2012 Proceedings of International Conference on Modelling, Identification and Control

(ICMIC 2012)

Wuhan, Hubei, China 24 – 26 June 2012

Pages 1-657



IEEE Catalog Number: ISBN:

CFP1290K-PRT 978-1-4673-1524-1

Proceedings of 2012 International Conference on Modelling,

Identification, and Control

Table of Contents

Circuits and Systems I

Chaired by Shaofeng Bian, Zhishen Wang	
Modeling and Simulation of Temperature -induced Luminous Intensity for Fiber-optic Photoelectric Sensors	
Xiaoyu Ge, Yong Xiao, Xiaoyan Wang, Zhe Zheng	1
Robust Synchronization Algorithm for Electro-hydraulic Motion Systems	
Yong Xiao, Xiaoyu Ge, Zhe Zheng, Peiqi Pan	6
A Novel Sound Localization Design Using Arrayed Integrate and Fire Neuron Circuits	
Xiaoyan Yu, Ethan Farquhar, Min H. Kao	12
Modeling and Analyzing the Main Modes of an Ultra-Precision Stage with Lumped Parameter Method	
Leqing Cui, Yu Zhu, Kaiming Yang, Xin Li, Dongdong Yu	16
New results on L2–L∞ filter design for delayed stochastic systems by delay decomposition approach	
Wenqin Wang, Shouming Zhong, Sing Kiong Nguang and Feng Liu	22
New Method for Initial Orientation Estimation in Dynamic State Using MEMS Magnetometers Accelerometers	and
Chang Liu, Fei Liu, Zhiqing Jiang, Ruizhi Mao, Xiaolin Hu	2:
Numerical Investigation of Resistance Characteristic for Submunition with Hat Shape fin	
Guanglin He, Hefei Tian, Xuan Wang, Shuai Sun	34
Analysis on the Technical Improving Method of Cluster Munitions based on Multi-dimensi	ona
PrincipleDecision-making	
Dong Ze.Qin, Ning Jun.Fan, Jian Ping.Wang	40
Circuits and systems II	
Chaired by Guangqun Cao, Minglai Chen	
A numerical method for artillery recoil resistance calculation	
Guangqun Cao, Faming Zhou, Jiadong Shi, Zhiyin Zeng, Xiaoke Gao	45
Research on the Feature of Hydraulic Oil of Electro-Hydraulic Pump	
Chen Huanming, Liu Weiguo	51

Modeling and Control of T-S Fuzzy Hyperbolic Model for a Class of Nonlinear Systems

Minglai Chen, Junmin Li	56
The Distance Cycle Slip Detection and Correction of a Certain Radar Yuhua Dong, Haichun Ning, Xin Gao	62
Optical Image Reconstruction Using Frequency-Domain Simulations: Optimization of Detector Positions Ma Shujing, Fang Bin	67
A Model for Static Vulnerability Analysis of Shipboard Power System Based on Complex Networks Theory Ji Xin, Zhang Xiaofeng, Huang Jing	73
A new method of calibrating the camera nonlinear model Yin Hongtao, Liu Cheng, Li Yibing, Haibin Liu	79
Failure Analysis of Microstructure under Shock Load	
Zhang Jian-hong, Li Dong-guang, Cui Xue-jun	85
Circuits and Systems III	
Chaired by Leping Bu, Xiaoru Sang	
Design and Implementation of a High-precision underwater electric field measurement system Xiaobei Wang, Li Xia, Xiangjun Wang, Yi Liu	90
Characteristics of GPS Signal Propagation in Cylindrical Metal Pipes with One End closed Mao Ruizhi, Li Jie, Yang Yinfang, Li Huiqun, Li Bing	96
Observability of the Performance Evaluating Area and Optimized Robust Control of an Ultra-precision Stage Xiaoru Sang, Wensheng Yin	101
Make a film using 3D animated game scenes Ran Shuanglin	107
Numerical Simulation Study on the Water Inrush of Minor Faults in Coal Seam Floor Cunhan Huang, Li Zhang	113
Aircraft Intersection Collision Conflict Detection and Resolution under the Control of A-SMGCS Zhu Xinping, Tang Xinmin, Han Songchen	119
An Edge Growth Segmentation Arithmetic Based on HSI Color Space Liming Wang, Xiaoling Yan, Leping Bu	125
Researching on the fault diagnosis method of the shipboard power system Jialin-Wang, Li Xia, Zhengguo-Wu, Xuanfang-Yang	130
Circuits and Systems IV	
Chaired by Shijun Zhao, Xiangfu Wu	
Nios II Custom Instruction on FIR Filter Arithmetic Ye Tian, Yan Li, Qiang Dong	134

