



FIRST AFRICAN CONTROL CONFERENCE (AFCON 2003) 3-5 DECEMBER, 2003 CAPE TOWN SOUTH AFRICA

WelcomeGetting StartedConference InformationQFT SymposiumCommitteesAuthorsSessionsSearch

Welcome

Welcome to the First African Control Conference (AFCON 2003) On CD-ROM. This disc is designed so that you may locate papers by session or author, as well as with full text search.

Papers originated as electronic files or hard copy. The papers were converted to Adobe Acrobat PDF file format for crossplatform access. Since some of the papers were scanned, the viewing quality will vary with the size and quality of fonts used. Even though the viewing quality on your monitor may vary, all papers print clearly.

Be sure to read the "Getting Started" section for useful recommendations on how to use this electronic guide.

Thank you and Enjoy!

2003 African Control Conference

Main Menu

2003 African Control Conference

ACROBAT PREFERENCES

To make viewing and searching easier, the changing of two default Acrobat Preferences is recommended(found under File > Preferences on the menu bar).

In the dialogue box for General Preferences, turn OFF the "Open Cross-Document Links in Same Window" option. This keeps the Guide file open when paper files are viewed and returns the reader to the same page in the Guide when a paper is closed.

In the dialogue box for Search Preferences, turn ON the "Show Fields" option so that Title, Author, Keywords, and Subject fields are visible when specifying search criteria. If for some reason this preference option is not present, check to see that Search plug-in has been installed. The search icon will be present on the Acrobat Toolbar if the function is properly installed.

Main Menu

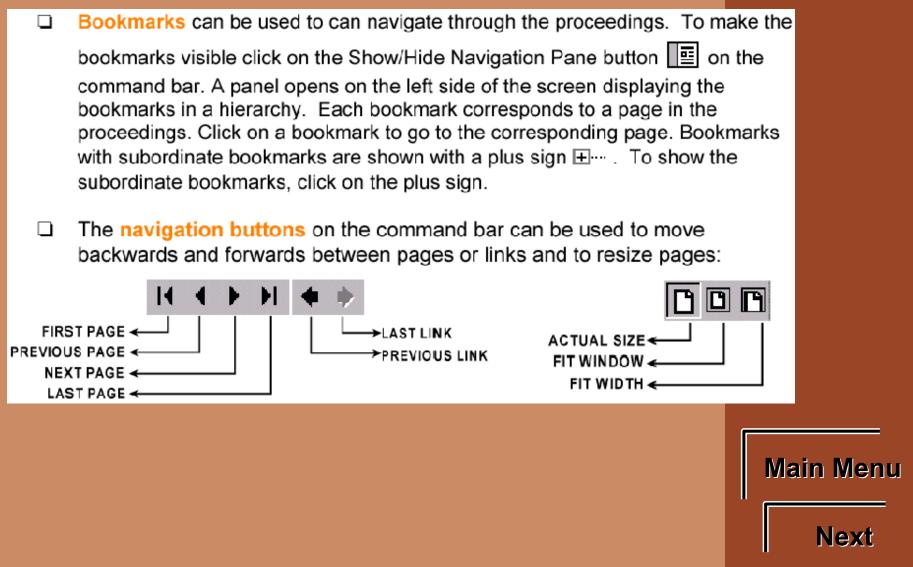
2003 African Control Conference

NAVIGATING

- □ The guide to these proceedings contains hypertext links to specific sections and separate paper files. The mouse pointer changes to a pointing hand √ hy when positioned over linked text. Clicking on the text activates the link.
- To exit a paper after viewing, and return to the guide, select File > Close from the menu bar (CTRL-W).
- To switch between a paper and the guide or any other PDF file that is open, select Window from the menu bar and select which open file to return to.
- □ To zoom in on an area of text or graphic use the zoom tool ⊥. from the toolbar.

Main Menu

2003 African Control Conference



2003 African Control Conference

SEARCHING

Two types of searching are possible with Acrobat.

- The Find option searches linearly through the currently open Acrobat file from the cursor forward.
- The Search is option can start a full-text search of all words in the body of papers in the collection or search only the entries in the Title, Author, Subject or Keywords fields. Check that the index file for these proceedings is attached. Click on the 'indexes' button in the search dialogue box. If the SAUPEC 2000 index is not listed, press the 'add' button and look in the root directory of the CD-ROM for a file called "index.pdx". Click on that file to add it to the list.

Main Menu

Committees

International Programme Committee

ChairmanEd Boje (ZA)Vice-ChairsIan Craig (ZA), Xiaohua Xia(ZA)

Members

Pedro Albertos (ES)MituhMartin Braae (ZA)Ben (ZA)Han-Fu Chen (CN)PeterGraham Goodwin (AU)Rolf IVladimir Kucera (CZ)MikeClaude Moog (FR)ManfMarkus Reuter (NL)ChrisSirkka-Liisa Jamsa-Jounella (FI)

Mituhiko Araki (JP) Ben Chen (SG) Peter Flemming (UK) Rolf Isermann (DE) Mike Masten (US) Manfred Morari (CH) Chris Swartz (CA)

Main Menu

2003 African

Control

Conference

National Organising Committee

Chairman Members Jon Tapson (ZA) Ed Boje (ZA) Martin Braae (ZA)

Fernando Camisani (ZA)

