

## THE TECHNICAL PROGRAM AT A GLANCE

**Tuesday, June 26: Tutorials / Workshops**

**Tuesday, 7:30 PM: Welcome Reception, Roof Garden**

**Program Structure: 6 Parallel Sessions, 3 Sequential Tracks per Day**

Time	Wednesday 6/27	Thursday 6/28	Friday 6/29
8:30 – 9:30 AM	Why Industry Needs Improved And Practical Nonlinear Control: A Challenge For Today - Plenary Session	Hierarchical Control – Reconciling Hybrid Systems Theory And Control Applications - Plenary Session	Wireless Control Systems: Scientific Challenges And Emerging Applications - Plenary Session
9:30 - 11:30 AM	Nonlinear Systems I	Nonlinear Systems II	Power Systems I
	Predictive Control I	Process Control I	Fault Tolerant Systems
	Biologically Inspired Systems Control	Decentralized Control	Network Systems and Communications
	Fuzzy Systems I	Unmanned Systems I	Spectral Estimation & Time Delayed Systems
	Robotics I	Robotics III	Robotics V
	Linear Systems I	Robust Control II	Optimization
11:30 – 11:45 AM	Coffee Break	Coffee Break	Coffee Break
11:45 AM to 1:25 PM	Discrete Event Systems I	Discrete Event Systems II	Computer Controlled Systems
	Embedded Control Systems	Nonlinear Systems III	Education and Training
	Fuzzy Systems II	Neural Networks I	Neural Networks II
	Linear Systems II	Linear Systems III	Image Processing
	Modeling and Simulation I	Modeling and Simulation II	Modeling and Simulation III
	Modeling and Automation in Anesthesia and Intensive Care	Process Control II	Swarms
	Poster Session I	Poster Session II	Poster Session III
1:25 – 2:45 PM	Lunch	Lunch	Lunch
2:45 – 3:45 PM	Control Systems Architectures For The Process Industries - Plenary Session	Automation in the Ancient Mediterranean World – Round Table Discussion	Web Threats – Round Table Discussion
3:45 – 4:00 PM	Coffee Break	Coffee Break	Coffee Break
4:00 to 6:20 PM	Adaptive Control I	Adaptive Control II	Aerospace Control
	Hybrid Systems	Industrial Automation and Manufacturing	Intelligent Transportation Systems
	Marine Vehicle Control	Unmanned Systems II	Power systems II
	Predictive Control II	Electric Drives Control I	Hydraulic Systems Control
	Robotics II	Robotics IV	Computational Intelligence
	Robust Control I	Sliding Mode Control	
Around 7:30 PM	MED'07 Organizing Committee Dinner	Conference Banquet	Closing Reception

## MED'07 FINAL TECHNICAL PROGRAM

### Program Abbreviation & Format – 20 Minutes per Paper

<b>Abbreviation</b>	<b>Format</b>	
W, Th, Fr	Paper Number	Poster Paper
WA, ThA, FrA	Paper Number	Paper Title
WM, ThM, FrM	Paper Number	Paper Title
WP, ThP, FrP	Paper Number	Paper Title

### Session Room Names, Three Days

<b>Session Number</b> <b>(All tracks A, M and P)</b>	<b>Room Name</b>
W, Th, Fr, Session - 1	<b><i>Pella</i></b>
W, Th, Fr, Session – 2	<b><i>Mycenae</i></b>
W, Th, Fr, Session – 3	<b><i>Edessa</i></b>
W, Th, Fr, Session – 4	<b><i>Macedonia</i></b>
W, Th, Fr, Session – 5	<b><i>Naoussa</i></b>
W, Th, Fr, Session – 6	<b><i>Kozani</i></b>

## Session index

# Wednesday, June 27

### WA-1: Nonlinear Systems I

Chairs: *S. Kotsios* and *J. Kasac*

Room: *Pella*, Time: *9:30 AM - 11:30 AM*

- T23-006: A Revised Look at Numerical Differentiation with an Application to Nonlinear Feedback Control  
*M. Mboup, C. Join, M. Fliess*
- T23-008: A Spatial Domain Multiresolutional Particle Filter  
*L. Hong, X. Kefu*
- T23-007: An Algorithm for Designing Feedback Stabilizers of Nonlinear Polynomial Systems  
*S. Kotsios*
- T23-010: Finite Dimensional Internal Model-Based Repetitive Control of Nonlinear Passive Systems  
*J. Kasac, B. Novakovic, D. Majetic, D. Brezak*
- T23-009: On-Line Time-Scaling Control of a Kinematic Car with One Input  
*B. Kiss, E. Szadeczky-Kardoss*
- T23-005: Singularity Induced Bifurcations of Dissipative MHD Systems  
*W. Marszalek, Z. Trzaska*

### WA-2: Predictive Control I

Chairs: *D. Hrovat* and *C. Stoica*

Room: *Mycenae*, Time: *9:30 AM - 11:30 AM*

- T27-016: A Model Predictive Control Approach for Combined Braking and Steering in Autonomous Vehicles  
*P. Falcone, F. Borrelli, J. Asgari, H. Tseng, D. Hrovat*
- T27-010: Applications of a Model Based Predictive Control to Heat-Exchangers  
*R. Balan, V. Maties, V. Hodor, O. Hancu, S. Stan*
- T27-009: Comparisons and Combinations of Interpolation Methods with Conventional Predictive Control  
*Y. Ding, J. Rossiter*
- T27-011: Off-Line Robustness Improvement of Predictive Control Laws in State-Space Description  
*C. Stoica, P. Rodriguez-Ayerbe, D. Dumur*
- T27-019: Robust Bilateral Generalized Predictive Control for Teleoperation  
*T. Slama, D. Aubry, R. Oboe, F. Kratz*

### **WA-3: Biologically Inspired Systems Control**

Chairs: *A. Weitzenfeld* and *K. Tahboub*

Room: *Edessa*, Time: *9:30 AM - 11:30 AM*

- T04-005: Control of an Anaerobic Upflow Fixed Bed Bioreactor  
*F. Angulo, G. Olivar, A. Rincon*
- T12-008: Fuzzy Modeling the Influence of Temperature on Tissue Biosensor for Measurement of Dopamine  
*V. Rangelova, D. Tsankova*
- T04-010: Humanoid Postural Control based on two Biologically-Inspired Approaches  
*K. Tahboub, T. Mergner*
- T04-011: Modeling Cancer Outcome Prediction by aiNet: Discrete Artificial Immune Network  
*D. Tsankova, V. Rangelova*
- T04-007: Monitoring Signal Analysis and Control of Epileptic Seizures: A Paradigm in Brain Research  
*J. Echauz, G. Georgoulas, O. Smart, A. Gardner, H. Firpi, B. Litt, G. Vachtsevanos*
- T04-008: Rat-inspired Model of Robot Target Learning and Place Recognition  
*A. Barrera, A. Weitzenfeld*

### **WA-4: Fuzzy Systems I**

Chairs: *Z. Kovacic* and *N. Mitrakis*

Room: *Macedonia*, Time: *9:30 AM - 11:30 AM*

- T12-006: A Neuro-Fuzzy Multilayered Classifier for Land Cover Image Classification  
*N. Mitrakis, C. Topaloglou, T. Alexandridis, J. Theocharis, G. Zalidis*
- T11-006: A Run-time Reconfigurable Fuzzy PID Controller Based on Modern FPGA Devices  
*G. Economakos, C. Economakos*
- T12-005: Closed-Loop Global Fuzzy TSK Modeling: A Case Study  
*H. Azimian, A. Fatehi, B. Nadjar Araabi*
- T12-007: Enhanced Approach for Static Output Stabilization for Discrete Time T-S Systems  
*M. Nachidi, F. Tadeo, A. Benzaouia*
- T12-004: Simultaneously Structural Learning and Training of Neurofuzzy GMDH Using GA  
*A. Sharifi, M. Teshnehlab*