A Fire Image Segmentation Arithmetic Based on Multi Images Edge Difference Yan Xiaoling, Wang Liming	139
Electric propulsion Effects on DC Zonal Electrical Distribution System Stability Wu Shuang, Xia Li, Zhang Chao, Wang Xinzhi, Li Chun	143
A SVM approach for vessel fire detection based on image processing Xuanfang Yang, Jialin Wang, Shizhao He	149
The predication model for trade sizes based on PLS Xiao Liangfen	153
A New Identification Method of Linear System Based on the Feature of Step Response Curve Xiangfu Wu, Yongming Qiao	157
Study on Self-organization Method for Single Target Tracking in Binary Wireless Sensor Networks Shijun Zhao, Sijia Liu, Ye Feng	163
Improved Method of Acquiring the Attitude Changing Duration of an Agile Imaging Satellite Guo Hao, Peng Li, Qiu Di-shan, He Chuan	169
Circuits and Systems V	
Chaired by Huiliang Shang, Mahdi Vosooghi	
An Optimized Circuit Simulation Method for the Isomorphism Determination of Regular Graphs	
Huiliang Shang, Yang Liu, Jichuan Li, Wenjie Dong, Yuan Gao	175
An Adaptive Method of Model Updating in MS Tracking	
Ke Ze xian, Jiang Han hong, Zhang Chao liang, Jiang Chun liang	182
A new Survey on Dynamic Programming to Distributed Control of Random System Mahdi Vosooghi, Dr. Amin Farmanbordar	187
Design and Realization of Hard Target Intelligent Penetration Fuze System Based on DSP Zongbao Liu, Shiqiao Gao, Shaohua Niu, Jingqing Du	192
Shadow detecting algorithms research for moving objects base on self-adaptive background Jinjuan Yuan, Jin Wu, Yanhui Cheng	196
Investigating the Impact of Pulsed Load on Isolated Power System Wang Xin-zhi, Xia Li, Zhang Chao, Wu Shuang	200
Study of Reaching Law Approach for Discrete-time Variable Structure Control System Lizhong Song, Shuchao Gong, Yingjun Tian	205
A Novel Predictive Current Control Method for Shunt Active Power Filter Li Zhe, Wu Zhengguo, Xia Li, Zhou Weiping	210

General Control I

Chaired by Jian Huang, Linglong Hu A Quasi-linearisation approach to trajectory based methods for nonlinear MOR S.A. Nahvi, M. Nabi, S. Janardhanan 216 Tracking Control of Pneumatic Muscle Using Lyapunov Based Control Method Youssif M. T. Elobaid, Jian. Huang, Yongji. Wang, Jun. Wu 222 A Bi-level Optimal Control Approach to Route Guidance Problem Considering Travelers' Stochastic Compliance Weili Sun, Linglong Hu, Ping Li, Hui Wang 227 A Classification Regulation Congestion Control Algorithm Based on Queue Strategy Feng Yu, Jiaxin Fu, Bin Ma, Changtao Wang, Zhonghua Han 234 Predictive Control of District Heating Network using Fuzzy DMC Stefan Grosswindhager, Andreas Voigt, Martin Kozek 240 Model Reference Decoupling Controller Design via LMI Optimization Zhishen Wang, Zongzhun Zheng, Lei Liu, Yongji Wang 246 Overstep Control Analysis for Multi-Car Elevator 253 Jian Liu, Yue Wu, Jing Dai, Meiju Liu, Chengdong Wu, Enyeang Gao On Designing Time-delay Feedback Controller for Master-Slave Synchronization of Singular Lur'e Systems Xiaofu Ji, Ceng Zu, Hongye Su 259 **Computer Integrated Manufacturing Systems** Chaired by Wenli Shang, Zhonghua Han Study on QoS Routing Algorithm of CPS Heterogeneous Network Based on Ant Colony Algorithm and Genetic Algorithm Bin Ma, Jingya Ren, Haibin Qiu, Changtao Wang, Zhonghua Han 265 The Comparison of Method for Numeral Recognition Algorithm Bin Ma, Shuhai Bian, Kuan Huang, Zhonghua Han, Changtao Wang 271 Hybrid PSO/DE Solution for the Earliness/Tardiness Case of Hybrid Flow-shop Scheduling Problem Zhonghua Han, Haibo Shi, Wenbin Yuan, Zhiyu Zhang 276 A Mixed Integer Linear Programming Model for Automobile Order Promising Dechang Sun, Haibo Shi, Zhonghua Han, Chang Liu 282 Application of ACOTS Hybrid Algorithm for Job Shop Scheduling Problems 288 Yang Cao, Xiaoyu Song, Ying Zhang, Zhonghua Han Application of Building Energy Detection System Based on OPC Technology Changtao Wang, Jingya Ren, Zhonghua Han, Bin Ma 293

