CMES 2024 Symposium is supported by TUBITAK

ORAL

# PROGRAM BOOK

## 8th International Conference on Computational Mathematics and Engineering Sciences

17 – 19 May 2024,
Şanlıurfa – Türkiye

# THE EIGHTH INTERNATIONAL CONFERENCE ON COMPUTATIONAL MATHEMATICS AND ENGINEERING SCIENCES (CMES-2024), ŞANLIURFA/TÜRKİYE, MAY 17-19, 2024

The **Eighth International Conference on Computational Mathematics and Engineering Sciences (CMES-2024)** will be held in Harran University from **17- to 19 May 2024 in Şanlıurfa, Türkiye.** It provides an ideal academic platform for researchers and professionals to discuss recent developments in both theoretical, applied mathematics and engineering sciences. This event also aims to initiate interactions among researchers in the field of computational mathematics and their applications in science and engineering, to present recent developments in these areas, and to share the computational experiences of our invited speakers and participants.

The Organizing Committee



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# MESSAGE FROM THE GENERAL CHAIRS

Dear Conference Attendees,

We are honored to welcome you to the **Eighth International Conference on Computational Mathematics and Engineering Sciences (CMES-2024)** at Harran University from 17 to 19 May 2024 in Şanlıurfa City, Türkiye.

CMES, founded in 2016 at Faculty of Science and Techniques Errachidia Moulay Ismail University Morocco is an annual intarnational conference, which was very successful in the past years by providing opportunities to the participants in sharing their knowledge and informations and promoting excellent networking among different international universities. This year, the conference includes 200 extended abstracts, several submissions were received in response to the call for papers, selected by the Program Committee. The program features keynote talks by distinguished speakers such as:

**Dumitru Baleanu** from Institute of Space Sciences, Magurele-Bucharest, Romania; **Yusif Gasimov** from Azerbaijan University, Azerbaijan; **Naim L. Braha** from University of Prishtina, Kosovo; **Ekrem Savas** from Usak University, Türkiye; **Mehmet Emir Köksal** from Ondokuz Mayıs University, Türkiye; **Amdulla O. Mekhrabov** from Azerbaijan Technical University, Azerbaijan. The conference also comprises contributed sessions, posters sessions and various research highlights.

We would like to thank the Program Committee members and external reviewers for volunteering their time to review and discuss submitted abstracts. We would like to extend special thanks to the Honorary, Scientific and Organizing Committees for their efforts in making CMES-2024 a successful event. We would like to thank all the authors for presenting their research studies during our conference. We hope that you will find CMES-2024 interesting and intellectually stimulating, and that you will enjoy meeting and interacting with researchers around the world.

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***Hasan Bulut,***

Firat University, Elazig, Türkiye.

***Zakia Hammouch***,

ENS Meknes, Moulay Ismail University Morocco

## TOPICS

Control Theory,
Game Theory,
Applied Mathematics,
Financial Mathematics,
Artificial Intelligence,
Education Sciences,
Engineering Sciences,
Computer Science,
Information Technology,
Geometry and Its Applications,
Analysis and Its Applications,
Statistics and Its Applications,
Algebra and Its Applications,
Topology and Its Application,
Chaos and Dynamical Systems,
Cryptography and its Applications,
Fractional Calculus and Applications,
Economics and Econometric Studies,
Electrical and Electronic Engineering,
Defense industry and applications,
Mathematical Biology,
Computational Epidemiology,
Mathematical Chemistry,
Mathematics Education and Its Applications,
Numerical Methods and Scientific Programming,
Linearand Nonlinear programming and Dynamics,
Modeling of Bio-systems for Optimization and Control,
Ordinary, Partial, Stochastic and Delay Differential Equations,
Computational Fluids mechanics. Heat and Mass Transfers,
Earth Sciences,
Applied Sciences

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# PROCEEDINGS

Full version of submitted papers will be published in Special Volumes of reputed journals. Procedure, Guidelines and Checklist for the preparation and submission of papers to the Proceedings of CMES-2024 can be found in the journals websites. The journals in which selected and peer-reviewed full papers of CMES-2024 will be published are as follows:

**1. BOOK OF ABSTRACTS [Free of charge]**
If Authors submit ABSTRACT TEXTS, then, after getting referees evaluations for these abstracts, they will be published in ABSTRACT PROCEEDING BOOK of CMES-2024. For FULL TEXT PAPERS, Authors have to submit their FULL TEXT PAPERS online via submission system of CMES-2024. These FULL TEXT PAPERS will be published in FULL TEXT PROCEEDING BOOK of CMES-2024 after getting at least two positive reports.

