April 27, 2006, Thursday

9:30-10:30: Opening Ceremony, Conference Hall

10:30-11:00: Break

Plenary Lecture, 11:00-12:00

- MACHADO, J.A.T. and SILVA, M.F., *An Overview of Legged Robots* **Chair: AGRAWAL, O.P.**

Plenary Lecture, 12:10-13:10

- FISHER, B., *The Composition and Neutrix Composition of Distributions* **Chair: LI, C.**

13:20-14:30, Lunch

Blue Hall	Amphi I	Amphi II
Mechanical Engineering, 14:30-15:40 **Chair: ELMENREICH, W.** • 14:30-15:00 NEUMANN, N., SATTEL, T. and WALLASCHEK, J.W., *On Set-Oriented numerical methods for global analysis of non-smooth mechanical systems* • 15:00-15:20 TAKACI, A., and TAKACI, D. *On the solution of a mathematical model of a viscoelastic bar* • 15:20-15:40 MARINOVA, D., LUKARSKI, D. and STAVROULAKIS, G., *Modeling and Optimal Control for Plates with Defects*	**Numerical Methods, 14:30-15:30** **Chair: ÖZÇAĞ, E.** • 14:30-14:50 ASHYRALYEV, A., *Fractional spaces generated by the positive differential and difference operators in a Banach Space* • 14:50-15:10 DOSIYEV, A.A. and CIVAL S., *A Fourth Order Accurate Difference-Analytical Method For Solving Laplaces Boundary Value Problem With Singularities* • 15:10-15:30 ÖZBILGE, E., *A numerical analysis of variational finite difference schemes for steady state heat conduction problems with discontinuous coefficients*	**System Analysis, 14:30-15:30** **Chair: UDOVICIC, Z.** • 14:30-14:50 HACINLIYAN, A., ERENTÜRK, M. and ŞAHİN G., *Possible Chaotic Structures in the Turkish Language with Time Series Analysis* • 14:50-15:10 GONCALVES, R., CALHEIROS, F., PINTO A., *Comparison of methodologies in river flow prediction. The Paiva river case.* • 15:10-15:30 T˙IRYAKI, F.,GONCE, H, *A Compensatory Fuzzy Approach to Multi-objective Solid Transportation Problem*

Break

Blue Hall	Amphi I	Amphi II	BlockA-106
Fuzzy Systems 1, 16:15-17:35 • **Chair: ASYALI, M.H.** • 16:15-16:35 BAYRAMOV, S. and GUNDUZ, Ç., *Limits of inverse and direct spectra in category of fuzzy modules* • 16:35-16:55 ŞENÇİMEN, C. and PEHLİVAN, S., *Some Results on Interval Valued Fuzzy Sets* • 16:55-17:15 TİRYAKİ, F. and ÇETİN, N., *A Compensatory Fuzzy Approach to Multiple-Objective Linear Fractional Transportation Problem (MOLFTP)* • 17:15-17:35 AYTAR, S., PEHLİVAN, S., *Levelwise Statistical Convergence of a Sequence of Fuzzy Numbers*	**Mathematical Tools 1, 16:15-17:35** **Chair: FISHER, B.** • 16:15-16:45 ASADA, A., *Zeta-regularization and Calculus on Infinite Dimensional Spaces* • 16:45-17:10 LEANDRE, R., *Positivity theorem in semi-group theory* • 17:10-17:25 KRISHNAN, E.V., *Some exact solutions of the (2 + 1)-dimensional Kadomtsev-Petviashvili equation*	**Signal Processing 2, 16:25-17:25** **Chair: DALKHE, S.** • 16:25-16:45 DİNÇ, E., *Continuous wavelets transform analysis and the mathematical resolution of the overlapping absorption spectra and their ratio signals for the multicomponent determination* • 16:45-17:05 AKTAŞ, H.A., DİNÇ, E. and PEKCAN, G., *Wavelet transform for the simultaneous prediction of the colorants in food product* • 17:05-17:25 KANBUR, M., DİNÇ, E., AKSOY, H., AKDI, Y. and TAŞ, Ayşegül , *Coiflets wavelet transform for the quantitative analysis of commercial veterinary powder product*	**Electrical Engineering, 16:25-17.35** **Chair: MARINOVA, D.** • 16:25-16:55 ELMENREICH, W. and SCHORGENDORFER, A., *Fusion of Continuous-Valued Sensor Measurements using Statistical Analysis* • 16:55-17:15 ŞAHİN, S. and KAVAK, A., *Implementation of Floating Point Arithmetic Using an FPGA* • 17:15-17:35 DOUKHNITCH, E., SALAMAH, M. and SANDOUKA, A., *Novel Hardware-Oriented Algorithms for TDOA Positioning Technique in Cellular Networks*

