C O M M U N I C A T I O N S

FACULTY OF SCIENCES
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES
DE L'UNIVERSITE D'ANKARA

Series A1: Mathematics and Statistics

VOLUME: 71 **Number: 3** **YEAR: 2022**

Faculty of Sciences, Ankara University
06100 Beşevler, Ankara-Turkey
ISSN 1303-5991 e-ISSN 2618-6470

C O M M U N I C A T I O N S

FACULTY OF SCIENCES
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES
DE L'UNIVERSITE D'ANKARA

Series A1: Mathematics and Statistics

Volume:71 **Number: 3** **Year:2022**

Owner (Sahibi)
Sait HALICIOĞLU, Dean of Faculty of Sciences

Editor in Chief (Yazı İşleri Müdürü)
Fatma KARAKOÇ

Associate Editor
Arzu ÜNAL

Managing Editor
Elif DEMİRCİ

Area Editors

Nuri OZALP (Applied Mathematics)

Murat OLGUN (Functional Analysis, Fuzzy Set Theory, Decision Making)

Burcu UNGOR (Module Theory)

Halil AYDOGDU (Stochastic Process-Probability)

Arzu ÜNAL (Partial Differential Equations)

Gülen TUNCA (Analysis-Operator Theory)

Elif TAN (Number Theory, Combinatorics)

Olcay ARSLAN (Robust Statistics-Regression-Distribution Theory)

Elif DEMİRCİ (Mathematical Modelling-Comput. Mathematics)

Mehmet UNVER (Analysis, Fuzzy Set Theory, Decision Making)

Ahmet ARIKAN (GroupTheory)

Birdal SENOGLU (Theory of Statistics & Applied Statistics)

Hijaz AHMAD (Numerical Analysis-Mathematical Techniques)

Oktay DUMAN (Summability and Approximation Theory)

Tuğce ÇALCI (Ring Theory)

Yılmaz AKDİ (Econometrics-Mathematical Statistics)

Gizem SEYHAN OZTEPE (Differential Equations)

İshak ALTUN (Topology)

İsmail GÖK (Geometry)

Mehmet YILMAZ (Computational Statistics)

Shengda ZENG (Mathematical modeling of physical systems, Applications of PDEs)

Sevda SAĞIROĞLU PEKER (Topology)

Cemal ATAKAN (Multivariate Analysis)

Editors

P. AGARWAL
Anand Int. College of Eng., INDIA

R. P. AGARWAL
Texas A&M University, USA

M. AKHMET
METU, TURKEY

A. ATANGANA
University of the Free State, SOUTH AFRICA

A. AYTUNA
METU, retired, TURKEY

E. BAIRAMOV
Ankara University, TURKEY

H. BEREKETOĞLU
Ankara University, TURKEY

H. BOZDOĞAN
University of Tennessee, USA

C. Y. CHAN
University of Louisiana, USA

A. EDEN
Boğaziçi University, retired, TURKEY

A. B. EKİN
Ankara University, TURKEY

D. GEORGIOU
University of Patras, GREECE

V. GREGORI
Universitat Politècnica de València, SPAIN

V. S. GULIYEV
Nat. Acad. of Sciences, AZERBAIJAN

A. HARMANCI
Hacettepe University, TURKEY

F. HATHOUT
Université de Saïda, ALGERIA

K. ILARSLAN
Kırıkkkale University, TURKEY

A. KABASINSKAS
Kaunas Univ. of Tech. LITHUANIA

V. KALANTAROV
Koç University, TURKEY

A. M. KRALL
The Pennsylvania State University, USA

H. T. LIU
Tatung University, TAIWAN

V. N. MISHRA
Indira Gandhi National Tribal University, INDIA

C. ORHAN
Ankara University, TURKEY

M. PITUK
University of Pannonia, HUNGARY

S. ROMAGUERA
Universitat Politècnica de València, SPAIN

H. M. SRIVASTAVA
University of Victoria, CANADA

I. P. STAVROULAKIS
Univ. of Ioannina, GREECE

S. YARDIMCI
Ankara University, TURKEY

This Journal is published four issues in a year by the Faculty of Sciences, University of Ankara. Articles and any other material published in this journal represent the opinions of the author(s) and should not be construed to reflect the opinions of the Editor(s) and the Publisher(s).