**2. CONFERENCE PROCEEDINGS [Free of charge]**
At the beginning, if Authors submit FULL TEXT PAPERS, then, after getting at least two positive referee reports, FULL TEXT PAPERS will be published in FULL TEXT PROCEEDING BOOK of CMES-2024 with ISBN:77733 number. Therefore, Abstracts of these FULL TEXT PAPERS will **NOT** be published in ABSTRACT PROCEEDING BOOK of CMES-2024.

**3. FRACTAL AND FRACTIONAL JOURNAL [SCI-E],**
Selected papers from CMES-2024 will be published in a special issue dedicated to the Conference entitled "**Feature Papers for Mathematical Physics Section".**
https://www.mdpi.com/journal/fractalfract/special_issues/1TAP5BBZ45
This journal is indexed by SCI-E.

**4. PROCEEDINGS OF THE INSTITUTE OF MATHEMATICS AND MECHANICS [E-SCI]**
Selected papers from CMES-2024 will be published by https://proc.imm.az/special/

This journal is indexed by E-SCI.

**5.TURKISH JOURNAL OF SCIENCE, [FREE]**
Participants of CMES 2024 can submit their good quality papers to Turkish Journal of Science. After the peer review process, the papers will be published at TJOS. The authors must write "CMES 2024" as comments to the editor.
(Editor in Chief: Dr. Ahmet Ocak AKDEMİR) For on-line submission: https://dergipark.org.tr/tr/pub/tjos

**6.TURKISH JOURNAL OF INEQUALITIES, [FREE]**
"Participants of CMES 2024 can submit their good quality papers to Turkish Journal of Inequalities. Selected papers will be published at TJI after the peer review process. The participants can send their papers to erhanset@tjinequality.com. The authors must write "CMES 2024" as the subject.
(Editor in Chief: Prof. Dr. Erhan SET)
http://tjinequality.com/

**7. MATHEMATICS IN NATURAL SCIENCE (MNS)**
Authors can submit their full text paper directly to the journal by using the following link
https://www.isr-publications.com/mns

**8. MATHEMATICS IN ENGINEERING, SCIENCE AND AEROSPACE (MESA), [FREE, SCOPUS]**
"Selected papers will be published after peer review in the Journal of Mathematics in Engineering, Science and Aerospace (MESA)"
(Editor in Chief: Prof. Seenith Sivasundaram)
http://nonlinearstudies.com/index.php/mesa

**9. APPLIED MATHEMATICS AND NONLINEAR SCIENCES, [SCOPUS]**
Participants of CMES 2024 can submit their high quality full text papers to Applied Mathematics and Nonlinear Sciences by selecting CMES-2024 under the Select Article Type Menu.
https://www.editorialmanager.com/amns/default.aspx

**10. MATHEMATICAL MODELLING AND NUMERICAL SIMULATION WITH APPLICATIONS (MMNSA), [TR DİZİN]**
The Special Issue on "Advanced Methods of Modelling and Numerical Computation in Science and Engineering". Authors can submit their full text paper directly to the journal by using the information provided in the following link
https://mmnsa.org/index.php/mmnsa/special_issues/SI-CMES2023

**11. SYMMETRY [SCI-E] ;**
**SPECIAL ISSUE "ADVANCES IN MATRIX TRANSFORMATIONS, OPERATORS AND SYMMETRY"**
Authors can submit their full text paper directly to the journal by using the following link
https://www.mdpi.com/journal/symmetry/special_issues/Advances_Matrix_Transformations_Operators_Symmetry

**12. YUZUNCU YIL UNIVERSITY JOURNAL OF THE INSTITUTE OF NATURAL AND APPLIED SCIENCES (TR-Dizin)**
Authors can submit their full text paper directly to the journal by using the following link
https://dergipark.org.tr/tr/pub/yyufbed

**13. PEDAGOGICAL PERSPECTIVE (PEDPER)**
Pedagogical Perspective **(PedPer)** is an international, double blind reviwing, non-profit, professional scientific journal. PedPer is a journal that accepts manuscripts related to pedagogy and education. http://pedagogicalperspective.com/

# PLENARY & INVITED TALKS

# Generalised fractional operators with some applications

**Dumitru Baleanu**
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Institute of Space Sciences, Magurele-Bucharest, Romania
**dumitru.baleanu@lau.edu.lb**

**Abstract:** We know that fractional calculus deals with the study of so-called fractional order integral and derivative operators over real or complex domains, and their applications. However, a clear definition of a generalized fractional operator is needed. In this talk I will concentrate on solving this important issue and provide some real-world applications.