17:50-20:30, Dinner

April 28, 2006, Friday

Plenary Lecture, 9:30-10:30, Blue Hall

- AGRAWAL, O.P., *Generalized Euler-Lagrange equations and the transversality conditions for fractional variational problems* **Chair: BALEANU, D.**

Blue Hall	Amphi I	Amphi II
Fractional Calculus 1, 10:50-11:50 **Chair: BALEANU, D.** • 10:50-11:10 BARBOSA, R.S., MACHADO, J.A.T., VINAGRE B.M., and CALDERON A.J., *Study of the Van der Pol Oscillator with Fractional Derivatives* • 11:10-11:30 BARBOSA, R.S, MACHADO, J.A.T. and GALHANO A.M., *Analysis of Fractional-Order Discrete Controllers in the Presence of Nonlinearities* • 11:30-11:50 NIGMATULLIN, R.R., *The Statistics of the Higher (Fractional) Moments: Quantitative "Reading" of Any Randomness*	**Mathematical Tools 2, 10:50-11:50** **Chair: AL-MOMANI, R.** • 10:50-11:10 EFE, M.Ö., *Modeling of PDE Processes with Finite Dimensional Non-Autonomous ODE Systems* • 11:10-11:30 Ozdemir, Y, On Nonlocal Boundary Value Problems for Hyperbolic-Parabolic Equations • 11:30-11:50 KULA, L. and YAYLI, Y., *Split Quaternions and Rotations in* E_2^4	**Applications in Economics, 10:50-11:50** **Chair: ROSARIO, J.M.** • 10:50-11:10 FERREIRA, F., FERREIRA, F. and PINTO, A., *Bayesian price leadership* • 11:10-11:30 FERREIRA, F., FERREIRA, F., FERREIRA, M., OLIVEIRA, B. and PINTO, A., *Cournot model: repeated R&D investments for non-identical firms* • 11:30-11:50 FERREIRA, LMMS, FINKENSTADT, BF, OLIVEIRA, BMPM and PINTO, AA, *Nonlinearity in an Edgeworthian Exchange Economy*
Fractional Calculus 2, 11:55-12:55 **Chair: MAINARDI, F.** • 11:55-12:15 MUSLIH, S. and BALEANU, D., *Fractional Euler-Lagrange equations of motion in fractional space* • 12:15-12:35 RABEI, E.M., TARAWNEH, D.M., MUSLIH, S., BALEANU, D., *Heisenberg's Equations of Motion with Fractional Derivatives* • 12:35-12:55 BALEANU, D., *Equivalent Lagrangians within fractional calculus*	**Mathematical Tools 3, 11:55-13.15** **Chair: EFE, M.O.** • 11:55-12:15 AL-MOMANI, R. and ALMOMANI, K., *Dirichlet Problem for Orthotropic Bounded Cylinder with Combined Boundary Conditions* • 12:15-12:35 PASHAEV, O., *Dissipative Solitons and Nonlinear Resonance Dynamics in 2+1 Dimensions* • 12:35-12:55 PAN, T. and LI, J., *The Polygonal Approximations of Nonconvex Conservation Laws in Finite Interval* • 12:55-13:15, DOSIEV, A., Quantizations of locally convex spaces	**Manufacturing Systems, 11:55-12:55** **Chair: FERREIRA, F.** • 11:55-12:25 ROSARIO, J.M., DUMUR, D. and MACHADO, J.A.T., *A Mechatronic Approach to Control of 6 DOF Parallel Manipulator* • 12:25-12:55 CIOBANU, L. and CIOBANU, I.B., *Holonic Galvanization or Hardening Line* • 12:55-13:15 YAKHNO, V and SEVİMLİCAN, A. *A method for the recovery of the electric field vibration inside vertical inhomogeneous anisotropic dielectrics*

13:20- 14:20, Lunch

Plenary Lecture, 14:30-15:30, Blue Hall

- MAINARDI, F., MURA, A., PAGNINI G. and GORENFLO R., *Sub-diffusion equations of fractional order and their fundamental solutions*

Chair: MACHADO, J.A.T.