Correspondence Address:
COMMUNICATIONS EDITORIAL OFFICE
Ankara University, Faculty of Sciences,
06100 Tandoğan, ANKARA – TURKEY
Tel: (90) 312-2126720 Fax: (90) 312-2235000
e-mail: commun@science.ankara.edu.tr
http://communications.science.ankara.edu.tr/index.php?series=A1

Print:
Ankara University Press
İncitaş Sokak No:10 06510 Beşevler
ANKARA – TURKEY
Tel: (90) 312-2136655

©Ankara University Press, Ankara 2022

C O M M U N I C A T I O N S

FACULTY OF SCIENCES
UNIVERSITY OF ANKARA

DE LA FACULTE DES SCIENCES DE
L'UNIVERSITE D'ANKARA

Series A1:Mathematics and Statistics

Volume: 71 **Number: 3** **Year: 2022**

Research Articles

Sumeera SHAFI, A new system of generalized nonlinear variational inclusion problems in semi-inner product spaces..... 616
Ayşe KABATAŞ, On eigenfunctions of Hill's equation with symmetric double well potential..... 634
Selim Orhun SUSAM, Tail dependence estimation based on smooth estimation of diagonal section..... 650
Shabir Ahmad MALIK, Ashish KUMAR, On the maximum modulus of a complex polynomial..... 666
Haşim CAYIR, Tarana SULTANOVA, α-Sasakian, β-Kenmotsu and trans-Sasakian structures on the tangent bundle..... 682
Rasoul MOUSAREZAEI, Bijan DAVVAZ, Soft semi-topological polygroups..... 689
Esra KAYA, A different approach to boundedness of the B-maximal operators on the variable Lebesgue spaces..... 710
Zeynep DURNA, Ahmet Sinan OZKAN, Eigenvalue problems for a class of Sturm-Liouville operators on two different time scales..... 720
Vimlesh Kumar GUPTA, Saurabh PORWAL, Omendra MISHRA, Multivalent harmonic functions involving multiplier transformation..... 731
Nilay ŞAHİN BAYRAM, Power series methods and statistical limit superior..... 752
Bendaoud ABED SID-AHMED, Bouharket BENAISSA, Abdelkader SENOUCI, Some Hardy-type integral inequalities with sharp constant involving monotone functions..... 759
Emrah KORKMAZ, Combinatorial results of collapse for order-preserving and order-decreasing transformations..... 769
Mert Sinan OZ, Coefficients of Randic and Sombor characteristic polynomials of some graph types..... 778
Saheed Olaosebikan AREMU, Ali OLGUN, On difference of bivariate linear positive operators..... 791
Hasan KARA, Hüseyin BUDAK, Muhammad Aamir ALI, Fatih HEZENCI, On inequalities of Simpson's type for convex functions via generalized fractional integrals..... 806
Süleyman ŞENYURT, Davut CANLI, Kebire Hilal AYVACI, Associated curves from a different point of view in E^3..... 826
Döne KARAHAN, On the solutions of the q-analogue of the telegraph differential equation..... 846
Burcu BEKTAŞ DEMİRCİ, Murat BABAARSLAN, Zehra ÖGE, Timelike loxodromes on Lorentzian helicoidal surfaces in Minkowski n-space..... 856
Chhapikul MIAH, MD. Monirul ISLAM, Shyamapada MODAK, Sukalyan MISTRY, Role of ideals on σ-topological spaces..... 870
Çetin YILDIZ, Mustafa GÜRBÜZ, The Minkowski type inequalities for weighted fractional operators..... 884

Erratum

Fatiha BOUABDALLAH, Zohra BENDAOUD, Erratum to: Zero-based invariant subspaces in the Bergman space..... 898

©Ankara University Press, Ankara 2022

©Ankara University Press, Ankara 2022