

Editorial Information

Title of the special issue: Nonlinear Evolution Problems with Applications

Shengda Zeng^{1,2,*}, Stanislaw Migorski²

1. Guangxi Colleges and Universities Key Laboratory of Complex System Optimization and Big Data Processing, Yulin Normal University, Yulin 537000, Guangxi, People's Republic of China
2. Faculty of Mathematics and Computer Science, Jagiellonian University in Krakow, ul. Lojasiewicza 6, 30-348 Krakow, Poland

*Corresponding author. zengshengda@163.com

The special issue of the journal Hacettepe Journal of Mathematics and Statistics is devoted to new advances and novel developments in the theory of nonlinear differential equations. A collection of papers provides new mathematical tools and methods for the theoretical studies and their applications. The special issue includes contributions on nonlinear partial differential equations (fractional differential equations, variational and hemivariational inequalities, fixed point approaches, equilibrium problems), optimal control theory and inverse problems, and mathematical modelling and various applications (solid and fluid mechanics, biology, medicine, economics).

The interesting papers deal with stochastic differential variational inequalities, evolution inclusions, fractional complex Ginzburg-Landau equation, hyperbolic equations, fluid models, numerical analysis for solving fixed problems, inverse problems, elliptic-parabolic systems, applications to piezoelectric beam damped systems and the blood flow transport, hemivariational inequalities, and nonconvex sweeping processes.

We wish to express our gratitude to all authors for their valuable contribution to this special issue.

It is our pleasure to acknowledge the support of the European Union's Horizon 2020 Research and Innovation Programme under the Marie Skłodowska-Curie grant agreement No. 823731 CONMECH, and the National Science Centre of Poland under Project No. 2021/41/B/ST1/01636.

HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS

Volume 52 Issue 6 - Special Issue (2023)

E-ISSN: 2651-477X

Honorary Editor

Lawrence Michael Brown

Editor in Chief

Mathematics

Murat Diker (Hacettepe University, Mathematics - hjms@hacettepe.edu.tr)

Statistics

Nursel Koyuncu (Hacettepe University, Statistics - statisticshjms@gmail.com)

Associate Editors

Derya Ersel (Hacettepe University, Statistics - dtektas@hacettepe.edu.tr)

Yasemin Kayhan Atılgan (Hacettepe University, Statistics - ykayhan@hacettepe.edu.tr)

Production Editors

Talha Arıkan (Hacettepe University, Mathematics - tarikan@hacettepe.edu.tr)

İsmail Aslan (Hacettepe University, Mathematics - ismail-aslan@hacettepe.edu.tr)

Berke Kaleboğaz (Hacettepe University, Mathematics - bkuru@hacettepe.edu.tr)

Özge Karadağ Ataş (Hacettepe University, Statistics - ozgekaradag@hacettepe.edu.tr)

Uğur Sert (Hacettepe University, Mathematics - usert@hacettepe.edu.tr)

O. Oğulcan Tuncer (Hacettepe University, Mathematics - otuncer@hacettepe.edu.tr)

Sema Yayla (Hacettepe University, Mathematics - semasimsek@hacettepe.edu.tr)

Ayfer Ezgi Yılmaz (Hacettepe University, Statistics - ezgiyilmaz@hacettepe.edu.tr)

Area Editors

Mathematics

Emre Alkan (Number Theory - ealkan@ku.edu.tr)

Angel Del Rio (Algebra, Group Theory - adelrio@um.es)

Naoki Endo (Commutative Rings and Algebras - nendo@rs.tus.ac.jp)

Sergio Estrada (Homological Algebra - sestrada@um.es)

Rodrigo Hernandez Gutierrez (General Topology - rod@xanum.uam.mx)

Varga Kalantarov (Partial Differential Equations - vkalantarov@ku.edu.tr)

Serap Öztıp Kaptanoğlu (Abstract Harmonic Analysis - oztips@istanbul.edu.tr)

Azer Khanmamedov (Partial Differential Equations - azer@hacettepe.edu.tr)

Adam Lecko (Complex Analysis - alecko@matman.uwm.edu.pl)

Emre Mengi (Numerical Analysis - emengi@ku.edu.tr)

Cihan Orhan (Analysis, Summability - orhan@science.ankara.edu.tr)

Abdullah Özbekler (Ordinary Differential Equations - aozbekler@gmail.com)

Ekin Özman (Number Theory, Algebraic Geometry - ekin.ozman@boun.edu.tr)

