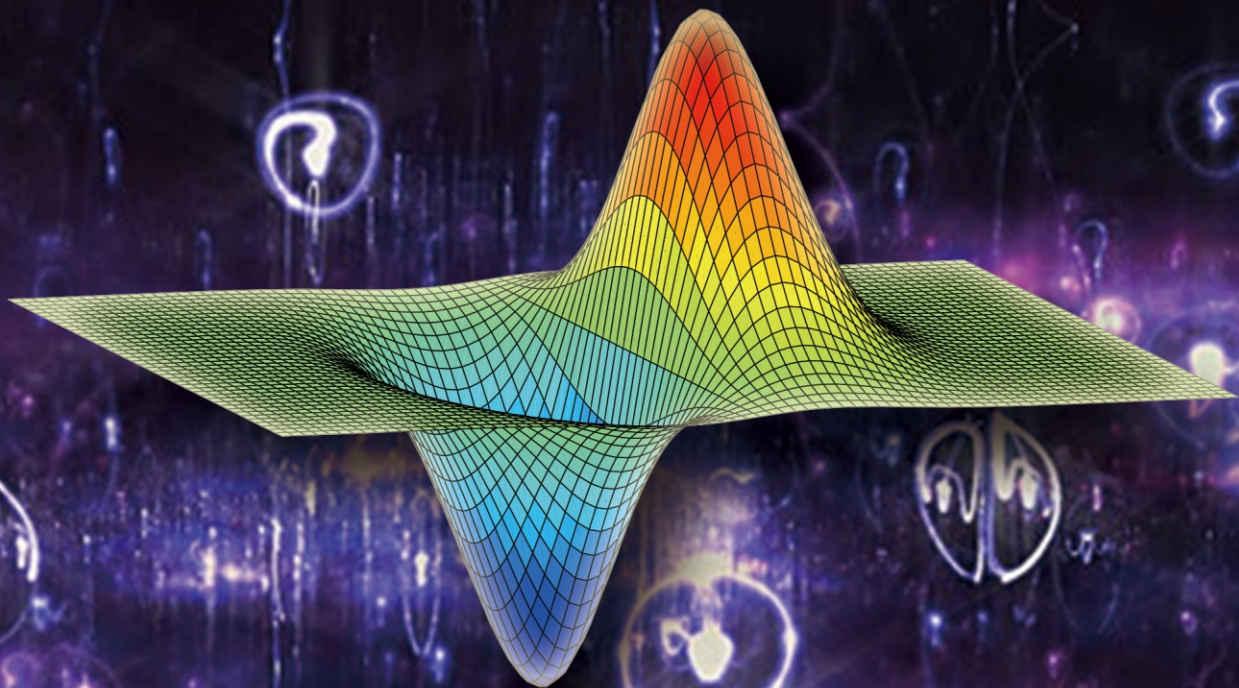


ISSN: 2160-0368 Volume 10, Number 11, November 2020



# Advances in Pure Mathematics



ISSN: 2160-0368



<https://www.scirp.org/journal/apm>

# Journal Editorial Board

ISSN 2160-0368 (Print) ISSN 2160-0384 (Online)

<https://www.scirp.org/journal/apm>

---

## Editor-in-Chief

**Prof. Leo Depuydt**

Brown University, USA

## Editorial Board

**Dr. Taher S. H. Abdelmonem**

Mansoura University, Egypt

**Prof. Józef Banas**

Bronislaw Markiewicz State School of Higher Vocational Education in Jaroslaw, Poland

**Prof. Serdar Beji**

Istanbul Technical University, Turkey, Turkey

**Prof. Constantin Buse**

West University of Timisoara, Romania

**Prof. Chuanmiao Chen**

Central South University, China

**Dr. Claudio Cuevas**

Federal University of Pernambuco, Brazil

**Prof. Dragan S. Djordjevic**

University of Nis, Serbia

**Dr. Ozgur EGE**

Celal Bayar University, Turkey

**Prof. Ahmed M. A. El-Sayed**

Alexandria University, Egypt

**Prof. Cristescu Gabriela**

Aurel Vlaicu University of Arad, Romania

**Prof. Hongya Gao**

Hebei University, China

**Prof. Aleksander Grytczuk**

University of Zielona Góra and Jan Pawel II Western, Poland

**Prof. Yuxia Guo**

Tsinghua University, China

**Dr. Sevdzhan Hakkaev**

University of Kansas, USA

**Dr. Chengchun Hao**

Chinese Academy of Sciences, China

**Prof. Tianxiao He**

Illinois Wesleyan University, USA

**Prof. Wei He**

Nanjing Normal University, China

**Prof. Tingzhu Huang**

University of Electronic Science & Technology of China, China

**Prof. Toshitake Kohno**

The University of Tokyo, Japan

**Prof. Vichian Laohakosol**

Kasetsart University, Thailand

**Dr. Jingjing Ma**

University of Houston-Clear Lake, USA

**Prof. Elimhan N. Mahmudov**

Istanbul Technical University, Turkey

**Dr. Lucia Marino**

Catania University, Italy

**Prof. Ming Mei**

McGill University, Canada

**Dr. Vishnu Narayan Mishra**

Indira Gandhi National Tribal University, India

**Dr. M. T. Mustafa**

Qatar University, Qatar

**Dr. Mahammad A. Nurmammadov**

Azerbaijan State Pedagogical University, Azerbaijan

**Prof. Jyotindra C. Prajapati**

Charotar University of Science and Technology, India

**Dr. Marius Rădulescu**

Institute of Mathematical Statistics and Applied Mathematics “Gheorghe Mihoc-Caius Iacob” of the Romanian Academy, Romania

