Dynamic Compaction	
Qingjuan Meng, Jingsheng Qiao and Lin Wang	74
Numerical Simulation Analysis of Block's Thermal Performance and Its Influencing Factors	
Lihui Ma, Liang Wei and Weijun Yang	80
Study on Evaluation of Earthquake Evacuation Capacity in Village Based on Multi-level Grey Evaluation	
Danxiang Ma, Jianyu Chu, Xinuan Liu and Shiyong Zhao	85
Research of the 3d GIS Based on Open GL_ES for Earthquake Engineering	
Chuanwen Luo, QingjieZhu, BoPang and JinshengWang	93
Simultaneous COD and Nitrogen Removal in a Micro-Aerobic Granular Sludge Reactor for Domestic Wastewater Treatment	
Xiao Liu and Chunjuan Dong	99
The Energy Analysis of Concrete Failure in Structural Engineering	
Tingquan Liu, Shuo Wang, Jing Gao and Xuejing Tian	106
Thermodynamic Analysis of the Actual Air Cycle Refrigeration System	
Liu Shengjun, Zhang Zhenying and Tian Lili	112
Relationship between Energy Consumption and Economic Growth: Empirical Study Based on Data on Hebei Province from 1980 to 2008	
Yang Li, Feng Nan and Fang Nan	117
Effects of Total Phosphorus (TP) and Microbially Available Phosphorus (MAP) on Bacterial Regrowth in Drinking Water Distribution System	
Dengling Jiang, Yue Chen and Guowei Ni	124
A Fuzzy-Stochastic Constraint Programming Model for Hazmat Road Transportation Considering Terrorism Attacking	
Hongmei Jia, Lin Zhang, Xiuling Lou and Huiyun Cao	130
Experimental Research on Seismic Behavior of Unbonded Precast Reinforced Concrete Frame	
Jianqiang Han, Yulong Cai, Changyan Lin, Guanyu Gao and Fei Wang	137

Contents

Engineering Construction and Project Management

The Application of Nested-Game Theory in the Public Participation Mechanism in the Decision-Making of Large Engineering Projects
PANG Yongshi, XIE Shufeng and JIANG Shasha 142

Establishment and Application of Performance Assessment Model of Waste Management in Architectural Engineering Projects in China
Liu Jingkuang and Wang Yousong 147

Forecast for Construction Engineering Risk Based on Fuzzy Sets and Systems Theory
Yan Jun Zhao, Xiao Jun Liu and Yan Zhao 156

Risk Assessment Based On Fuzzy Network (F-ANP) In New Campus Construction Project
Zhou Lin and Yang Jianping 162

The Risk Assessment Model of BT Construction Engineering Project Financing
Luo Fu-zhou and Gao Hong-yuan 169

Research on Risk Management of Railway Engineering Construction
WANG Lin, LI Yaqi and WANG Enmao 174

Study on the Reasonable Value Distribution of Residential Engineering on the Theory of Industrial Value Chain
LI Lingyan, LIU Xiao Jun and YAN Weicheng 181

Based on Gray Comprehensive Evaluation Method of Real Estate
Xiao Jun Liu and Beibei Chen 189

Engineering Risk Management Planning in Energy Performance Contracting in China
Hu Jinrong and Zhou Enyi 195

Spatial Autoregressive Model of Commodity Housing Price and Empirical Research
Feng Lan and Yuan Zhang 206

Research of 4MIE's Effect on Engineering Quality Based on Structural Equation Model
Mao Yihua and Xu Tuo 213

The Study of the Risk Decision of Cluster Park Engineering
Wang La-yin and Luo Fu-zhou 221

Fuzzy Real Option Evaluation of Real Estate Project Based on Risk Analysis
Yihua Mao and Wenjing Wu 228

The Comprehensive Evaluation for Design Elements of Urban Aged Residential Engineering Project Based on NSFDDSS
Wang Xu Jia, Zhang Jing and Gao Qian Qian 236

Application of Entropy Measurement in Risk Assessment of the Engineering Project of Construction-Agent System
Ge Xiao-mei and Liu Xiao-jun 244

The Model Combined the BT Project and Land Development Risk Assessment Research
Yuan Hai-lin and Cai Wen-ying 250

Study on the Scope that Subway Engineering Influence the Price of Peripheral Real Estate*
SONG Hong, LIU Xiao-jun and HU Zhen 257

Analysis and Evaluation of Project Cost Risk Based on BP Algorithm
Binmei Zhu, Hao Zhang and Xujia Wang 264

