

2010 Second International Conference on Computer Modeling and Simulation

ICCMS 2010

Table of Contents

Volume - 1

Preface - Volume 1	xiv
Organizing Committee - Volume 1	xv
Reviewers - Volume 1	xvi

Volume 1: Session 1

High-Capacity Reversible Data-Hiding for LZW Codes	3
<i>Chang-Chu Chen and Chin-Chen Chang</i>	
Visualization and Security for Video Sharing and Transfer over Networks	9
<i>Lekha Chaisorn, Corey Manders, Janya Sainui, and Tian Shiang Kok</i>	
Numerical Simulation of Seismic Responses of Complex Shape Super High-Rise Steel TV Tower	14
<i>Li Chunxiang and Zhong Qiuyun</i>	
The Method of Tree-Dimension Spatial Data Modeling Based on Web	19
<i>Lianying Sun and Ming Huang</i>	
Pseudo-random Sequence Correlation Simulation Based on MATLAB	23
<i>Niu Yixia, Zhuang Ziqiang, Song Jijiang, and Li Yueran</i>	
Unifying Modeling and Simulation Based on UML Timing Diagram and UPPAAL	26
<i>Kangle Cui, Zongyuan Yang, Jinkui Xie, and Kaiyu Wan</i>	
Network Trusted Class Dynamic Evaluation Model Design and Research	31
<i>Junfeng Tian, Lei Shi, and Xiumei Wang</i>	

The Study and Implementation of Three-Dimensional Virtual Campus System Based on Web	36
<i>De-feng Liu and Ying Hao</i>	
Optimization for PID Control Parameters on Hydraulic Servo Control System Based on the Novel Compound Evolutionary Algorithm	40
<i>Youxin Luo and Zhaoguo Chen</i>	
A 3D Sound Simulation System for Flight Simulator	44
<i>Sheng Xiaowei, Zheng Shutao, Han Junwei, and Hao Minghui</i>	
Design of Fluid Viscous Dampers for Single-Story Asymmetric-Plan Buildings Based on LQR Theory	49
<i>Chunxiang Li and Xinhua Gu</i>	
Finite Element Simulation and Experiment Study of High Manganese Steel Drilling	54
<i>Xu Li and Yang Liang</i>	
Sampled-Data Observer for Inverted-Pendulum with Large Sampling Interval	59
<i>Ying Wang, Zhixian Lin, and Maoqing Li</i>	

Volume 1: Session 2

The Numerical Simulation and Experimental Analysis of the Flow Field in the High Pressure Unloading Valve	65
<i>Zhifeng Liu, Kun Yang, Wentong Yang, and Ling Li</i>	
Application of the Decoupling Control Scheme Based on RBFN Inverse Dynamic Modeling for Non-linear Multi-variable System	69
<i>Hongbing Sun and Shengquan Li</i>	
Design of Infrared Power Meter Reading System Based on Embedded Linux Operation System	74
<i>Zhang Yuhua and Zhang Yifei</i>	
Thruster Fault Diagnosis of Autonomous Underwater Vehicles Based on Least Disturbance Wavelet Neural Network	78
<i>Xiao Liang, Wei Li, Linfang Su, Han Yin, and Jun Zhao</i>	
Design and Research on Series Leading Correction PID Controller	83
<i>Xiaodong Zhao, Zhuzhen Wang, and Haiyan Wang</i>	
Performance Analysis of DSSS System with Nonlinear FM Jammer	88
<i>She Pei and Shao Gaoping</i>	
Linear Solving the Infinite Homography Matrix from Epipole	92
<i>Yue Zhao, Shimin Wang, Juan Wang, and Hongqiang Ding</i>	
Influence Law of Upward Throw and Lateral Deviation Distances for Struck Pedestrian on Vehicle Body Surface	97
<i>Yanhui Fan and Zhen Dong</i>	

