

# HIROSHIMA MATHEMATICAL JOURNAL

Formerly

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

---

VOLUME 12

1982

---

PUBLISHED BY

DEPARTMENT OF MATHEMATICS  
FACULTY OF SCIENCE  
HIROSHIMA UNIVERSITY  
HIROSHIMA, JAPAN



## TABLE OF CONTENTS

### VOLUME 12, 1982

<b>ABE, N.:</b> On generalized total curvatures and conformal mappings .....	203
<b>ABIB, O. R.:</b> Métriques invariantes à gauche un groupe de Lie: sur une conjecture de Milnor .....	245
<b>BALSER, W.:</b> Growth estimates for the coefficients of generalized formal solutions, and representation of solutions using Laplace integrals and factorial series .....	11
<b>BUI HUY QUI:</b> Weighted Besov and Triebel spaces: Interpolation by the real method .....	581
<b>DIVALL, R. A.:</b> See UEHARA, H. ....	225
<b>ELIASON, S. B. and L. W. WHITE:</b> On positive solutions of second order elliptic partial differential equations .....	469
<b>GRAEF, J. R., M. K. GRAMMATIKOPOULOS and P. W. SPIKES:</b> On the behavior of solutions of generalized Emden-Fowler equations with deviating arguments .....	1
<b>GRAMMATIKOPOULOS, M. K.:</b> See GRAEF, J. R. ....	1
<b>HASHIZUME, M.:</b> Whittaker functions on semisimple Lie groups .....	259
<b>HEMMI, Y.:</b> Mod $p$ $H$ -spaces and $p$ -regularities .....	399
<b>HONDA, M.:</b> Weakly serial subalgebras of Lie algebras .....	183
<b>HONDA, M.:</b> Joins of weak subideals of Lie algebras .....	657
<b>II, K.:</b> Fourier-like transformation and a representation of the Lie algebra $\mathfrak{so}(n+1, 2)$ .....	421
<b>IMAOKA, M.:</b> Symplectic Pontrjagin numbers and homotopy groups of $MSp(n)$ .....	151
<b>IVANOV, A. F., Y. KITAMURA, T. KUSANO and V. N. SHEVELO:</b> Oscillatory solutions of functional differential equations generated by deviation of arguments of mixed type .....	645
<b>KAWANO, N. and M. NAITO:</b> Positive solutions of semilinear second order elliptic equations in exterior domains .....	141

<b>KAYANO, T. and M. YAMASAKI:</b> Dirichlet finite solutions of Poisson equations on an infinite network .....	569
<b>KIJIMA, D. and M. NISHI:</b> A note on excellent forms .....	249
<b>KIM, I.-B.:</b> Special concircular vector fields in Riemannian manifolds .....	77
<b>KITAMURA, Y.:</b> See IVANOV, A. F. ....	645
<b>KUBO, F.:</b> An infinite-dimensional semisimple Lie algebra .....	607
<b>KUSANO, T.:</b> See IVANOV, A. F. ....	645
<b>MAEDA, F.-Y.:</b> Dirichlet problem for a semi-linearly perturbed structure of a harmonic space .....	103
<b>MATSUKI, T.:</b> Orbits on affine symmetric spaces under the action of parabolic subgroups .....	307
<b>MIYAKAWA, T.:</b> On nonstationary solutions of the Navier-Stokes equations in an exterior domain .....	115
<b>MIYAKAWA, T. and Y. TERAMOTO:</b> Existence and periodicity of weak solutions of the Navier-Stokes equations in a time dependent domain ...	513
<b>MIZUTA, Y.:</b> Minimally semi-fine limits of Green potentials of general order .....	505
<b>NAITO, M.:</b> See KAWANO, N. ....	141
<b>NISHI, M.:</b> See KIJIMA, D. ....	249
<b>NTOUYAS, S. K.:</b> A boundary value problem for second order functional differential equations .....	453
<b>OOISHI, A.:</b> Castelnuovo's regularity of graded rings and modules .....	627
<b>OHKAWA, T.:</b> The pure braid groups and the Milnor $\bar{\mu}$ -invariants of links .....	485
<b>OKA, S. and K. SHIMOMURA:</b> On products of the $\beta$ -elements in the stable homotopy of spheres .....	611
<b>OKAMOTO, K. and T. SAKURAI:</b> On a certain class of irreducible unitary representations of the infinite dimensional rotation group II .....	385
<b>OKAMOTO, K. and T. SAKURAI:</b> An analogue of Peter-Weyl theorem for the infinite dimensional unitary group .....	529
<b>ONODA, N. and K. YOSHIDA:</b> On noetherian subrings of an affine domain .....	377