**WA-5: Robotics I**Chairs: *A. Mueller* and *M. Soron*Room: *Naoussa*, Time: *9:30 AM - 11:30 AM*

- T30-002: Being Sociable: Multirobots with Self-sustained Energy  
*T. Ngo, H. Raposo, H. Schioler*
- T30-005: Conditions for Transverse-Regularity of Serial Manipulators  
*A. Mueller*
- T30-007: Generation of Continuous Tool Paths Based on CAD Models for Friction Stir Welding in 3D  
*M. Soron, I. Kalaykov*
- T30-020: Investigation of Self-locking in Concertina Movement  
*F. Barazandeh, B. Bahr, A. Moradi*
- T30-006: Trajectory Generation for Mobile Manipulators  
*F. Abdessemed*
- T30-041: Trajectory Planning Algorithm Based on the Continuity of Jerk  
*K. Petrinc, Z. Kovacic*

**WA-6: Linear Systems I**Chairs: *T. Raff* and *A. Okou*Room: *Kozani*, Time: *9:30 AM - 11:30 AM*

- T19-002: A New Observer for SISO Minimum Phase Linear Systems with Unknown Inputs  
*A. Okou, M. Tarbouchi, D. Bouchard*
- T19-014: An Impulsive Observer that Estimates the State of a Linear Continuous Time System in Predetermined Finite Time  
*T. Raff, F. Allgower*
- T19-008: Performance Bounds in MIMO Linear Control with Pole Location Constraint  
*A. Peters, M. Salgado, E. Silva-Vera*
- T19-018: Pole Assignment in LMI Regions for Linear Constrained Control  
*F. Mesquine, D. Mehdi*
- T19-015: Reformulation of Disturbance Observer Design in the Frequency Domain  
*M. Garcia-Sanz, D. Casajus, J. Elso*

### **WM-1: Discrete Event Systems I**

Chairs: *F. Lewis* and *K. Schmidt*

Room: *Pella*, Time: *11:45 AM - 1:25 PM*

- T08-006: A Performance Evaluation Algorithm for Discrete Event Systems Under Blocking  
*O. Kaymakci, S. Kurtulan*
- T08-005: A Shared-Medium Communication Architecture for Distributed Discrete Event Systems  
*K. Schmidt, E. Schmidt, J. Zaddach*
- T08-002: Deadlock Avoidance for Free Choice Multi-Reentrant Flow Lines: Critical Siphons & Critical SubSystems  
*P. Ballal, F. Lewis, J. Mireles, K. Sreenath*
- T08-004: On Discrete Event Diagnosis Methods for Continuous Systems  
*M. Daigle, X. Koutsoukos, G. Biswas*
- T08-003: Stable Fuzzy Controller for Discrete Event Systems  
*R. Ghasemi, A. Doustmohammadi, M. Menhaj*

### **WM-2: Embedded Control Systems**

Chairs: *C. Ferrer* and *P. Dobra*

Room: *Mycenae*, Time: *11:45 AM - 1:25 PM*

- T11-002: A Novel Real-time System Platform Development Applied to an Integrated Inertial Navigation System  
*Y. Guo, X. Fito, C. Ferrer*
- T11-001: An Embedded CPU Based Automatic Ranging System for Vehicle  
*S. Lu, X. Cao, Z. Cai, G. Zeng, T. Liu*
- T11-005: Embedded Electronic Control System for Continuous Self-Tuning of Motorcycle Suspension Preload  
*F. Baronti, F. Lenzi, R. Roncella, R. Saletti, O. Di Tanna*
- T11-003: Rapid Prototyping of Control Systems using Embedded Target for TI C2000 DSP  
*R. Duma, P. Dobra, M. Abrudean, M. Dobra*
- T09-002: Real-time Distributed Control System for Navigating Omnidirectional Soccer Robot  
*V. Rostami, S. Ebrahimijam, O. Sojodishijani*

**WM-3: Fuzzy Systems II**Chairs: *S. Bogdan* and *Y. Morsly*Room: *Edessa*, Time: *11:45 AM - 1:25 PM*

- T30-014: A Fuzzy IMM-UKF Algorithm for Highly Maneuvering Multi-Target Visual-Based Tracking  
*M. Djouadi, Y. Morsly, D. Berkani*
- T28-016: Decentralized Temperature Fuzzy Logic Control of a Passive Air Conditioning Unit  
*R. Riadi, R. Tawegoum, A. Rachid, G. Chasseriaux*
- T23-025: Engineering Procedure for Analysis of Nonlinear Structure Consisting of Fuzzy Element and Typical Nonlinear Element  
*T. Sijak, O. Kuljaca, L. Kuljaca*
- T31-029: One-Step Procedure for Robust Output  $H_{\infty}$  Fuzzy Control  
*M. Oudghiri, M. Chadli, A. El Hajjaji*
- T12-009: Sensitivity-Based Self-learning Fuzzy Logic Controller as a PLC Super Block  
*S. Bogdan, Z. Kovacic, D. Krapinec*

**WM-4: Linear Systems II**Chairs: *A. Edelmayer* and *O. Pastravanu*Room: *Macedonia*, Time: *11:45 AM - 1:25 PM*

- T19-019: A New Technique for Calculation of Maximum Achievable Gain and Phase Margins with Proportional Control  
*N. Bayhan, M. Soylemez*
- T19-017: Exact Fault and Disturbance Decoupling by Means of Direct Input Reconstruction and Estimation of the Inverse Dynamics  
*A. Edelmayer, J. Bokor, Z. Szabo*
- T19-011: On Stabilizing with PID controllers  
*K. Saadaoui, A. Ozguler*
- T19-016: Perron-Frobenius Theorem and Invariant Sets in Linear Systems Dynamics  
*M. Matcovschi, O. Pastravanu*
- T19-020: The Effect of Distance between Open-Loop Poles and Closed-Loop Poles on the Numerical Accuracy of Pole Assignment  
*E. Bozkurt, M. Soylemez*

### **WM-5: Modeling and Simulation I**

Chairs: *G. Fedele* and *J. Sakellariou*

Room: *Naoussa*, Time: *11:45 AM - 1:25 PM*

- T21-004: A Prony-like polynomial-based approach to model order Reduction  
*L. Coluccio, A. Eisinberg, G. Fedele*
- T21-006: Chaos Stabilization with TDAS and FPIC in a Buck Converter  
*F. Angulo, J. Burgos, G. Olivar*
- T21-026: Identification of Dynamical Systems Under Multiple Operating Conditions via Functionally Pooled ARMAX Models  
*S. Fassois, J. Sakellariou*
- T21-007: System Modeling of MEMS Gyroscopes  
*R. Rashed, H. Momeni*
- T21-005: Towards Cybernetic Hand: A Neural Network Method for Hand Prosthesis Control  
*F. Nowshiravan Rahatabad, M. Nekoui, M. Hashemi Golpaygani, A. Fallah, M. Kazemzadeh Narbat*

### **WM-6: Modeling & Automation in Anesthesia and Intensive Care**

Chairs: *O. Simanski* and *T. Schauer*

Room: *Kozani*, Time: *11:45 AM - 1:25 PM*

- T06-008: Control Applications in Artificial Ventilation  
*M. Walter, S. Leonhardt*
- T04-013: Automatic Drug Delivery in Anesthesia: From the Beginning Until Now  
*O. Simanski, A. Schubert, R. Kaehler, M. Janda, J. Bajorat, R. Hofmockel, B. Lampe*
- T27-017: Model-Based Predictive Control of Blood-Sugar Level in Intensive Care  
*T. Schauer, J. Raisch*
- T21-024: Monitoring the Stress Response During General Anesthesia  
*A. Schubert, O. Simanski, M. Janda, R. Hofmockel, B. Lampe*
- T01-026: Predictive Adaptive Control of the Bispectral Index of the EEG (BIS): Exploring Electromyography as an Accessible Disturbance  
*C. Nunes, T. Mendonca, J. Lemos, P. Amorim*

