

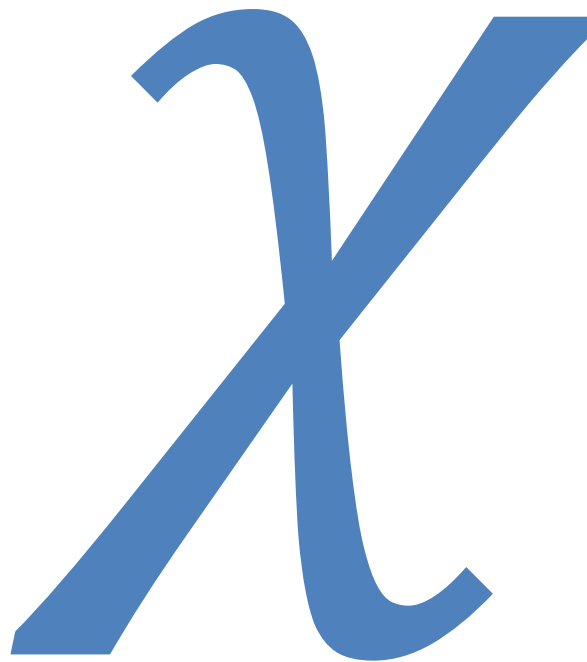
ISSN 2086-0382

E-ISSN 2477-3344

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024



CAUCHY	Vol. 9	No. 1	Pages: 1 - 186	Malang May 2024	ISSN 2086-0382	E-ISSN 2477-3344
--------	--------	-------	-------------------	--------------------	-------------------	---------------------

ISSN : 2086-0382

E-ISSN : 2477-3344

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024

CAUCHY is a mathematical journal published twice a year on May and November by the Mathematics Department, Faculty of Science and Technology, Universitas Islam Negeri Maulana Malik Ibrahim Malang. This journal includes research papers, literature studies, analysis, and problem solving in Mathematics (Algebra, Analysis, Statistics, Computing and Applied Mathematics).

EDITORIAL BOARD

- Editor in Chief** : **Dr. Sri Harini, M.Si**, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia
- Managing Editor** : **Juhari, M.Si**, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia
Ari Kusumastuti, M.Si, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia
- Editorial Board** : **Prof Hadi Susanto**, Department of Mathematical Sciences, University of Essex and Department of Mathematics of Khalifa University, United Kingdom
Mario Rosario Guarracino, Computational and Data Science Laboratory High Performance Computing and Networking Institute National Research Council of Italy, Italy
Kartick Chandra Mondal, Jadavpur University, Salt Lake Campus, India
Rowena Alma L. Betty, University of the Philippines Diliman, Philippines
Muhammad Fakhruddin, Department of Mathematics, Faculty of Military Mathematics and Natural Sciences, The Republic of Indonesia Defense University, Bogor, Indonesia
Alfi Yusrotis Zakiyyah, Universitas Bina Nusantara, Indonesia
Bety Hayat Susanti, Politeknik Siber dan Sandi Negara, Indonesia
Dian Savitri, Universitas Negeri Surabaya, Indonesia
Meta Kallista, Universitas Telkom, Indonesia
Dani Suandi, Universitas Bina Nusantara, Bandung, Indonesia
Anwar Fitrianto, Department of Statistics, IPB University, Indonesia
Sri Harini, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia
Dr Heni Widayani, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung, Indonesia
Corina Karim, Brawijaya University

ISSN : 2086-0382

E-ISSN : 2477-3344

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024

EDITORIAL BOARD

Subanar Seno, Gadjah Mada University, Indonesia

Toto Nusantara, State University Of Malang, Indonesia

Edy Tri Baskoro, Institut Teknologi Bandung, Indonesia

Eridani Eridani, Airlangga University, Indonesia

Abdul Halim Abdullah, University of Technology Malaysia, Malaysia

Kusno, University of Jember, Indonesia

Slamin, University of Jember, Indonesia

Riswan Efendi, UIN Sultan Syarif Kasim Riau, Indonesia

Arief Fatchul Huda, UIN Sunan Gunung Djati Bandung, Indonesia

Usman Pagalay, Universitas Islam Negeri Maulana Malik Ibrahim Malang,
Indonesia

Abdussakir, Universitas Islam Negeri Maulana Malik Ibrahim Malang,
Indonesia

Fachrur Rozi, Universitas Islam Negeri Maulana Malik Ibrahim Malang,
Indonesia

Assistant Editor : **Mohammad Nafie Jauhari, M.Si**, Universitas Islam Negeri Maulana Malik
Ibrahim Malang, Indonesia