Application Artificial Bee Colony Algorithm (ABC) for Reconfiguring Distribution Network	102
<i>Nguyen Tung Linh and Nguyen Quynh Anh</i>	
An Intelligent Tracking Technology Based on Kalman and Mean Shift Algorithm	107
<i>Li Ying-hong, Pang Yi-gui, Li Zheng-xi, and Liu Ya-li</i>	
Semantic-Based Handwritten Chinese Character Recognition Model	110
<i>Liu Zhongyuan, Bai Yu, and Xu Qingxin</i>	
Performance Analysis of Reliable Dynamic Buffer UDP over Wireless Networks	114
<i>Wang Long and Wan Zhenkai</i>	
Volume 1: Session 3	
Research on Adjust Speed Control System of Mine Electric Locomotive	121
<i>Shufang Wang, Baozhen Lei, and Changqing Liu</i>	
Accident Simulation on High Sulfur Natural Gas Well Blowout	125
<i>Ma Qing-chun and Zhang-Laibin</i>	
Model Identification for Autonomous Underwater Vehicles Based on Maximum Likelihood Relaxation Algorithm	128
<i>Xiao Liang, Wei Li, Jianguo Lin, Linfang Su, and Hui Li</i>	
Key Technique of Assembly System in an Augmented Reality Environment	133
<i>Yutao Wang, Yuan Shen, Dongcai Liu, Shen Wei, and Changan Zhu</i>	
Stability and Instability incurred by Aggregation in Host-Parasitoid Systems	138
<i>Huawei Dai, Shounian Deng, and Zizhen Li</i>	
GPS Pseudo-random Code Simulation in Time Domain and Frequency Domain	143
<i>Niu Yixia, Zhuang Ziqiang, Song Jijiang, and Li Zhenguo</i>	
A Constructive Semantics Revelation for Applying the Four Color Problem on Modeling	146
<i>Yucong Duan</i>	
Research into Edge Drop of Cold Rolled Strip and Its Influencing Factors	151
<i>Haimiao Wu, Zhifeng Pang, Guiying Yao, Yanwei Zhang, and Zhimin Liu</i>	
The TBM Model Based on Risk Evaluation	155
<i>Jianjun Ma and Zhiyong Gao</i>	
A Modified Skull-Stripping Method Based on Morphological Processing	159
<i>Wei Zhao, Mei Xie, Jingjing Gao, and Tao Li</i>	
Research on the Stability of Vehicle Suspension Excited by the Road Surface Profile	164
<i>Wu Can, Wang Weirui, Shi Haoran, and Zhang Weiqian</i>	

Research on Education and Training Oriented Virtual Collaborative Training Environment	169
<i>Lixia Liu and Qi Jia</i>	

Volume 1: Session 4

Finite Element Analysis and Structural Improvement of Diesel Engine Connecting Rod	175
<i>Zheng Bin, Ji Lixia, and Liu Yongqi</i>	
Occlusion Handling Based on Particle Filter in Surveillance System	179
<i>Xinting Pan, Xiaobo Chen, and Aidong Men</i>	
Forward Displacement Analysis of 25th Nine-Link Barranov Truss Based on Chaos Least Square Method	184
<i>Youxin Luo and Qiyuan Liu</i>	
Background Subtraction under Multiple Varying Illuminations in Different Background Luminance	189
<i>Ming Yang Yang, Yang Bo, Men Ai Dong, and Guo Yun Long</i>	
Feature Based Visualization Algorithm for Large-Scale Flow Data	194
<i>Zhong Liang, ChiTian He, and Zhang Xin</i>	
Real-Time Rendering for 3D Game Terrain with GPU Optimization	198
<i>Bing Tang and LanFang Miao</i>	
An Effective Background Subtraction under the Mixture of Multiple Varying Illuminations	202
<i>Yunlong Guo, Bo Yang, Yangyang Ming, and Aidong Men</i>	
Investigation the Characteristics of Unstable Binary Droplet Collision with High Speed	207
<i>Cheng Chuansong, Li Yunqing, and Zhao Lifeng</i>	
Reliability Statistic Estimation on Network via Perfect Sampling	212
<i>Zhai Yongzhi and Zhou Yuan</i>	
A Novel Quantified Method for Flight Operation Safety	215
<i>Jiaxue Liu, Xiaowei Zhang, and Jiankang Dong</i>	
Analysis of Load Capacity on Spatial Rotation 4-SPS-S Parallel Manipulator	219
<i>Guohua Cui and Yanwei Zhang</i>	
Aircraft Taxi Route Planning for A-SMGCS Based on Discrete Event Dynamic System modeling	224
<i>Tang Xin-min, Wang Yu-ting, and Han Song-chen</i>	