**Keywords:** fractional calculus, generalised fractional operators

**References**

[1] Al-Refai, M, Baleanu, D (2022), On an extension of the operator with Mittag-Leffler kernel, Fractals, 30(5): 2240129.
[2] Anwar A, Baleanu D (2023), On two backward problems with Dzherbashian-Nersesian operator, 8(1): 887-904, AIMS Mathematics.

## On Some Inverse Problems In Untraditional Formulation

Yusif Gasimov[1]
[1]Azerbaijan University, Baku, Azerbaijan; [2]Baku State University, Baku, Azerbaijan
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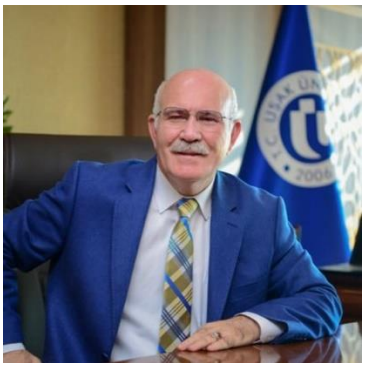
**Abstract:** The talk is devoted to the solution of some type of inverse problems. Usually, when solving inverse problems one has to recover the equation or boundary conditions describing the process using given additional conditions. As such conditions usually some signals received from the object may be taken. These signals in mathematical formulation are called spectral data that must satisfy some conditions. The searched objects are some functions, coefficients in the equations or in the boundary conditions. The problems considered in the talk are different from the traditional ones. Here we consider the inverse problems for some operators and the searched object are not functions as usual but are domains. We try to identify the domain where the process is going on. To solve such problems one meets some serious mathematical problems. The first problem is the choice of additional conditions – spectral data that satisfies all necessary conditions and allows to find the domain. The second problem is to construct a constructive mathematical apparatus that allows to work with functionals of the domains. To do this the space of the domains should be developed with all necessary mechanisms. In the work the space of the convex bounded domains is constructed and a scalar product is defined there. Then the definition of the s-functions expressed by the spectral data of the Schrodinger operator is given. A scheme is proposed to solve the following inverse spectral problem with respect to domain: Define a domain on the boundary of which the s-functions of the Schrodinger operator are equal to the given functions.

**Keywords:** Schrödinger operator, convex bounded domains.

### References

1. Pontryagin L.S., Boltyansky V.G., Gomkrelidze R.V., Mishchenko E. (1969). Mathematical theory of optimal processes. Moscow, Nauka, 1969, 384 p.
2. Gabasov R., Kirllova F.M. (1981). Optimization Methods. Minsk, BSU, 1981, 350 p.



# THE SECRET BEHIND WESTERN CIVILIZATION: ISLAMIC SCIENCE

Ekrem Savas[1]

[1] Department of Mathematics, Usak University, Usak, Turkey

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**Abstract**

In this study; what is the place of the Islamic Cultural world in the history of sciences? I will try to explain this. I will also explain that Western civilization is the continuation of Islamic civilization under different geographical and economic conditions.

**Keywords:** Islamic culture; Western civilization

## REFERENCES

1. Fuat sezgin, İslam Bilim tarihi, Timaş yayınları, 2015.

**Fractional Order Thinking and Proportional-Integral-Derivative (PID) Control**

Mehmet Emir KÖKSAL
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**Abstract:** The subject of fractional calculus has become very well-known and popular in recent decades. This is because fractional-order models simulate the properties of real systems better than whole order models. Therefore, fractional calculus is used as a powerful and important tool for defining, investigating, analyzing, solving, and understanding many different chemical, engineering, mathematical, physical, statistical, and social problems in real life. In this lecture, the basic concepts of fractional calculus and various common definitions of fractional integration and differentiation are introduced. Various applications in science and engineering are mentioned. In particular, the design of fractional-order proportional integral derivative controllers is emphasized. Mathematical formulations of five design specifications corresponding to the 3D drawing are presented with program implementations. The system design specifications of phase margin, gain margin, phase flatness, low-frequency output noise suppression, and high-frequency noise suppression are considered for designing controllers using the presented 3D graphical method. Each specification is represented by some surfaces that define the boundaries of the permissible parameters of PID control coefficients. The requirements are mapped in the 3D Euclid space by 3D surfaces and/or lines so that the proportional, integral, derivative control coefficients can be optimally chosen to meet the given specifications in an optimum way and to allow trade-off or compromise.

