INTERNATIONAL WORKSHOP ON MATHEMATICAL METHODS IN ENGINEERING

Cankaya University, Ankara, Turkey
April 27-29, 2017

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- Kenan TAS (Turkey)

Co-Chairs

- J.A.Tenreiro Machado (Portugal)
- Yangjian Cai (China)

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1. Foreword

"Mathematical Methods in Engineering, MME-2017" is held at Cankaya University, Ankara, Turkey during April 27 – 29 , 2017.

This workshop brings together 363 researchers from academia, industry, and engineers from 36 different countries, including North and East America, India, Europe, and the Far East.

The main theme of this current workshop is Fractional Calculus and Nonlinear Analysis with Engineering Applications. However, talks are not restricted to these subjects. The topics to be covered in seven special sessions are *"Fixed Point Theory, Ulam Stability and Related Applications"*, *"New Developments in Applications of Fractional Calculus", "Vortex Beams and Their Use in Optical Links", "Fractional-order Systems: Analysis, Synthesis and Their Importance for Future Design", "Applications of the Group Preserving Scheme and Reproducing Kernel Method", "Spectral Theory and Its Applications" and "Operations Research (OR) Methods for Advanced Mathematical Modelling"*.

I applaud the outstanding efforts of the participants, who share an uncompromising commitment to excellence, and commend the dedication of the members of the International Scientific Committee who make this event possible.

I would like to express our gratitude to Cankaya University for their support and sponsorship of the meeting. All local organizing committee members with leadership of Dumitru Baleanu and Co-Chairs J.A.Tenreiro Machado (Polytechnic of Porto, Portugal) and Yangjian Cai (Soochow University, China) as well as organizers of Special Sessions, and the members of Organizing Committee and International Scientific Committee deserve heartfelt thanks.

Finally, we are celebrating the twentieth anniversary of Cankaya University by the year of 2017. In this very special occasion, on behalf of the International Scientific Committee, I also wish to express my sincere thanks to all academicians, students, and other participants who have made valuable contributions for the actualisation of this conference.

Kenan Tas ; Chair of MME 2017
Department of Mathematics,
Cankaya University, Turkey

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	Blue Hall Special Session 1-2	Red Hall Special Session 4-1	Auditorium 2 Parallel Session 1-5 Mathematical Tools	Auditorium 3 Parallel Session 1-6 Mathematical Tools
	Chair: Alberto SIMOES **Co-Chair: Selma GULYAZ OZTURK**	**Chair: Dumitru BALEANU** **Co-Chair: Guo-Cheng WU**	**Chair: Ayse BUGATEKIN** **Co-Chair: Sinan ERCAN**	**Chair: Gokhan GOKDERE** **Co-Chair: Ahu ERCAN**
17:25 - 17:45	**Inci ERHAN** - Geraghty type contractions on Branciari b-metric spaces	**Guo-Cheng WU** - Discrete Time Control for Fractional Systems–Lyapunov Direct Method	**Mehmet ATCEKEN** - On the Quasi Conformal Curvature Tensor of a Normal Paracontact Metric Manifold	**Ahmet OTELES** - On The Inverse and The Powers of One Type of Skew Circulant Matrices
17:45 - 18:05	**Veysel NEZIR** - c_0 Can Be Renormed to Have The Fixed Point Property for Affine Nonexpansive Mappings	**Alireza Khalili GOLMANKALEH** - Differential Equations On The Fractal Tartan	**Muhammad Aslam NOOR** - Auxiliary Principle Technique for Strongly Mixed Variational-like Inequalities	**Ahu ERCAN** - Inverse Nodal Problem for Discontinuous Integro-Differential Operator
18:05 - 18:25	**Ozgur EGE** - Fixed Point of Various Contraction Conditions in Digital Metric Spaces	**Xiaoting LIU** - A Variable-Order Fractal Derivative Model for Anomalous Diffusion	**Murat BODUR** - A Generalization of Lupaş-Jain Operators	**Suleyman DIRIK** - Contact Pseudo-Slant Submanifolds of a LPSasakian Manifold
18:25 - 18:45	**Tugce ALYILDIZ** - Fixed Point Results For F-Contractions On Space With Two Metrics	**Shahram REZAPOUR** - On Dimension of The Set of Solutions for a Fractional Differential Inclusion	**Sinan ERCAN** - On Weak λ-statistically Convergence of Order α	**Gokhan GOKDERE** - Repairable Circular Consecutive-2-out-of-n: F System with Unequal Constant Failure Rates
18:45 - 19:05	**Ozgur EGE** - Fixed Point Theorem for Commuting Mappings in Digital Metric Spaces	**Omer ACAN** - On the Solutions of Systems of Differential Equations with Conformable Derivative	**Ayse BUGATEKIN** - Reliability of Consecutive k-out-of-n Systems with Non-Homogeneous Poisson Process	**Altaf Ahmad BHAT** – Dirichlet Averages of Wright-Type Hypergeometric Functıon and Their Q-Extension
19:05 - 19:25		**Mehmet Giyas SAKAR** - Numerical Solution of Fractional Bratu Type Equation by Legendre-Reproducing Kernel Method	**Fatma AYAZ** - A Numerical Approach For Solving Multi Term Fractional Order Differential Equations	**Ahu ERCAN** - Certain Stability Singular Sturm-Liouville Operator

● **SAHINER, Ahmet, ABDULHAMID, Idris A. M. ,** Suleyman Demirel University, TURKEY

A Global Optimization Technique by Using Auxiliary Function Method in Directional Search via Bezier Surface

We consider the problem of finding a global minimaizer point of a given nonsmooth unconstrained objective function. Our approach is to concentrate the variety of the objective function f along the direction d from a flow point x, to such an extent that we presented a thought of line search strategy. The algorithm of this method is proposed in order to make smooth the objective function, and then reduce it into one dimensional case at each direction, so that it could be minimized using an auxiliary function approach.

● **ABU-DAWWAS, Rashid,** Yarmouk University, JORDAN

Almost First Strongly Graded Rings

Let G be a group with identity e and R be a G-graded ring with unity 1. In this article, we introduce the concept of almost first strongly graded rings and prove that it properly contains the class of first strongly graded rings. We introduce when almost first strongly graded rings are separable over their identity component. We show that If R is an almost first strongly graded ring, then R/T is separable if and only if $1 \in tr_\xi(Z^*(T))$. Also, we introduce the concept of almost crossed product over the support and study its relations with almost first strongly graded rings.

● **ACAN, Omer*, BALEANU, Dumitru**,** *Siirt University, TURKEY, **Cankaya University, TURKEY & Institute of Space Sciences, ROMANIA

On the Solutions of Systems of Differential Equations with Conformable Derivative

The aim of this presentation to extend the applications of conformable differential transform method (CFDTM) and the conformable Adomian decomposition method (CADM). Also we aim to provide approximate solutions for nonlinear system of fractional differential equations with conformable derivative of the form:

$$\begin{aligned} T_{\alpha_1} u_1(t) &= f_1(t, u_1, u_2, \ldots, u_n) \\ T_{\alpha_2} u_2(t) &= f_2(t, u_1, u_2, \ldots, u_n) \\ &\vdots \\ T_{\alpha_n} u_n(t) &= f_n(t, u_1, u_2, \ldots, u_n) \end{aligned} .$$

For a better understanding of the subject, we apply these methods on the linear and nonlinear problems. Then we compare the results obtained for these two methods by the aid of tables and graphs.