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Yogyakarta, Indonesia, September 21, 2024

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Preface of the Conference Proceeding of the 2nd International Conference on Mathematics, its Applications, and Mathematics Education (ICMAME) 2024

We are pleased to present the proceedings of the 2nd International Conference on Mathematics, its Applications, and Mathematics Education (ICMAME) 2024. This esteemed event was a collaborative effort organized by the Department of Mathematics, Faculty of Science and Technology, and the Department of Mathematics Education, Faculty of Teacher Training and Education, Universitas Sanata Dharma, Yogyakarta, Indonesia.

The conference was held on September 21, 2024, at Universitas Sanata Dharma, Indonesia, under the theme "*21st Century Mathematics and Mathematics Education.*" This theme reflects the urgent need for innovative approaches to mathematics and mathematics education, aligned with the demands and opportunities of the 21st century. ICMAME 2024 brought together mathematicians, educators, and researchers to discuss emerging trends and share insights in these critical areas.

We were privileged to have distinguished keynote and invited speakers who enriched the conference with their expertise and perspectives. Our heartfelt thanks go to:

- **Assoc. Prof. Dr. Wanty Widjaya** (Deakin University, Australia)
- **Dr. rer. nat. Wolfgang Bock** (Linnaeus University, Sweden)
- **Dr. Martianus Frederic Ezerman** (Nanyang Technological University, Singapore)
- **Asst. Prof. Dr. Parkpoom Phetpradap** (Chiang Mai University, Thailand)
- **Veronica Fitri Rianasari, M.Sc., Ph.D.** (Universitas Sanata Dharma, Indonesia)

We extend our deepest gratitude to the organizing committee for their dedication and hard work, to the authors for their invaluable contributions, and to the reviewers for their diligent evaluations and constructive feedback. Without their combined efforts, this conference would not have been possible.

We hope this collection of proceedings, featuring contributions from authors across various countries (Indonesia, Philippines, Thailand, Japan, etc.), serves as a significant resource for researchers, educators, and practitioners. May it inspire future innovations, foster collaboration, and contribute to the advancement of mathematics and mathematics education for the betterment of our global community.

Thank you for being a part of the 2nd ICMAME 2024. We look forward to continuing this journey together and to exploring new horizons in the fascinating realms of mathematics and mathematics education.

Yogyakarta, 15 January 2025

Eko Budi Santoso

Chair, The 2nd ICMAME 2024

Statement of Peer review

In submitting conference proceedings to ITM Web of Conferences, I certify to the Publisher that I adhere to the **Policy on Publishing Integrity** of the journal in order to safeguard good scientific practice in publishing.

1. All articles have been subjected to peer review administered by the proceedings editors.
2. Reviews have been conducted by expert referees, who have been requested to provide unbiased and constructive comments aimed, whenever possible, at improving the work.
3. Proceedings editors have taken all reasonable steps to ensure the quality of the materials they publish and their decision to accept or reject a paper for publication has been based only on the merits of the work and the relevance to the journal.

International Conference on Mathematics, its Applications and Mathematics Education (ICMAME), 21 st September 2024, Yogyakarta, Indonesia

Proceedings editor(s): Hartono, Ph.D., Eko Budi Santoso, Ph.D., Prof.Dr.rer.nat Herry Pribawanto

January 29, 2025



The 2nd International Conference on Mathematics, Its Applications, and Mathematics Education (ICMAME) 2024

ICMAME



21st Century Mathematics and Mathematics Education Hybrid: Driyarkara Seminar Room (offline) & Zoom (online) SANATA DHARMA UNIVERSITY, INDONESIA

<https://e-conf.usd.ac.id/index.php/icmame/icmame2024>

ABOUT THE CONFERENCE

The 2nd International Conference on Mathematics, Its Applications, and Mathematics Education (ICMAME) 2024 with the theme "21st Century Mathematics and Mathematics Education" will be held at Sanata Dharma University, Yogyakarta, Indonesia, on 21 September 2024. Selected papers of this conference will be published in ITM Web of Conferences Proceedings, Journal of The Indonesian Mathematical Society (SCOPUS), Barekeng: Jurnal Ilmu Matematika dan Terapan (SINTA 2), and Jurnal Pendidikan Matematika (SINTA 3).