<b>SAKAMOTO, T.:</b> Weakly serial subgroups .....	295
<b>SAKURAI, T.:</b> See OKAMOTO, K. ....	385
<b>SAKURAI, T.:</b> See OKAMOTO, K. ....	529
<b>SHEVELO, V. N.:</b> See IVANOV, A. F. ....	645
<b>SHIMOMURA, K.:</b> See OKA, S. ....	611
<b>SHINAGAWA, M.:</b> Some results on the normalization and normal flatness .....	209
<b>SHINTANI, H.:</b> Modified Rosenbrock methods for stiff systems .....	543
<b>SHINTANI, H.:</b> Modified Rosenbrock methods with approximate Jacobian matrices .....	559
<b>SPIKES, P. W.:</b> See GRAEF, J. R. ....	1
<b>SUMIHIRO, H.:</b> A theorem on splitting of algebraic vector bundles and its applications .....	435
<b>TERAMOTO, Y.:</b> See MIYAKAWA, T. ....	513
<b>TODA, N.:</b> Some notes on asymptotic values of meromorphic functions of smooth growth .....	491
<b>TÔGÔ, S.:</b> Ascendancy in locally finite groups .....	93
<b>TRENCH, W. F.:</b> Asymptotic theory of perturbed general disconjugate equations .....	43
<b>TSUKIYAMA, K.:</b> On the group of fibre homotopy equivalences .....	349
<b>UEHARA, H. and R. A. DIVALL:</b> Hopf algebra of class functions and inner plethysms .....	225
<b>WHITE, L. W.:</b> See ELIASON, S. B. ....	469
<b>YAMASAKI, M.:</b> See KAYANO, T. ....	569
<b>YASUKURA, O. and I. YOKOTA:</b> Subgroup $(SU(2) \times Spin(12))/Z_2$ of compact simple Lie group $E_7$ and non-compact simple Lie group $E_{7,\sigma}$ of type $E_{7(-5)}$ .....	49
<b>YOKOTA, I.:</b> See YASUKURA, O. ....	49
<b>YOSHIDA, K.:</b> The Hopf bifurcation and its stability for semilinear dif- fusion equation with time delay arising in ecology .....	321
<b>YOSHIDA, K.:</b> See ONODA, N. ....	377





CONTENTS

	PAGE
<b>S. K. NTOUYAS:</b> A boundary value problem for second order functional differential equations .....	453
<b>S. B. ELIASON and L. W. WHITE:</b> On positive solutions of second order elliptic partial differential equations .....	469
<b>T. OHKAWA:</b> The pure braid groups and the Milnor $\bar{\mu}$ -invariants of links .....	485
<b>N. TODA:</b> Some notes on asymptotic values of meromorphic functions of smooth growth .....	491
<b>Y. MIZUTA:</b> Minimally semi-fine limits of Green potentials of general order .....	505
<b>T. MIYAKAWA and Y. TERAMOTO:</b> Existence and periodicity of weak solutions of the Navier-Stokes equations in a time dependent domain .....	513
<b>K. OKAMOTO and T. SAKURAI:</b> An analogue of Peter-Weyl theorem for the infinite dimensional unitary group .....	529
<b>H. SHINTANI:</b> Modified Rosenbrock methods for stiff systems .....	543
<b>H. SHINTANI:</b> Modified Rosenbrock methods with approximate Jacobian matrices .....	559
<b>T. KAYANO and M. YAMASAKI:</b> Dirichlet finite solutions of Poisson equations on an infinite network .....	569
<b>BUI HUY QUI:</b> Weighted Besov and Triebel spaces: Interpolation by the real method .....	581
<b>F. KUBO:</b> An infinite-dimensional semisimple Lie algebra .....	607
<b>S. OKA and K. SHIMOMURA:</b> On products of the $\beta$ -elements in the stable homotopy of spheres .....	611
<b>A. OOISHI:</b> Castelnuovo's regularity of graded rings and modules .....	627
<b>A. F. IVANOV, Y. KITAMURA, T. KUSANO and V. N. SHEVELO:</b> Oscillatory solutions of functional differential equations generated by deviation of arguments of mixed type .....	645
<b>M. HONDA:</b> Joins of weak subideals of Lie algebras .....	657