- Adaptive & Non Linear Control
- Artificial Neural Networks / Fuzzy Logic
- Automation
- Economics & Economic Evaluation
- Industrial Systems 1
- Industrial Systems 2
- Instrumentation
- Lab Systems
- Learning Systems
- Linear Systems
- Modelling and Control 1 2
- Non linear systems
- Processes Control
- QFT 1 2
- Speech
- Plenary

2003 African Control Conference

Main Menu

Adaptive & Non Linear Control

V Bobál, P Chalupa and P Dostál Usage of self-tuning controllers Simulink library for real-time control

A Khaki Sedigh and B Moaveni Adaptive input-output pairing using on-line RGA identification

M Jerouane, N Sepehri and F Lamnabhi-Lagarrigue Dynamic analysis of variable structure force control of Hydraulic actuators via the reaching law approach

B Behar, F Lamnabhi-Lagarrigue, T Ahmed-Ali Robust nonlinear controls for two problems of rejecting disturbances

M B Jacobs Feedback Control in the Evolution of Lindenmayer Systems 2003 African Control Conference

Main Menu

Sessions

Artificial Neural Networks / Fuzzy Logic

R Marumo and M O Tokhi Modelling and control of a pneumatic motor using neural networks

S M B Malaek, H Izadi and M Pakmehr Intelligent auto landing controller based on neural networks

J Zrida, A Benzaouia, F Mesquine, and S El Faiz Rate-based flow fuzzy controller for communication systems

H Ayad, S Doubabi and A Hamzaoui An anti windup compensator for systems for saturation actuators using adaptive fuzzy logic

A Benzaouia and M Nachidi Regulation of the temperature inside a greenhouse: a fuzzy control approach 2003 African Control Conference

Main Menu

Sessions

Automation

F J E Laubscher and A Grobbelaar Establishment of a control philosophy for the pebble bed modular reactor

P A Gouws, T A Harrison and P C Pelser Interfacing a Panelview 660 to a control Logix 5550 controller

G Procter Configuration control on PLC applications at the SAFARI-1 Research Reactor

B J Dragt, I K Craig and F R Camisani-Calzolari Navigation of autonomous underground mine vehicles

P Kulczycki and J Waglowski Optimal base-stations locations in the LMDS wireless data transmission system 2003 African Control Conference

Main Menu

Sessions

Economics & Economic Evaluation

W Coetzer A Model of the Diffusion of Breakthrough Products

M A Petersen, E Letsaolo, H Raubenheimer, N Sepadi, F van der Walt, H van Rooyen On the Stochastic controllability of Ho-Lee Hull-White, black-Derman-Toy and Cox-Ingersoll-Ross interest rate models

S-L Jämsä-Jounela, R Poikonen, N Vatanski, and A. Rantala *Evaluation of control performance in remote maintenance centres*

M A Petersen On optimal control problems in funding systems

Z M Smit and I K Craig Optimising electricity real time pricing tariffs 2003 African Control Conference

Main Menu

Sessions

Industrial Systems 1

O Rubin and J Pritchard Dynamic modelling for control of a new generation nuclear power station

S-C Wang and X Xia Mathematical modelling of heavy-ore load train equipped with electronically control pneumatic brake

A C Roebl A Multiple Particle Feed Control System

M-S Chou and X Xia Train controller for heavy-ore train

P Tshuma, E Nyakwende and M Collier A model hybrid control synthesis approach using heterogeneous ball mill system 2003 African Control Conference

Main Menu

Sessions

Industrial Systems 2

M Peens, I K Craig and P C Pistorius On the modelling of an electric-arc furnace electrode-control system

JO Pedro, OT Nyandoro, C G Bigg and J T Nelson Design of an ABS controller

P L Rathaba, I K Craig, P C Pistorius Identification of an electric arc furnace

P Saayman, I K Craig and F R Camisani-Calzolari Optimization of an autonomous vehicle despatch system in an underground mine

S K Mathew and R Sahu Performance Matrix Based Controller Tuning for Tire Vulcanization Process 2003 African Control Conference

Main Menu

Sessions

Instrumentation

M V Shuma-Iwisi and G J Gibbon Smart Transducers: A Reconstructed Definition and a Link to Microcontrollers

A Kardec, D Barros and M de Oliveira Santos Estimating the Heart Instantaneous Frequency using the EARM Algorithm

D Stuart-Watson and J Tapson A Simple Force-Balance Accelerometer/Seismometer Based on a Tuning Fork Displacement Sensor

J Treurnicht and W H Steyn A Robust Attitude Measuring System for Agile Satellites 2003 African Control Conference

Main Menu

Sessions

Lab Systems

R Delport and P de Vaal The unit operations toolbox:a dynamic simulation package in Simulink

P D Pretorius Development of graphical user interfaces in control systems for educational laboratory work in the Matlab environment

P de Vaal and A Sandrock Equipping a process control laboratory to reflect contemporary control technology

C A Germond and G J Gibbon The Development of a Test Bed for Performance Measurement of Ethernet Based Fieldbuses

TA Harrison, KP Bodenstein and HP Ferreira An expert system for the education of engineering students

Q Lin and S Zhu NetLab A Real Internet-based Laboratory 2003 African Control Conference

Main Menu

Sessions

Learning Systems

T Marwala Control of complex systems using Bayesian networks and genetic algorithms

P Naidoo Intelligent Control & Tracking of a Solar Parabolic Trough

G T Jemwa and C Aldrich Development of on-line inductive systems by use of support vector machines

