Proceedings of
the 3rd World Congress on
Intelligent Control and Automation

June 28 — July 2, 2000
Hefei, China

Sponsored by
University of Science and Technology of China (USTC)

Technical Cosponsored by
IEEE Robotics and Automation Society
IEEE Control System Society, Beijing Chapter
Chinese Association of Automation
Chinese Association of Artificial Intelligence
Anhui Association for Science and Technology, China

Press of University of Science and Technology of China
Volume 4

Plenary Talks

PT-01 Intelligent Control and Adaptation

Ruwei Dai, Dengyong Zhou ........................................ (2267)

PT-02 Digital Power System

Qiang Lu ........................................................................ (2274)

PT-03 Design and Control of Flexible Transfer System

Toshio Fukuda, Isao Takagawa ..................................... (2283)

PT-04 Multivariable Intelligent Decoupling Control and Its Applications

Tianyou Chai, Xin Wang, Heng Yue .......................... (2289)

PT-05 Integrating e-Intelligence into Product and Service Automation

Jay Lee ........................................................................ (2296)

PT-06 A System Theoretic Foundation for Blind System Identification and Estimation

Rueywen Liu ............................................................... (2297)

Regular Sessions

4A: Large Scale Systems

4A-01 Inclusion Principle of Dual Systems

Xuebo Chen, Xiaohua Li .............................................. (2298)

4A-02 On Fuzzy Extension Decision System of the Large Scale System

Wanjun Zhang, Zhenyu Wang, Yi Zhao, Zhongxiong He .......... (2302)

4A-03 Decentralized Memoryless Robust Control for Uncertain Interconnected Systems

with Time Delays

Jitao Sun, Yongqing Liu ............................................ (2307)

4A-04 Observer-Based Decentralized Robust Stabilizing Control for Interconnected Uncertain Delayed Systems

Yinping Zhang, Jitao Sun ......................................... (2310)

4A-05 Dynamic Cooperation in Intelligent Large Scale System Control

Wei Xing, Tiejun Wu .................................................. (2314)
4A-06 Semi-Decoupled Transform and Stability Analysis for a Class of Large-Scale Combined Systems

Jianhua Li, Yanping Li, Rui Su, Junsheng Li ........................................................... (2319)

4B: DEDS and Hybrid Dynamic Systems

4B-01 Supervisory Control of Extended Timed Event Graph

Zhibing Zhuo, Wende Chen .......................................................... (2322)

4B-02 Fuzzy Time Petri Nets and Its Application in Supervision of DEDS

Meimei Gao, Zhiming Wu, Xiaoguang Huang .................................................. (2327)

4B-03 The Equivalent System of DEDS and the Rank of Dioid Matrix

Yanhong Xiao, Hao Wu, Yongjin Peng ......................................................... (2332)

4B-04 An Extension to Timed Colored Petri Nets (TCPNs) for Modeling Manufacturing Systems with Limited Resources Availability

Zhibin Jiang, Richard Y.K. Fung, Ming J. Zuo, Paul Y.L. Tu .................................... (2336)

4B-05 An Approach for the Design of Supervisory Controller of Discrete Event Systems

Y.M. Li, M.Z. Wang, A.H. Jones .................................................. (2341)

4B-06 Sensitivity Analysis of Performance for Semi-Markov Processes

Baoqun Yin, Hongsheng Xi, Yaping Zhou .................................................... (2347)

4B-07 Optimal Control Policy of an Unreliable Manufacturing System with Setup Time

Yaguang Kong, Youxian Sun ........................................................ (2351)

4B-08 Deadlock and Deadlock Avoidance of Batch Processes System

Yali Wu, Jianchao Zeng ........................................................ (2356)

4B-09 A Tunable QoS Routing Algorithm

Caixia Chi, Shiquan Wu, Jianfang Wang ..................................................... (2360)

4B-10 The Performance Analysis of Leaky Bucket Algorithm with Markov-Modulated Bernoulli Process