**Keywords:** Fractional calculus, Fractional order modeling, PID controller, FOPID controller, 3D plots.

**References:**

1. M.E. Koksal, Time and frequency responses of non-integer order RLC circuits, AIMS Mathematics, 4 (1) 61-75, 2019
2. M.E. Koksal, Stability analysis of fractional differential equations with unknown parameters*, Nonlinear Analysis: Modeling and Control,* 24 (2) 224-240, 2019
3. M.E. Koksal, Explicit commutativity conditions for second-order linear time-varying systems with non-zero initial conditions, *Archives of Control Sciences,* 29 (3) 413-432, 2019

**Design and Development of Advanced Magnetic Materials via Computational Material Science for Technological Applications**

Amdulla O. Mekhrabov[1]* and M. Vedat Akdeniz[2]

[1]Novel Materials and Nanotechnologies Institute, Azerbaijan Technical University (AzTU), Az1073, Baku, Azerbaijan, *emdulla.mehrabov@aztu.edu.az
[2]Novel Alloys Design and Development Lab (NOVALAB), Department of Metallurgical and Materials Engineering (Met E), Middle East Technical University (METU), 06800-Ankara, Turkey

**Abstract:** The presentation will be an overview of the main research thrusts at the "Novel Alloys Design and Development Lab" (NOVALAB) of MetE-METU and at "Novel Materials and Nanotechnologies" Institute of Azerbaijan Technical University (AzTU) in the designing, development and utilizations of advanced multicomponent magnetic materials for technological applications. Fundamental principles and main aspects of ***Computational Materials Science (CMS)*** for ***modeling and simulation based "alloy design"*** which has been developed over 45 years by Prof. Mekhrabov, will be presented.

**Keywords:** Modeling, Simulation, Soft Magnetic Materials, Metallic Glasses, Nanostructured alloys, Glass Formation Ability, Monte Carlo, Reverse Monte Carlo, Molecular Dinamics

**REFERENCES**

1. Aykol M., Mekhrabov A.O. and Akdeniz M.V., Nano-scale Phase Separation in Amorphous Fe-B Alloys: Atomic and Cluster Ordering, Acta Mater., vol. 57, 171- 81, 2009.

2. Aykol M., Akdeniz M.V. and Mekhrabov A.O., Solidification behavior, glass forming ability and thermal characteristics of soft magnetic Fe-Co-B-Si-Nb-Cu bulk amorphous alloys, Intermetallics, vol. 19, 1330-1337, 2011.

3. M.V. Akdeniz and A.O. Mekhrabov, Size dependent stability and surface energy of amorphous FePt nanoalloy, J. of Alloys and Comp., vol. 788, 787-798, 2019.

**Approximation by modified ($p$, $q$)-gamma-type operators**

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ILIRIAS Research Institute, Janina, No-2, Ferizaj, 70000, Kosovo

**Abstract**

The main object of this paper is to construct a new class of modified (p, q)-Gamma-type operators. For this new class of operators, in section one, the general moments are find; in section two, the Korovkin-type theorem and some direct results are proved by considering the modulus of continuity and modulus of smoothness and their behavior in Lipschitz-type spaces. In section three, some results in the weighted spaces are given, and in the end, some shape-preserving properties are proven.

**Keywords:** Modified ($p$, $q$)-Gamma-type operators; Modulus of continuity; Shape-preserving approximation

**References**

1. Altomare, F., Campiti, M.: Korovkin-Type Approximation Theory and Its Application. Walter de Gruyter Studies in Math., vol. 17. de Gruyter & Co., Berlin (1994)

2. Atlihan, O.G., Unver, M., Duman, O.: Korovkin theorems on weighted spaces: revisited. Period. Math. Hung. 75(2), 201–209 (2017)

## 5/17/2024

| | |
|---|---|
| **09:30-10:00** | **OPENING CEREMONY-Faculty of Arts and Sciences-Big Lecture Hall**<br>Prof. Dr. Mehmet Tahir GÜLLÜOĞLU-Rector of Harran University<br>Prof. Dr. Fahrettin GÖKTAŞ-Rector of Firat University<br>Prof. Dr. Zakia HAMMOUCH-Chair of CMES<br>Prof. Dr. Rifat ÇOLAK-Department of Firat University |
| **10:00-10:30** | **PLENARY LECTURE-Faculty of Arts and Sciences-Big Lecture Hall**<br>Speaker: Prof. Dr. Dumitru Baleanu<br>Title: Generalised fractional operators with some applications<br>Chair: Prof. Dr. Yusif Gasimov |
| **10:30-10:45** | **Coffee Break** |
| **10:45-11:15** | **PLENARY LECTURE-Faculty of Arts and Sciences-Big Lecture Hall**<br>Speaker: Prof. Dr. Yusif Gasimov<br>Title: On Some Inverse Problems In Untraditional Formulation<br>Chair: Prof. Dr. Alaattin Esen |
| **11:15-11:30** | **Coffee Break** |
| **11:00-12:00** | **PLENARY LECTURE-Faculty of Arts and Sciences-Big Lecture Hall**<br>Speaker: Prof. Dr. Ekrem SAVAŞ<br>Title: The Secret Behind Western Civilization: Islamic Science<br>Chair: Prof. Dr. Rifat Çolak |
| **12:45-14:00** | **Lunch (Central Dining Hall/Cafeteria)** |