E Namikka and G J Gibbon Identification of Data Mining Techniques for Industrial Process Analysis and Control

J Kämpe, M Vermasvuori, K Koskela and S-L Jämsä-Jounela1 Intelligent support system for Pressure Filter 2003 African Control Conference

Main Menu

Sessions

Linear Systems

U Nurges and E Rustern On Robust Stability and Robust Control via Reflection coefficients

K K Busawon On Jordan controllable and observable canonical forms

X Xia, G Chen and R Gai On control Lyapunov modes of linear control systems

M Machaba and M Braae Explicit Damping Factor Specification in Symmetrical Optimum Tuning of PI controllers 2003 African Control Conference

Main Menu

Sessions

Modelling and Control 1

J H Viljoen and I K Craig Modelling and optimal control of a telecommunications market operator

R Filter and X Xia Computer based HIV/AIDS parameter estimation for practitioners and patients

C M Matasane and M T E Kahn Multi element optical fibre sensor telemetry and control using the internet

S Madolo Inferentials in advanced process control

R H Roberts and M C Andrews Three generations of coal loading control 2003 African Control Conference

Main Menu

Sessions

Modelling and Control 2

M Adonis and MTE Khan PID control of infrared radiative power profile for ceramic emitters

Martin Braae A connection theory for the analysis of large scale systems

A S Iorio, V C Smith, PJ Brereton-Stiles and A Singh *Mintek's advanced optimisation control strategies in milling, flotation and smelting*

K Brooks Real time control and optimisation – Current status, new Developments and future possibilities

KM Yanev and A Obok Opok Improved technique of multi-stage compensation 2003 African Control Conference

Main Menu

Sessions

Non linear systems

A M Jeffrey, X Xia and I K Craig On attaining maximal and durable suppression of the viral load

E Eitelberg and E Boje *Quasi Steady State Modelling of an Evaporator*

J O Pedro, M Mthethwa and O T Nyandoro *Time-optimal control of robotic manipulators modelled with actuator dynamics*

R F Chidzonga and E Eitelberg Controlling velocity and steering for bicycle stabilization

R Goma, F A Okou, O Akhrif, H Nkwawo, F Lamnabhi-Lagarrigue and E Delaleau *Real-time implementation of a robust nonlinear control for rotor speed stability and voltage regulation of power systems* 2003 African Control Conference

Main Menu

Sessions

Processes Control

R Tsoneva Robust control of continuous fermentation processes described by Monod-type model with delay

J Jansson, T Linberg and E Dahlquist Process Optimization and Model Based Control in Pulp and Paper Industries

S Gardner, N J le Roux and C Aldrich Visualization of process data with biplots

N M Dube and R Tzoneva Automation of ion exchange process used for desalination of Water

C Sandrock and PL de Vaal Systematic control problem analysis applied to batch pulp digester control

C Aldrich and M Barkhuizen Analysis of Process dynamics with Monte Carlo singular spectrum analysis 2003 African Control Conference

Main Menu

Sessions

QFT 1

J Cervera, A Baños, I Horowitz Non Plant Modifying Multiloop QFT Revisited

M García-Sanz, M Barreras, I Egaña and C H Houpis External Disturbance Rejection in Uncertain Mimo Systems with QFT Non-Diagonal Controllers

E Boje Quantitative feedback design approach for systems with probabilistic parameterisations

E Eitelberg On multivariable tracking 2003 African Control Conference

Main Menu

Sessions

QFT 2

M Barker and C Pritchard Controlling a Class of Nonlinear Plants using Fuzzy Gain Scheduling and QFT

E Boje Robust "linear time invariant equivalent" design for a non-linear magnetic levitator

V S Bokharaie, A Khaki-Sedigh Automatic QFT Controller Design using LMI Theory

G Hongbo and L Hongren Robust QFT-based Position Control of Electrohydraulic Servo System

V S Bokharaie, A Khaki-Sedigh A Combined Method for Automatic QFT Loop-Shaping Using Linear Programming and Genetic Algorithm 2003 African Control Conference

Main Menu

Sessions

Speech

A K Barros and E J Nascimento Real time speech separation by lateral inhibition and masking

P H Carvalho and A K Barros Decomposition of speech signals into its modulated components for application to VOCODER

D J Mashao and J Greene Evaluation of speaker recognition feature sets using the SVM classifier

A K Barros and N Abreu Noise removal in a single speech channel through coding by independent component analysis 2003 African Control Conference

Main Menu

Sessions

Plenary

G Chen Complex Dynamical Networks: Control and Synchronization.

P. Albertos and J. Salt Some Issues in Control Engineering Practice

R Benson From Single Loop to Cohesive Process Control: The Future

S Skogestad Control structure design: What should we control, measure and manipulate?