Break, Poster Session, 15:30-16:00***

Blue Hall	Amphi I	Amphi II
Vibration Analysis, 16:10-17:10 **Chair: BARBOSA, R.** • 16:10-16:30 AL-NASSAR, Y.N., KALYON, M., PAKDEMIRLI, M. and AL-BEDOOR, B.O., *Stability Analysis of Rotating Blade Vibration due to Torsional Excitation* • 16:30-16:50 AŞIK, M.Z. and DURAL E., *Effect of Support Conditions on the Vibration of the Laminated Composite Beams* • 16:50-17:10 EKİCİ, H.O. and BOYACI, H., *Effects of Non-Ideal Boundary Conditions on Vibrations of Micro beams*	**Mathematical Tools 4, 16:10-17:10** **Chair: TAKACI, A.** • 16:10-16:30 GUSEINOV, G., *On solutions of discrete nonlinear elliptic boundary value problems* • 16:30-16:50 GLAZUNOV, N.M., *Homotopy Invariant Algebraic Models and Homotopical Methods to Engineering* • 16:50-17:10 DEFTERLİ, Ö. and BALEANU, D., *Hidden symmetries of two dimensional superintegrable systems*	**Electrodynamics 1, 16:10-17:10** **Chair: ERİŞ, A.** • 16:10-16:30 GURAY, E. and TARMAN, H.I., *Thermal Convection In the Presence of a Magnetic Field: Numerical Simulation* • 16:30-16:50 GÜRKAN, Z.N. and PASHAEV, O., *Vortex and Vortex Lattice Dynamics in Magnetic Fluid Model* • 16:50-17:1, E., BUSSE, F.H. and PESCH W., *Pattern Formation in the Rotating Cylindrical Annulus with an Azimuthal Magnetic Field at low Prandtl numbers*
Fractional Calculus 3, 17:20-18:40 **Chair: MUSLIH, S.** • 17:20-17:40 AGRAWAL, O.P. and BALEANU D., *A Hamiltonian Formulation and a Direct Numerical Scheme for Fractional Optimal Control Problems* • 17:40-18:00 VINAGRE, B.M., MONJE, C.A., CALDERON, J.A., and SUAREZ, J.I., *Fractional PID Controllers Design and Implementations for Industry Application* • 18:00-18:40 NIGMATULLIN, R.R., ARBUZOV, A.A., SALEHLI, F., GIZ, A., BAYRAK, I., CATALGILGIZ, H., *The First Experimental Confirmation Of The Fractional Kinetics Containing The Complex Power-Law Exponents: Dielectric Measurements Of Polymerization Reactions*	**Mathematical Tools 5, 17:20-18:40** **Chair: LEANDRE, R.** • 17:20-17:40 AKPOLAT, Ç., *Discrete Cosine Transform Based Palmprint Verification by Using Linear Discriminant Analysis* • 17:40-18:00 MAHMUDOV, N.I. and MATAR M.M., *Approximate controllability of one-dimensional SDE driven by countably many Brownian motions* • 18:00-18:20 SERT C., *hp-Spectral Element Solutions of Partial Differential Equations* • *18:20-18:40* PAMUK, S., *On the Solution of the Porous Media Equation by Decomposition Method: A Review*	**Dynamical Systems 1, 17:20-18:40** **Chair: GRAHOVSKI, G.** • 17:20-17:40 AYDIN, B. and KANOĞLU, U., *An Analytical Solution for Wind Set-down Relaxation Problem* • 17:40-18:00 GAVRILOVA, E., *Coupled Frequencies of a Fluid in a Circular Cylindrical Tank with a Membrane on its Upper Base and Permanent Axis Loading* • 18:00-18:20 AŞIK, M.Z. and İŞBUĞA V., *Non-linear Response of a Layered Medium* • 18:20-18:40 ABU-ALSHAIKH, I., *One-dimensional Wave Propagation in Functionally Graded Cylindrical Layered Media*

18:45-20:30, Banquet

April 29, 2006, Saturday

Plenary Lecture, 9:30-10:30, Blue Hall

- STETTER, H., *Mathematics with Perturbed Information -a Core Technique in Scientific Computing* **Chair: TAŞ, K.,**

