

# HIROSHIMA MATHEMATICAL JOURNAL

---

VOLUME 53, NUMBER 1

MARCH, 2023

---

PUBLISHED BY  
MATHEMATICS PROGRAM  
GRADUATE SCHOOL OF  
ADVANCED SCIENCE AND ENGINEERING  
HIROSHIMA UNIVERSITY

# Hiroshima Mathematical Journal

## Editors

|                                  |                     |
|----------------------------------|---------------------|
| Ichiro SHIMADA (Managing Editor) |                     |
| Makoto ABE                       | Shoichi FUJIMORI    |
| Naoki HONDA                      | Makoto IIMA         |
| Akihiko INOUE                    | Mishio KAWASHITA    |
| Shun-ichi KIMURA                 | Yuya KODA           |
| Makoto MATSUMOTO                 | Tetsu MIZUMACHI     |
| Yuki NAITO                       | Kunimochi SAKAMOTO  |
| Hirofumi WAKAKI                  | Hirokazu YANAGIHARA |

Hiroshima Mathematical Journal is a continuation of Journal of Science of the Hiroshima University, Series A, Vol. 1~Vol. 24 (1930~1960) and Journal of Science of the Hiroshima University, Series A-I, Vol. 25~34 (1961~1970).

Starting with Volume 4 (1974), each volume of Hiroshima Mathematical Journal consists of three numbers annually. This journal publishes original papers in pure and applied mathematics.

Copyright © by Editorial Board of Hiroshima Mathematical Journal  
Mathematics Program, Graduate School of Advanced Science and Engineering  
Hiroshima University

Printed by  
Letterpress Co., LTD.  
Hiroshima, Japan

## Instructions for Authors

1. Manuscripts should be written in English and should contain
  - (i) title
  - (ii) name(s) of author(s)
  - (iii) abstract
  - (iv) 2020 Mathematics Subject Classification Numbers
  - (v) key words
  - (vi) body of the paper
  - (vii) references
  - (viii) affiliation(s), address(es) and e-mail address(es)in this order. For symbols and style conventions, authors should consult current issues of the journal. The LaTeX style file of HMJ and its documentation can be obtained from the HMJ web page.
2. Manuscripts should be submitted electronically in PDF format using the online submission form (in EditFlow<sup>®</sup>).  
EditFlow<sup>®</sup> submission page of HMJ: <https://ef.msp.org/submit/hmj>
3. When the manuscript is accepted for publication, the author will be asked for the LaTeX source file and the pdf file (the dvi file) which must be identical to that of the final version of the manuscript.
4. The pdf files of papers published in the journal will be offered to the public without charge on the journal's homepages HMJ online and Project Euclid. Authors will be asked to give consent for the journal to publish electronically as well as in print. Authors reserve the right to post their papers on the authors' homepages.
5. The address and the e-mail address of the HMJ office are:  

Hiroshima Mathematical Journal,  
Mathematics Program,  
Graduate School of Advanced Science and Engineering,  
Hiroshima University,  
Higashi-Hiroshima,  
739-8526 Japan  
  
Tel: +81-82-424-7350  
Fax: +81-82-424-0710  
e-mail: [hmj@hiroshima-u.ac.jp](mailto:hmj@hiroshima-u.ac.jp)  
HMJ web page: <http://www.math.sci.hiroshima-u.ac.jp/hmj/index.html>

## CONTENTS

|  | PAGE |
|--|------|
| <b>R. MECENE and M. ALI GHORBEL:</b> Properties of the Dirichlet type 3<br>distribution .....  | 1    |
| <b>K. UEMATSU:</b> On classification of irreducible quandle modules over a connected<br>quandle.....   | 27   |
| <b>H. WATANABE:</b> Belyi injectivity for outer representations on certain quotients<br>of étale fundamental groups of hyperbolic curves of genus zero ..... | 63   |
| <b>R. KOBAYASHI:</b> Infinite presentations for fundamental groups of surfaces.....  | 87   |
| <b>A. KODAMA:</b> A criterion for biholomorphicity of self-mappings of generalized<br>Fock-Bargmann-Hartogs domains.....                                     | 111  |