Simulation of Genetic Algorithm Scheduling on ExtendSim based on COM Technology

Zhang Shi Shan, Peng Hui, Liu Chang, Yao Li Li	299
Intelligent Fault Diagnosis System for New Assembly Transmission	
SHANG Wenli, ZHOU Xiaofeng, YUAN Jie, HAN Zhonghua and SHI Haibo	304
Modelling, Identification and Analysis I	
Chaired by Wenbo Na, Vincent Y. Liu	
A Stage-Structured Predator-Prey Model with the Beddington-DeAngelis Functional Response	
Manjun Ma, Jicheng Tao, Yazhou Han, Huadong Zeng	310
Gait Planning and Simulation of the Quadruped Robot Based on Virtual Prototype	
WANG Shuhai, JIN Yi, LIU Xixia, LIU Weiping	315
A Transformation Approach from Informal Descriptions of SWRL to Built-in Elements of Protégé4.1	
Zhao Li, Zheng Li, Xin Guo, Peng Liang, Ke-Qing He, Bo Huang	321
Steady state of a food chain model with prey-taxis	
Manjun Ma, Yazhou Han, Jicheng Tao, Delin Wu	327
Research on Modeling and Simulation of Equipment Maintenance Support Based on Queuing Theory	
Wang Guihua, Jiang Liqiang, Guo Qiang, Gao Jianjun, Chen Minya	335
Business Information Supply Chain Modeling and Simulation Methodology	
Vincent Y. Liu, Joe Z. Zhang, Xinbo Sun, Hao Huang	338
Modeling of Thrust Misalignment and Wind Disturbances for Air-breathing Hypersonic Vehicles	
Yanli Du, Yuping Lu, Qingxian Wu, Changsheng Jiang	344
Comparison of Regression Analysis, Artificial Neural Network and Genetic Programming in Handling	
the Multicollinearity Problem	
A.Garg, K. Tai	352
Cybernetics and Engineering I	
Chaired by Xi Chen, Jie Li	
An Overview of the Simultaneous Localization and Mapping on Mobile Robot	
Jie Li, Lei Cheng, Huaiyu Wu, Ling Xiong, Dongmei Wang	358
Modeling and Simulation on the Interior Ballistics of Piston High-Low Pressure Launch Device for Micro-rol	oot
Xin Hao, Jianzhong Wang, Jiadong Shi, Liming Wang	365
Dynamic Modeling for Decision-Making Process Based on the Bayesian Theory	
Li Wang	370
ADVDS401 Angular Valacity Massurament System Docad on TMS220F2012 and AD7000	
ADXRS401 Angular Velocity Measurement System Based on TMS320F2812 and AD7898 Zhihao Guo, Yanbing Liang	376
Methods and Application on Research of Structural Topology Optimization	202
Liang Sun, Jinsong Du, Changqing Su	382

Hamiltonian-Based Binocular Visual Servoing of Camera-in-Hand Robotic Systems	
Bo Yang, Huiguang Li, Zhenbo Kang, Honglei Jiang	387
Modeling and Controlling of Engineering Ship Based on Genetic Algorithm	
Fu Hehe, LI Zhijun, Li Guangwei, Jin Xiantao, Zhu Penghao	393
The Application Prospects of Intelligent PID Controller in Power Plant Thermal Process Control Jianjun Sun, Xiangdong Liu	398
Cybernetics and Engineering II	
Chaired by Min Wang, Jun Wang	
A Flocking Control Mechanism Based on the Mode of Internet of Things	
Jun Wang, Lei Cheng, Huaiyu Wu, Pian Jin	403
A Rapid Layout Model of Manipulation Devices in Cockpit	
Hongjun Xue, Yanqing Tie, Xiaoyan Zhang, Junfeng Pang	409
Adaptive Kalman Filter Based Maneuvering Target Tracking	
Chang Liu, Xinhan Huang, Min Wang	414
Design of multi-Point Wireless Temperature Measuring System	
Sha Ni, Junfeng Su, Lili Nie, Shaocheng Qu	421
Improvement on the congested government productive spending in stochastic endogenous growth model Bo Yang, Xueguang Chen	425
Study on the Safety of Automotive Plastic Fuel Tank	
Xu Jiangling, Zheng huan, zhi-qiu Lei	428
The Reading Data Error Analysis of 1-wire Bus Digital Temperature Sensor DS18B20	
Bangyan Huang, Jianglong Lei, Yan bo	432
A Novel Target Tracking Approach Based on ORB Used in Micromanipulation System	
Lei Zuo, Xinhan Huang, Wen Zuo	436
Cybernetics and Engineering III	
Chaired by Kun Fan, Ting Liu	
Analysis of the Hybrid Scheduling Algorithm in the Gird Environment	
Ting-ting Zhao, Ting Liu	442
Study on Fault Tree Analysis Model of Road Transport Safety Supervision System and Control Strategies	
Ting Liu, Ting-ting Zhao	447
A Novel Small Dim Infrared Target Detecting Method based on Grayscale Merging and Connected Com	iponents
Analysis	
Ying Zhang, Min Wang, Shaoqing Niu	453