**Central Halls 1st Floor**

**Hall-4**

| | | |
|---|---|---|
| **14:00-15:15 17.05.2024** | **Chair** | **Prof. Dr. Fatma AYAZ** |
| | Authors | Titles |
| | Ambreen Siyal, Kashif Ali Abro | Repel Effects of Heat Transference from Brinkman Fluid under Ferromagnet via Non-Singularized Differentials |
| | Abd Essamed Guettouche, Chaabane Djama | Optimizing a linear function over the set of efficient solutions: Case of the stochastic set-covering problem. |
| | Hasan Karaçallı, Orhan Özdemir | On the Oscillation of a Second Order Differential Equation With a Superlinear Neutral Term |
| | Orhan Özdemir | Oscillation of Second Order Neutral Emden-Fowler Differential Equations |
| | Ercan Tunç | Improved oscillation criteria for third-order half-linear delay differential equations via canonical transform |
| **15:15-15:30** | **Coffee Break** | |

| Hall 4 | | |
|---|---|---|
| **15:30-16:45 17.05.2024** | **Chair** | **Doç. Dr. Ömer ORUÇ** |
| | Authors | Titles |
| | Meltem Uzun | On Wave Structures Of Time Conformable Zakharov–Kuznetsov Equation |
| | Ömer Oruç | A Meshfree Method For Numerical Solutions Of Some Reaction-Diffusion Type Equations |
| | Gülşen Orucova Büyüköz, Hüseyin Hakli | Implementation Of Battle Royale Optımızatıon Algorıthm For 0-1 Knapsack Problem Usıng S-Shaped And V-Shaped Transfer Functıons |
| | Gülden Mülayim | Model Order Reduction for Shigesada-KawasakiTeramoto Cross-Diffusion Systems |
| | Kübra Heredağ, Fatma Ayaz | Examination Of Mhd Effect and Fractional Derivative Model Between Porous Medium Parallel Plates In TimeDependent Flow |
| **Hall 6** | | |
| **14:00-15:15 17.05.2024** | **Chair** | **Prof. Dr. Ercan ÇELİK** |
| | Authors | Titles |
| | Bülent Oruç, Mustafa Berkay Doğan, Emir Balkan, İlkin Özsöz, Sunay Mutlu, Aybala Büşra Çalışkur | Gravity Modelling And Earthquake Analysis For East Anatolian Fault Zone And Surrounding Area |
| | Gözde Karataş Baydoğmuş, Şahsene Altınkaya | A Survey On Different Statistical Distributions Using Python Programming |
| | Gözde Karataş Baydoğmuş, Şahsene Altınkaya, Nahide Zeynep Cicekli | Exploring Machine Learning Techniques For Gender Voice Recognition Using Limited Speech Data |
| | Bülent Oruç, Mustafa Berkay Doğan, Emir Balkan, İlkin Özsöz, Sunay Mutlu, Aybala Büşra Çalışkur | Gravity Modelling And Earthquake Analysis For East Anatolian Fault Zone And Surrounding Area |
| | Ayse Nur Akkilic, Hasan Bulut | Some behaviors of the analytical solution of the Calogera-Bogoyevlenski Schiff equation |
| **15:15-15:30** | **Coffee Break** | |