D Limebeer Motorcycle Steering Oscillations Due to Road Profiling 2003 African Control Conference

Main Menu

Sessions

Α	В	С	D	Е	F	
G	н	Т	J	к	L	
М	Ν	Ο	Ρ	R	S	
т	V	W	Х	Y	z	

2003 African Control Conference

Main Menu



Abreu N NOISE REMOVAL IN A SINGLE SPEECH CHANNEL THROUGH CODING BY INDEPENDENT COMPONENT ANALYSIS

Adonis M PID CONTROL OF INFRARED RADIATIVE POWER PROFILE FOR CERAMIC EMITTERS

Ahmed-Ali T ROBUST NONLINEAR CONTROLS FOR TWO PROBLEMS OF REJECTING DISTURBANCES

Akhrif O REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS 2003 African Control Conference

Main Menu



Albertos P SOME ISSUES IN CONTROL ENGINEERING PRACTICE

Aldrich C VISUALIZATION OF PROCESS DATA WITH BIPLOTS

ANALYSIS OF PROCESS DYNAMICS WITH MONTE CARLO SINGULAR SPECTRUM ANALYSIS

DEVELOPMENT OF ONLINE INDUCTIVE SYSTEMS USING SUPPORT VECTOR MACHINES

Andrews MC THREE GENERATIONS OF COAL LOADING CONTROL

Ayad H AN ANTI WINDUP COMPENSATOR FOR SYSTEMS WITH SATURATION ACTUATORS USING ADAPTIVE FUZZY LOGIC 2003 African Control Conference

Main Menu



B

BaZos A NON PLANT MODIFYING MULTILOOP QFT REVISITED

Barker M CONTROLLING A CLASS OF NONLINEAR PLANTS USING FUZZY GAIN SCHEDULING AND QFT

Barkhuizen M ANALYSIS OF PROCESS DYNAMICS WITH MONTE CARLO SINGULAR SPECTRUM ANALYSIS

Barreras M EXTERNAL DISTRURBANCE REJECTION IN UNCERTAIN MIMO SYSTEMS WITH QFT NON-DIAGONAL CONTROLLERS 2003 African Control Conference

Main Menu



Barros AK REAL TIME SPEECH SEPARATION BY LATERAL INHIBITION AND MASKING

DECOMPOSITION OF SPEECH SIGNALS INTO THEIR MODULATED COMPONENTS TO USE IN VOCODER

NOISE REMOVAL IN A SINGLE SPEECH CHANNEL THROUGH CODING BY INDEPENDENT COMPONENT ANALYSIS

ESTIMATING THE HEART INSTANTANEOUS FREQUENCY USING THE EARM ALGORITHM

Behar B ROBUST NONLINEAR CONTROLS FOR TWO PROBLEMS OF REJECTING DISTURBANCES

Benson R FROM SINGLE LOOP TO COHESIVE PROCESS CONTROL: THE FUTURE 2003 African Control Conference

Main Menu



Benzaouia A RATE-BASED FLOW FUZZY CONTROLLER FOR COMMUNICATION SYSTEMS

FUZZY CONTROL APPLIED TO THE REGULATION OF THE TEMPERATURE INSIDE A GREENHOUSE

Bigg CG DESIGN OF AN ANTILOCK BRAKING SYSTEM CONTROLLER

Bobál V USAGE OF SELF-TUNING CONTROLLERS SIMULINK LIBRARY FOR REAL-TIME CONTROL

Bodenstein K AN EXPERT SYSTEM FOR THE EDUCATION OF ENGINEERING STUDENTS 2003 African Control Conference

Main Menu



Boje E QUASI STEADY STATE MODELLING OF AN EVAPORATOR

QUANTITATIVE FEEDBACK DESIGN FOR SYSTEMS WITH PROBABILISTIC PARAMETERISATIONS

ROBUST "LINEAR TIME INVARIANT EQUIVALENT" DESIGN FOR A NON-LINEAR MAGNETIC LEVITATOR

Bokharaie VS A COMBINED METHOD FOR AUTOMATIC QFT LOOP-SHAPING USING LINEAR PROGRAMMING AND GENETIC ALGORITHM

AUTOMATIC QFT CONTROLLER DESIGN USING LMI THEORY

2003 African Control Conference

Main Menu



Braae M EXPLICIT DAMPING FACTOR SPECIFICATION IN SYMMETRICAL OPTIMUM TUNING OF PI CONTROLLERS

A CONNECTION THEORY FOR THE ANALYSIS OF LARGE SCALE SYSTEMS

Brereton-Stiles PJ MINTEK'S ADVANCED OPTIMISATION CONTROL STRATEGIES IN MILLING, FLOTATION AND SMELTING

Brooks K REAL TIME CONTROL AND OPTIMISATION – CURRENT STATUS, NEW DEVELOPMENTS AND FUTURE POSSIBILITIES

Busawon KK ON JORDAN CONTROLLABLE OBSERVABLE CANONICAL FORMS 2003 African Control Conference

Main Menu



С

Camisani-Calzolari FR OPTIMIZATION OF AN AUTONOMOUS VEHICLE DESPATCH SYSTEM IN AN UNDERGROUND MINE

NAVIGATION OF AUTONOMOUS UNDERGROUND MINE VEHICLES

Carvalho PH DECOMPOSITION OF SPEECH SIGNALS INTO THEIR MODULATED COMPONENTS TO USE IN VOCODER

Cervera J, NON PLANT MODIFYING MULTILOOP QFT REVISITED

Chalupa PI USAGE OF SELF-TUNING CONTROLLERS SIMULINK LIBRARY FOR REAL-TIME CONTROL 2003 African Control Conference