**Prof. Jingli Ren**

Zhengzhou University, China

**Dr. Gábor Sági**

Alfréd Rényi Institute of Mathematics and BUTE, Hungary

**Prof. Bayram Sahin**

Inonu University, Turkey

**Prof. Samir H. Saker**

Mansoura University, Egypt

**Dr. Bessem Samet**

Tunis College of Sciences and Techniques, Tunisia

**Dr. Yongli Song**

Tongji University, China

**Prof. Hari M. Srivastava**

University of Victoria, Canada

**Prof. Yeong-Jeu Sun**

I-Shou University, Chinese Taipei

**Dr. Néstor Thome**

Universitat Politècnica de València, Spain

**Prof. Aydin Tiryaki**

Izmir University, Turkey

**Prof. Gabor Toth**

Rutgers University, USA

**Prof. Amitabha Tripathi**

Indian Institute of Technology, India

**Prof. Nodari Vakhania**

Georgian Academy of Sciences, Mexico

**Prof. Qingwen Wang**

Shanghai University, China

**Dr. Yanjin Wang**

Institute of Applied Physics and Computational Mathematics, China

**Prof. Changjin Xu**

Guizhou Key Laboratory of Economics System Simulation, China

**Dr. Jasang Yoon**

University of Texas Rio Grande Valley, USA

**Prof. Mohamed F. Yousif**

The Ohio State University, USA

**Dr. Shijun Zheng**

Georgia Southern University, USA

**Prof. Changjiang Zhu**

South China University of Technology, China

# Table of Contents

**Volume 10    Number 11**

**November 2020**

**Nonregular Boundary Value Problem for the Cauchy-Riemann Operator**

I. Ly, S. Tao.....623

**Continuity of Solution Mappings for Parametric Set Optimization  
Problems under Partial Order Relations**

Y. M. Sun.....631

**Verifications of the Scattering Theory on Manifolds**

M. Y. Youssif, E. E. E. Dalam.....645

**The Non-Smooth Problem of Wheel Motion**

W. Grzesikiewicz, A. Zbiciak.....658

## Advances in Pure Mathematics (APM)

### Journal Information

#### SUBSCRIPTIONS

The *Advances in Pure Mathematics* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

##### **Subscription rates:**

Print: \$79 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

#### SERVICES

##### **Advertisements**

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

##### **Reprints (minimum quantity 100 copies)**

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

#### COPYRIGHT

##### **Copyright and reuse rights for the front matter of the journal:**

Copyright © 2020 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

##### **Copyright for individual papers of the journal:**

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

##### **Reuse rights for individual papers:**

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

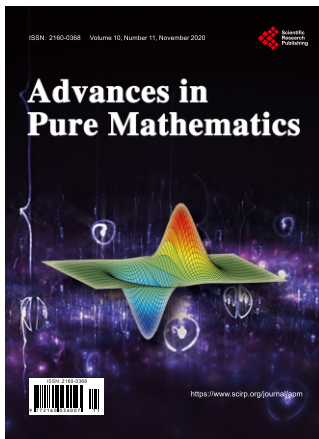
##### **Disclaimer of liability**

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [apm@scirp.org](mailto:apm@scirp.org)



*Call for Papers*

# Advances in Pure Mathematics (APM)

ISSN 2160-0368 (Print) ISSN 2160-0384 (Online)  
<https://www.scirp.org/journal/apm>

**Advances in Pure Mathematics (APM)** is an international journal dedicated to the latest advancements in ordered algebraic structures. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of ordered algebraic structures.

## Subject Coverage

This journal invites original research and review papers that address the following issues. Topics of interest include, but are not limited to:

- Applied Harmonic Analysis
- Approximation Theory
- Asymptotic Methods
- Bifurcation Theory
- Coding Theory
- Combinatorics
- Complex Analysis
- Convex Analysis
- Difference Equations
- Differential Equations
- Dynamical Systems
- Fixed-Point Theory
- Fourier Analysis
- Fractals
- Fractional Analysis
- Functional Differential Equations
- Fuzzy Mathematics
- Geometry
- Geometry of Banach Spaces
- Integral Equations
- Mathematical Biology, including Population Dynamics
- Mathematical Physics
- Matrix Theory
- Moment Theory
- Number Theory
- Numerical Analysis
- Operator Theory
- Optimal Control
- Optimization Wavelets
- Partial Differential Equations
- Probability
- Reaction-Diffusion Problems, Discrete Mathematics
- Scattering Theory
- Semigroups of Operators
- Signal Theory
- Special Functions
- Statistics
- Stochastic Process
- Topology and Applications
- Transport Theory
- Ultrametric Analysis
- Variational Methods

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the APM.

## Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

## Website and E-Mail

<https://www.scirp.org/journal/apm> E-mail: [apm@scirp.org](mailto:apm@scirp.org)

## *What is SCIRP?*

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

## *What is Open Access?*

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



Scientific  
Research  
Publishing

Website: <https://www.scirp.org>

Subscription: [sub@scirp.org](mailto:sub@scirp.org)

Advertisement: [service@scirp.org](mailto:service@scirp.org)