Mehmetçik Pamuk (Topology, Manifolds and Cell Complexes - mpamuk@metu.edu.tr)

Changguo Shao (Group Theory - shaoguozi@163.com)

Bülent Ünal (Differential Geometry - bulent@fen.bilkent.edu.tr)

Luca Vitagliano (Differential Geometry - lvitagliano@unisa.it)

Dingguo Wang (Hopf Algebras, Tensor Categories - dgwang@qfnu.edu.cn)

Sibei Yang (Harmonic Analysis and Functional Analysis - yangsb@lzu.edu.cn)

Xin Zhang (Graph Theory and Combinatorics - xzhang@xidian.edu.cn)

Shengda Zeng (Partial Differential Equations, Nonlinear Analysis, Control Theory - zengshengda@163.com)

Yunus E. Zeytuncu (Functions of Several Complex Variables - zeytuncu@umich.edu)

Statistics

Ali Allahverdi (Operational Research & Statistics - ali.allahverdi@ku.edu.kw)

Olca Arslan (Robust Statistics - oarslan@ankara.edu.tr)

Narayanaswany Balakrishnan (Applied Statistics, Theory of Statistics - bala@mcmaster.ca)

Adil Baykasoglu (Operational Research - adil.baykasoglu@deu.edu.tr)

Haydar Demirhan (Categorical Data Analysis, Monte Carlo Simulation - haydar.demirhan@rmit.edu.au)

Sat Gupta (Sampling, Time Series - sngupta@uncg.edu)

Tahir Hanalioglu (Stochastic Processes Theory, Probability Theory - tahirhanaliyev@etu.edu.tr)

Burcu Hudaverdi (Time Series Analysis, Multivariate Statistics - burcu.hudaverdi@deu.edu.tr)

Zeynep Işıl Kalaylıođlu (Bayesian Inference, Model Selection - kzeynep@metu.edu.tr)

Hasan Örkücü (Data Envelopment Analysis, Operation Research - hhorkcu@gazi.edu.tr)

Birdal Şenođlu (Experimental Design, Statistical Distributions - senoglu@science.ankara.edu.tr)

Contents

Mathematics

Special Issue Papers

- 1 Existence and convergence for stochastic differential variational inequalities
by Fei Guan, Van Thien Nguyen and Zijia Peng1461
- 2 Pseudo-almost periodic C^0 -solution for evolution inclusion with mixed nonlocal plus local initial conditions
by Li Ye and Yongjian Liu1480
- 3 Wave solutions of the time-space fractional complex Ginzburg-Landau equation with Kerr law nonlinearity
by Niping Cai, Yuqian Zhou and Qian Liur1492
- 4 A generalized integral problem for a system of hyperbolic equations and its applications
by Anar Turmaganbetkyzy Assanova1513
- 5 Stability analysis for a recovered fracturing fluid model in the wellbore of shale gas reservoir
by Jinxia Cen, Nicușor Costea, Chao Min and Jen-Chih Yao1533
- 6 Error bounds for a class of history-dependent variational inequalities controlled by \mathcal{D} -gap functions
by Boling Chen and Vo Minh Tam1550
- 7 Algorithm analysis of solving fixed point of nonexpansive mappings based on runge-kutta method
by Xiangyao Li, Li-Jun Zhu and Mihai Postolache1567
- 8 An inverse problem of identifying the time-dependent potential and source terms in a two-dimensional parabolic equation
by Mousa J. Huntul and Ibrahim Tekin1578
- 9 A parabolic-elliptic chemo-repulsion system in 2D domains with nonlinear production
by Alex Ancoma-Huarachi and Exequiel Mallea-Zepeda1600
- 10 Well-posedness and general energy decay of solutions for a nonlinear damping piezoelectric beams system with thermal and magnetic effects
by Hassan Messaoudi, Abdelouaheb Ardjouni, Salah Zitouni and Housseem Eddine Khochemane1615
- 11 Superlinear elliptic hemivariational inequalities
by Yunru Bai, Leszek Gasiński and Nikolaos S. Papageorgiou1631
- 12 Stability analysis and numerical simulation of non-steady partial differential model in the human pulmonary capillaries using finite differences technique
by Azim Aminatae and Mohammadhossein Derakhshan1658
- 13 Nonconvex integro-differential sweeping processes involving maximal monotone operators
by Mouchira Mansour, Ilyas Kecis and Tahar Haddad1677