Huachen Zhang, Fengsheng Tu ........................................................... (2365)

4B-11 An Algorithm to Reduce Simulation Number of Times for Optimizing Closed Jackson Network

Yaping Zhou, Baoqun Yin, Hongsheng Xi, Zhongsheng Hua .................................... (2370)

4B-12 Optimal Control for Hybrid Systems Based on Mixed Dynamical Programming

Haifeng Zhai, Hongye Su, Jian Chu, Weimin Wu, Haihong Wu ................................... (2374)
4C: Computer Aided Design

4C-01 Application of Inductance Matrix in Digital Simulation

Zhongjing Yang, Pinghui Zhang, Chuanxin Li ........................................... (2379)

4C-02 Parametric Design Method Based on a Directed Acyclic Hypergraph

and Object Oriented Technology

Cuixia Ma, Xiangxu Meng ............................................................... (2383)

4C-03 The Research and Implement of an Agent-Based CSCW Environment

for Pattern Design System

Chenglei Yang, Xiangxu Meng, Bin Gong, Changhe Tu, Zhenyu Teng ................. (2388)

4C-04 An Improved Generation Algorithm for Fractal Patterns Based on Fuzzy

Stochastic Iterated System

Jian'an Fang, Xu Zhang, Qingxuan Wan .............................................. (2392)

4C-05 Research of the Algorithm for Bipolar Analog IC Mask Recognition

Based on Pattern Identification Principle

Tong Tian, Shuangjun Wu ............................................................... (2396)

4C-06 An Investigation on Brushless DC Motor CAD

Qunjing Wang, Guoli Li, Mingshi Sun, Fanrang Kong, Zhihua Feng .................... (2400)

4C-07 The Study of Simulation for Induction Motor Direct Torque Control System

Qiangang Guo, Yufei Zhang, Pengchao Zhang ....................................... (2405)

4C-08 Development of a CAD Platform for an Practical AC Speed-Adjusting System

Based on Device Net

Zhi Wang, Guihua Er, Chao Yuan, Diayan Hu ....................................... (2409)

4C-09 Application of Pattern Emulation on Weave CAD Automatization

Sheng Li, Xiangxu Meng, Changhe Tu ............................................... (2412)

4C-10 A Expression Method of User-Oriented Flexible Features Model

and Its Applications

Xiaorong Du, Zhenan Liu ............................................................... (2417)

4C-11 The AI Software's Exploitation of Coal Preparation Using CAD

Shifan Xu, Chen Peng, Youqun Shi, Xiaoping Ma .................................. (2421)

4C-12 Using Computer to Simulate the Movement of Plane Link Mechanism Dynamicly

Jin Wang, Wengang Cao ............................................................... (2424)

4C-13 The Application of Expert System on Electrochemistry Rectifying Power

Supply CAD

Jinguo Xi, Duwu Cui, Ruojun Wang, Ye Zhang ................................... (2427)

4C-14 The Implementation of CAD-Based Fuzzy Control Design Software

Lixiong Li, Minrui Fei ............................................................... (2430)
4D: Information Processing and Information Systems

4D-01 Fuzzy Data Association in Multi-Sensor Multi-Target Tracking

   Meihua Xie, Lixin Deng, Zhengming Wang .................................................. (2435)

4D-02 Analysis and Decision by Using Fuzzy Information of Fuzzy Graph

   Da Wu ............................................................................................................. (2439)

4D-03 Study of Clustering Validity Based on Fuzzy Similarity

   Jihong Pei, Xuan Yang .................................................................................. (2444)

4D-04 Measures of Fuzziness and Entropy of Fuzzy Information

   Xiaoshu Hang, Fanlun Xiong ...................................................................... (2448)

4D-05 Digital Image Sampling Curve Feature Extraction Using Triangle Fractal Method

   Shaoning Pang, Jiegu Li ............................................................................... (2453)

4D-06 The Properties and Performance Analysis of \( \frac{1}{2} \)-Spectrum

   Yangyu Fan, Jiuhao Shang, Jincai Sun ......................................................... (2457)