Modeling of High Lift-drag Ratio Re-entry Vehicle Using Parameterized Configuration Approach Lin Ping, Zhang Ran, Li Huifeng	459
An Adaptive Neuro-Fuzzy Control Approach for Motion Control of a Spacecraft Maneuver K. V. Lakshmi, Mashuq-un-Nabi	466
Fuzzy-PID based deviation-correcting Control system for Laser Guided AGV Kun Fan, Qiang Yang, Wenjun Yan, Bicheng Lei	471
Research on Classification Method of Wavelet Entropy and Fuzzy Neural Networks for Motor ImageryEEG Xin LI, Wei Cui, Changwu LI	477
Control and Research Based on Data-driven Virtual Feedback Algorithms Xi Chunmiao	482
Cybernetics and Engineering IV	
Chaired by Ye Tian, Zhigao Feng	
The Study of Metallurgical Automation Based on Integrated Model of the Enterprise Bus Xi Chunmiao	487
The Application of Measuring Robot Based on the Measurement Dynamic Measurement Technolog High-pressure Line Patrol Xi Chunmiao	gy at 491
Integrated Modeling and Simulation for CAV Aerodynamic and Control Zhigao Feng, Jin Xiao, Ping Lin	495
The Study of the Oil Pipeline Automatic Control based on UIB Artificial Neural Network Xi Chunmiao	501
The Variable Selection for the Level Control of Continuous Casting Mould Based on the BP Neural Network Lu Yanmin, Fang Kangling	504
Design and Implementation of General Civil Aviation GFS Interactive Software System Ye Tian, Jihong Zhu	509
Bank-to-turn Control Design for No-power Lift-body Reentry Flight Vehicle Liu Kaifeng, Cheng Qichang, Meng Haidong, Jiang Bin	515
Cybernetics and Engineering V	
Chaired by Jianzhong Zhou, Bo Liu	
Study of Network Security Situation in Honeynet	
Sun Bing, Wang Hai-feng, Cheng Ling	518
Robust Adaptive Excitation Controller Design Based on Sliding Mode Control and Neural Network Disturbances Observers	
Hebang Ma, Jianzhong Zhou, Yi Wan	523

The Direct Torque Control (DTC) of the Permanent Magnet Synchronous Motor (PMSM) based on the Nonsingular Terminal Sliding Mode (NTSM)
Cheng Ling, Wang Zhao, Sun Bing 529
Research of input decouple method of re-entry aircraft
Shaobo Ni, Jiayuan Shan, Shuaifeng Shang 533
Ubiquitous localization method on mobile robot in the Internet of Things
Bo Liu, Lei Cheng, Huaiyu Wu, Yang Chen, Fen Wang 537
The Comparative Study of Virtual Analyzers Models for Industrial Distillation Column
I. S. Mozharovskii, A. Yu. Torgashov 543
A Study of Heuristic Serching Approach for Dynamic System Modeling
Dingchun Xia, Xiaozhen Qin 549
General Control II
Chaired by Yu Guo, Li Li
Analysis and Application of Pump Controlled Motor Speed Servos with/without a Position Loop Haigang Ding, Jiyun Zhao 554
A New Autonomous Underwater Robotic Fish Designed for Water Quality Monitoring
Hui Yu, Anwen Shen, Liang Peng 560
Time Delay Prediction for Space Teleoperation Based on Non-Gaussian Auto-Regressive Model
T. J. Hu, X. X. Huang, Q. Tan
Adaptive Mean Shift Algorithm Based on Hybridized Bacterial Chemotaxis
Yanling Li, Yi Shen 572
Linear Functional Observers for Systems with Delays in State Variables: A Multirate Output Sampling Approach S Janardhanan, N Satyanarayana 577
Bounded Consensus Tracking for Second-Order Multi-Agent Systems with Communication Delay and Sampled Information
Li Li, Huajing Fang 583
An Autonomic Computing Approach for Coordinated Temperature Control in Architectural Interconnected Environment
Bo Wang 589
Experimental Studies on H_{∞} Control for Magnetic Levitation System with Friction Compensation
Guoping Wei, Yu Guo*, Fangqin Huang, Yifei Wu 595

Ground Vehicle, Telematics and Autonomous Systems

Chaired by Yue Ma, Ye Yang

Vehicle Noise Sources Orientation Identification Method Based on Cyclic Auto-Correlation

Xinbo Li, Tao Han, Tong Zheng, Nannan Liu, Yaowu Shi, Xiaotao Kang	601
Implementation of Vision Algorithm for SRV-1 Mobile Robot	
Emam Fathy, Khaled El-Metwally, A. R. Hanafy	606
Homogenous Fog Condition Recognition based on Traffic Scene	
Hongjun Song, Yangzhou Chen, Yuanyuan Gao	611
I gpgtcrk gf 'Rtgf kevkxg'Eqpvtqrl'y kij 'Eqpvttckpvu'hqt'Cwqpqo qwu'Wpf gty cvgt'Xgj kerg'F gr vj 'Eqpvtqrl' Geng Tao, Zhao Jin	617
O qf grkpi "cpf "Kf gp\khec\kqp"qh'Cwqpqo qwı"Wpf gty c\gt "Xgj kerg'hqt 'Cf xcpegf 'Eqp\tqn Geng Tao, Zhao Jin	624
Design of Car Remote Monitoring System Based on Internet	
Qinqin Wang, Zhiqiu Lei, Shaocheng Qu	630
Performance Evaluation of Lifting Entry Guidance for Hypersonic Vehicles	
Ye Yang, Weihua Ma, Hao Wu, Tao Guo	635
Path planning methods for mobile robots with linear programming	
Liying Yang, Juntong Qi, Jianda Han	640
Modelling, Identification and Analysis II	
Chaired by Shaocheng Qu, A. Garg	
Dynamic modeling of SOFC stack using ARXidentification algorithm	
H.B. Huo, X.H. Kuang, H.E. Huo, X.J. Zhu	646
Review of Genetic Programming in Modeling of Machining Processes	
A. Garg, K. Tai	652
Different Techniques to Improve the Data Speed of WiMAX	
D.Feng, C.Chen, S.Ghauri	658
A Scramjet Engine Modeling Method and Validation for Real-Time Simulation	
Chao Tian, Guanghong Gong	664
Modeling and Analysis of Numerical Wave Tank Based on the ALE Algorithm	
Zhu Feng, Zhu Wei-hua, Fan Jun, Fang Bo, Zhao Kun	672
Congested government expenditure in a stochastic endogenous growth model with production and co- features	onsumption
Bo Yang, Xueguang Chen	678
Digital Intermediate Frequency Module Design of High-speed Wireless Broadband Receiver	
Jing Dai, Chunjiang Chang, Sainan Wang, Jian Liu	682
Development of Wearable Bath Safety Monitoring System for Handicapped People	
Hao Zhang, Jian Huang, Weiguang Huo, Chunjing Tao	688