Blue Hall	Amphi I	Amphi II	BlockA-106
Fuzzy Systems 2, 10:50-12:10 **Chair: BAYRAMOV, S.** • 10:50-11:10 ASYALI, M.H., ALCI, M., ZHENG, L. and JUUSOLA, M., *Comparison of Fuzzy and Volterra Series Nonlinear System Modeling Approaches* • 11:10-11:30 AYGÜN, H. and BURAL, A.A., *Fuzzy Inverse Compactness* • 11:30-11:50 GÜNDÜZ Ç., BAYRAMOV, S., *Inverse and direct spectra limits of exact sequences in categories of fuzzy modules*	**Mathematical Tools 6, 10:50-12:10** **Chair: ASADA, A.** • 10:50-11:10 LI, C. *The distributional products by the Laurent series* • 11:10-11:30 KAPTANOĞLU, H.T. *Some spaces of analytic functions defined through radial fractional derivatives* • 11:30-11:50 ÖZÇAĞ E., EGE, İ., GÜRÇAY, H., JOLEVSKA-TUNESCA, B., *Some Remarks on the Incomplete Gamma Function* • 11:50-12:10 ALTAŞ, I.M., NEYES, J., *A Fuzzy Logic Load-Frequency Controller for Power Systems*	**Electrodynamics 2, 10:50-12:10** **Chair: GAVRILOVA, E.** • 10:50-11:10 DARIESCU, C., DARIESCU, M.−A. and MURARIU G., *Electromagnetic Radiating Modes in Einsteins Universe* • 11:10-11:30 RAMADAN, O., *Unconditionally stable ADI-FDTD implementation of Maxwell equations for truncating frequency dispersive debye media* • 11:30-11:50 YAKHNO, V.G. and YAKHNO, T.M., *Simulation of Magnetic Fields from Impulse Point Current in Anisotropic Materials* • 11:50-12:10 ARSLAN, T. and KARACASU, M., *A Heuristic Approach for Processing Public Assessments on Transportation Projects*	**Mathematical Tools 7 10:50-12:10** **Chair: GUSEINOV, G.** • 10:50-11:10 TANOĞLU, G. *Vector Shock Soliton of Vector Wave Equation in Three Space Dimension* • 11:10-11:30 BASHIROV, A. and MAZHAR, Z., *On Asymptotical Behavior of Solution of Riccati Equation Arising in Linear Filtering with Shifted Noises* • 11:30-11:50 CENK, M. and ÖZBUDAK, F., *Isomorphism Classes of Ordinary Elliptic Curves over Fields of Characteristic* • 11:50-12:10 KHAN, M.,S., *Some fuzzy fixed point theorems*

Biomedical Systems, 12:15-13:35 **Chair: DİNÇ, E.** • 12:15-12:35 ARIKAN, O., ARIKAN F., and EROL C.B., *3-D Computerized Ionospheric Tomography with Random Field Priors* • 12:35-12:55 İŞCAN, Z., DOKUR, Z. and ÖLMEZ, T., *Improved Incremental Self-Organizing Map for the Segmentation of Ultrasound Images* • 12:55-13:15 ÖZER, M. and UZUNTARLA, M., *Synchronization between neuronal spiking activity and sub-threshold sinusoidal stimuli based on the FitzHugh-Nagumo model* • 13:15:13:35 ÖZER, M. and TÜRKER, İ., *A comparative analysis for the regularity of the neuronal spike train based on the five different algorithms with stochastic ion channels*	**Mathematical Tools 8, 12:15-13:35** **Chair: PAKDEMİRLİ, M.** • 12:15-12:35 ÖZER, M., VALARISTOS, A., POLATOĞLU, Y., HACIBEKİROĞLU, G., CENYS, A. and ANAGNOSTOPOULOS, A.N., *A Characterization of the Dynamics of Newton's Derivative* • 12:35-12:55 PINTO, C.M.A. and GOLUBITSKY, M., *Central Pattern Generators for Bipedal Locomotion* • 12:55-13:15 MAKHALDIANI, N., *Fractal Geometry and Calculus with some Applications* • 13:15-13:35 UDOVICIC, Z., *The Threshold of Compression in Wavelet Transform with Haars Coefficients - Numerical Examples*	**Dynamical Systems 2, 12:15-13:35** **Chair: DARIESCU, M.** • 12:15-12:35 GRAHOVSKI, G.G. and DANDOLOFF R., *A XY Spin Chain Models on Space Curves and Analogy with Kirchhoff Rods* • 12:35-12:55 TUĞLUK, O. and TARMAN, H.I., *Dynamics of Wall Bounded Flow* • 12:55-13:15 YARIMPABUÇ, D., YILDIRIM, C. and TARMAN, H.I., *Transitional Dynamics in Thermal Convection Between Rigid Plates* • 13:15-13:35 UMUT, Ö., *Generalized Synchronization of Nuclear Spin Generator System via Linear Transformations*	

