

# HIROSHIMA MATHEMATICAL JOURNAL

Formerly

JOURNAL OF SCIENCE OF THE HIROSHIMA UNIVERSITY, SERIES A-I (MATHEMATICS)

---

VOLUME 1,

1971

---

PUBLISHED SEMI-ANNUALLY BY  
DEPARTMENT OF MATHEMATICS  
FACULTY OF SCIENCE  
HIROSHIMA UNIVERSITY  
HIROSHIMA, JAPAN



# TABLE OF CONTENTS

VOLUME 1, 1971

BERTHOLF, D.E. and C.A. WOOD: Commutative Rings for which Each Proper Homomorphic Image is a Multiplication Ring. II .....	1
CHEN, H.-Y., L.-S. CHEN and C.-C. YEH: On the Behavior of Solutions of the Cauchy Problem for Parabolic Equations with Unbounded Coefficients .....	145
CHEN, L.-S.: The Unbounded Growth of Solutions of Parabolic Equations with Unbounded Coefficients .....	155
CHEN, L.-S., C.-C. YEH and H.-Y. CHEN: On the Behavior of Solutions of the Cauchy Problem for Parabolic Equations with Unbounded Coefficients .....	145
EGUCHI, M.: On the Radon Transform of the Rapidly Decreasing Functions on Symmetric Spaces II .....	161
HATANO, K.: Notes on Hausdorff Dimensions of Cartesian Product Sets .....	17
ITANO, M.: Note on the Canonical Extensions and the Boundary Values for Distributions in the Space $H^\mu$ .....	405
ITANO, M. and K. YOSHIDA: Energy Inequalities and Cauchy Problems for a System of Linear Partial Differential Equations .....	75
ITO, M.: Sur les Noyaux d'Ordre Fractionnaire Associés au Noyau de Dirichlet .....	123
ITO, M.: Sur le Balayage Relatif aux Noyaux Composés .....	339
KAWAGUCHI, T. and M. SUGAWARA: $K$ - and $KO$ -Rings of the Lens Space $L^n(p^2)$ for Odd Prime $p$ .....	273
KENMOCHI, N.: Existence Theorems for Certain Nonlinear Equations .....	435
KOBAYASHI, T.: On Some Secondary Cohomology Operations .....	41
KOBAYASHI, T. and M. SUGAWARA: $K_A$ -Rings of Lens Spaces $L^n(4)$ .....	253
KOBAYASHI, T. and M. SUGAWARA: On Stable Homotopy Types of Stunted Lens Spaces .....	287
MAEDA, F.-Y. On Regularity of Boundary Points for Dirichlet Problems of the Equation $\Delta u = qu (q \geq 0)$ .....	373
MARUO, O. and S. TÔGÔ: Nonimbedding Theorems of Algebras .....	5
NISHIDA, N.: A Note on the Admissible Tests and Classifications in Multivariate Analysis .....	427