4D-07 Application of the Zero-Crossing Rate, LOFAR Spectrum and Wavelet

to the Feature Extraction of Passive Sonar Signal

   Xueyao Li, Fuping Zhu .................................................................................. (2461)

4D-08 Logistic-Map Chaotic Spreading Spectrum Sequences Under

   Linear Transformation

   Xueyi Zhang, Lu Jin, Kejun Wang, Dianpu Li ................................................ (2464)

4D-09 The Application of BP Type Neural Network in Speech Coding

   Xueying Zhang .............................................................................................. (2468)

4D-10 Optimization of Mother Wavelets and Time-Frequency Detection of Signals

   Huaijie Sheng, Li Zhu .................................................................................... (2471)

4D-11 Separation of Discrete Linear Mixed Chaotic Signals

   Xuchu Dai, Jingang Zhang, Peixia Xu ............................................................ (2474)

4D-12 Improvement to Frey's Adaptive Chaotic Encoder

   Jingang Zhang, Xuchu Dai, Peixia Xu ............................................................ (2479)

4D-13 The Effect of Speed on Error Rate in Wireless Train Control

   Bing Bu, Xishi Wang ...................................................................................... (2484)

4D-14 Removing Distortion in DMT Modulation Caused by Insufficient Cyclic

   Prefix Length

   Wenxiao Shi, Zi Lin, Licui Zhang .................................................................. (2488)

4D-15 A Study and Analysis on a High Intensity Public Data Encryption Algorithm

   Zi Lin, Wenxiao Shi, Li Wang ....................................................................... (2492)
4D-16 A Study of Mutual Information in Quantum Information Systems
Guanggui Bao ................................................................. (2495)

4D-17 Implementation of a 12.8Kbit/s LD-CELP Speech Codec
Xueying Zhang ............................................................... (2499)

4D-18 A Long-Distance High-Speed Data Acquisition and Controlling System
Kezhu Song, Jie Wu, Junfeng Yang .................................. (2503)

4D-19 Dynamic Bit-Rate Estimation and Control for Constant-Quality
Communication of Video
Daji Qiao, Yuan F. Zheng ............................................... (2506)

4D-20 A Bit-Rate Control Method in Video Communication
Dong Tian, Lansun Shen, Zhanyun Duan .......................... (2512)

4D-21 Switched Bus in Information System-Principal and Design
Yanfang Wang ............................................................... (2517)

4D-22 Data Visualization and Knowledge Visualization
Weijin Lou, Fansheng Kong, Yongsheng Cao ...................... (2523)

4D-23 Uncertainty Measures of Roughness of Knowledge and Rough Sets
in Incomplete Information Systems
Jiye Liang, Zongben Xu .................................................. (2526)

4D-24 A Pattern Recognition Machine with Fuzzy Clustering Analysis
Xiaogang Ruan ............................................................. (2530)

4D-25 Rough Set Theory and Its Practice in Knowledge Discovery
Shixing Fu, Zengxiang Lu, Haiming Lu, Yanda Li ................ (2535)

4D-26 An On-line Chinese Signature Verification System Using an Impulse Response
of Signature Generation Model
Fang Liu, Yizheng Qiao .................................................. (2540)

4D-27 A New Approach of Halftoning Based on Error Diffusion
with Rough Set Filtering
Huanglin Zeng, Hu Ying, Xingbo Sun ................................ (2544)

4D-28 Online Hand-Sketched Graphics Recognition Based on Attributed
Relational Graph Matching
Changhua Li, Bing Yang, Weixin Xie .............................. (2549)

4D-29 Using Association Rules to Improve Chinese Handwritten Character Recognition
Lixin Zhen, Ruwei Dai ................................................... (2554)

4D-30 Data Detection Technique in Quick Pressure Test
Yunliang Wang, Qiang Gao, Hui Liu, Kexin Wei .................. (2558)