Volume 1: Session 5

Application of Numerical Simulation in Investigating Factors Effecting Torque Characteristics of Small Gasoline Engine	231
<i>Peng He, Yunqing Li, and Lifeng Zhao</i>	
Memoryless Polynomial RLS Adaptive Filter for Trajectory Target Tracking	235
<i>Rongtai Cai, Qingxiang Wu, Jinqing Liu, and Yuanhao Wu</i>	
Performance Analysis of Improved TCP over Wireless Networks	239
<i>Wang Long and Wan Zhenkai</i>	
Simulation and Comparison of Two Kinds of Severe Convective Weather Processes	243
<i>Zhou Houfu, Guo Pinwen, and Zhai Jing</i>	
Queue Analysis of Soft Frequency Reuse Scheme in LTE-Advanced	248
<i>Li Shu, Xiangming Wen, Zhongjun Liu, Wei Zheng, and Yong Sun</i>	
Comparative Study on Cold-Air Injection Schemes in Caving Face	253
<i>Liu Guannan, Gao Feng, Kanf Zongxin, and Zhang Zhizhen</i>	
Dynamic Complexities in a Host-Parasitoid Model with Parasitoid Intergenerational Survival	257
<i>Huawei Dai, Wenlong Li, Zizhen Li, and Shounian Deng</i>	
Modeling and Simulation for Theoretic Capacity Model of Highway	261
<i>Xiaodong Zang</i>	
Based on Distributed Architecture to Improve System Performance of a New Generation of SCADA	264
<i>Liyuan Zhao and Qi Zhao</i>	
Research and Design of a New Intrusion Detection System Model	268
<i>Diangan Wang, Zegui Ying, Hong Guo, and Xiaoqiang Peng</i>	
Mechanism and Methods of Outdoor AR Spatial Information Visualization Representation	272
<i>Xueling Wu and Fu Ren</i>	
Visual Tracking via Incremental Covariance Model Learning	277
<i>Jun Wang and Yi Wu</i>	

Volume 1: Session 6

The Application of Multimedia Technology in 24-Style Taijiquan	283
<i>Zhihua Tan</i>	
Modelling and Analysis of a Predator-Prey System with Pulses and Time Delay	286
<i>Lingshu Wang and Guanghui Feng</i>	
A Particle-Based Unified Model for Non-Newtonian Fluid Simulation	290
<i>Hongquan Sun and Jiqing Han</i>	
Modeling and Simulation of Mini Autonomous Underwater Vehicles with Fins	295
<i>Xiao Liang, Wei Li, Jianguo Lin, Linfang Su, and Hui Li</i>	

An Adaptive Power Minimization Algorithm for Power-Line Communication	300
<i>Li Jiao-jun, Chen Bing, Li Heng, and Su Li-yun</i>	
Simulation of Hot Gas Withdrawal from a Reverse Flow Reactor for Lean Methane Oxidation	303
<i>Liu Ruixiang, Liu Yongqi, Gao Zhenqiang, and Zheng Bin</i>	
Simulations on Long Range Acoustic Transmission Characteristics Under Complex Conditions	309
<i>Zhao Yan-an, Zhang Xiao-min, Huang Jian-guo, and He Ke</i>	
Traffic Surveillance System for Vehicle Flow Detection	314
<i>Xinting Pan, Yunlong Guo, and Aidong Men</i>	
A Hybrid Lossless Compression Scheme for Efficient Delivery of Medical Image Data over the Internet	319
<i>Qiusha Min and Robert J.T. Sadleir</i>	
Modeling and Simulation of International Politics Evolution in Crisis	324
<i>Yu Qin-zhang, Zhang Jing, and Zhang Ying-chao</i>	
Investigation of the Atomization Cooling in Transportation Channel Based on Dispersed Phase Model	329
<i>Liu Guannan, Gao Feng, Zhang Zhizhen, and Liu Xingguang</i>	
Dynamics Modeling for Submarine Pipeline Oil Spill	333
<i>Ming Xiao, Qingjun Gao, Jianguo Lin, Wei Li, and Xiao Liang</i>	