| Hall 6 | | |
|---|---|---|
| **15:30-16:45 17.05.2024** | **Chair** | **Prof. Dr. İsmail Onur KIYMAZ** |
| | Authors | Titles |
| | Metin Turgay | Approximation Properties of Kantorovich Type Sampling Series In Weighted Spaces of Functions |
| | Gülay Oğuz, Abdülkadir Olcay | The Relations of Soft Topological Hyperstructures |
| | Gülay Oğuz, Ayhan Yüksel | Rough Approximation Operators on Algebraic Hyperstructures |
| **Hall 7** | | |
| **14:00-15:15 17.05.2024** | **Chair** | **Prof. Dr. Alaattin ESEN** |
| | Authors | Titles |
| | Muhammed Huzeyfe Uzunyol, Berat Karaagac, Alaattin Esen | Crank-Nicolson Finite Difference Treatment of Time Fractional Klein Gordon Equation |
| | Sibel Özer, Yusuf Uçar, Damla Özçelik | A Study On Numerical Solution of the Regularized Long Wave Equation |
| | Hatice Karabenli, Yusuf Uçar, E. Nesligül Aksan, Alaattin Esen | A Comparative Study Of Finite Element Methods With Cubic And Quintic Basis Functions For The Smch Equation |
| | Nuri Murat Yağmurlu, Selçuk Kutluay,Ali Sercan Karakaş | Cubic Hermite Collocation Method For The Equal Width Wave Equation |
| | Enes Ata, İ. Onur Kıymaz, Hacı Mehmet Başkonuş | A New Fractional Modelling Of Rc Electric Circuit |
| **15:15-15:30** | **Coffee Break** | |
| **Hall 7** | | |
| **15:30-16:45 17.05.2024** | **Chair** | **Prof. Dr. Onur Alp İLHAN** |
| | Authors | Titles |
| | Merve Zeynep Kaya, Ercan Çelik, Mesut Karabacak | Solution of Fractional Order Partial Differential Equations with Hosoya Neural Network |
| | Zulqurnain Sabir, Ayse Nur Akkilic, Hasan Bulut | Designing a novel radial basis process for the nonlinear prey-predator system |
| | Melik Şenyuva, Özlem Kırcı, Hasan Bulut | New Exact Wave Solutions of the New Hamiltonian Amplitude Equation Through (m + 1/G')-Expansion Method |
| | Arif Özkul, Tolga Aktürk, Hasan Bulut | Modified Kudryashov Method for Solving Van der Waals Gas System |
| | Sıdıka Şule Şener Kılıç, Adem Irmak, Arzu Aykut | Ritz Method for the Numerical Solution of the Heat Equation |

| Hall 9 | | |
|---|---|---|
| **14:00-15:15 17.05.2024** | **Chair** | **Prof. Dr. Nuri Murat YAĞMURLU** |
| | Authors | Titles |
| | Sadettin Kursun | Some New Results for Exponential-tpye Durrmeyer Sampling Series |
| | Fatma Almaz | The Specific Energy And Specific Angular Momentum On Rotational Surfaces In Pseudo Euclidean 4-Space With Index 2 |
| | "Mahmut Ozusan , Hikmet Kemaloğlu" | Expansion Theorem for Sturm-Liouville Problem including Local Derivative |
| | Yasemin Bakır, Oya Mert, Gülay Karahanlı | On Using A New Approach To Determine The Root Of Nonlinear Equations |
| | Mehmet Uçar, Aynur Yalçıner | On The Uniformly Parikh-Friendly Words |
| **15:15-15:30** | **Coffee Break** | |
| **Hall 9** | | |
| **15:30-16:45 17.05.2024** | **Chair** | **Prof. Dr. Murat KARAKAŞ** |
| | Authors | Titles |
| | Fatih Avşar | Fixed Points of multiplicative Zamfirescu Mapping in Multiplicative Metric Spaces |
| | Koray İbrahim Atabey, Muhammed Recai Türkmen, Mikail Et, Muhammed Çinar | q-Bell Statistical Convergence |
| | Funda Türk,Samet Erden | Ostrowski type inequalities via fractional integrals and related results |
| | Funda Türk, Samet Erden, Burçin Gökkurt Özdemir | Exponential Inequalities Involving Riemann-Liouville Fractional Integral |
| | Koray İbrahim Atabey, Murat Karakaş | q -Pell Sequence Spaces |
| **Central Halls 2nd Floor** **Hall 1** | | |
| **14:00-15:15 17.05.2024** | **Chair** | **Prof. Dr. Bahadır YÜZBAŞI** |
| | Authors | Titles |
| | Bahadır Yüzbaşı | Housing Price Determinants: A Big Spatial Data Analysis |
| | Muhammed Veysi Güler, Muhammed Emre Çolak | Detecting Android Malware Using LightGBM: A Study on the TUANDROMD Dataset |
| | Ömer Miraç Kökçam, Muhammed Emre Çolak, Özal Yıldırım | Voting Classifier Based Explainable Artificial Intelligence Method For Detecting Glioma Grading Using Clinical And Mutation Features |
| | Ayşe Metin Karakaş, Sinan Çalık | The New Gompertz Distribution |
| **15:15-15:30** | **Coffee Break** | |