Editorial Office

Mathematics Department,

Maulana Malik Ibrahim State Islamic University of Malang

Gajayana st. 50 Malang, East Java, Indonesia 65144

Phone (+62) 81336397956, Faximile (+62) 341 558933

e-mail: cauchy@uin-malang.ac.id

ISSN : 2086-0382

E-ISSN : 2477-3344

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024

FOCUS AND SCOPE

CAUCHY-Jurnal Matematika Murni dan Aplikasi is a mathematical journal published twice a year in May and November by the Mathematics Department, Faculty of Science and Technology, Maulana Malik Ibrahim State Islamic University of Malang.

We welcome authors for original articles (research), review articles, interesting case reports, special articles illustrations that focus on the Mathematics Pure and Applied. Subjects suitable for publication include, but are not limited to the following fields of:

1. Actuarial
2. Algebra
3. Analysis
4. Applied
5. Computing
6. Econometrics
7. Statistics

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024

INDEXING AND ABSTRACTING

CAUCHY-Jurnal Matematika Murni dan Aplikasi has been covered (indexed and abstracted) by following services:

1. **DOAJ**
2. **Dimensions**
3. **Moraref** - (2015-)-(<http://moraref.or.id/index.php/browse/index/36>)
4. **OneSearch Indonesia** - (2015-)-([http://onesearch.id/Search/Results?filter\[\]=repoId:IOS2732](http://onesearch.id/Search/Results?filter[]=repoId:IOS2732))
5. **Mendeley** - (2013-)-(<https://www.mendeley.com/groups/5034091/cauchy/papers/>)
6. **Indonesian Scientific Journal Database (ISJD)** - (2013-)-(<http://isjd.pdii.lipi.go.id/index.php/Direktori-Jurnal.html>)
7. **Google Scholar** - (2009-)-(https://scholar.google.co.id/citations?hl=en&view_op=list_works&gmla=AJsN-F60moFBk7Q0o2Q-9-XUIMca1zI8OZ9Lp2EhCtubhL9dCisxNYH9sAiEAU0g0UDT8tyM6Jk3Z666Zu46VRsBYZ6Vjc2a_w&user=dr K-5HkAAAAJ)
8. **IPI** - (2009-)-(<http://id.portalgaruda.org/?ref=browse&mod=viewjournal&journal=5272>)

CAUCHY

Jurnal Matematika Murni dan Aplikasi

Volume 9, Issue 1, May 2024

TABLE OF CONTENTS

Inclusive Local Irregularity Vertex Coloring In Grid Graph Family	1 – 13
LQR and Fuzzy-PID Control Design on Double Inverted Pendulum.....	14 – 25
Multipolar Intuitionistic Fuzzy Positive Implicative Ideal in B-Algebras.....	26 – 35
The Reflexive H-Strength on Some Graphs.....	36 – 49
Mathematical Modeling of HIV/AIDS Disease Spread with Public Awareness	50 – 65
Order Ideals on Lexicographic Direct Sum of Three Totally Ordered Abelian Groups.....	66 – 72
The Boundedness of Generalized Fractional Integral Operators on Small Morrey Spaces.....	73 – 81
Numerical Analysis of Airflow in Trachea Affected by Thyroid Cancer Using Finite Volume Method	82 – 93
Estimating Missing Panel Data with Regression and Multivariate Imputation by Chained Equations (MICE).....	94 – 105
KFCM-PSOTD : An Imputation Technique for Missing Values in Incomplete Data Classification	106 – 118
Comparison between Statistical Approaches and Data Mining Algorithms for Outlier Detection	119 - 128
Spatial Weight Matrix Comparison of SAR-X Model using Casetti Approach.....	129 – 137
SEIR Mathematical Model with the Use of Hand Sanitizers to Prevent the Spread of Covid-19 Disease	138 – 154
Systematic Literature Review (SLR) on Annuity Modeling of Plantation Replanting Cost Reserves Based on the Cobb-Douglas Model.....	155 – 171
Mathematical Models of Human Papillomavirus Transmission with Vaccination	172 – 186