

# HIROSHIMA MATHEMATICAL JOURNAL

---

VOLUME 40, NUMBER 2

JULY, 2010

---

PUBLISHED BY

DEPARTMENT OF MATHEMATICS  
GRADUATE SCHOOL OF SCIENCE  
HIROSHIMA UNIVERSITY

# Hiroshima Mathematical Journal

## Editors

Kunimochi SAKAMOTO (Managing Editor)

Yoshio AGAOKA

Akihiko INOUE

Seiichi KAMADA

Shun-ichi KIMURA

Ryo KOBAYASHI

Yoshihiro MIZUTA

Toshitaka NAGAI

Tatsuyuki NAKAKI

Hiraku NISHIMORI

Makoto SAKUMA

Ichiro SHIMADA

Hirofumi WAKAKI

Masafumi YOSHINO

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  
Department of Mathematics, Graduate School of Science, 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) 2000 Mathematics Subject Classification Numbers, and key words and phrases
  - (v) body of the paper
  - (vi) references
  - (vii) 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. Color printing may be accepted with some possible charge.

2. Manuscripts should be submitted in duplicate to the HMJ office. Attached should be a separated sheet containing
  - (a) the title of the paper
  - (b) the mailing address (and an e-mail address) of the author who is responsible for proof-readings
  - (c) the running title (condensed title of less than 30 characters).

The manuscript will not usually be returned to the author.

It is preferred that manuscripts be prepared using the LaTeX2e style file of HMJ, which is available from the HMJ webpage, with no special macros. Then it is only necessary for the author to submit a LaTeX source file together with a pdf file (or a dvi file) and (a), (b) and (c) to the HMJ office by e-mail. If we have a trouble in handling the files, then the author may be asked to send a printed manuscript as well.

The LaTeX style file of HMJ, its documentation, and a sample tex file can be obtained from the HMJ webpage.

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 HMJ webpage. The author 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. Authors of papers published in the journal will have a total of 50 offprints for papers without charge.
6. The address and the e-mail address of the HMJ office are:

Hiroshima Mathematical Journal  
Department of Mathematics  
Graduate School of Science  
Hiroshima University  
Higashi-Hiroshima 739-8526 Japan

Tel: +81-82-424-7350

Fax: +81-82-424-0710

E-mail: [hmj@math.sci.hiroshima-u.ac.jp](mailto:hmj@math.sci.hiroshima-u.ac.jp)

HMJ webpage: <http://www.math.sci.hiroshima-u.ac.jp/hmj/index.html>

## CONTENTS

	PAGE
<b>K. ITO:</b> A new description of convex bases of PBW type for untwisted quantum affine algebras .....	133
<b>K. IMAMURA:</b> Stability and bifurcation of periodic travelling waves in a derivative non-linear Schrödinger equation .....	185
<b>R. TABATA:</b> Sharp inequalities for the permanent dominance conjecture .....	205
<b>Y. MAEDA:</b> Statistical inference for functional relationship between the specified and the remainder populations .....	215
<b>K. SAJI:</b> Criteria for singularities of smooth maps from the plane into the plane and their applications.....	229
<b>T. KAWAZOE and H. MEJJAOLI:</b> Uncertainty principles for the Dunkl transform.....	241
<b>H. AOYAMA:</b> Erratum to “Lebesgue spaces with variable exponent on a probability space” .....	269
<b>S. KADOWAKI and S. KAGEYAMA:</b> Erratum to “Existence of affine $a$ -resolvable PBIB designs with some constructions” .....	271