Main Menu



Chen G ON CONTROL LYAPUNOV MODES OF LINEAR CONTROL SYSTEMS

COMPLEX DYNAMICAL NETWORKS: CONTROL AND SYNCHRONIZATION

Chidzonga RF CONTROLLING VELOCITY AND STEERING FOR BICYCLE STABILIZATION

Chou M-S CONTROLLER DESIGN FOR HEAVY-HAUL TRAIN SYSTEM

Coetzer W A MODEL OF THE DIFFUSION OF BREAKTHROUGH PRODUCTS

Collier M OPTIMISATION OF HETEROGENEOUS BALL MILL SYSTEMS (HBMS) USING COMBINED MULTIESTIMATOR AND GENETIC ALGORITHM BASED SWITCHED MULTICONTROLLER SYSTEM 2003 African Control Conference

Main Menu



Craig IK MODELLING AND CONTROL OF A THREE-PHASE ELECTRIC ARC FURNACE

IDENTIFICATION OF AN ELECTRIC ARC FURNACE MODEL

OPTIMIZATION OF AN AUTONOMOUS VEHICLE DESPATCH SYSTEM IN AN UNDERGROUND MINE

ON ATTAINING MAXIMAL AND DURABLE SUPPRESSION OF THE VIRAL LOAD

OPTIMISING ELECTRICITY REAL TIME PRICING TARIFFS

MODELLING AND OPTIMAL CONTROL OF A TELECOMMUNICATIONS MARKET OPERATOR

NAVIGATION OF AUTONOMOUS UNDERGROUND MINE VEHICLES 2003 African Control Conference

Main Menu



D

Dahlquist E PROCESS OPTIMIZATION AND MODEL BASED CONTROL IN PULP AND PAPER INDUSTRY

de Vaal P SYSTEMATIC CONTROL PROBLEM ANALYSIS APPLIED TO BATCH PULP DIGESTER CONTROL

THE UNIT OPERATIONS TOOLBOX: A DYNAMIC SIMULATION PACKAGE IN SIMULINK

EQUIPPING A PROCESS CONTROL LABORATORY TO REFLECT CONTEMPORARY CONTROL TECHNOLOGY

Delaleau E REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS

2003 African Control Conference

Main Menu



Delport R THE UNIT OPERATIONS TOOLBOX: A DYNAMIC SIMULATION PACKAGE IN SIMULINK

Dostál P USAGE OF SELF-TUNING CONTROLLERS SIMULINK LIBRARY FOR REAL-TIME CONTROL

Doubabi S AN ANTI WINDUP COMPENSATOR FOR SYSTEMS WITH SATURATION ACTUATORS USING ADAPTIVE FUZZY LOGIC

Dragt BJ NAVIGATION OF AUTONOMOUS UNDERGROUND MINE VEHICLES

Dube NM AUTOMATION OF ION EXCHANGE PROCESS USED FOR DESALINATION OF WATER 2003 African Control Conference

Main Menu





EgaZa I EXTERNAL DISTRURBANCE REJECTION IN UNCERTAIN MIMO SYSTEMS WITH QFT NON-DIAGONAL CONTROLLERS

Eitelberg E CONTROLLING VELOCITY AND STEERING FOR BICYCLE STABILIZATION

ON MULTIVARIABLE TRACKING

QUASI STEADY STATE MODELLING OF AN EVAPORATOR

EI Faiz S RATE-BASED FLOW FUZZY CONTROLLER FOR COMMUNICATION SYSTEMS

Ezzine J RATE-BASED FLOW FUZZY CONTROLLER FOR COMMUNICATION SYSTEMS 2003 African Control Conference

Main Menu



F

Ferreira HP AN EXPERT SYSTEM FOR THE EDUCATION OF ENGINEERING STUDENTS

Filter R COMPUTER BASED HIV/AIDS PARAMETER ESTIMATION FOR PRACTITIONERS AND PATIENTS 2003 African Control Conference

Main Menu





Gai R ON CONTROL LYAPUNOV MODES OF LINEAR CONTROL SYSTEMS

García-Sanz EXTERNAL DISTRURBANCE REJECTION IN UNCERTAIN MIMO SYSTEMS WITH QFT NON-DIAGONAL CONTROLLERS

Gardner S VISUALIZATION OF PROCESS DATA WITH BIPLOTS

Germond CA THE DEVELOPMENT OF A TEST-BED FOR PERFORMANCE MEASUREMENT OF ETHERNET BASED FIELDBUSES 2003 African Control Conference Main Menu Authors



Gibbon GJ THE DEVELOPMENT OF A TEST-BED FOR PERFORMANCE MEASUREMENT OF ETHERNET BASED FIELDBUSES

SMART TRANSDUCERS: A RECONSTRUCTED DEFINITION, A LINK TO MICRO CONTROLLERS

IDENTIFICATION OF DATA MINING TECHNIQUES FOR INDUSTRIAL PROCESS ANALYSIS AND CONTROL

Goma R

REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS

Gouws PA INTERFACING A PANELVIEW 660 TO A CONTROL LOGIX 5550 CONTROLLER 2003 African Control Conference

Main Menu



Greene J EVALUATION OF SPEAKER RECOGNITION FEATURE-SETS USING THE SVM CLASSIFIER

Grobbelaar HA ESTABLISHMENT OF A CONTROL PHILOSOPHY FOR THE PEBBLE BED MODULAR REACTOR 2003 African Control Conference