| Hall 1 | | |
|---|---|---|
| **15:30-16:45 17.05.2024** | **Chair** | **Prof. Dr. Zuhal KÜÇÜKASLAN YÜZBAŞI** |
| | Authors | Titles |
| | Semih Geçen, İlhan İçen, A. Fatih Özcan | Grupoid Atlases |
| | M. Mustafa Beydağı, A. Fatih Özcan, İlhan İçen | Properties of Rough Subgrupoids |
| | Zühal Küçükaslan Yüzbaşı | Motion Of The Filament In Minkowski Space |
| | Mustafa Beydağı, A. Fatih Özcan, İlhan İçen | Local Rough Equalities And Local Rough Equivalences Of Sets |
| | Semih Geçen,İlhan İçen, A.Fatih Özcan | Modern Set Theories Fuzzy, Rough, Soft, Near Sets And The Relationships Between Them |
| **Hall 3** | | |
| **14:00-15:15 17.05.2024** | **Chair** | **Doç. Dr. Ebru CAVLAK ASLAN** |
| | Authors | Titles |
| | Neşe İşler Acar | A Collocation Method for Numerical Solution of Linear Integro-Differential Equations by Stancu Polynomials |
| | Ugur Bayrakcı, Seyma Tuluce Demiray, Huseyin Yıldırım | New soliton solutions with generalized exponential rational function method |
| | Hasan Gündüz, Mesut Karabacak, Ercan Çelik | The Computation Of H∞-Norm Of Transfer Functions Of Linear Daes Via Two-Step Method |
| | Derya Deniz, Ebru Cavlak Aslan | New Optical Soliton Solutions of the NLS Equation with Jacobi Elliptic Function Expansion Method |
| | Md. Nur Alam, Onur Alp İlhan, Md. Shahid Hasan, Uzzal Saha, F. Berna Benli | Some New Results Of The Nonlinear Conformable Model Arising In Plasma Physics |
| **15:15-15:30** | **Coffee Break** | |

| Hall 3 | | |
|---|---|---|
| **15:30-16:45 17.05.2024** | **Chair** | **Doç. Dr. Esin İLHAN** |
| | Authors | Titles |
| | Orhan Dalkılıç, Esin İlhan, Hasan Bulut | Comparative Analysis of Rankings and Preference Values for Fuzzy Decision-Making Approaches in Reducing Unnecessary Biopsies |
| | Nurettin Bağırmaz | On The Construction Of A Topology On A Rough Semigroup |
| | Tuğba Yavuz | On a Coefficient Problem For Functions Belongs to Certain Subclass of Univalent Functions |
| | Elif Nur Yıldırım, Münevver Tuz | Analysis Of Mathematical Model Wave Solutions With The Exponential Function Method |
| | Cemil İnan | Examining The Relationship Between Integral Equations And Differential Equations |
| | Tuğçem Partal, Melike Kakşi | Comparison Of Deterministic And Stochastic Dynamics Of Sir Model |
| **Hall 4** | | |
| **14:00-15:15 17.05.2024** | **Chair** | **Doç. Dr. Özlem DEFTERLİ** |
| | Authors | Titles |
| | Özlem Defterli, Ayşe Özmen | GPLM for Regression of Complex Systems |
| | Ece Atlan, Handan Öztekin | Lanar Congruent Curves According To Caputo Fractional Derivative |
| | Emin Beso, Senada Kalabusi´c, Esmir Pilav, Arzu Bilgin | Dynamics Of A Plant-Herbivore Model Subject To Allee Effects With Logistic Growth Of Plant Biomass |
| **15:15-15:30** | **Coffee Break** | |
| **17:00-17:30** | **PLENARY LECTURE-Faculty of Arts and Sciences-Big Lecture Hall** | |
| | Speaker: Prof. Dr. Mehmet Emir KÖKSAL | |
| | Title: Fractional Order Thinking and Proportional-Integral-Derivative (PID) Control | |
| | Chair: Prof. Dr. Hacı Mehmet Baskonuş | |
| **17:45-18:30 19:30-23:00** | **Dinner (Central Dining Hall/Cafeteria) Urfa Sira Night at Gulizar Mansion** | |

## 5/18/2024

**Education Faculty Halls Entry Floor**

**Gazali**

| | | |
|---|---|---|
| **10:00-11:15 18.05.2024** | **Chair** | **Doç. Dr. Mahmut MODANLI** |
| | Authors | Titles |
| | Ulviye Demirbilek, Mehmet Şenol, Hasan Bulut | Solving Dynamic Complexity with Analytical Solution Techniques |
| | Shorish Omer Abdulla, Mahmut Modanlı | Analytic Solutions for Third-Order Fractional Partial Differential Equation Using Modified Double Laplace Transform Method |
| | Natavan Allahverdiyeva, Yusif Gasimov | Some Properties of the Eigenfequencies on the Domain of the Plate |
| | Mehmet Aydin, Resat Yilmazer | Fractional Solutions of the General Class of Non-Fuchsian Differential Equations |
| | Aslı Alkan, Tolga Aktürk, Hasan Bulut | The Novel Numerical Solutions of the Cahn-Hilliard Equation via the Novel Hybrid Method |
| | Aslı Alkan, Tolga Aktürk, Hasan Bulut | The New Numerical Solutions of the Navier-Stokes Equation with the New Hybrid Method |
| | Aslı Alkan, Tolga Aktürk, Hasan Bulut | The Novel Numerical Solutions of the Rosenau-Hyman Equation via the Novel Hybrid Method |
| **11:15-11:30** | **Coffee Break** | |