**WP: Poster Papers Wednesday**Chair: *Z. Doulgeri*Time: *11:45 AM - 1:25 PM*

- T01-002: Adaptive Output Feedback Control for Uncertain System with Static Nonlinearity  
*A. Bobtsov, N. Nikolaev, O. Slita*
- T15-007: CoViS: An Amphibious Computer Vision System  
*J. Kadarusman, A. Sehgal, K. Garvit, P. Shah, P. Singh*
- T01-004: Design of Adaptive Sliding Mode Controller for Chaos Synchronization  
*K. Chang*
- T15-003: Image Feature Selection Using Modified ICM Method  
*J. Hwang, H. Choi, J. Hwang*
- T05-003: Local Cost Sensitive Learning for Handling Imbalanced Data Sets  
*M. Karagiannopoulos, D. Anyfantis, S. Kotsiantis, P. Pintelas*
- T06-006: Performance Analysis of Bit-Rate-Limited Stochastic Control  
*A. Gurt, G. Nair*
- T11-004: Some Issues of Microprocessor-based Power System Stabilizer Implementation  
*Z. Tecec, V. Cesic, I. Petrovic*
- T14-003: Training ANFIS Structure with Modified PSO Algorithm  
*V. Seydi Ghomsheh, M. Aliyari Shoorehdeli, M. Teshnehlab*

**WP-1: Adaptive Control I**Chairs: *D. Vrabie and P. Rosa*Room: *Pella*, Time: *4:00 PM - 6:20 PM*

- T01-025: A Multiestimation Discrete-time Adaptive Control Incorporating Fractional Order Holds and Multirate Sampling with Stabilization of the Discrete Plant Zeros  
*A. Bilbao-Guillerna, M. De La Sen, S. Alonso-Quesada*
- T01-012: Adaptive Control of Uncertain Systems Using Function Approximations and Adaptive Bounding  
*V. Stepanyan, A. Kurdila*
- T01-013: Evaluation of the RMMAC/XI Method with Time-Varying Parameters and Disturbance Statistics  
*P. Rosa, M. Athans, S. Fekri, C. Silvestre*
- T01-003: Further Evaluation of the RMMAC Method with Time-Varying Parameters  
*P. Rosa, C. Silvestre, M. Athans, S. Fekri*
- T28-015: PID Autotuning Settings for Balanced Servo/Regulation Operation  
*V. Ramon, A. Orlando*
- T01-010: Policy Iteration for Continuous-time Systems with Unknown Internal Dynamics  
*D. Vrabie, O. Pastravanu, F. Lewis*
- T01-005: Robust Discrete-time Simple Adaptive Tracking  
*R. Ben-Yamin, I. Yaesh, U. Shaked*

## **WP-2: Hybrid Systems**

Chairs: *X. Koutsoukos* and *M. Bujorianu*  
Room: *Mycenae*, Time: *4:00 PM - 6:20 PM*

- T19-006: A Simple Hybrid/Switching Strategy for Improving Linear Controllers  
*J. Elso, M. Garcia-Sanz*
- T14-009: Hybrid Fault Detection and Isolation in a Heater Bank of an HVAC System  
*P. Silva, V. Becerra, I. Khoo, J. Calado*
- T14-004: Reachability Analysis of a Biodiesel Production System Using Stochastic Hybrid Systems  
*D. Riley, X. Koutsoukos, K. Riley*
- T21-008: Rigorous Hybrid Systems Simulation with Continuous-time Discontinuities and Discrete-time Components  
*J. Taylor, J. Zhang*
- T14-008: Topological Superposition of Abstractions of Stochastic Processes  
*M. Bujorianu, M. Bujorianu*

## **WP-3: Marine Vehicle Control**

Chairs: *Y-H. Hu* and *J. Sa da Costa*  
Room: *Edessa*, Time: *4:00 PM - 6:20 PM*

- T20-007: A 6 DoF Nonlinear Observer for AUVs with Experimental Results  
*J. Refsnes, A. Sorensen, K. Pettersen*
- T20-003: A Direct Generalized Predictive Controller for Ship Course  
*Y. Hu, S. Xu*
- T21-011: A Framework for Obtaining Steady-State Maneuvering Characteristics of Underwater Vehicles Using Sea-Trial Data  
*O. Hegrenas, O. Hallingstad, B. Jalving*
- T20-002: A Geometric Design Approach to the Broadband Control of Remotely Located Vibration  
*J. Wang, S. Daley*
- T20-001: Feedback Linearization Control Applied to the Archimedes Wave  
*D. Valerio, P. Beirao, J. Sa Da Costa*
- T20-006: Localization of an Underwater Vehicle Using an IMU and a Laser-Based Vision System  
*G. Karras, K. Kyriakopoulos*
- T20-008: Output Feedback Control of an AUV with Experimental Results  
*J. Refsnes, A. Sorensen, K. Pettersen*
- T20-010: Kinematic Simulative Analysis of Virtual Potential Field Method for AUV Trajectory Planning  
*M. Barisic, Z. Vukic, N. Miskovic*

**WP-4: Predictive Control II**

Chairs: *G. Vachtsevanos* and *P. Tatjewski*  
 Room: *Macedonia*, Time: *4:00 PM - 6:20 PM*

- T27-006: A Particle Filtering-based Framework for Real-time Fault Diagnosis and Failure Prognosis in a Turbine Engine  
*M. Orchard, G. Vachtsevanos*
- T27-008: A Predictive Control Algorithm - Some Applications for Nonlinear Processes  
*R. Balan, V. Maties, O. Hancu, S. Stan, C. Lapusan*
- T27-004: Desensitized Model Predictive Control  
*C. Lana, M. Rotea*
- T27-001: Efficient Model Predictive Control Integrated with Economic Optimization  
*M. Lawrynczuk, P. Marusak, P. Tatjewski*
- T19-001: Future of the Smith predictor Based Regulators Comparing to Youla Parameterization  
*L. Keviczky, C. Banyasz*
- T27-007: Robust MPC of Nonlinear Multivariable Systems Subject to Structured Uncertainty  
*F. Bouani, B. Bouzouita, M. Ksouri*
- T27-005: Steady-State Operability of Multi-Variable Non-Square Systems: Application to Model Predictive Control (MPC) of the Shell Heavy Oil Fractionator (SHOF)  
*L. Shead, C. Anastassakis, J. Rossiter*

**WP-5: Robotics II**

Chairs: *N. Mitsou* and *E. Frontoni*  
 Room: *Naoussa*, Time: *4:00 PM - 6:20 PM*

- T30-015: Autonomous Docking for an eROSI Robot Based on a Vision System with Points Clustering  
*H. Min, A. Drenner, N. Papanikolopoulos*
- T30-035: Comparison and Fusion of Vision and Range Measurements for Robot Pose Estimation  
*P. Zingaretti, E. Frontoni*
- T30-030: Localization Accuracy Matrix Analysis for Localization Accuracy Consideration in 2D Precision Fixture System  
*Y. Tsai, S. Lu*
- T30-032: Occupancy Grid Mapping: An Empirical Evaluation  
*T. Collins, J. Collins, C. Ryan*
- T35-001: Software Architecture and Calibration Framework for Hybrid Optical IR and Vision Tracking System  
*F. Ababsa, J. Didier, A. Tazi, M. Mallem*
- T30-038: Temporal Occupancy Grid for Mobile Robot Dynamic Environment Mapping  
*N. Mitsou, C. Tzafestas*
- T30-034: Vision Based Approach for Active Selection of Robot's Localization  
*E. Frontoni, A. Mancini, P. Zingaretti*