Progress Risk Assessment for Spliced Network of Engineering Project Based on Improved PERT
Li Wenyong and Liu Xiao Jun 271

Service Engineering

An Engineering Pricing Model for Scenic Spots Based on Revenue Management
Duan Zhiping, Li Ranran and Ma Huaifu 279

Analysis of Tourism and Landscape Engineering on Real Estate Impact Based on Correlation
Ai-juan Chen, Yue Han and Xiao Tan 286

Information Seeking as a Mediator Between Proactive Personality and Adjustment
Wenchi Zou, Yong Zheng and Jingshan Zhu 294

Setting up the Tourism Engineering Marketing Information System of China
Li Ying and Mike Peters 301

Research on Service Quality Engineering Management of Tourist Destination —Taking the Yangtze Three Gorges for Example
KONG Ting, KAN Ru-liang and MOU Xiao-juan 309

Loss-Averse Behavioral Hypothesis Manufacturer in Engineering Supplier Development Under Risk
Kuan Yang 317

The Impact of the Global Financial Crisis on the Entertainment Tourism Industry: A Financial Engineering Case Study of Macao from 2007 to 2010
Victor K. Y. Chan 323

The Engineering of China Commercial Bank Operational Risk Measurement
Yuan Xie, Ya-wen Wu and Yu-chen Hu 330

Service Quality Measurement from Customer Perception Based on Services Science, Management and Engineering
Xinglong Xie 337

Analysis on Service Engineering Innovation of Tourism Based on Process Metaphysics
Haiying Liu 344

Contents

On Life Cycle of Cultural Heritage Engineering Tourism: A Case Study of Macau Zhang Meng, Yu Wei and Yang Yu	351
Culture Heritage Tourism Engineering at Penang: Complete the Puzzle of “The Pearl of Orient” Lim Tiam Chai	358
Gender and Engineering Career Development of Hotel’s Employees in China Yun Yang	365
An IDEF0 Design for PDM-Based Die Integrated Intelligent Design System Functional Model Dong Linfeng, Guo Qiang and Wang Lin	372
Extension Analysis of Ecological Engineering Management of Tourist Area Qiao-Xing Li and Ting Zhang	377
Research on Tourism Water Resources Carrying Capacity Engineering in Hainan Province Jie Qiuyun, Fu Guoji, Liu Mulian, Wang Yujun and Xu Jingxuan	384
The PRA Tools for Qualitative Rural Tourism Research Rosalind SIA Juo Ling	392
A Study of the Owner’s Commission Model and Incentive Contract Based on Principal-Agent Relationship GUO Tao and WANG Jingjing	399
Decision Engineering	
Study on Similar Engineering Decision Problem Identification Based On Combination of Improved Edit-Distance and Skeletal Dependency Tree with POS Dong-bin Hu and Jun Ding	406
A Study on Preference Reversal on WTA, WTP and Choice under the Third Generation Prospect Theory Yongmei Liu, Tiantian Li, Junhua Hu and Chen Fan	414
A Decision Study on River Carrying Capacity of Changsha-Zhu-Tan Region Ying Zhang, Lanying Yin and Xiang Li	422
Dynamic Stochastic Multi-Criteria Decision Making Method Based on Cumulative Prospect Theory and Set Pair Analysis Junhua Hu and Liu Yang	432
Improvement of the VaR Method for Foreign Exchange Risk Measurement Based on Macro Information Released Xiaofeng Liu and Hua Cao	440
Distance Measure for Linguistic Decision Making Yejun Xu and Huimin Wang	450
Meta-Heuristics in Multi-Core Environments Ragnar Magnús Ragnarsson, Hlynur Stefánsson and Eyjólfur Ingi Ásgeirsson	457
Evaluation of Promotional and Cross-Promotional Effects Using Support Vector Machine Semiparametric Regression María Pilar Martínez-Ruiz, José Luis Rojo-Álvarez and Francisco Javier Gimeno-Blanes	465
Detecting Changes in a Distillation Column by Using a Sequential Probability Ratio Test Yahya CHETOUANI	473
Predicting the Price of EU ETS Carbon Credits Heiða Njóra Guðbrandsdoóttir and Haraldur Óskar Haraldsson	481
A Switching Threshold Model for Oil Prices Palombizio Ennio A. and Olivares Pablo	490
Pressure Impact on Common Reed Particleboards Manufacturing Procedure J.A. Flores, J.J. Pastor, A. Martínez-Gabarron, F.J. Gimeno-Blanes and M.J. Frutos	499