Main Menu



Η

Hamzaoui A AN ANTI WINDUP COMPENSATOR FOR SYSTEMS WITH SATURATION ACTUATORS USING ADAPTIVE FUZZY LOGIC

Harrison TA AN EXPERT SYSTEM FOR THE EDUCATION OF ENGINEERING STUDENTS

INTERFACING A PANELVIEW 660 TO A CONTROL LOGIX 5550 CONTROLLER

Hongbo G ROBUST QFT-BASED POSITION CONTROL OF ELECTROHYDRAULIC SERVO SYSTEM

Hongren L ROBUST QFT-BASED POSITION CONTROL OF ELECTROHYDRAULIC SERVO SYSTEM 2003 African Control Conference

Main Menu



Houpis CH EXTERNAL DISTRURBANCE REJECTION IN UNCERTAIN MIMO SYSTEMS WITH QFT NON-DIAGONAL CONTROLLERS

2003 African Control Conference

Main Menu



IORIO AS MINTEK'S ADVANCED OPTIMISATION CONTROL STRATEGIES IN MILLING, FLOTATION AND SMELTING

Isaac Horowitz NON PLANT MODIFYING MULTILOOP QFT REVISITED

Izadi H INTELLIGENT AUTOLANDING CONTROLLER BASED ON NEURAL NETWORKS 2003 African Control Conference

Main Menu





Jacobs MB FEEDBACK CONTROL IN THE EVOLUTION OF GENERATIVE LINDENMAYER SYSTEMS

James E REAL TIME SPEECH SEPARATION BY LATERAL INHIBITION AND MASKING

Jämsä-Jounela S-L EVALUATION OF CONTROL PERFORMANCE IN REMOTE MAINTENANCE CENTERS

INTELLIGENT SUPPORT SYSTEM FOR A PRESSURE FILTER

Jansson J PROCESS OPTIMIZATION AND MODEL BASED CONTROL IN PULP AND PAPER INDUSTRY 2003 African Control Conference

Main Menu



Jeffrey AM ON ATTAINING MAXIMAL AND DURABLE SUPPRESSION OF THE VIRAL LOAD

Jemwa GT DEVELOPMENT OF ONLINE INDUCTIVE SYSTEMS USING SUPPORT VECTOR MACHINES

Jerouane M DYNAMIC ANALYSIS OF VARIABLE STRUCTURE FORCE CONTROL OF HYDRAULIC ACTUATORS VIA THE REACHING LAW APPROACH 2003 African Control Conference

Main Menu





Kahn MTE MULTI ELEMENT OPTICAL FIBRE SENSOR TELEMETRY AND CONTROL USING THE INTERNET

Kämpe J INTELLIGENT SUPPORT SYSTEM FOR A PRESSURE FILTER

Khaki Sedigh A ADAPTIVE INPUT-OUTPUT PAIRING USING ON-LINE RGA IDENTIFICATION

AUTOMATIC QFT CONTROLLER DESIGN USING LMI THEORY

A COMBINED METHOD FOR AUTOMATIC QFT LOOP-SHAPING USING LINEAR PROGRAMMING AND GENETIC ALGORITHM 2003 African Control Conference

Main Menu



Khan MTE PID CONTROL OF INFRARED RADIATIVE POWER PROFILE FOR CERAMIC EMITTERS

Koskela K. INTELLIGENT SUPPORT SYSTEM FOR A PRESSURE FILTER

Kulczycki P OPTIMAL BASE-STATIONS LOCATIONS IN THE LMDS WIRELESS DATA TRANSMISSION SYSTEM 2003 African Control Conference

Main Menu



Lamnabhi-Lagarrigue F DYNAMIC ANALYSIS OF VARIABLE STRUCTURE FORCE CONTROL OF HYDRAULIC ACTUATORS VIA THE REACHING LAW APPROACH

ROBUST NONLINEAR CONTROLS FOR TWO PROBLEMS OF REJECTING DISTURBANCES

REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS

Laubscher FJE ESTABLISHMENT OF A CONTROL PHILOSOPHY FOR THE PEBBLE BED MODULAR REACTOR 2003 African Control Conference

Main Menu



Le Roux NJ VISUALIZATION OF PROCESS DATA WITH BIPLOTS

Letsaolo E ON ATHE STOCHASTIC CONTROLLABILITY OF HO-LEE, HULL-WHITE, BLACK-KARASINSKI AND COX-INGERSOLL-ROSS INTEREST RATE MODELS

Limebeer D MOTORCYCLE STEERING OSCILLATIONS DUE TO ROAD PROFILING

Lin Q NETLAB: A REAL INTERNET-BASED LABORATORY

Linberg T PROCESS OPTIMIZATION AND MODEL BASED CONTROL IN PULP AND PAPER INDUSTRY 2003 African Control Conference

Main Menu





Machaba M EXPLICIT DAMPING FACTOR SPECIFICATION IN SYMMETRICAL OPTIMUM TUNING OF PI CONTROLLERS

Madolo S APPLICATION OF A LINEAR INFERENTIAL IN ADVANCED PROCESS CONTROL

Malaek SMB INTELLIGENT AUTOLANDING CONTROLLER BASED ON NEURAL NETWORKS

Marumo R MODELLING AND CONTROL OF A PNEUMATIC MOTOR USING NEURAL NETWORKS

Marwala T CONTROL OF COMPLEX SYSTEMS USING BAYESIAN NETWORKS AND GENETIC ALGORITHM 2003 African Control Conference