### **WP-6: Robust Control I**

Chairs: *J-J. Martin-Romero* and *K. Hitoshi*

Room: *Kozani*, Time: *4:00 PM - 6:20 PM*

- T31-015: Active Suspensions: A Reduced-Order H-infinity Control Design  
*J. Wang, A. Zolotas, D. Wilson*
- T31-010: Analytical Formulation to Compute QFT Templates for Plants with a High Number of Uncertain Parameters  
*J. Martin-Romero, M. Gil-Martinez, M. Garcia-Sanz*
- T31-014: Decoupled Control of Two Tank System via Algebraic Mu-Synthesis  
*M. Dlapa*
- T31-003: Design and Optimization of Robust PID Controller via Stability Methods for a Class of Uncertainty Systems  
*A. Keshtkar, H. Bolandi, A. Jalali*
- T31-002: Robust Control via Polytopic Stability Region Approximations  
*U. Nurges, E. Rustern*
- T31-013: Robust Nonlinear Adaptive Control for the Magnetic Levitation System  
*S. Yasuyuki, N. Hisakazu, K. Hitoshi, N. Hirokazu*

## **Thursday, June 28**

### **ThA-1: Nonlinear Systems II**

Chairs: *M. Vajta* and *E. Kyrkjebo*

Room: *Pella*, Time: *9:30 AM - 11:30 AM*

- T23-028: A Disturbance Decoupling Nonlinear Control Law for Variable Speed Wind Turbines  
*S. Thomsen, N. Poulsen*
- T23-023: A New Closed-loop Identification Method of a Hammerstein-type System with a Pure Time Delay  
*E. Drljevic, B. Perunicic, Z. Juric*
- T23-033: Approximate Solution of a Nonlinear Partial Differential Equation  
*M. Vajta*
- T23-029: Leader-Follower Output Reference State Feedback synchronization of Euler-Lagrange Systems  
*E. Kyrkjebo, K. Pettersen*
- T23-020: Selection of Regressors using Correlation Analysis to Design a Virtualinstrument for an SRU of a refinery  
*D. Antonio, G. Salvatore, N. Giuseppe, X. Maria Gabriella*
- T23-030: Stabilization of BiLinear Systems via Linear State Feedback Control  
*F. Amato, C. Cosentino, A. Merola*

**ThA-2: Process Control I**Chairs: *A. Prayati* and *P. Daoutidis*Room: *Mycenae*, Time: *9:30 AM - 11:30 AM*

- T28-004: A Decision Support System with Distributed Agents for Large-Scale Process Control  
*A. Prayati, A. Stathaki, E. Furujsjo, R. King*
- T28-003: Control of a Bioreactor using Feedback Linearization  
*F. Angulo, R. Munoz-Tamayo, G. Olivar*
- T28-007: Control of interface shape of Cadmium zinc Telluride Grown via an electrodynamic gradient Freeze Furnace  
*L. Lun, A. Yeckel, J. Derby, P. Daoutidis*
- T28-005: Implementation of AW Compensation Based-on Multifiltering for Fault Diagnosis  
*A. Rios-Bolivar, W. Acuna*
- T28-008: Method for Real Time Optimal Control of the ActivatedSludge Process  
*R. Tzoneva*

**ThA-3: Decentralized Control**Chairs: *P. Shirley* and *G. Nair*Room: *Edessa*, Time: *9:30 AM - 11:30 AM*

- T07-002: An application of Rantzer's Dual Lyapunov Theorem to Decentralized Navigation  
*D. Dimarogonas, K. Kyriakopoulos*
- T07-005: Automatic Pairing of MIMO Plants Using Normalized RGA  
*A. Fatehi, A. Shariati Dehaghan*
- T07-006: Cooperative Networked Stabilisability of Linear Systems with Measurement Noise  
*G. Nair, R. Evans*
- T09-001: Coprimeness in the Ring of Pseudorational Transfer Functions  
*Y. Yamamoto*
- T07-003: Decentralized Resonant Controller For Vibroacoustic Active Control  
*P. Micheau, R. Louvriot, A. Berry*
- T07-007: Model Analysis and Control of a Four Segment Irrigation CAnal  
*P. Shirley, J. Lemos, N. Nogueira, F. Machado*

### **ThA-4: Unmanned Systems I**

Chairs: *E. Velenis* and *A. Sehgal*

Room: *Macedonia*, Time: *9:30 AM - 11:30 AM*

- T34-009: A Simple and Adaptive On-Line Path Planning System for a UAV  
*G. Ducard, K. Kulling, H. Geering*
- T34-001: Aggressive Maneuvers on Loose Surfaces: Data Analysis and Input Parametrization  
*E. Velenis, P. Tsiotras, J. Lu*
- T34-003: Autonomous Underwater Unmanned Vehicular Recovery System based on Low-Cost Inter-Aural Time Differentiation Passive Sonar  
*P. Singh, A. Sehgal, P. Shah, J. Kadarusman*
- T34-004: Evolutionary Path Planning and Navigation of Autonomous Underwater Vehicles  
*V. Kanakakis, N. Tsourveloudis*
- T34-005: FPGA Based Flexible Autopilot Platform for Unmanned Systems  
*W. Alvis, S. Murthy, K. Valavanis, W. Moreno, M. Fields, S. Katkooori*
- T34-006: Multiple Sensor Based UGV Localization Using Fuzzy Extended Kalman Filtering  
*A. Tsalatsanis, K. Valavanis, A. Kandel, A. Yalcin*

### **ThA-5: Robotics III**

Chairs: *K. Lee* and *S. Fatikow*

Room: *Naoussa*, Time: *9:30 AM - 11:30 AM*

- T30-033: A Workstation for Microassembly  
*E. Kunt, K. Cakir, A. Sabanovic*
- T35-002: Adjusting Output-Limiter for Stable Haptic Interaction with Deformable Objects  
*K. Lee, D. Lee*
- T30-031: Automated Cell Characterization by a nanohandling robot station  
*F. Krohs, S. Hagemann, S. Fatikow*
- T30-017: Control of Constrained spatial three-link flexible manipulators  
*S. Kilicaslan, M. Ozgoren, S. Ider*
- T30-009: Design of a Compact dexterous robot hand with remotely located actuators and sensors  
*M. Saliba, M. Axiak*
- T30-022: Grip-Slip: A Slip/Shear Tactile Display Master Unit for Grip Tasks  
*R. Baavour, M. Fuchs, U. Ben-Hanan*

**ThA-6: Robust Control II**

Chairs: *B. Datta* and *P. Orlowski*  
 Room: *Kozani*, Time: *9:30 AM - 11:30 AM*

- T31-021: A Robust Dynamic Routing Strategy based on H<sub>∞</sub> Control  
*F. Abdollahi, K. Khorasani*
- T31-022: A Sliding Mode-based Congestion Control for Time Delayed Differentiated-Services Networks  
*K. Bouyoucef, K. Khorasani*
- T31-031: A Sylvester-Equation Based Parametric Approach for Minimum Norm and Robust Partial Quadratic Eigenvalue Assignment  
*S. Brahma, B. Datta*
- T31-025: Controller Reduction Using Structurally Balanced Truncation Method with New Closed-loop Structures  
*K. Asato, T. Nagado, S. Tamaki*
- T31-027: On Robust stability of some parameter-dependent Linear Systems: Solutions via Matrix pencil Techniques  
*J. Chen, P. Fu, S. Niculescu*
- T31-024: Uncertain Frequency Domain Estimates for LTV Discrete-time Systems  
*P. Orlowski*

**ThM-1: Discrete Event Systems II**

Chairs: *J. Mireles-Garcia* and *K. Tervo*  
 Room: *Pella*, Time: *11:45 AM - 1:25 PM*

- T25-003: An efficient approach for on-Line diagnosis of Discrete event Systems  
*F. Basile, P. Chiacchio, G. De Tommasi*
- T17-008: Discrete Event-Based Cost Criteria for Controller Parameter Optimization  
*K. Tervo, V. Holttä*
- T08-008: OnLine Fault Detection in the Modular Supervisory Control of an Experimental Manufacturing Cell  
*G. Kovacs, L. Pietrac, B. Kiss, E. Niel*
- T25-001: Optimal State Feedback for Single-Place Connected Circuits Using Controlled Dan/Petri Nets+  
*E. Jimenez Serrano, K. Araki, S. Kusakabe*
- T08-010: Supervisory Control of Discrete Event Systems by Using Observers  
*R. Campos-Rodriguez, M. Alcaraz-Mejia, J. Mireles-Garcia*