Network and Networked Systems

 ${\it Chaired by Johan L.A.\ Dubbeldam,\ Binqiang\ Xue}$

O qf grlpi "cpf "Ulo wrcslqp"qp"O go qt { "d { 'Eqo r rgz "P gw qtm'cpf 'Eqo r wgt Lanhua Zhang, Yuedong Zhang, Xiujuan Wang, Shaowei Xue	694
Research on ECP3 Mobile-Payment Xin Sheng, Dongsheng Liu, Hao Tian	700
BSHM-WSN: A Wireless Sensor Network for Bridge Structure Health Monitoring Zhicheng Dai, Shengming Wang, Zhonghua Yan	705
Optimization Coverage of Nonlinear Sequence Nodes Based on Mobile Strategy in WSN Zeyu Sun, Chuanfeng Li	710
Moving Horizon State Estimation for Constrained Networked Control Systems with Missing Measurements Binqiang Xue, Shaoyuan Li, Ning Li	716
The Networked Controller Design over The Ship IPMS Network Yin Yang, Ren Zheng-ying, Song Li-zhong, Li Hong-ke	722
An overview about pinning control of complex networks Xi Chen, Lan Zhang, Wei Li	728
Extended State Observer Based Non-iteration Predicted Entry Guidance Chang Songtao, Su Mao, Zhang Da, Wang Yongji	737
Small Flight Vehicles	
Chaired by Zhengjie Wang, Ningjun Fan	
Design of a Adaptive Decoupling Control Law of Miniature Duct Fan UAV	
Feng Zhou, Yanxuan Wu, Jing Liu, Min Xu	743
A Modified Attitude Determination Algorithm Using Low-Cost Sensors Fei Liu, Haifu Wang, Chang Liu, Kewei Huang	749
Stochastic Process Model of the Multi-UAVs Collaborative System Based on State Transition Bing Li, RuiZhi Mao, XiaoDong Yuan, Jie Li, TingZhao Yi	754
An Improved Differential Optical Flow Method Yining Jin, Zhengjie Wang, Fei Shang	759
Modeling and Aerodynamic Analysis of a Ducted-Fan Micro Aerial Vehicle Zhang Wei, Fan Ningjun, Wang Zhengjie, Wu Yanxuan	765
Infrared Image Edge Extraction Based on the Lateral Inhibition Network and a Denoising Method Xu Peng, Li Dong-guang, Cui Xue-jun, Qin Guo-jie	771

System Identification based Anti-torque Flap Design

Modeling and Analysis of Fuse Warhead Coordination for EFP Warhead in "Fly-over and Shoot-down" Smart Ammunition

Yang Zhe, Fan Ningjun, Wang Zhengjie, Zhao Zengyin

An Aircraft Steady Dynamic Derivatives Calculation Method

Ye Chuan, Ma Dongli

782

852

Robotics Chaired by Yunong Zhang, Yun Du Bi-Criteria Torque Minimization of Redundant Robots Performing Different End-Effector Trajectories by Using Simplified LVI-PDNN Yunong Zhang, Dongsheng Guo 788 Path Planning of Vehicle Based on Improved Ant Colony Algorithm 794 Ying Zhang, Yang Cao, Zhonghua Han Artificial Bee Colony Algorithm based Auto-Disturbance Rejection Control for Rehabilitation Robotic Arm Driven by PM-TS Actuator 799 Jun Wu, Yongji Wang, Jian Huang, Kexin Xing Progresses in Study of Pipeline Robot 805 Yun Du, Quan-min Zhu, Sabir Ghauri, Jian-hua Zhai, Hui-ran Jia, Hassan Nouri A Car-Like Mobile Robot Design and Implementation Wei Ren, Qiang Gu, Ding-xin He, Jin Zhao 811 Dynamic Modelling and Simulation of Wire-Walking Robot Based on the Control of Balancing Pole Guanglei Lu, Lei Guo, Shimin Wei, Yonghua Huang 817 Research Autonomous Motion Control for Snake Robot Based on Bionic Learning Strategy Jian xian Cai, Xuguang Sun, Hong rui Ma, and Quan sheng Wang 823 Advanced Vehicle Monitoring System Based on Arcgis Silverlight Shang Wenli, He Chao, Zhou Xiaofeng, Han Zhonghua, Peng Hui, Shi Haibo 829 **Space Systems and Control** Chaired by Zhongda Lu, Wenli Sun Attitude Control of Flexible Spacecraft Considering Rigid-Flex Coupling Parameters Chunfeng Zhou, Yu Guo*, Yanlan Fu, Aifang Lai, and Qingwei Chen 834 Adaptive Repetitive Control Design of Nonlinearly Parameterized Systems 840 Wenli Sun, Hong Cai, Fu Zhao Repetitive Control Design of Simulation Turntable Based on Integral Sliding Mode Wenli Sun, Hong Cai, Fu Zhao, Zhenghu Zhong 846