4D-31 Target Number Detection Based on Time-Range-Doppler Image
<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4D-32</td>
<td>Data Oriented Analysis of Workflow Optimization</td>
<td>Hongbing Ji, Weixin Xie</td>
<td>2560</td>
</tr>
<tr>
<td>4D-33</td>
<td>Large Signal Analysis of Arc Welding Power Supply Based on Matlab Modeling and Simulation</td>
<td>Minglun Ren, Weidong Zhu, Shanlin Yang</td>
<td>2564</td>
</tr>
<tr>
<td>4D-34</td>
<td>The Design Methods of Current-Mode nth-Order Filters</td>
<td>Xiufang Wang, Bingkun Gao</td>
<td>2566</td>
</tr>
<tr>
<td>4D-35</td>
<td>Multi-Channel Digital Automatic Ultrasonic Detecting System</td>
<td>Jiajun Tang, Qizhi Ni, Yanfang Wang</td>
<td>2567</td>
</tr>
<tr>
<td>4D-36</td>
<td>Automatically Generation Technology of a Domain Information System</td>
<td>Zhongxue Li, Shenglin Li, ling Liu</td>
<td>2568</td>
</tr>
<tr>
<td>4D-37</td>
<td>A New Blind Separation Approach Based on Blind Localization</td>
<td>Qingwen Liu, Zengfu Wang</td>
<td>2569</td>
</tr>
<tr>
<td>4D-38</td>
<td>Data Fusion Model of Target Identification in the Battle Field</td>
<td>Shuhai Liu, Ren'an Ma</td>
<td>2570</td>
</tr>
<tr>
<td>4D-39</td>
<td>Study of the Stochastic Method of Dynamic Programming for Optimizing the Storage Area Network(SAN)</td>
<td>Yonghao Mai, Xingyu Wang</td>
<td>2571</td>
</tr>
<tr>
<td>4D-40</td>
<td>Intelligent Information Agents Design and Realization</td>
<td>Weihua Li</td>
<td>2572</td>
</tr>
<tr>
<td>4D-41</td>
<td>Internet/Intranet Based Digitized Teleservice System</td>
<td>Jian Wang, Wei Ren, Hao Zhang, Junwei Yan, Qidi Wu</td>
<td>2573</td>
</tr>
<tr>
<td>4D-42</td>
<td>Researches on the Network Support Environment of the Collaboration-Based Virtual Laboratory</td>
<td>Fangmin Li, Renfa Li, Chengqing Ye</td>
<td>2574</td>
</tr>
<tr>
<td>4D-43</td>
<td>Flow and Congestion Control: Modeling and Analysis</td>
<td>J.A. Van Casteren, Ming Shao, M. Goossens</td>
<td>2575</td>
</tr>
<tr>
<td>4D-44</td>
<td>Intelligent Agent-Based IN Service Creation Environment</td>
<td>Yanming Liu, Xingxi Chu, Yuxiang Ma</td>
<td>2576</td>
</tr>
<tr>
<td>4D-45</td>
<td>The Research on Overload Control Algorithms for SCP of Intelligent Network</td>
<td>Yuxiang Ma, Yanming Liu, Xingxi Chu, Xiaowei Sun</td>
<td>2577</td>
</tr>
<tr>
<td>4D-46</td>
<td>A Explicit Rate Caculating Flow Control of ATM Networking</td>
<td>Hui Bai, Zhenhua Duan</td>
<td>2578</td>
</tr>
<tr>
<td>4D-47</td>
<td>Database Oriented System Design in the Frame of Information System</td>
<td>Tiesheng Xiong, Lian Li, Min Dai</td>
<td>2580</td>
</tr>
</tbody>
</table>
4D-48 Intelligent Management System of Personnel Research Based on Human Element
Jiang Zhang, Zhong Xiong He .......................................................... (2636)

4D-49 R&D on Translation Technique in Enterprise Information Publishing
Management System
Siqing Shan, Guoping Xia, Jicheng Yang ........................................... (2641)