### **ThM-2: Nonlinear Systems III**

Chairs: *Z. Vukic* and *V. Syrmos*

Room: *Mycenae*, Time: *11:45 AM - 1:25 PM*

- T23-019: Identification of Wiener Systems : the least amount of a priori information  
*E. Bai, J. Reyland*
- T23-015: Nonlinear System Identification and Fault Detection using Hierarchical Clustering Analysis and Local Linear Models  
*X. Wang, V. Syrmos*
- T23-013: Observer-based quantized Output Feedback control of Nonlinear Systems  
*D. Liberzon*
- T23-016: Self-modulation in SISO Nonlinear Systems Characterized by Resonant Jumps  
*M. Nemescu, D. Lucache*
- T23-018: Transfer Function Identification by Using Self-Oscillations  
*N. Miskovic, Z. Vukic, M. Barisic*

### **ThM-3: Neural Networks I**

Chairs: *G. Rovithakis* and *E. Petlenkov*

Room: *Edessa*, Time: *11:45 AM - 1:25 PM*

- T22-003: A Robust Neuro-Adaptive Congestion Control Scheme with Respect to Exogenous Disturbances and Delay  
*C. Houmkozis, G. Rovithakis*
- T22-008: Adaptive Neural Network Tracking Control for A Class of MIMO Nonlinear Systems with Measurement Error  
*A. Kostarigka, G. Rovithakis*
- T22-004: Fault Tolerant Design of Neuro-Processors Using Weight Limitation and Ternary Output  
*N. Tomabechi, Y. Fujioka*
- T22-009: NN-ANARX Structure Based Dynamic Output Feedback Linearization for Control of Nonlinear MIMO Systems  
*E. Petlenkov*
- T04-001: Use of artificial neural networks in sequential models of membrane proteins of the Swiss-Prot database for the Detection of transmembrane segments  
*A. Kalpakas, M. Christodoulou*

**ThM-4: Linear Systems III**Chairs: *A. Zolotas and L. Lanari*Room: *Macedonia*, Time: *11:45 AM - 1:25 PM*

- T19-010: Control of uncertain Compartmental Systems  
*C. Sousa, T. Mendonca, P. Rocha*
- T19-024: Hierarchical Control Implementation  
*L. Cavarischia, L. Lanari*
- T19-031: Output covariance tracking of Linear stochastic Systems  
*S. Baromand, H. Khaloozadeh*
- T19-029: Output Selection Under Control and Fault Detectability  
*Z. Li, A. Zolotas, I. Jaimoukha, K. Grigoriadis, K. Michail, J. Pearson*
- T19-026: Subspaces invariance Constraints in Large Scale Systems  
*L. Cavarischia, L. Lanari*

**ThM-5: Modeling and Simulation II**Chairs: *M. Gasperin and W. Suleiman*Room: *Naoussa*, Time: *11:45 AM - 1:25 PM*

- T21-009: A Simulation Environment for the Analysis of Home Automation  
*G. Conte, D. Scaradozzi, A. Perdon, M. Cesaretti, G. Morganti*
- T21-014: Design of IEC 61131-3 Function Blocks using SysML  
*F. Chiron, K. Kouiss*
- T21-018: Evaluation of fire protective garments by using instrumented mannequin and model-based Estimation of burn injuries  
*D. Juricic, B. Musizza, M. Gasperin, I. Mekjavic, M. Vrhovec, G. Dolanc*
- T21-019: Identification of Quadratic in-the-State System Using Nonlinear Programming  
*W. Suleiman, A. Monin*
- T21-010: On-Line PD Measuring System Modeling and Experimental Verification for Covered-Conductor Overhead Distribution Lines  
*G. Hashmi, M. Lehtonen*

### **ThM-6: Process Control II**

Chairs: *K. Arvanitis* and *N. Ivanescu*  
Room: *Kozani*, Time: *11:45 AM - 1:25 PM*

- T29-003: A Comprehensive Study for Real-time Learning of Wave-Net Models of a Nonlinear Time-Varying Experimental Process  
*V. Zakeri, V. Naghavi, A. Safavi*
- T28-010: Controller Design for Automatic Guidance of Agricultural Vehicles at High Field Speeds  
*K. Arvanitis, G. Pasgianos, G. Kalogeropoulos*
- T28-014: Implementation of Sequential Function Charts with microcontrollers  
*N. Ivanescu, T. Borangiu, S. Brotac, A. Dogar*
- T04-012: Multivariable PID Control Design For Wastewater Systems  
*N. Wahab, R. Katebi, J. Balderud*
- T28-012: Statistical Process Control using Kernel PCA  
*G. Stefatos, A. Ben Hamza*
- T28-011: Tuning PID Controllers for a Class of Unstable Dead Time Processes based on Stability Margins Specifications  
*K. Arvanitis, G. Pasgianos, G. Kalogeropoulos*

### **ThP: Poster Papers Thursday**

Chair: *K. Kyriakopoulos*  
Time: *11:45 AM - 1:25 PM*

- T19-021: Algebraic Control of Unstable Delayed First Order Systems Using RQ-meromorphic Functions  
*L. Pekar, R. Prokop, R. Matusu*
- T17-012: Analyzing Trends by Symbolic Episode Representation and Sequence Alignment  
*B. Balasko, Z. Banko, J. Abonyi*
- T21-012: Application of the genetic algorithms to the Reduction of order of an Engine with D.C current  
*K. Kherraz*
- T19-009: Energy Recuperation in Automotive Active Suspension Systems with Linear Electric Motor  
*A. Stribrsky, K. Hyniova, J. Honcu, A. Kruczek*
- T16-011: Identification and Analysis of the Power Consumption for Aluminum Extrusion Process  
*A. Al-Smadi, S. Asad, W. Massarweh*
- T20-009: Nonlinear Tracking Control of Underactuate Ships based on a Unified Kinematic and Dynamic Model  
*D. Chwa*
- T16-003: Possibilities to Increase the Quality of Phase Current Control for Synchronous Motors  
*M. Cambal, M. Novak, J. Novak*
- T20-005: Target-Based Line-Of-Site Stabilization in Periscopes  
*A. Kazemy, H. Seyed Amin, M. Farrokhi*

**ThP-1: Adaptive Control II**Chairs: *K. Ito* and *A. Jalali*Room: *Pella*, Time: *4:00 PM - 6:20 PM*

- T01-027: A Hardware Design for an OnLine Active Noise Control System  
*M. Eshghi, S. Gholami Boroujeny, A. Jalali*
- T01-014: An Adaptive Law for Slope Identification Position Tracking and Force Regulation for a Robot in Compliant Contact with an Unknown Surface  
*Z. Doulgeri, Y. Karayiannidis*
- T01-009: Design and Implementation of a Fast Active Noise Control System on FPGA  
*A. Jalali, S. Gholami Boroujeny, M. Eshghi*
- T01-016: Enhanced Funnel-Control with Improved Performance  
*C. Hackl, Y. Ji, D. Schroeder*
- T04-006: Feedforward Adaptation to Stable and Unstable Dynamics in Arm Movements  
*K. Ito, M. Doi, T. Kondo*
- T01-015: Nonidentifier-based Adaptive Control with Saturated Control Input Compensation  
*C. Hackl, Y. Ji, D. Schroeder*
- T01-020: Observer-based actuator Fault Detection for chemical batch reactors: a Comparison between Nonlinear Adaptive and  $H_\infty$ -based approaches  
*F. Pierri, G. Paviglianiti*

**ThP-2: Industrial Automation & Manufacturing**Chairs: *M. Friman* and *R. Daoud*Room: *Mycenae*, Time: *4:00 PM - 6:20 PM*