Main Menu



Mashao DJ EVALUATION OF SPEAKER RECOGNITION FEATURE-SETS USING THE SVM CLASSIFIER

Matasane CM MULTI ELEMENT OPTICAL FIBRE SENSOR TELEMETRY AND CONTROL USING THE INTERNET

Mathew SK PERFORMANCE MATRIX BASED CONTOLLER TUNING FOR TIRE VULCANIZATION PROCESS

Mesquine F RATE-BASED FLOW FUZZY CONTROLLER FOR COMMUNICATION SYSTEMS

Moaveni B. ADAPTIVE INPUT-OUTPUT PAIRING USING ON-LINE RGA IDENTIFICATION 2003 African Control Conference

Main Menu



Mthethwa M TIME-OPTIMAL CONTROL OF ROBOTIC MANIPULATORS MODELLED WITH ACTUATOR DYNAMICS

2003 African Control Conference

Main Menu



Ν

Nachidi M FUZZY CONTROL APPLIED TO THE REGULATION OF THE TEMPERATURE INSIDE A GREENHOUSE

Naidoo P INTELLIGENT CONTROL AND TRACKING OF A SOLAR PARABOLIC TROUGH

Namikka E IDENTIFICATION OF DATA MINING TECHNIQUES FOR INDUSTRIAL PROCESS ANALYSIS AND CONTROL

Nelson JT DESIGN OF AN ANTILOCK BRAKING SYSTEM CONTROLLER

Nkwawo H REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS 2003 African Control Conference

Main Menu



Nurges U ON THE ROBUST STABILITY AND ROBUST CONTROL VIA REFLECTION COEFFICIENTS

Nyakwende E OPTIMISATION OF HETEROGENEOUS BALL MILL SYSTEMS (HBMS) USING COMBINED MULTIESTIMATOR AND GENETIC ALGORITHM BASED SWITCHED MULTICONTROLLER SYSTEM

Nyandoro OT DESIGN OF AN ANTILOCK BRAKING SYSTEM CONTROLLER

TIME-OPTIMAL CONTROL OF ROBOTIC MANIPULATORS MODELLED WITH ACTUATOR DYNAMICS 2003 African Control Conference Main Menu Authors



0

Obok Opok A IMPROVED TECHNIQUE OF MULTI-STAGE COMPENSATION

Okou F A REAL-TIME IMPLEMENTATION OF A ROBUST NONLINEAR CONTROL FOR ROTOR SPEED STABILITY AND VOLTAGE REGULATION OF POWERS SYSTEMS 2003 African Control Conference

Main Menu



Ρ

Pakmehr M INTELLIGENT AUTOLANDING CONTROLLER BASED ON NEURAL NETWORKS

Pedro JO DESIGN OF AN ANTILOCK BRAKING SYSTEM CONTROLLER

TIME-OPTIMAL CONTROL OF ROBOTIC MANIPULATORS MODELLED WITH ACTUATOR DYNAMICS

Peens M MODELLING AND CONTROL OF A THREE-PHASE ELECTRIC ARC FURNACE

Pelser PC INTERFACING A PANELVIEW 660 TO A CONTROL LOGIX 5550 CONTROLLER 2003 African Control Conference

Main Menu



Petersen MA ON ATHE STOCHASTIC CONTROLLABILITY OF HO-LEE, HULL-WHITE, BLACK-KARASINSKI AND COX-INGERSOLL-ROSS INTEREST RATE MODELS

ON OPTIMAL CONTROL PROBLEMS IN FUNDING SYSTEMS

Pistorius PC MODELLING AND CONTROL OF A THREE-PHASE ELECTRIC ARC FURNACE

IDENTIFICATION OF AN ELECTRIC ARC FURNACE MODEL

Poikonen R EVALUATION OF CONTROL PERFORMANCE IN REMOTE MAINTENANCE CENTERS

Pretorius PD DEVELOPMENT OF GRAPHICAL USER INTERFACES IN CONTROL SYSTEMS FOR EDUCATIONAL LABORATORY WORK IN THE MATLAB ENVIRONMENT 2003 African Control Conference

Main Menu



Pritchard C CONTROLLING A CLASS OF NONLINEAR PLANTS USING FUZZY GAIN SCHEDULING AND QFT

Pritchard J DYNAMIC MODELLING FOR CONTROL OF A NEW GENERATION NUCLEAR POWER STATION

Procter G CONFIGURATION CONTROL ON PLC APPLICATIONS AT THE SAFARI-1 RESEARCH REACTOR 2003 African Control Conference

Main Menu





Rantala A EVALUATION OF CONTROL PERFORMANCE IN REMOTE MAINTENANCE CENTERS

Rathaba PL IDENTIFICATION OF AN ELECTRIC ARC FURNACE MODEL

Raubenheimer H ON ATHE STOCHASTIC CONTROLLABILITY OF HO-LEE, HULL-WHITE, BLACK-KARASINSKI AND COX-INGERSOLL-ROSS INTEREST RATE MODELS

Roberts RH THREE GENERATIONS OF COAL LOADING CONTROL

Roebl A A MULTIPLE PARTICLE FEED CONTROL SYSTEM 2003 African Control Conference

Main Menu



Rubin O DYNAMIC MODELLING FOR CONTROL OF A NEW GENERATION NUCLEAR POWER STATION

Rustern E ON THE ROBUST STABILITY AND ROBUST CONTROL VIA REFLECTION COEFFICIENTS 2003 African Control Conference