Inhibition of Non-linear Disturbance Based on Iterative Learning Control	
Xu Fengxia, Lu Zhongda, Hassan Nouri	858
Research on Quantization Errors of Stability for Model-Based Networked Control System	
Lu Zhongda, Xu Fengxia, Tian Qunhong	864
Design of Augmentation Stability Control System for Hovering of Ducted Propeller Air Vehicle	
Li Mingxi, Xiang Changle, Ma Yue, Zhu Lijun, Xu bin	870
Computational Modelling of Blades for a Novel Wind Turbine System	
Pei Ying, Yongkang Chen, Yigeng Xu	875
Sliding Mode Control	
Chaired by Dongya Zhao, Yin Yang	
Optimization Control Method with System Condition Online Monitor for Cleaning Process	
Wenbo Na, Zhiwei Su, Ling Wang	880
A SMART Control Framework for Overcoming the Buzz Mobile Advertisement	
Vincent Y. Liu, Peng Zhou, Hao Huang	886
Adaptive PID Controllers with Specifications on Phase and Amplitude Margins	
Ya Gang Wang, Xiao Ming Xu	892
Research on Networked Sliding Mode Prediction Control	
Yin Yang, Ren Zheng ying, Song Li zhong, Li Hong ke	898
Second Order Sliding Mode Controller for Space Rovers	
Sandeep Kaur, Dr.S Janardhanan	903
The modelling and sliding mode control study of sewage treatment system	
Ran Zhen, Xueli Wu, Qiaoling Zhang, Quanmin Zhu, Hassan Nouri	908
A Robust Higher Order Sliding Mode Control Of Rigid Robotic Manipulator	
M. Agwan*, S. Janardhanan† and Lilie Dewan	914
A Stopping Criterion for Krylov-subspace based Model Order Reduction Techniques	
Mohammad Abid Bazaz, Mashuq-un-Nabi, S. Janardhanan	918
Wind Energy Conversion Systems	
Chaired by Feng Qiao, James Furze	
A Magnitude-phase Detection Method for Grid-connected Voltage of Wind Power Generation System	
Xiaoying Zhang, Zhizhuang Cheng, Xiaolan Wang, Zhiwei Wen	923
Facilitating description of fuzzy control algorithms to ordinate plant species by linking online models	
James N. Furze, Quan M. Zhu, Feng Qiao and Jennifer Hill	930
LMI based H ₂ /H _∞ Power System Stabilizers for Large Disturbances in Power Systems with Wind Plant	
Yuan Peng, Quan Min Zhu, Hassan Nouri	936

An Energy Efficient Hop-Number-Constrained Multi-hop Routing Algorithm for Heterogeneous Wi Networks	reless Sensor
Zhijun Gao, Hongyu Wang, Chunyan Xue, Zhonghua Han	942
Multiple Obstacles Collision Avoidance and Behavior Modelling for a Mobile Robot	
Feng Zhang, Hongguang Lan, Feng Qiao, Xueyang Sun,	948
Bounded Synchronization of Switched Dynamical Networks with Non-identical Nodes	
Liming Du, Fengying Wang, Feng Qiao	954
On-Off Control of Wind Turbine for Maximum Wind Power Point Tracking	
Feng Zhang, Hongguang Lan, Feng Qiao, Xueyang Sun, and Shuang Sun	960
Maximal Power Extraction of Variable Speed Wind Turbine under Rated Wind Speed	
Feng Qiao, Shuang Sun, Feng Zhang Xueyang Sun,Hongguang Lan	966
Intelligent Systems	
Chaired by Wei Li, Shiji Song	
Based on fuzzy neural network of multi-agent data fusion	
Bin Ma, Nannan Li, Changtao Wang, Zhonghua Han, Tongying Guo	972
Numerical Simulation on Arc Generatrix Cone Cover Forming of Shaped Jet	
Zhu Feng, Zhu Wei hua, Yan Jun Lai, Yu Chang Quan, Feng Le Man	978
Some New Deformation Formulas on Variance and Covariance	
Yuli Zhang, Huaiyu Wu, Lei Cheng	984
Adaptive Robust Control for Servo System with Friction and Input Dead-zone Nonlinearity	
Jian Guo, Jingjing Ji, Fan Yang, Bin Yao	990
A Novel Approach to Design a Pure Rolling Cycloid Reducer with Involute Teeth Superimposed	
Yuan Song, Qizheng Liao, Shimin Wei, Lei Guo, Lifeng Zhou	995
An Overview of Hierarchical Temporal Memory: A New Neocortex Algorithm	
Xi Chen, Wei Wang, Wei Li	1001
Incremental Feedback Learning Methods For Voice Recognition Based On DTW Xiaoxia Chen, Jian Huang, Yongji Wang, Chunjing Tao	1008
The applicatiom of support vector machine and impoved particle swarm optimization	
Hu Zhang, Min Wang, and Xinhan Huang	1014
Detection, Calibration and Simulation	
Chaired by Dingli Yu, Dong Feng	
The Simulation of Laser Doppler in Velocity measurement of rainwater in pipe	
Zheng Yanfang, Fang Bin	1019
Analysis of UWB coexistence with 2G/3G/4G wireless communication systems	

