VOLUME 47 | ISSUE 2 | YEAR 2023
ISSN 1300-0098 • E-ISSN 1303-6149

TURKISH JOURNAL OF MATHEMATICS

http://journals.tubitak.gov.tr/math/

Published by the Scientific and Technological Research Council of Turkey

TÜBİTAK

TURKISH JOURNAL OF MATHEMATICS

Editor-in-Chief **Adnan TERCAN**, Hacettepe University, Turkey
Assistant Editor-in-Chief **Aydın GEZER**, Atatürk University, Turkey

VOLUME 47 • ISSUE 2 • 2023
ISSN 1300-0098 • E-ISSN 1303-6149

SCOPE

- The Turkish Journal of Mathematics is published electronically 6 times a year by the Scientific and Technological Research Council of Turkey (TÜBİTAK).
- Accepts English-language original research manuscripts in the field of mathematics. Review articles are only considered for publication in exceptional circumstances.
- Contribution is open to researchers of all nationalities.

EDITORIAL BOARD

- Alexander DEGTYAREV, Bilkent University, Turkey
- Ali Sinan SERTÖZ, Bilkent University, Turkey
- Anar DOSİ, Middle East Technical University, Turkey
- Bayram ŞAHİN, Ege University, Turkey
- Cornelia-Livia BEJAN, University of "Al. I. Cuza", Romania
- Eduard EMELYANOV, Sobolev Institute of Mathematics, Russia
- Enrique ZUAZUA, Friedrich-Alexander Universitat, Germany
- Elena BRAVERMAN, University of Calgary, Canada
- Esther GARCIA, Universidad Rey Juan Carlos, Spain
- Hüseyin DEMİR, Ondokuz Mayıs University, Turkey
- İlham A. ALIEV, Akdeniz University, Turkey
- Jacek DZIOK, University of Rzeszow, Poland
- Janusz SOKOL, University of Rzeszow, Poland
- Kazım İlhan İKEDA, Boğaziçi University, Turkey
- Louis H. ROWEN, Bar-Ilan University, Israel
- Marat AKHMET, Middle East Technical University, Turkey
- Mario KRNIC, University of Zagreb, Croatia
- Martin BOHNER, Missouri University of Science and Technology, U.S.A.
- Maria Alessandra RAGUSA, University of Catania, Italy
- Pedro A. Guil ASENSIO, University of Murcia, Spain
- Peter DANCHEV, Bulgarian Academy of Sciences, Bulgaria
- Salvador ROMAGUERA, Valèncіa Polytechnic University, Spain
- Sang-Eon HAN, Jeonbuk National University, South Korea
- Seher Melike AYDOĞAN, İstanbul Technical University, Turkey
- Selma ÖZÇAĞ, Hacettepe University, Türkiye
- Shahram REZAPOUR, Azarbaijan Shahid Madani University, Azarbaijan
- Snezhana HRISTOVA, University of Plovdiv, Bulgaria
- Tamar DATUASHVILI, Ivane Javakhishvili Tbilisi State University, Georgia
- Toma ALBU, Institute of Mathematics of the Romanian Academy, Romania
- Varga K. KALANTAROV, Koç University, Turkey
- W. A. ZUNIGA-GALINDO, University of Texas Rio Grande Valley, USA, Centro de Investigación y de Estudios Avanzados del I. P. N, Mexico
- William WEISS, University of Toronto at Mississauga, Canada
- Zekeriya ARVASI, Osmangazi University, Turkey

ABSTRACTED

- Science Citation Index Expanded
- Scopus
- Academic Search Complete
- Zentralblatt MATH
- MathSciNet
- Current Index to Statistics

CONTENTS

Generalization of statistical limit-cluster points and the concepts of statistical limit inferior-superior on time scales by using regular integral transformations 405
Ceylan YALÇIN

Novel results on trapezoid-type inequalities for conformable fractional integrals 425
Fatih HEZENCİ, Hüseyin BUDAK