Main Menu





Saayman P OPTIMIZATION OF AN AUTONOMOUS VEHICLE DESPATCH SYSTEM IN AN UNDERGROUND MINE

Sahu R PERFORMANCE MATRIX BASED CONTOLLER TUNING FOR TIRE VULCANIZATION PROCESS

Some issues in control engineering practice

SANDROCK C SYSTEMATIC CONTROL PROBLEM ANALYSIS APPLIED TO BATCH PULP DIGESTER CONTROL

EQUIPPING A PROCESS CONTROL LABORATORY TO REFLECT CONTEMPORARY CONTROL TECHNOLOGY 2003 African Control Conference

Main Menu



Santos M ESTIMATING THE HEART INSTANTANEOUS FREQUENCY USING THE EARM ALGORITHM

Sepadi N ON ATHE STOCHASTIC CONTROLLABILITY OF HO-LEE, HULL-WHITE, BLACK-KARASINSKI AND COX-INGERSOLL-ROSS INTEREST RATE MODELS

DYNAMIC ANALYSIS OF VARIABLE STRUCTURE FORCE CONTROL OF HYDRAULIC ACTUATORS VIA THE REACHING LAW APPROACH

Shuma-Iwisi MV SMART TRANSDUCERS: A RECONSTRUCTED DEFINITION, A LINK TO MICRO CONTROLLERS

Skogestad S CONTROL STRUCTURE DESIGN: WHAT SHOULD WE CONTROL, MEASURE AND MANIPULATE? 2003 African Control Conference

Main Menu



Smit ZM OPTIMISING ELECTRICITY REAL TIME PRICING TARIFFS

Smith VC MINTEK'S ADVANCED OPTIMISATION CONTROL STRATEGIES IN MILLING, FLOTATION AND SMELTING

Singh A MINTEK'S ADVANCED OPTIMISATION CONTROL STRATEGIES IN MILLING, FLOTATION AND SMELTING

Steyn Wh A ROBUST ATTITUDE MEASURING SYSTEM FOR AGILE SATELLITES

Stuart-Watson D A SIMPLE FORCE BALANCE ACCELEROMETER/SEISMOMETER BASED ON A TUNING FORK DISPLACEMENT SENSOR 2003 African Control Conference

Main Menu



Takeuchi Y REAL TIME SPEECH SEPARATION BY LATERAL INHIBITION AND MASKING

Tapson J A SIMPLE FORCE BALANCE ACCELEROMETER/SEISMOMETER BASED ON A TUNING FORK DISPLACEMENT SENSOR

Tokhi MO MODELLING AND CONTROL OF A PNEUMATIC MOTOR USING NEURAL NETWORKS

Treurnicht J A ROBUST ATTITUDE MEASURING SYSTEM FOR AGILE SATELLITES 2003 African Control Conference

Main Menu



Tshuma P OPTIMISATION OF HETEROGENEOUS BALL MILL SYSTEMS (HBMS) USING COMBINED MULTIESTIMATOR AND GENETIC ALGORITHM BASED SWITCHED MULTICONTROLLER SYSTEM

Tsoneva R ROBUST CONTROL OF CONTINUOUS FERMENTATION PROCESSES DESCRIBED BY MONOD-TYPE MODEL WITH DELAY

AUTOMATION OF ION EXCHANGE PROCESS USED FOR DESALINATION OF WATER

2003 African Control Conference

Main Menu



V

Van der Walt F Van Rooyen H ON ATHE STOCHASTIC CONTROLLABILITY OF HO-LEE, HULL-WHITE, BLACK-KARASINSKI AND COX-INGERSOLL-ROSS INTEREST RATE MODELS

Vatanski N EVALUATION OF CONTROL PERFORMANCE IN REMOTE MAINTENANCE CENTERS

Vermasvuori M INTELLIGENT SUPPORT SYSTEM FOR A PRESSURE FILTER

Viljoen JH MODELLING AND OPTIMAL CONTROL OF A TELECOMMUNICATIONS MARKET OPERATOR 2003 African Control Conference

Main Menu



W

Waglowski J OPTIMAL BASE-STATIONS LOCATIONS IN THE LMDS WIRELESS DATA TRANSMISSION SYSTEM

Wang S-C MATHEMATICAL MODELLING OF HEAVY-ORE LOAD TRAIN EQUIPPED WITH ELECTRONICALLY CONTROL PNEUMATIC BRAKE 2003 African Control Conference

Main Menu





Xia X MATHEMATICAL MODELLING OF HEAVY-ORE LOAD TRAIN EQUIPPED WITH ELECTRONICALLY CONTROL PNEUMATIC BRAKE

CONTROLLER DESIGN FOR HEAVY-HAUL TRAIN SYSTEM

ON ATTAINING MAXIMAL AND DURABLE SUPPRESSION OF THE VIRAL LOAD

COMPUTER BASED HIV/AIDS PARAMETER ESTIMATION FOR PRACTITIONERS AND PATIENTS

ON CONTROL LYAPUNOV MODES OF LINEAR CONTROL SYSTEMS

2003 African Control Conference

Main Menu



Y

Yanev KM IMPROVED TECHNIQUE OF MULTI-STAGE COMPENSATION 2003 African Control Conference

Main Menu





Zhu S NETLAB: A REAL INTERNET-BASED LABORATORY

Zrida J RATE-BASED FLOW FUZZY CONTROLLER FOR COMMUNICATION SYSTEMS 2003 African Control Conference

Main Menu