KEYNOTE SPEAKER



Assoc. Prof. Dr. Wasty Widjaja
Deakin University, Australia



Dr. Gerard Wolfgang Beck
Linnæus University, Sweden



Dr. Martians Frederic Ezerman
Nanyang Technological University, Singapore



Assoc. Prof. Dr. Paekpoom Phetpradap
Chiang Mai University, Thailand



Veronika Fitri Rianasari, M.Sc., Ph.D.
Sanata Dharma University, Indonesia

INVITED SPEAKERS

GOALS

This conference is conducted to bring together mathematicians and other scientists working on new trends of mathematics and mathematics education for 21st century. The aim of this conference is to promote research interests in different fields of mathematics as well as in mathematics education.

SCHEDULE:

- a. Submission Start : May 1, 2024
- b. ~~Deadline Abstract Batch 1 : July 31, 2024~~
- c. ~~Announcement Batch 1 : August 5, 2024~~
- d. ~~Deadline Abstract Batch 2 : August 16, 2024~~
- e. ~~Announcement Batch 2 : August 22, 2024~~
- f. Deadline Abstract, Batch 3 : August 30, 2024
- g. Announcemet Abstract, Batch 3 : August 31, 2024
- f. Full Paper Submission : September 2, 2024
- g. Conference Day : September 21, 2024

ARTICLE REGULATIONS :

We welcome researchers to submit their original, unpublished work that hasn't been reviewed elsewhere, and that addresses cutting-edge research in Pure Mathematics, Applied Mathematics, and Mathematics Education. The review process involves

- the submission of a complete paper by the author(s) before the specified deadline, adhering to the provided template. Submission is conducted through an e-conference system.
- Each manuscript undergoes thorough peer review by at least two qualified reviewers. Only manuscripts approved by reviewers with relevant expertise in the field are accepted.
- Evaluation criteria include the paper's contribution to the respective field, originality and suitability of the research method, technical proficiency in research development and execution, as well as paper structure and language quality.
- The peer review process entails manuscript submission, review and selection by editors who may approve, reject, or directly review submissions.
- Plagiarism checks are performed using Turnitin.
- Authors are notified of acceptance, revision requirements, or rejection based on reviewer feedback.
- Authors revise the manuscript according to reviewer suggestions, resubmitting the revised version.
- Acceptance notification is issued by the editor if reviewers are satisfied with the revision.
- Editors conduct a final review and edit to ensure adherence to template guidelines.
- Publication requires conference registration and participation by the author or at least one co-author.

Topics of interest for submission include, but are not limited to:

- Mathematics:**
 - o Analysis and Applied Analysis
 - o Analysis and Applied Algebra
 - o Graph Theory
 - o Discrete Mathematics
 - o Statistics and Probability
- Applied Mathematics:**
 - o Cryptography
 - o Dynamical Systems
 - o Control Theory
 - o Fuzzy Sets and Systems and Fuzzy Logic
 - o Mathematical Modeling
 - o Optimization and Operational Research
 - o Machine Learning and Data Science
- Mathematics Education:**
 - o Realistic Mathematics Education
 - o Ethnomathematics
 - o Learning Media
 - o Curriculum
 - o Learning Design
 - o Pedagogical Content Knowledge



LINK (template Paper):

<http://bit.ly/templatepaperICMAME>

FEES

		Early bird	Regular
Presenter	College Student S1	Rp. 200.000	Rp. 250.000
	General, S2, S3	Rp. 500.000	Rp. 750.000
	Overseas	USD 50	USD 75

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- a. Early bird (before August 6, 2024)
- b. Regular (before September 14, 2024)
- c. International SWIFT Code: BMRIDJJA



Principal Contact: Febi Sanjaya, M.Sc. (Whatsapps +62 856-4346-5140) Email : icmame@usd.ac.id
Sanata Dharma University, Kampus III, USD, Paingan, Maguwoharjo, Depok, Sleman, Yogyakarta, Indonesia, 55282.