Volume 1: Session 7

Research on Simulation-Based Radio Communication Network Organization and Application Evaluation	341
<i>Lixia Liu and Xiaojuan Zhou</i>	
The Protocol of Physical Layer for Underwater Acoustic Network	346
<i>Yu Yang, Zhang Xiaomin, Peng Bo, Xiang Jinglin, and He Ke</i>	
Numerical Simulation of Sea Surface Roughness Parameterizations' Effect on the Typhoon Wind Fields Using the Coupled Atmosphere-Wave-Ocean Model	351
<i>Yuanqiao Wen and Jinfeng Zhang</i>	
Synchrony of Two Uncoupled Neurons under the Chaos Signal Stimulation	355
<i>Yueping Peng and Jue Wang</i>	
Speech Compression with Best Wavelet Packet Transform and SPIHT Algorithm	360
<i>Dan Zhao and Shengqian Ma</i>	
A New Model Based on Improved ACA and BP to Predict Silicon Content in Hot Metal	364
<i>Li Wang, Dong-qing Wang, Jia-jun Zhu, and Xiang Zhao</i>	

Research on Information Capability Based High-Performance Information Sharing in the Simulation Grid	369
<i>Zhang Ying-Chao, Zhang Jing, Chen Xin, Yu Qin-Zhang, and Zhang Hao</i>	
A Double Pseudonyms Authentication for Distributed P2P Systems	377
<i>Chunling Cheng, Bingzhen Gao, and Dengyin Zhang</i>	
Extracting Rules from Optimal Clusters of Self-Organizing Maps	382
<i>Chihli Hung and Lynn Huang</i>	
The Research and Realization of Mine Construction Management System Based on SOA	387
<i>Bingjiang Gong, Jian Han, and Xiaofei Sun</i>	
A GA-Based Approach for Parameter Learning of Discrete Dynamic Bayesian Networks	390
<i>Huang Wang, Xiaoguang Gao, and C.P. Thompson</i>	
A Computational Architecture for Modeling Emotional Behavior in Synthetic Agent	394
<i>Ji-Wen Hu, Quan-Jun Yin, Lei Feng, and Hai-Jun Deng</i>	
Volume 1: Session 8	
IBMSE: An Integrated Behavior Modeling and Simulation Environment	401
<i>Lei Feng, Quan-Jun Yin, Ji-Wen Hu, and Ya-Bing Zha</i>	
An Effective Heuristic for the Integrated Scheduling Problem of Automated Container Handling System Using Twin 40' Cranes	406
<i>Kewei Zheng, Zhiqiang Lu, and Xiaoming Sun</i>	
Algorithm for Solving Games	411
<i>Wei Gong and Fei Xie</i>	
Optimize Geometry Division to Construct Clustered Dot Dithering Matrix	414
<i>Xu Guoliang and Tan Qingping</i>	
A Novel Dynamic Model for Peer-to-Peer File Sharing Systems	418
<i>Dong Guo, Baoqun Yin, Shan Lu, Jing Huang, and Jian Yang</i>	
The Research on Searching Path Algorithm of Interoperable Recommendation Trust Based on MMAS	423
<i>Wang Yanhui, Xiao Xuemei, Jia Limin, and Qin Yong</i>	
Adaptive Critic Based Control of Aircraft with Atmospheric Disturbance	428
<i>Jianguo Yao, Xiaoping Zhu, Jian Li, and Fei Hu</i>	
Simulation of Submarine Pipeline Oil Spill Based on Wave Motion	433
<i>Ming Xiao, Qingjun Gao, Jianguo Lin, Wei Li, and Xiao Liang</i>	
Identifying Metabolite Biomarkers in Unstable Angina In-Patients by Feature Selection Based Data Mining Methods	438
<i>Huihui Zhao, Jianxin Chen, Na Hou, Chenglong Zheng, and Wei Wang</i>	