Sabir Ghauri, Dong Feng 102	25
Numerical Simulation of Arch dam Withstand Underwater Explosion	
Zhu Feng, Zhu Wei hua, Zhu XiaoXi, Sun Ji bin, Hua Xia	31
Research on Linux-based KD-DRT Real-time Simulation Platform	
Xinyu yao, Wei Feng, Wenbo Wu, Yong Chen 103	37
The Research of Magnetic Flux Door Magnetic Compass Error Compensation Method	
Lili Nie, Sha Ni, Zhiping Liu, Shaocheng Qu 104	42
Collegeine of Starbaria Differential Francia Madala Usina Loudiair Newsonial Madada and Bartisla Sanca	
Calibration of Stochastic Differential Equation Models Using Implicit Numerical Methods and Particle'Swar Optimization	ırm
Tianhai Tian, Xiangyu Ge 104	46
Development of the Measurement System of the Postero-to-Anterior Movements of the Cervical Spine	
Tiantian Wang, Jian Huang, Yongji Wang, Xiaolin Huang, Jinghui Zhang	52
Multi-grant Daged Winslage Naturals System for Fire and Daison and Cap Datestion	
Multi-agent Based Wireless Network System for Fire and Poisonous Gas Detection Zhijun Gao, Hongyu Wang, Chunyan Xue, Di Wang 105	58
2.17.11. 0.10, 1.10.18, 1.11.17.11.11.11.11.11.11.11.11.11.11.11	
Energy, Power and Electronics Systems I	
Chaired by Yong Chen, Zhijun Li	
An Integrated Solar-Fuel Cell Powered System for an Airship	
Farbod Khoshnoud, Yong K. Chen, Rajnish K. Calay 106	63
Design on Control System of HighPrecision Micro-displacement Platform	
Jing Dai, Sainan Wang, Chunjiang Chang, Jian Liu, Meng Shao	71
Analysis on Circulating Current of Parallel Inverter with SPWM Modulation for AC Motor Drive	
Jianbao Liu, Xinxin Qin, Hua Lin, Leping Bu	77
Research on OSG Control of Induction Motor Drives for Electric Vehicles	
Gang Zheng, Shengjie Guo, Shicai Fan, Yahui Ren	84
Passarah of Coordinated Control Method of Hybrid Dower Crops System	
Research of Coordinated Control Method of Hybrid Power Crane System Li Zhi jun, Li Zhen, Li Hui jie, Zheng Ye, Shang Cheng, Sun Yan 109	90
El Zin Jan, El Zien, El Harrie, Elleng R, Shang Cheng, San Tan	70
Modeling and Dynamic Analysis of Inlet Pressure-regulating Valve for Tractor-brake Hydraulic Torque Converte	
Jin Yi, Liu Xi xia, Liu Wei ping, Wang Shu hai 109	95
A study of a novel wind turbine structure for urban skyscrapers using CFD simulation	
Xu Zhang, Yongkang Chen, Rajnish K Calay	01
Prediction, Optimization and Scheduling I	
Chaired by Jie Ma, Liying Yang	
Optimal Ascent Guidance based on Direct Optimization Method	

Classical State Space Realization of the Rational NARMAX Model	
Fernando Gómez-Salas, Yongji Wang, Quanmin Zhu	1112
Using NW Small-World Model to Improve the Performance of Social Emotional Optimization Algorithm	
Xuming Li, Zhihua Cui	1120
Density Compensation to Reference Map of Gravity Navigation	
Ma Jie, Yang Fan, Yan Zu, Xiong Ling	1126
Robust Guaranteed Cost Control for BTT Vehicle Based on LMI	
Chuanfeng Li, Xiang Gao, Yongji Wang	1132
The selection algorithm of precedence rows based task assignment solution for vehicle-target pursuit system	
Liying Yang, Juntong Qi, Jianda Han	1138
Particle Swarm Optimization of PID tuning in measurement experiment of gravitational constant G	
Lidi Quan, Yongji Wang	1144
Algorithms for Complex and Uncertain Systems	
Chaired by Randa Herzallah , Anli Shang	
Path Cost and Assessment between Cities from Complex Network	
Lanhua Zhang, Xiujuan Wang, Yuedong Zhang Shaowei Xue,	1150
Urban Bus Transport Network Optimization from Complex Network	
Lanhua Zhang, Lei Peng, Yuedong Zhang, Shaowei Xue	1156
The 3-Input Euler Polynomial Neuronet (3IEPN) with Weights-and-Structure-Determination (WASD) Algori	thm
Yunong Zhang, Weibing Li, Xiaotian Yu, Lin Xiao, Jinhao Chen	1162
Adaptive Backstepping 2-SMC of Multi-Input Cascade Nonlinear Uncertain Systems	
An-li Shang, De-hai Yu, Zheng Wang	1168
A cooperative stochastic differential game of industrial pollution	
Yan Xiong, Shaocheng Qu	1172
A Fast Binocular Vision Stereo Matching Algorithm	
Hui Zhang, LingTao Zhang, Ming Zhao, Jian Liu	1176
An Online Ascent Phase Trajectory Reconstruction Algorithm Using Gauss Pseudospectral Method	
Da Zhang, Xuefang Lu, Lei Liu and YongJi Wang	1181
Energy, Power and Electronics Systems II	
Chaired by MianHong Wu, Yuan Peng	
Control Scheme of Hybrid Inverters in High Power Drives	
Wei Yongqing, Qiao Mingzhong, Zhang Xiaofeng	1187
Power Decomposition Based on SVM Regression	
Jiaming Li, Sam West, Glenn Platt	1192