Twisted Dirac operators and the Kastler-Kalau-Walze type theorem for five dimensional manifolds with boundary 439
Tong WU, Sining WEI, Yong WANG

On the relation between oscillation of solutions of differential equations and corresponding equations on time scales 476
Olexandr STANZHYTSKYI, Roza UTESHOVA, Victoriia TSAN, Zoia KHALETSKA

A note on *ss*-supplement submodules 502
Emine ÖNAL KIR

Qualitative study of a second order difference equatio 516
Messaoud BERKAL, Juan Francisco NAVARRO

Notes on totally geodesic foliations of a complete semi-Riemannian manifold 528
An Sook SHIN, Hyelim HAN, Hobum KIM

Numerical solution for Benjamin-Bona-Mahony-Burgers equation with Strang time-splitting technique 537
Melike KARTA

Bi-periodic incomplete Horadam numbers 554
Elif TAN, Mehmet DAĞLI, Amine BELKHIR

On solvability of homogeneous Riemann boundary value problems in Hardy-Orlicz classes 565
Yusuf ZEREN, Fidan A. ALIZADEH, Feyza Elif DAL

On max-min solutions of fuzzy games with nonlinear memberships functions 582
Adem Cengiz ÇEVİKEL

Some remarks on parameterized inequalities involving conformable fractional operators 590
Cihan ÜNAL, Fatih HEZENCI, Hüseyin BUDAK

On conditions of regular solvability for two classes of third-order operator-differential equations in a fourth-order Sobolev-type space 608
Araz R. ALIEV, Nazila L. MURADOVA

Geodesics and natural complex magnetic trajectories on tangent bundles 620
Mohamed Tahar Kadaoui ABBASSI, Noura AMRI

Curves and stick figures not contained in a hypersurface of a given degree 650
Edoardo BALLICO

Contiguity distance between simplicial maps 664
Ayse BORAT, Mehmetcik PAMUK, Tane VERGİLİ

Novel Fano type lower bounds on the minimum error probability of list M-ary hypothesis testing . 678
Berkan DÜLEK

Boundedness of Bergman projections acting on weighted mixed norm spaces 687
Ivana SAVKOVIĆ

The normalized Miller-Ross function and its geometric properties 694
Khaled MEHREZ

On the Hilbert series of the tangent cones for some 4-generated pseudosymmetric monomial curves 706
Nil ŞAHİN

Scattering solutions and scattering function of a Klein-Gordon s-wave equation with jump conditions 721
Halit TAŞ, Yelda AYGAR, Elgiz BAIRAMOV

Numerical solutions of differential equations having cubic nonlinearity using Boole collocation method 732
Kübra ERDEM BİÇER, Hale Gül DAĞ

A calculus for intuitionistic fuzzy values 746
Enes YAVUZ

Metrical almost periodicity, metrical approximations of functions and applications 769
Belkacem CHAOUCHI, Marko KOSTIĆ, Daniel VELINOV

Clairaut Riemannian maps 794
Kiran MEENA, Akhilesh YADAV

Lyapunov-type inequalities for $(\mathtt{n},\mathtt{p})$-type nonlinear fractional boundary value problems 816
Paul W. ELOE, Muralee Bala Krushna BODDU

Generating functions for reciprocal Catalan-type sums: approach to linear differentiation equation and (p-adic) integral equations 830
Damla GÜN, Yılmaz ŞİMŞEK

Locally product-like statistical submersions 846
Kazuhiko TAKANO, Esra ERKAN, Mehmet GÜLBAHAR

Closure operators, irreducibility, Urysohn's lemma, and Tietze extension theorem for proximity spaces 870
Samed ÖZKAN, Muammer KULA, Sümeyye KULA, Tesnim Meryem BARAN

On generalized Darboux frame of a spacelike curve lying on a lightlike surface in Minkowski space $\mathbb{E}_1^3$ 883
Jelena DJORDJEVIĆ, Emilija NEŠOVIĆ, Ufuk ÖZTÜRK