A Blind Source Separation Algorithm Based on Whitening and Non-linear Decorrelation	443
<i>Zhijun Li, Jianping An, Lei Sun, and Miao Yang</i>	
Introduction to the Design and Implementation of a Web-Based Meta-Synthetic System (WebSMS)	448
<i>Liu Baohong, Liu Jian, and Yan Li</i>	
An Exception Handling Capability-Aware Web Service Selection Method	452
<i>Tianyang Zheng, Bing Jia, Wei Pan, and Weichang Chen</i>	
Volume 1: Session 9	
Approach to External Events of Real-Time Operating System Based on Polling	459
<i>Xuhui Chen, Guolong Yu, and Huiyan Cheng</i>	
Research on Speaker Recognition Based on Multifractal Spectrum Feature	463
<i>Yuhuan Zhou, Jinming Wang, and Xiongwei Zhang</i>	
Investigation of Relaying Node Placement in Wireless Mesh Networks	467
<i>Xingang Wang, Lin Guan, Chi Xuefen, and Guan Xin</i>	
Backstepping Based Adaptive Control for a Mini Rotorcraft with Four Rotors	472
<i>Huanye Liu, Jian Li, Jianguo Yao, and Fei Hu</i>	
Optimization Design for the Converter by the Finite Element Method	477
<i>Xia Chen, Qingming Chang, and Yawei Li</i>	
A Study of Pulmonary Nodule Detection in Three-Dimensional Thoracic CT Scans	481
<i>Yang Liu, Jinzhu Yang, Dazhe Zhao, and Jiren Liu</i>	
Research on Correction Model of PSVM in Face Recognition	485
<i>Liyang Lang, Feijia Xia, and Yanhua Du</i>	
A Calibration Algorithm for Nonplanar Array with Arbitrary Geometry Using Known Sources	489
<i>He Ke, Zhang Xiaomin, Han Peng, Zhao Yan'an, and Yu Yang</i>	
Towards a Framework of a Secure E-Qualification Certificate System	493
<i>Lisha Chen-Wilson and David Argles</i>	
Semi-parametric Regression in Dam Observation Data Processing	501
<i>Huang Weiduo and Xu Chang</i>	
Stereo Matching for Slanted Plane: A Probability Model	505
<i>Renjie Xu, Fengxia Li, and Zhengang Zhai</i>	
Geometric Structure Based High Frequency Data Distribution GARCH Model and Empirical Analysis	510
<i>Yang Li and Chun Yuan</i>	

Volume 1: Session 10

Design and Analysis of a Novel Chaotic Image Encryption	517
<i>Long Min and Huang Lu</i>	
Numerical Simulation of Optimal Transport Paths	521
<i>Qinglan Xia</i>	
An Improved Ant Colony System Algorithm for Optimal Path Planning Problem of Mobile Robots	526
<i>Along Yang, Lixin Gao, and Yanping Luo</i>	
From a Mess to Graphic Maps: Visualization of Large-Scale Heterogeneous Networks	531
<i>Haoxiang Wang</i>	
Assess Content Comprehensiveness of Ontologies	536
<i>Jiabin Ruan and Yubin Yang</i>	
Numerical Simulation of Typhoon Wave Using Different Sea Surface Roughness Parameterizations in the Coupled Atmosphere-Wave-Ocean Model	540
<i>Jinfeng Zhang, Liwen Huang, Yuanqiao Wen, and Jian Deng</i>	
Revelation and Evaluation on Generation and Application of Empirical Rules with Semantics	544
<i>Yucong Duan</i>	
Research on Communication Model of Joint Operations Simulation	551
<i>Lixia Liu</i>	
A Novel Feature for Object Detection	556
<i>Fuguo Zhu, Bo Yang, Xiaomei Li, and Aidong Men</i>	
Research on Multi-agent Based C4ISR Effectiveness Simulation and Evaluation	561
<i>Zhang Ying-chao, Ye Feng, Yu Qin-zhang, and Chen Xin</i>	
The Research of Dynamic and Comprehensive Evaluation of Interoperable Trust Based on Fuzzy Comprehensive Evaluation with Variable Weights	569
<i>Wang Yanhui, Xiao Xuemei, and Zhang Chenchen</i>	
Mesh Segmentation by Local Depth	575
<i>Jinjie Lin, Yubin Yang, Tong Lu, Guangnan He, and Jiabin Ruan</i>	
Author Index - Volume 1	580