Experimented Engine Test Data Modelling Method Mian Hong Wu, W.C Lin, S Y Duan	1197
Two-step Reduction Procedure for Parametric Transient Electromagnetic Computations Mohammad Abid Bazaz, Mashuq-un-Nabi, S. Janardhanan	1201
Implementation of Adaptive Ethernet for Embedded Integrated Navigation System	
Jie Yan, XiaoSu Xu	1207
High Accurate Pulse Circuit Design of Transdermal Drug Delivery Instrument	
zhi-qiu Lei qin-qin Wang and shao-cheng Qu	1211
Application of Multi-agent and Particle Swarm Optimization in Network Reconfiguration of Ship Power'Sys	stem
Zheng Wang, Yongji Wang, Anli Shang	1215
Prediction, Optimization and Scheduling II	
Chaired by Ruili Wang, Zhiyan Wang	
Dynamic Modelling and Active Disturbance Rejection Controller Design for a Morphing Wing Mechanism	
Rongqi Shi, Jianmei Song, Weiyu Wan	1221
Parameters identification of synchronous machine based on sensitivity analysis	
Wu Xusheng, Zhang Junhong, Gao Wei, Wen Qi	1228
A 12-Pulse Converter Featuring a Rotating Magnetic Field Transformer	
Jiang Xiaoyi, Wang Tiejun, Wu Xusheng, Gao Wei	1234
Time-Dependent Heat Flux Identification: Application to a Three-Dimensional Inverse Heat Conduction'Pro	blem
S. Beddiaf, L. Autrique, L. Perez, J.C. Jolly	1239
Adaptive sampling of nonlinear system trajectory for Model Order Reduction	
S.A. Nahvi, M. Nabi, S. Janardhanan	1246
Non-linear Data Analysis of Impedance Spectroscopy as Applied to Cellular Toxicity Systems	
Zhiyan Wang, Janice Kiely, Richard Luxton	1253
Emergency Materials Scheduling Optimization Based on Modified GA	
Ming Zhao, Xiaoyu Song, Hui Zhang, Feng Qiao, YiChen Gao	1260
Theoretical investigation of asymmetric exclusion processes on m-input n-output junctions with random'upd	ate
Shaoda Li, Ruili Wang, Mingzhe Liu and Yizhang Yin	1266
Modelling and Control in Traffic & Engine Science	
Chaired by Yu-long Ying, Xiangyuan Tao	
Analysis of Complexity Measure of Air Traffic Flow at Terminal Area Rased on Annrovimate Entropy	

Analysis of Complexity Measure of Air Traffic Flow at Terminal Area Based on Approximate Entropy

Dong Bing, Du Wen

1269

Simulation Study on Fuel Supply Rate Curve of Marine Inter-cooled Gas Turbine	
Yu-long Ying, Shu-ying Li, Zhi-tao Wang, Yun-peng Cao, Yue-wu Sun	1275
Reliability Analysis of Weapon Systems Based on SPSS	
Guo Qiang, Wang Guihua, Gao Jianjun, Yang Ruipeng, Han Jincheng	1281
Optimal Analysis of Flow Parameters for Marine Gas Turbine Intercooler based on simulation model	
Yu-long Ying, Shu-ying Li, Zhi-tao Wang, Yun-peng Cao, Yue-wu Sun	1284
Clearance of Flight Control Law Based on H_{∞} Theory	
Shuai Dong, Zhishen Wang, Lei liu, Liuli Ou, Yongji Wang	1290
Robust Model Predictive Controller Design for a Hypersonic Flight Vehicle	
Xiangyuan Tao, Chen Hua, Ning Li, Shaoyuan Li	1296
Application of Adaptive Unscented Kalman Filter for Angular Velocity Calculation in GFSINS	
Qingya Wu, Jiayuan Shan, Shaobo Ni	1302
Terminal Sliding Mode Control of Mobile Wheeled Inverted Pendulum	
Lifei Mao, Jian Huang, Feng Ding, Yongji Wang	1308