4D-50 Design and Implementation of Parts Production Quality Control Management Information System in CIMS Environment
Xueming Wang, Xiaohong Guan, Guoji Sun ........................................ (2646)

4D-51 Management Information System for Hospitalization Insurance
Hongling Li, Jing Chen, Quan Sun ...................................................... (2651)

4D-52 Establishing Technology Information Management System of Corporate
Sifang Mao, Xiaoqian Chen, Zhongsheng Hua ....................................... (2655)

4D-53 Equipment MIS in Military Industrial Enterprises
Jichun Chen, Haiping Yin, Xuying Jiang .............................................. (2658)

4D-54 Optimization Problem of Shrinkage and Thresholding Policies in Wavelet and the Application to Image Processing
F.Y. Wan, Z.D. Yuan .......................................................................... (2661)

4D-55 Firing Particle Flow Detection and Tracking in Sequence Images
Xuan Yang, Jihong Pei, Wanhai Yang ................................................ (2666)

4D-56 Approach of Automatic Multithreshold Image Segmentation Based on
Class Variance
Xiaodan Wang, Chongming Wu ....................................................... (2671)

4D-57 Image Classification Based on Data Fusion
Zhigang Zhao, Xuequan Chen ............................................................ (2675)

4D-58 The Identification of Head-And-Shoulder Scene Basing on the Peculiarity of Human Vision System
Zhong Chen, Youjie Wang, Zushu Li, Jiyan You, Jingli Shao .................. (2679)

4D-59 Texture Segmentation Method Based on Incomplete Tree Structured Wavelet Transform and Fuzzy Kohonen Clustering Network
Xiaodan Wang, Hua Jin, Rongchun Zhao ............................................ (2684)

4D-60 The Development of Multimedia Monitoring System for the Railway Road Condition
Yixin Qi, Weiqiang Hu, Tie Liu, Zheng Zhou ....................................... (2688)

4D-61 A Method of Wavelet-Based Edge Detection with Data Fusion for Multiple Images
4D-62 Study on Tamper-Proofing of Digital Media
Xiuqing Wu, Rong Zhou, Yunxiang Xu

4D-63 Multipurpose Virtual-Reality-Based Motion Simulator
Jiang Du, Jingxiong Huang, Weixin Xie

4D-64 Synthesis Signal Process of Digital Sonar System
Chin-Teng Lin, I-Fang Chung, Shaw-An Liann, Feng-Yu Su

4D-65 General-Purpose Software Design for DAQ System Based on Windows 95
Peng Liu

4D-66 An Optoelectronic Isolator without Drift Based on Chopper and DSP
Xi Chen, Fu xian Yin, Yi Bao

4D-67 Digital Voice Processing System Based on High-Speed Multi DSP
Hucheng Chen, Qi An, Yanfang Wang, Jiaqin Chen

4D-68 An Equivalent Sample Circuit Based on DSP
Wuhu Lei, Qi An, Yanfang Wang, Weiping Liao

4D-69 The Application of Dither in High Speed and High Resolution ADC
Qingmin Zhang, Qi An, Yibao Wu, Shubin Liu, Yanfang Wang

4D-70 A Modular DSP System for Use in Embedded Electro-Optical Applications
Lanjun Li, Yaogeng Tang, Song Gao, Qiong Liu

4D-71 Invariant Characters of Information Systems under Some Homomorphisms I
Deyu Li, Qi Chen, Yichen Ma

4D-72 The Research of Automation Indexing System for Chinese Archives
Xin Wang, Xiao Yu, Xiaoting Zhang

4D-73 Automatic Chinese Text Error Correction Approach Based-on Fast Approximate
Chinese Word-Matching Algorithm
Lei Zhang, Ming Zhou, Changning Huang, Maosong Sun

4D-74 Approach in Automatic Detection and Correction of Errors in Chinese
Text Based on Feature and Learning
Lei Zhang, Ming Zhou, Changning Huang, Mingyu Lu