- T16-014: A Nonlinear PID Control Scheme for Hard Disk Drive  
*I. Basel, M. Hawwa*
- T06-007: Analysis of Pyramid In-Line Production at Higher-than-Nominal  
*R. Daoud, H. Amer*
- T17-007: Application and Execution of CNC/CAD/CAPP Technology in INC  
*S. Lu, X. Cao, Z. Cai, G. Zeng, T. Liu*
- T16-018: Managing Adaptive Process Monitoring: New Tools and Case  
*M. Friman, H. Happonen*
- T16-013: Optical Electronic Microdisplacement Gage  
*V. Baranov, V. Emelyanov, V. Ilyin*

### **ThP-3: Unmanned Systems II**

Chairs: *S. Longhi* and *K. Valavanis*

Room: *Edessa*, Time: *4:00 PM - 6:20 PM*

- T23-014: Chaos in Nonlinear Dynamic Systems: Helicopter Vibration  
*J. Taylor, S. Sharif*
- T03-001: Communication-assisted Topology Control for Autonomous Unmanned Systems  
*V. Ramarathinam, M. Labrador*
- T34-008: Dynamically Feasible Trajectory and Open-Loop Control Design for Unmanned Airships  
*F. Repoulas, E. Papadopoulos*
- T30-029: Fuzzy Logic Based Autonomous Unmanned Helicopter Navigation with a Tail Rotor Failure  
*R. Garcia, K. Valavanis, A. Kandel*
- T34-010: Safe Flying for an UAV Helicopter  
*A. Mancini, F. Caponetti, A. Monteriu, E. Frontoni, P. Zingaretti, S. Longhi*
- T34-007: Statistical Profile Generation for Traffic Monitoring Using Real-time UAV based Video Data  
*A. Puri, K. Valavanis, M. Kontitsis*
- T27-018: Unmanned Helicopter Waypoint Trajectory Tracking Using Model Predictive Control  
*C. Castillo, W. Moreno, K. Valavanis*

### **ThP-4: Electric Drives Control**

Chairs: *A. Safacas* and *L. Qiu*

Room: *Macedonia*, Time: *4:00 PM - 6:20 PM*

- T01-017: A Gain Scheduled Controller for Sinusoidal Ripple Elimination of AC PM Motor Systems  
*J. Wang, W. Gan, L. Qiu*
- T26-015: Adaptive Control for PWM Dc-to-Dc Converters Operating in Continuous Conduction Mode  
*S. El Beid, S. Doubab, M. Chaoui*
- T23-024: Input-Output Decoupling Control of Induction Motors with Rotor Resistance and Load Torque Identification  
*S. Enev*
- T16-021: Minimum Copper Loss Position Control of Linear Synchronous Motors with Current Limits  
*N. Chayopitak, D. Taylor*
- T21-002: Performance Analysis of FOC and DTC sensorless Induction Motors Drive  
*F. Naceri, S. Belkacem, K. Mebarka, B. Tayeb*
- T26-024: Power Factor Improvement of an AC-DC Converter via Appropriate PWM Technique  
*K. Georgakas, A. Safacas*
- T21-023: Stator Fault Detection in Induction Machines by Parameter Estimation Using Adaptive Kalman Filter  
*F. Bagheri, H. Khaloozadeh, K. Abbaszadeh*
- T28-013: The Decoupling of a Harmonic-Drive-Spring System for Position and Torque Control on Two Different Axes  
*L. Lemmer*

**ThP-5: Robotics IV**

Chairs: *L. Ribas* and *B. del-Muro-Cuellar*  
 Room: *Naoussa*, Time: *4:00 PM - 6:20 PM*

- T30-036: Motion Control for a Single-Motor Robot with an Undulatory Locomotion System  
*L. Ribas, J. Mujal, M. Izquierdo, E. Ramon*
- T30-037: Pitch Control for Running Quadrupeds Using Leg Positioning in Flight  
*N. Cherouvim, E. Papadopoulos*
- T31-028: Robust Adaptive Nonlinear H infinity Control for Robot Manipulators  
*I. Levi, N. Berman, A. Ailon*
- T31-009: Robust Control of Manipulator Robot by using the Variable StructureControl with Sliding Mode  
*A. Mellit, A. Mellit, M. Rahim, H. Salhi, A. Guessoum*
- T30-003: Robust PID-control Design for an Electrostatic micromechanical actuatorwith Structured uncertainty  
*M. Vagia, A. Tzes*
- T30-027: Smith-Predictor Compensator for a Delayed Omnidirectional MobileRobot  
*M. Velasco-Villa, B. Del-muro-Cuellar, A. Alvarez-Aguirre*
- T30-042: The RoboCup F-180 League Dedicated System Design for Performance Analyses of Distributed Embedded Systems  
*K. Koker, R. German*

**ThP-6: Sliding Mode Control**

Chairs: *M. Efe* and *M. Verge*  
 Room: *Kozani*, Time: *4:00 PM - 6:20 PM*

- T31-016: Analog Sliding Mode Controller for Position Tracking of Piezoelectric Actuators  
*S. Yannier, A. Sabanovic*
- T23-034: Design of a Sliding Mode Controller for a Biochemical Process By Using an Intermediate Output Variable  
*M. Efe*
- T23-022: Design of Sliding Mode Unknown Input Observer for Uncertain Takagi-Sugeno Model  
*A. Akhenak, M. Chadli, J. Ragot, D. Maquin*
- T23-035: Robust Low Altitude Behavior Control of a Quadrotor Rotorcraft Through Sliding Modes  
*M. Efe*
- T31-026: Robust Sliding Mode Controller for Turbocharged Diesel Engine with Parameter Perturbations  
*D. Malkhede, B. Seth*
- T23-004: Sliding Mode and Adaptive Control for un Underactuated Process  
*E. Lucet, Y. Liu, N. Mechbal, M. Verge*
- T23-021: Sliding Mode Control of Rotary Inverted Pendulum  
*M. Ahmadiéh Khanesar, M. Teshnehláb, M. Aliyari Shoorehdeli*

# Friday, June 29

## FrA-1: Power Systems I

Chairs: *A. Fernandes* and *A. Bensenouci*  
Room: *Pella*, Time: *9:30 AM - 11:30 AM*

- T26-006: Design of a Hierarchical Fuzzy Logic PSS  
*T. Hussein, A. Elshafei, A. Bahgat*
- T26-008: Mobile Fault Detection and Diagnosis Module for Automatic Systems  
*A. Korodi, T. Dragomir*
- T01-006: Robust Output Feedback Control Design using  $H_\infty$ /LMI and SA/Lead-Lag for an ANN-Adaptive Power System Stabilizer  
*A. Bensenouci, A. Abdelghany*
- T26-003: Series Compensation Using Variable Structure and Lyapunov Function Controls for Stabilization Multimachine Power System  
*A. Fernandes, V. Casanova*
- T26-009: Stability Studies of Critical DC Power System Component for More Electric Aircraft using  $\mu$  Sensitivity  
*M. Kuhn, Y. Ji, D. Schroeder*
- T26-014: Voltage Inversion due to SSSC Presence on Second Circuit of Double Circuit Line Causing Distance Relay Mal-Operation  
*S. Jamali, A. Kazemi, H. Shateri*

## FrA-2: Fault Tolerant Systems

Chairs: *G. Furlas* and *A. Edelmayer*  
Room: *Mycenae*, Time: *9:30 AM - 11:30 AM*

- T19-023: A New Adaptive Kalman Estimator Integrated in a Fault-Tolerant Control System  
*H. Jamouli, D. Sauter*
- T01-028: A New Class of Fault-Tolerant Systems: FPGA Implementation of Bio-Inspired Self-Repairing System  
*R. Caponetto, G. Dongola, L. Fortuna*
- T14-006: An Approach Towards Fault Tolerant Hybrid Control Systems  
*G. Furlas*
- T07-004: Federated filtering for Fault tolerant Estimation and sensor redundancy management in coupled Dynamics Distributed Systems  
*A. Edelmayer, M. Miranda*
- T14-007: Output-Feedback  $H_\infty$  Control of a Class of Networked Fault Tolerant Control Systems  
*S. Aberkane, D. Sauter, J. Ponsart*
- T19-013: Unambiguous Fault identification and Accommodation for Incipient and Abrupt Faults  
*G. Parlangei, D. Pacella, M. Corradini*