**Farabi**

| | | |
|---|---|---|
| **10:00-11:15 18.05.2024** | **Chair** | **Prof. Dr. Alper Osman ÖĞRENMİŞ** |
| | Authors | Titles |
| | Abdulkadir Eren, Ahmet Kaysal | Enhancing Microgrid Stability with Fuzzy Logic Controller |
| | Abdulkadir Eren, Hayriye Sarısoy Kübra Kaysal | Forecasting Seasonal Energy Production with K-Nearest Neighbours Regression Method |
| | Meltem Öğrenmiş | Curvatures Computation For Curves In Affine Space Using Fractional Calculus |
| | Meltem Öğrenmiş | Expanding Fractional Equiaffine Curvatures Of Plane Curves |
| | Kübra Kaysal, Fatih Onur Hocaoğlu | A Research on The Effect of Class Numbers for An Algorithmical Based Solar Radiation Class Estimation |
| | Nejla Gürefe | The Concretization Process of the “Pyramid” Concept;Deaf Student Example |
| | Yener Altun, Şakir İşleyen | A Research On The Qualitative Behavior Of Solutions Of Neutral Systems With Periodic Coefficients |
| **11:15-11:30** | **Coffee Break** | |

| | | |
|---|---|---|
| **Education Faculty Halls 1st Floor** | | |
| **Sokrates** | | |
| **10:00-11:15 18.05.2024** | **Chair** | **Prof. Dr. Fevzi ERDOĞAN** |
| | Authors | Titles |
| | Oğuzhan Demirel, Durmuş Yarımpabuç | Thermal Analysis Of Functionally Graded 2d Plate |
| | Özlem Cerit, Durmuş Yarımpabuç | Forced Vibration Analysis Of Functionally Graded Rods By Pseudospectral Chebyshev Method |
| | Enver Temo, Mehmet Eker, Durmuş Yarımpabuç | Pseudospectral Chebyshev Approach For Nonlinear Temperature Distributions In Functionally Graded Disks |
| | Tolga Aktürk | Effective Method for Analyzing Nonlinear Mathematical Model Behavior |
| | Kübra Elif Akbaş, Mahmut Işık | Weighted Statistical Convergence in Probability |
| | Yusuf Gürefe | Modified Exponential Function Method for TwoDimensional Nonlinear Mathematical Model |
| **11:15-11:30** | **Coffee Break** | |
| **Sokrates** | | |
| **İbni-Rüşt** | | |
| **10:00-11:15 18.05.2024** | **Chair** | **Doç. Dr. Fatma Berna BENLİ** |
| | Authors | Titles |
| | Şeyma Firdevs Korkmaz, Hasan Bulut, Gülnur Yel | Modeling Epidemics Using Ising Model and Voronoi Tessellation: A Novel Study and Epidemiological Applications |
| | Muhteşem Demir, Erhan Pişkin | Growth Of Solution For Reaction Diffusion Equation With Kirchhoff Term And Multiple Nonlinearities |
| | Nebi Yılmaz, Erhan Pişkin | Decay of Solutions for a Nonlinear Hyperbolic-type Equations with Variable Exponents |
| | Sebahattin Ertas, Hasan Bulut,Yusuf Pandir | New Exact Solutions of the (1+1) dimensional nonlinear Ostrovsky equation |
| | Ayşe Fidan, Erhan Pişkin | Blow up at finite time for sixth-order evolution equations with time dependent coefficient |
| | Beyhan Kemaloglu, Gülnur Yel, Hasan Bulut | Analytical Solution of Hirota Equation by Rational SineGordon Method |
| **11:15-11:30** | **Coffee Break** | |
| **12:30-14:00** | **Lunch** (Central Dining Hall/Cafeteria) | |
| **19:30-23:30** | **Urfa Sira Night at Harran University Uygulama Oteli** | |
| **SOCIAL ACTIVITIES** | | |
| **18.05.2024** | 14:00-17:00 | **Göbeklitepe and Museum Tours** (Please have your citizenship card with you) (Please upload it to the Museum Card application) |
| **19.05.2024** | 10:30-12:30 | **Fish Lake Tour** |

**8th International Conference on Computational Mathematics and Engineering Sciences**

17 – 19 May 2024,
Şanlıurfa – Türkiye