4D-75 Discovering and Filtering Text Information from Internet Based on
Inductive Learning
Bo Yang, Fei Liu, Yiqi Sun

4D-76 Chinese Word Classification Based on Statistics
Shiwan Zhao, Ying Xia, Shaoping Ma, Yu Wang, Zhong Su

4D-77 An Approach of Keyword Spotting Based on HMM
Binfeng Yan, Rui Guo, Xiaoyan Zhu, Bo Zhang
4D-78 Sift Algorithm to Improve Performance of Chinese Character Classifier
Using Linear Decision Function
Yijiang Jin, Min Zhang, Shaoping Ma ......................................................... (2760)

4D-79 A Learning Algorithm Detecting the Similar Chinese Characters' Boundary
Based on Unequal-Contraction of Dimension
Jinying Chen, Yijiang Jin, Shaoping Ma ..................................................... (2765)

4D-80 An Optimal Strategy for Parallel Processing of Speech Signals
Dening Qi, Zhengxiang Qian, Changjin Liu, Lin Yu ....................................... (2770)

4E: Systems Theory and Control Theory
4E-01 Properties of State Feedback Model Predictive Control Systems
Pinhui Hu, Xin Zuo, Pu Yuan ................................................................. (2774)

4E-02 The Predictive Functional Control Algorithm of Bilinear System
Honghua Pan, Hongye Su, Jian Chu ....................................................... (2779)

4E-03 A CGPC Controller in Continuous Casting Process
Ge Guo, Wei Li, Jun Wang, Manqiang Liu ............................................... (2783)

4E-04 A Non-Parametric Design Method for Predictive Control
Zhongbao Chen, Li Chen, Sifu Li ............................................................. (2787)

4E-05 Sliding Mode Model Predictive Control with Terminal Constraints
Jiansuo Zhou, Zhiyuan Liu, Run Pei ....................................................... (2791)

4E-06 Modular Multivariable Predictive Controller
Gang Wu, Xudong Lu, Zhigang Zhang, Meisheng Xue,
Gang Chen, Demin Sun ........................................................................... (2796)

4E-07 On the Qualitative Behaviour of Solutions of a Third Difference Equation
Zhizhen Wang ......................................................................................... (2801)

4E-08 Stability Analysis for Linear Time-Varying Systems Based on Generalized Orthogonal Polynomials
Jianping Zeng, Peng Cheng, Hong Lei ..................................................... (2806)

4E-09 What Is the Minimum Function Observer Order
Chia-Chi Tsui .......................................................................................... (2811)

4E-10 Robust Quadratic Stability of Interval Dynamical System
with Multiply Time-Delays
Li Xie, Weidong Zhang, Xiaoming Xu .................................................... (2817)

4E-11 Existence of Positive Definite Solution to Periodic Riccati Differential Equation
Yangzhou Chen, Shanben Chen ............................................................... (2820)