**FrA-3: Network Systems and Communications**

Chairs: *J. Baras* and *Z. Kovacic*  
 Room: *Edessa*, Time: *9:30 AM - 11:30 AM*

- T29-002: Data Rates Conditions for Network Control System Stabilization  
*I. Lopez Hurtado, C. Abdallah*
- T36-002: Feedback Control over Packet Dropping Network Links  
*H. Mo, C. Hadjicostis*
- T36-001: GA-based On-Line Optimization of CAN Message Scheduling  
*D. Duzanec, Z. Stare, Z. Kovacic*
- T36-005: Level-triggered Control of a Scalar Linear System  
*M. Rabi, J. Baras*
- T36-004: Throughput Rate Control for an 802.15.4 Wireless Body Area Network using Static and Low Order Anti-Windup Techniques  
*M. Walsh, M. Hayes*

**FrA-4: Spectral Estimation & Time Delayed Systems**

Chairs: *A. Perdon* and *A. Poulimenos*  
 Room: *Macedonia*, Time: *9:30 AM - 11:30 AM*

- T19-005: A Residual Generator for Singular Time-Delay Systems  
*A. Perdon, M. Anderlucci*
- T32-002: Asymptotic Analysis of Non-Stationary Functional Series TAR  
*A. Poulimenos, S. Fassois*
- T19-025: Model Matching of SISO Neutral Time Delay System via Output Feedback  
*F. Koumboulis, N. Kouvakas, P. Paraskevopoulos*
- T19-030: Output Feedback Decoupling of Neutral Time Delay Systems  
*G. Panagiotakis, F. Koumboulis, P. Paraskevopoulos*
- T19-027: Positive Observation problem for time?delays Linear positive Systems  
*M. Ait Rami, U. Helmke, F. Tadeo*
- T26-010: Study and Harmonic Analysis of SVPWM Techniques for VSI-Fed Double-Star Induction Motor Drive  
*K. Marouani, F. Khoucha, L. Baghli, D. Hadiouche, A. Kheloui*

### FrA-5: Robotics V

Chairs: *N. Tsourveloudis* and *H.G. Tanner*  
Room: *Naoussa*, Time: *9:30 AM - 11:30 AM*

- T30-018: A 4-4 Cable-Based Parallel Manipulator for an Application in Hospital Environment  
*E. Ottaviano, M. Ceccarelli, M. De Ciantis*
- T30-011: A Design of a New Leg-Wheel Walking Robot  
*C. Tavolieri, E. Ottaviano, M. Ceccarelli, A. Nardelli*
- T30-026: A Low Cost Modular Robot Vehicle Design for Research and Education  
*S. Piperidis, L. Doitsidis, C. Anastasopoulos, N. Tsourveloudis*
- T30-010: Enabling Complex Behavior by Simulating Marsupial Actions  
*M. Janssen, N. Papanikolopoulos*
- T30-025: Experimental Implementation of Robotic Sequential Nuclear Search  
*A. Cortez, X. Papageorgiou, H. Tanner, A. Klimenko, K. Borozdin, W. Priedhorsky*
- T30-023: Parametric Analysis and Design GuideLines for a Quadruped Bounding Robot  
*P. Chatzakos, E. Papadopoulos*

### FrA-6: Optimization

Chairs: *C. Sourkounis* and *C. Banyasz*  
Room: *Kozani*, Time: *9:30 AM - 11:30 AM*

- T24-001: A Computational Approach to Optimization of Controlled Mechanical Systems  
*V. Azhmyakov*
- T13-002: A Differential Evolution Tuned Optimal Guidance Law  
*R. Thangavelu, S. Pradeep*
- T24-002: Investigating H2 optimality of two-degree of freedom control Systems  
*L. Keviczky, C. Banyasz*
- T24-007: On-Line optimization model Design of gasoLine blending System under parametric uncertainty  
*W. Wang, Z. Li, Q. Zhang, Y. Li*
- T17-006: Optimal Boundary Control Synthesis for a Class of Distributed Parameter Systems Applying Adaptive Critics  
*D. Toshkova, P. Petrov, G. Toshkov*
- T01-029: Stochastic Dynamic Optimisation with Infinite Time Horizon for Variable Speed Wind Energy Converters  
*C. Sourkounis, B. Ni*

**FrM-1: Computer Controlled Systems**

Chairs: *E. Rosenwasser* and *A. Tzes*  
 Room: *Pella*, Time: *11:45 AM - 1:25 PM*

- T06-002: Causal polynomial pole assignment of Discrete LTI Systems by using deadbeat modes  
*B. Lampe, E. Rosenwasser*
- T06-001: High Speed Solenoid Valves in Pneumatic Servo Applications  
*Z. Situm, T. Zilic, M. Essert*
- T06-009: Improvements in knock control  
*U. Lezius, M. Schultalbers, W. Drewelow, B. Lampe*
- T06-003: Object List Based System Control  
*A. Scheibelmasser, B. Eichberger*
- T09-004: On the Modeling of Networked Controlled Systems  
*L. Dritsas, G. Nikolakopoulos, A. Tzes*

**FrM-2: Education and Training**

Chairs: *O. Yakimenko* and *J. Molina*  
 Room: *Mycenae*, Time: *11:45 AM - 1:25 PM*

- T10-004: An Undergraduate laboratory course on fuzzy controller implementation in FPGAs  
*S. Alcantara, C. Pedret, R. Vilanova, R. Romualdo*
- T23-017: GTF\_Tools: A Computer Algebra Package for Generalized Transfer Functions  
*M. Ondera*
- T10-003: On the Development of the Interactive Web-Based Courses on Classical and Modern Control  
*O. Yakimenko, F. Papoulias*
- T10-002: Programmable Analog Array in Control-Systems Laboratory  
*J. Galliere*
- T10-006: Using Industrial Standards on PLC Programming Learning  
*J. Molina, J. Barbancho, C. Leon De Mora, A. Molina, A. Gomez*

**FrM-3: Neural Networks II**

Chairs: *M. Christodoulou* and *S.G. Fabri*  
 Room: *Edessa*, Time: *11:45 AM - 1:25 PM*

- T04-002: Adaptive Backstepping Control for MAPK Cascade Models Using RBF Neural Networks  
*K. Vamvoudakis, M. Christodoulou*
- T26-011: Load Frequency Control in Interconnected Power System Using Modified Dynamic Neural Networks  
*K. Sabahi, M. Nekoui, M. Teshnehlab, M. Aliyari, M. Mansouri*
- T30-001: Multilayer Perceptron Dual Adaptive Control for Mobile Robots  
*M. Bugeja, S. Fabri*
- T23-031: Neuronal Principal Component Analysis for the Diagnosis of a Non Linear System  
*N. Pessel, J. Balmat, F. Lafont, J. Bonnal*
- T21-013: Order Model Reduction for Two-time-Scale Systems Based on Neural Network Estimation  
*O. Alsmadi, M. Abdalla*

#### **FrM-4: Image Processing**

Chairs: *F. Lewis* and *Z. Hocenski*

Room: *Macedonia*, Time: *11:45 AM - 1:25 PM*

- T17-002: Face Expression Recognition Using a Two Stage Neural Network  
*P. Dang, H. Stephanou, F. Ham, F. Lewis*
- T15-005: Failure Detection and Isolation in Ceramic Tile Edges Based on Contour Descriptor Analysis  
*Z. Hocenski, T. Keser*
- T15-004: Fast Invariant Face Detection in Video Frames  
*M. Monhi, F. Torkamani-Azar*
- T15-006: Tropospheric Signal Delay Estimation in Repeat-pass SAR Interferometry with QR-factorization  
*A. Likoka, V. Karathanassi*