13:35-14:30, Lunch

14:30-16:00, Atatürk's Mausoleum visit

16:00-19:00, Anatolian Civilization Museum visit

19:00-20:30, Dinner

*****Break, Poster Session**

- YAYLI, Y., U, Z., *Screw Motions In Lorentzian Space L^3*
- DARVISH, H., DEVRİM, C.,and ÜLKER, M.M., *SecurEvote*
- DARVISH, H., ÇELİK, Ö., and ALUŞ, C.**,** *National Emergency Data Network*
- GARADZHAEV, A., *On spectral theory of problems on normal oscillations of an ideal compressible fluid in rotating elastic containers*
- ALTIN, A., *Orbits and Real and Spherical Motions*
- SÜSLÜ, İ. , DİNÇ, E., and ALTINÖZ S., *An application of continuous wavelet transform to electrochemical signals for the quantitative analysis*
- CIOBANU, L. and CIOBANU, I.B., *Reliability of the Robots and the Flexible Cells*
- AMIRULLAH, M. M., *Jones Matrices of 2D Anisotropic System: Application to Eye Model*
- CANSIZ, A., and GUNDOGDU, O., *Translational and Rotational Dynamic Analysis of a Superconducting Levitation System*
- AMIRULLAH, M. M., *Holographic memories and optical signal processing in a ferroelectric crystal*
- COSKUN, S. B., *Analytical Solutions for Radial Buckley-Leverett Flow in Polar and Spherical Coordinates*
- FERREIRA, F., FERREIRA, F., PINTO, A., *Unknown costs in a duopoly with differentiated products*
- TUSALIU, P., STROICA, P., TUSALIU, D.C., ÖZDEMİR, A., and VOICU, V., *About Modelling and simulation of Transient Phenomena at the Unloaded Line Switching*
- DİNÇ, E., BALEANU, D., and TAŞ, K., *Continuous wavelet analysis for the ratio signals of the absorption spectra of binary mixtures*
- ALZABUT, J., *Piecewise Constant Control of Boundary Value Problem for Linear Impulsive Differential Systems*
- ÜSTÜNDAĞ, Ö, and DİNÇ, E., *Wavelet analysis for the simultaneous determination of angiotensin II receptor antagonist and Hydrochlorothiazide in mixtures*
- CIOBANU, B., and RADINSCHI, I., *A Mathematical Method for Study of the Electromagnetic Field in a Rotating Universe*
- DİNÇ, E. and BALEANU, M.C., *Quantitative Resolution of a Binary Mixture of Quinapril and Hydrochlorothiazide by Continuous Wavelet Analysis*
- CIOBANU, B., and RADINSCHI, I., *One Computational Method for Modelling the Energy of a Dilaton-Maxwell Solution*
- YÜKSEL, S.E., EL-BAZ, A., and FARAG, A.A., *A Kidney Segmentation Framework for Dynamic Contrast Enhanced Magnetic Resonance Imaging*
- DİNÇ, E., BALEANU, D., and TAŞ, K., *A new fractional wavelet analysis for the composite signals of the components in binary mixtures*
- ÖZER, M., *The natural and anticausal paths for the dynamics of ion channel gates based on the path probability method*
- DARIESCU, M. A., DARIESCU, C. and MURARIU G., *Quantum Hall-type behavior of charged bosons*
- YILTAS¸ D., *The Comparison of Prime Number Test Algorithms Under Their Performances*
- CIOBANU, L., *Comparative Study Mathematical Methods for Modeling the Flexible Systems of Fabrication*
- KELEŞ, H., *On Some Numbers Related to the Differential Equation System of d-Dimensional Fuzzy Linear Spaces (FLS)*