OKA, S.: Some Exact Sequences of Modules over the Steenrod Algebra .....	109
OKA, S.: The Stable Homotopy Groups of Spheres I .....	305
ONOSE, H.: Some Oscillation Criteria for $n$ th Order Nonlinear Delay-Differential Equations .....	171
SAKAI, S. and K. YOSHIDA: Note on the Cauchy Problem for Linear Hyperbolic Partial Differential Equations with Constant Coefficients .....	445
SHINTANI, H.: On One-step Methods Utilizing the Second Derivative ..	349
SUGAWARA, M. and T. KAWAGUCHI: $K$ - and $KO$ -Rings of the Lens Space $L^n(p^2)$ for Odd Prime $p$ .....	273
SUGAWARA, M. and T. KOBAYASHI: $K$ -Rings of Lens Spaces $L^n(4)$ .....	253
SUGAWARA, M. and T. KOBAYASHI: On Stable Homotopy Types of Stunted Lens Spaces .....	287
TÔGÔ, S. and O. MARUO: Nonimbedding Theorems of Algebras .....	5
WOOD, C.A. and D.E. BERTHOLF: Commutative Rings for which Each Proper Homomorphic Image is a Multiplication Ring. II .....	1
YAMASAKI, M.: Semi-Infinite Programs and Conditional Gauss Variational Problems .....	177
YANAGIHARA, H.: Some Properties of Hopf Algebras Attached to Group Varieties.....	227
YASUI, T.: The Reduced Symmetric Product of a Complex Projective Space and the Embedding Problem .....	27
YEH, C.-C., L.-S. CHEN and H.-Y. CHEN: On the Behavior of Solutions of the Cauchy Problem for Parabolic Equations with Unbounded Coefficients .....	145
YOSHIDA, K. and M. ITANO: Energy Inequalities and Cauchy Problems for a System of Linear Partial Differential Equations .....	75
YOSHIDA, K. and S. SAKAI: Note on the Cauchy Problem for Linear Hyperbolic Partial Differential Equations with Constant Coefficients .....	445

昭和四十六年十二月二十日 印刷

昭和四十六年十二月二十五日 発行

編 集 者 廣 島 大 学 理 学 部  
行 行 者 数 学 教 室

印 刷 者 增 田 訓 清  
広島市十日市町2丁目3番23号

印 刷 所 大 学 印 刷 株 式 会 社  
広島市十日市町2丁目3番23号

PRINTED BY  
DAIGAKU INSATSU CO., LTD  
HIROSHIMA, JAPAN

## CONTENTS

	PAGE
<b>L.-S. CHEN, C.-C. YEH and H.-Y. CHEN:</b> On the Behavior of Solutions of the Cauchy Problem for Parabolic Equations with Unbounded Coefficients .....	145
<b>L.-S. CHEN:</b> The Unbounded Growth of Solutions of Parabolic Equations with Unbounded Coefficients .....	155
<b>M. EGUCHI:</b> On the Radon Transform of the Rapidly Decreasing Functions on Symmetric Spaces II .....	161
<b>H. ONOSE:</b> Some Oscillation Criteria for $n$ th Order Nonlinear Delay-Differential Equations .....	171
<b>M. YAMASAKI:</b> Semi-Infinite Programs and Conditional Gauss Variational Problems .....	177
<b>H. YANAGIHARA:</b> Some Properties of Hopf Algebras Attached to Group Varieties .....	227
<b>T. KOBAYASHI and M. SUGAWARA:</b> $K_A$ -Rings of Lens Spaces $L^n(4)$ .....	253
<b>T. KAWAGUCHI and M. SUGAWARA:</b> $K$ - and $KO$ -Rings of the Lens Space $L^n(p^2)$ for Odd Prime $p$ .....	273
<b>T. KOBAYASHI and M. SUGAWARA:</b> On Stable Homotopy Types of Stunted Lens Spaces .....	287
<b>S. OKA:</b> The Stable Homotopy Groups of Spheres I .....	305
<b>M. ITO:</b> Sur le Balayage Relatif aux Noyaux Composés .....	339
<b>H. SHINTANI:</b> On One-step Methods Utilizing the Second Derivative .....	349
<b>F.-Y. MAEDA:</b> On Regularity of Boundary Points for Dirichlet Problems of the Equation $\Delta u = qu (q \geq 0)$ .....	373
<b>M. ITANO:</b> Note on the Canonical Extensions and the Boundary Values for Distributions in the Space $H^r$ .....	405
<b>N. NISHIDA:</b> A Note on the Admissible Tests and Classifications in Multivariate Analysis .....	427
<b>N. KENMOCHI:</b> Existence Theorems for Certain Nonlinear Equations .....	435
<b>K. YOSHIDA and S. SAKAI:</b> Note on the Cauchy Problem for Linear Hyperbolic Partial Differential Equations with Constant Coefficients .....	445