#### **FrM-5: Modeling and Simulation III**

Chairs: *J. Sakellariou* and *C. Nunes*

Room: *Naoussa*, Time: *11:45 AM - 1:25 PM*

- T21-020: A Functional Pooling Framework for the Identification of Systems Under Multiple Operating Conditions  
*S. Fassois, J. Sakellariou*
- T21-022: Automatic Constraint Propagation and Linearization methods inSIMONEK  
*E. Nagy, I. Lovanyi*
- T21-021: Modeling and Control of an Electric Arc Furnace  
*R. Balan, V. Maties, O. Hancu, S. Stan, C. Lapusan*
- T21-025: Modelling the Dynamics of depth of Anaesthesia: Cerebral State Index in dogs  
*N. Bressan, A. Castro, S. Bras, L. Ribeiro, D. Ferreira, A. Silva, L. Antunes, C. Nunes*

#### **FrM-6: Swarms**

Chairs: *K. Valavanis* and *B. Fidan*

Room: *Kozani*, Time: *11:45 AM - 1:25 PM*

- T33-001: A Novel Binary Particle Swarm Optimization  
*M. Ahmadiéh Khanesar, M. Teshnehláb, M. Aliyari Shoorehdéli*
- T33-003: Externally Excited Coordination of Autonomous Formations  
*I. Shames, C. Yu, B. Fidan, B. Anderson*
- T33-005: MPC Based Motion Control of Car-like Vehicle Swarms  
*W. Xi, J. Baras*
- T33-002: Switching Control for Robust Autonomous Robot and Vehicle Platoon Formation Maintenance  
*B. Fidan, B. Anderson*
- T33-004: Unmanned Ground Vehicle Swarm Formation Control Using Potential Fields  
*L. Barnes, M. Fields, K. Valavanis*

**FrP: Poster Papers Friday**Chair: *K. Kyriakopoulos*Time: *11:45 AM - 1:25 PM*

- T31-008: Control of Systems with Periodic Time-Varying Parameters: An Algebraic Approach  
*R. Matusu, R. Prokop, L. Pekar*
- T26-004: Decoupled Active and Reactive Power Control of a Doubly-Fed Induction Generator (DFIG)  
*A. Dendouga, R. Abdessemed, L. Bendaas, A. Chaiba*
- T28-006: Development Strategy of Next Generation Single-Chip Smart Inverters for Motor Control Applications  
*C. Szasz*
- T31-004: Fault Detection and Isolation filter Design for Systems Subject to Polytopic Uncertainties  
*E. Mazars, I. Jaimoukha, Z. Li, A. Zolotas*
- T23-002: Precision Tracking Control of a Piezoelectric-Actuated System  
*J. Shen, W. Jywe, H. Chiang, Y. Shu*
- T28-002: Some Practical Aspects about Performance and Tuning of a Multirate Discrete PID controller  
*Y. Cerezo, I. Lopez*
- T25-002: The Use of Coxian Distribution in Closed-Form Treatment of Stochastic Petri Nets  
*P. Janecek, J. Mosna, P. Prautsch*

**FrP-1: Aerospace Control**Chairs: *M. Larsen and R. Beard*Room: *Pella*, Time: *4:00 PM - 6:20 PM*

- T02-003: A Class of Flight Trajectories for Tracking Ground Targets with Micro Air Vehicles  
*R. Beard*
- T02-007: Attitude and Heading Reference System I-AHRS for the EFIGENIA Autonomous Unmanned Aerial Vehicles UAV Based on MEMS Sensor and a Neural Network Strategy for Attitude Estimation  
*M. Cordoba*
- T02-006: Compensation of jammed control surface of large transport aircraft by control reconfiguration  
*H. Ahmad, T. Young, T. Daniel, E. Omerdic*
- T01-018: Feed Forward Adaptive Learning Based Tracking of Spacecraft  
*A. Al-Garni, M. Shafiq, A. Kassem, R. Irfan Ahmad*
- T02-001: Model-Based Failure Severity Prediction Based on Robust Residual Design  
*M. Alves, D. Cabral, K. Fitzgibbon*
- T02-004: Multi-Objective Control of Aerodynamically Unstable Launcher  
*A. Khalate, A. Abdul, S. Jose, M. Dhekane*
- T02-005: Nonlinear Control of Electrodynamic Tether in Equatorial or Somewhat Inclined Orbits  
*M. Larsen, M. Blanke*

### **FrP-2: Intelligent Transportation Systems**

Chairs: *A. El Hajjaji* and *A. Abdul Salam*  
Room: *Mycenae*, Time: *4:00 PM - 6:20 PM*

- T18-008: A Robust Matrix t-clustering Technique for Vehicle Dynamics : theOutput Feedback case  
*J. Bosche, A. El Hajjaji*
- T18-004: Assistance control based on a Composite Lyapunov function for lane departure avoidance  
*N. Minoiu, M. Netto, S. Mammar*
- T18-010: Automation and Control of DIA Transportation Tunnel  
*A. Abdul Salam*
- T18-007: Estimation of Contac Forces and Tire Road Friction  
*A. Rabhi, N. M Sirdi, A. Elhajjaji*
- T18-009: Lateral Vehicle Velocity Estimation Using Fuzzy Sliding Mode  
*M. Oudghiri, M. Chadli, A. El Hajjaji*
- T18-011: Safety in Automated Transportation Tunnels  
*A. Abdul Salam*
- T18-005: WiFi Architecture for Traffic Control using MIPv6  
*R. Daoud, M. El-Dakroury, H. Amer, H. Elsayed, M. El-Soudani*

### **FrP-3: Power Systems II**

Chairs: *I. Kuzle* and *O. Pasteur*  
Room: *Edessa*, Time: *4:00 PM - 6:20 PM*

- T26-018: A DC Distribution Network with Alternative Sources  
*R. Magureanu, M. Albu, M. Priboianu, A. Dumitrescu*
- T26-026: An Overview of Ancillary Services in an Open Market Environment  
*I. Kuzle, D. Bosnjak, S. Tesnjak*
- T26-019: Challenges in Implementation of Human-Automation Interaction  
*A. Fereidunian, C. Lucas, H. Lesani, M. Lehtonen, M. Nordman*
- T16-002: Feedback from SOAP based messaging protocol for power generation information System  
*O. Pasteur, T. Dang, P. Delon*
- T26-001: The Effect of Energy Purchase Cost in Maintenance Schedule of Generating Units Based on Genetic Algorithm  
*R. Eshraghnia, M. Modir Shanechi, R. Riahi*

**FrP-4: Hydraulic Systems Control**Chairs: *I. Ursu* and *F. Koumboulis*Room: *Macedonia*, Time: *4:00 PM - 6:20 PM*

- T01-024: Adaptive Backstepping Type Control for Electrohydraulic Servos  
*F. Ursu, I. Ursu, E. Munteanu*
- T23-027: Geometric Control in a Regulator Problem for Electrohydraulic Servos  
*I. Ursu, F. Ursu, A. Halanay, S. Balea*
- T30-040: Model-Based Position Tracking Control for a 6-DoF Electrohydraulic Stewart Platform  
*I. Davliakos, E. Papadopoulos*
- T23-012: Nonlinear Robust Backstepping Control of an Electrohydraulic Velocity Servo System  
*G. Hasanifard, M. Hadad Zarif, A. Gharaveisi*
- T31-030: Robust Control Techniques for Hydraulic Actuators  
*M. Skarpetis, F. Koumboulis, M. Tzamtzi*

**FrP-5: Computational Intelligence**Chairs: *M. Kobayashi* and *M. Karagiannopoulos*Room: *Naoussa*, Time: *4:00 PM - 6:20 PM*

- T17-005: A Lazy Learning Control Method using Support Vector Regression  
*M. Kobayashi, Y. Konishi, H. Ishigaki*
- T16-016: Intelligent Adaptive control of Forces in Milling Processes  
*L. Rubio, M. De La Sen, A. Bilbao-Guillerna*
- T05-001: Local Dagging of Decision Stumps for Regression and Classification Problems  
*D. Anyfantis, M. Karagiannopoulos, S. Kotsiantis, P. Pintelas*