47
4E-12 Conditions for D-Stability of Discrete Singular Systems with Time-Delays
Ruliang Wang, Yongqing Liu .................................................. (2824)
4E-13 Homotopic Mapping and Pole Disposition of Control System
Liang Sun, Jikai Yi ................................................................. (2829)
4E-14 A Nonregular Case of the Jury Test
Zhaoqing Song, Xiaojun Guo, Yun'an Hu .................................. (2832)
4E-15 Model Validation of Multirate Systems from Time-Domain Experimental Data
Li Chai, Li Qiu .......................................................................... (2835)
4E-16 Oscillation of a Class Delay 2-D Discrete Dynamic Systems
Yongqing Liu, Shutang Liu ....................................................... (2841)
4E-17 On the Controllability and the Stabilizability of Control Delay Systems
Wei Jiang, Wenzhong Song, Shumin Fei, Shiji Song ....................... (2846)
4E-18 Robust Stability of Lurie-Type Uncertain Control Systems with Delays
Fuxing Duan, Bingji Xu ............................................................ (2850)
4E-19 Positive Invariance of Linear Uncertain Systems and Applications
Lisheng Hu, Yongyan Cao, Huihe Shao ........................................ (2854)
4E-20 Dissipation Design for Uncertain Discrete-Time Systems
Zhiquiang Tan, Yeng Chai Soh, Lihua Xie, Wenjian Cai, Yue Fang, Beng Tong Lim ....................................................... (2859)
4E-21 Inverse of a Sampled Data System
Er-Wei Bai ................................................................................ (2863)
4E-22 Digital Finite-Precision Controller Realizations with Sparseness Considerations
Jun Wu, Sheng Chen, Gang Li, Jian Chu ....................................... (2869)
4E-23 Pole Assignment for a Class of Second Order Coupled Generalized System
Zhaoqiang Ge ........................................................................... (2874)
4E-24 On the Minimal-Order of Dynamic Output Regulators
Jinzi Wang, Jifeng Zhang .......................................................... (2879)
4E-25 Combined PLC/VCS for Linear Systems with Input Constraints
Jianbo Hu, Jian Chu, Hongye Su ................................................ (2884)
4E-26 Study and Realization of Design and Simulation System of Ship Stance Control
Jingchuan Sun, Sheng Liu, Dianpu Li .......................................... (2889)
4E-27 Research into Quasi-Decentralised Control
T.C. Yang, Z.T. Ding, H. Yu ...................................................... (2893)
4E-28 The Resonance Problem of Concatenate System
Manshun Wang, Zhonghui Xue, Gang Zhang ............................... (2899)
4E-29 The Basic Pattern of Model Free Controller and Analysis of Application Effect
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4E-30</td>
<td>Comparison Analysis and Simulation of Capacity of Model Free (Non Modelling Adaptive) Controller with PID Regulator</td>
<td>Zhigang Han</td>
</tr>
<tr>
<td>4E-31</td>
<td>Optimal Solution and Approximate Solutions of SISO Mixed $H_2/l_1$ Problem</td>
<td>Qiubin Luo, Jiaqiang Tong</td>
</tr>
<tr>
<td>4E-32</td>
<td>Initial State Compensation of Repetitive Controller</td>
<td>Guangjie Xu, Runqiang Bian, Yasen Li, Zhimin Wang, Jinhua She, Michio Nakano</td>
</tr>
<tr>
<td>4E-33</td>
<td>The Variable Pairing in Multivariable Control System and Its Decoupling Research</td>
<td>Guangjie Xu, Runqiang Bian, Yasen Li, Zhimin Wang, Jinhua She, Michio Nakano</td>
</tr>
<tr>
<td>4E-34</td>
<td>Optimal Structure of FWL Digital Controller with Pole Sensitivity Minimization</td>
<td>Weihua Xu, Jun Wu, Jian Chu</td>
</tr>
<tr>
<td>4E-35</td>
<td>Pole Assignment for Infinite Dimensional Generalized System</td>
<td>Zhaoqiang Ge, Guangtian Zhu, Yonghao Ma</td>
</tr>
<tr>
<td>4E-36</td>
<td>Performance Analysis for Distributed Track Fusion with Feedback</td>
<td>Yunmin Zhu, Juan Zhao, Keshu Zhang, X. Rong Li, Zhisheng You</td>
</tr>
<tr>
<td>4E-37</td>
<td>The Method of Design of Filter for a Class of Linear Discrete Generalized Stochastic System</td>
<td>Chenghua Fu, Gongquan Tan</td>
</tr>
<tr>
<td>4E-38</td>
<td>Adaptive Evaluation Model for Complex System</td>
<td>Jianrong Shen, Hongzhi Liao</td>
</tr>
<tr>
<td>4E-39</td>
<td>System Evaluation Using Improved Superiority Analysis</td>
<td>Liang Liang, Zhongsheng Hua, Xiaowei Liu</td>
</tr>
<tr>
<td>4E-40</td>
<td>Nonlinear Predictive Filter for Satellite Attitude Estimation Using Star Sensors</td>
<td>Yurong Lin, Zhenglong Deng, Changsheng Shao</td>
</tr>
<tr>
<td>4E-41</td>
<td>Stable Linear $d$-step Ahead Predictors with Periodic Compensation</td>
<td>Cishen Zhang, Song Wang, Lihua Xie</td>
</tr>
<tr>
<td>4E-42</td>
<td>Asymmetrical Relay Oscillation Based Characteristic Estimation Principle</td>
<td>Minrui Fei</td>
</tr>
</tbody>
</table>

4F: Variable Structure Control

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4F-01</td>
<td>An Algorithm for Common Quadratic Lyapunov Function</td>
<td>Daizhan Cheng, Clyde Martin, Jianping Xiang</td>
</tr>
<tr>
<td>4F-02</td>
<td>The Design of Full Response Sliding Mode Variable Structure Robust Controller</td>
<td>Daizhan Cheng, Clyde Martin, Jianping Xiang</td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Variable Structure Control of Distributed Vibration Systems</td>
<td>Shuwen Pan, Xiehe Hu, Jiaqiang Pan, Fangmin Wang</td>
<td>2970</td>
</tr>
<tr>
<td>Variable Structure Control Theory and Application: a Survey</td>
<td>Shuwen Pan, Hongye Su, Xiehe Hu, Jian Chu</td>
<td>2977</td>
</tr>
<tr>
<td>The Design of a Hybrid Power Filter Based on Variable Structure Control</td>
<td>Mei Tong, Peiti Feng, Jingping Jiang</td>
<td>2982</td>
</tr>
<tr>
<td>Adaptive Quasi-Sliding Mode Control for Discrete Nonlinear System with Uncertain Model</td>
<td>Ying Li, Jingxiang Zou, Xinzeng Zhang, Huo Zhang</td>
<td>2987</td>
</tr>
<tr>
<td>Dynamic Non-Idealities and Their Effect on the Asymptotic Behavior of Discrete Variable Structure Control Systems with Delays</td>
<td>Yimin Yang, Xinzeng Zhang, Nan Cai</td>
<td>2991</td>
</tr>
<tr>
<td>High Precision Observer of Induction Motor with Variable Structure Control</td>
<td>Wenli Xu, Qiang Ling, Feng Chen</td>
<td>2996</td>
</tr>
<tr>
<td>The Application of Optimal Sliding Mode Control in DC Motor</td>
<td>Jiang Wang, Jiajun Wang, Zhongtang Zhao, Xiangyang Fei</td>
<td>3001</td>
</tr>
<tr>
<td>Variable Structure Control of Vibration Isolation Systems Based on Ackermann's Method</td>
<td>Shuwen Pan, Xiehe Hu, Jiaqiang Pan</td>
<td>3005</td>
</tr>
<tr>
<td>Integral Sliding Mode Variable Structure Control Based on Fuzzy Logic</td>
<td>Zhimei Chen, Jinggang Zhang, Jianchao Zeng</td>
<td>3009</td>
</tr>
<tr>
<td>Study of Low Altitude Flight Trajectory Control of Aircraft</td>
<td>Kehu Xu, Liming Song, Chunlin Shen</td>
<td>3013</td>
</tr>
<tr>
<td>Nonlinear Attitude Controller Design Based on Variable Structure Control with Sliding Mode</td>
<td>Xiaoping Shi, Xu Wang</td>
<td>3017</td>
</tr>
<tr>
<td>Optimal Sliding Mode Variable Structure Control of Servo Regulators with Asymptotic Observers</td>
<td>Changsheng Sun, Jie Tian, Jie Chen, Lihua Dou, Zhihao Gong</td>
<td>3021</td>
</tr>
<tr>
<td>A Simplified Discrete Time Variable Structure Control Design with Alleviation of Switching Effort</td>
<td>Ying J. Huang, Hang-Kang Way</td>
<td>3026</td>
</tr>
</tbody>
</table>