



JAPANESE JOURNAL OF MATHEMATICS

3rd Series

Official Journal of the Mathematical Society of Japan

Volume 1 • Number 1–2 • 2006

V.I. Arnold On the matricial version of Fermat–Euler congruences	1
S. Iyanaga Travaux de Claude Chevalley sur la théorie du corps de classes: Introduction	25
S. Gindikin Harmonic analysis on symmetric Stein manifolds from the point of view of complex analysis	87
L. Illusie Miscellany on traces in ℓ -adic cohomology: a survey	107
A. De Sole, V.G. Kac Finite vs affine W-algebras	137
B. Roynette, P. Vallois, M. Yor Some penalisations of the Wiener measure	263
K.-H. Neeb Towards a Lie theory of locally convex groups	291
V.I. Arnold <i>Publisher's Erratum:</i> On the matricial version of Fermat–Euler congruences	469
S. Kojima Foreword to the <i>Japanese Journal of Mathematics</i>	471
Y. Morita Welcome to the Third Series of the <i>Japanese Journal of Mathematics</i>	473

Volume 2 • Number 1–2 • 2007

V. Turaev

Lectures on topology of words

1

Special Feature: Award of the 1st Gauss Prize to K. Itô

K. Itô

On the occasion of the ceremonial 2006 Gauss Prize event at Kyoto University

41

M. Fukushima

On the works of Kiyosi Itô and stochastic analysis

45

P. Malliavin, M.E. Mancino, M.C. Recchioni

A non-parametric calibration of the HJM geometry:
an application of Itô calculus to financial statistics

55

H. McKean

Recollections of K. Itô and Kyoto 1957/58

79

J. Pitman, M. Yor

Itô's excursion theory and its applications

83

P. Salminen, P. Vallois, M. Yor

On the excursion theory for linear diffusions

97

Ya.G. Sinai

Congratulations to Professor K. Itô

129

D.W. Stroock

Itô geometry

133

M. Yor

How K. Itô revolutionized the study of stochastic processes

137

Special Feature: The 1st Takagi Lectures

T. Kobayashi

On the establishment of the Takagi Lectures

145

S. Kojima

On the Takagi Lectures

149

K. Miyake

Teiji Takagi, Founder of the Japanese School of Modern Mathematics

151

S. Bloch

Motives associated to graphs

165

F. Cucker, S. Smale

On the mathematics of emergence

197

J.-M. Lasry, P.-L. Lions
Mean field games 229

C. Voisin
Some aspects of the Hodge conjecture 261

* * *

E.B. Vinberg
On some number-theoretic conjectures of V. Arnold 297

B. Krötz
Corner view on the crown domain 303

L. Illusie
Erratum: Miscellany on traces in ℓ -adic cohomology: a survey 313

Volume 3 • Number 1–2 • 2008

Special Feature: The 3rd Takagi Lectures

P. Malliavin
Invariant or quasi-invariant probability measures for infinite dimensional groups
Part I: Non-ergodicity of Euler hydrodynamic 1

P. Malliavin
Invariant or quasi-invariant probability measures for infinite dimensional groups
Part II: Unitarizing measures or Berezinian measures 19

J. Makino
Do-it-yourself computational astronomy
Hardwares, algorithms, softwares, and sciences 49

* * *

A.A. Davydov, G. Ishikawa, S. Izumiya, W.-Z. Sun
Generic singularities of implicit systems of first order differential
equations on the plane 93

D. Lenz, N. Peyrerimhoff, O. Post, I. Veselić
Continuity properties of the integrated density of states on manifolds 121

Special Feature: The Takagi Lectures

D.-V. Voiculescu

Aspects of free analysis

163

O. Viro

From the sixteenth Hilbert problem to tropical geometry

185

* * *

C.F. Dunkl

Reflection groups in analysis and applications

215

M. Pevzner

Covariant quantization: spectral analysis versus deformation theory

247

Volume 4 • Number 1–2 • 2009

Special Feature: The 5th Takagi Lectures

M. Kontsevich

Holonomic \mathcal{D} -modules and positive characteristic

1

J.-P. Bourguignon

Ricci curvature and measures

27

É. Ghys

Right-handed vector fields & the Lorenz attractor

47

N.A. Nekrasov

Instanton partition functions and M-theory

63

Special Feature: The Takagi Lectures

H. Ooguri

Geometry as seen by string theory

95

D. McDuff

Symplectic embeddings and continued fractions: a survey

121

* * *

A. Barakat, A. De Sole, V.G. Kac

Poisson vertex algebras in the theory of Hamiltonian equations

141

Volume 5 • Number 1–2 • 2010

Special Feature: The 7th Takagi Lectures

M. Harris Arithmetic applications of the Langlands program	1
U. Jannsen Weights in arithmetic geometry	73
C. Khare Serre's conjecture and its consequences	103
J. M^cKernan Mori dream spaces	127

Special Feature: The Takagi Lectures

M. Khovanov Categorifications from planar diagrammatics	153
---	------------

* * *

M. Mazur, B.V. Petrenko Generalizations of Arnold's version of Euler's theorem for matrices	183
---	------------

Volume 6 • Number 1–2 • 2011

Special Feature: The Takagi Lectures

A. Connes The BC-system and L -functions	1
S. Brendle Evolution equations in Riemannian geometry	45

* * *

M. Mazur, B.V. Petrenko Addendum to "Generalizations of Arnold's version of Euler's theorem for matrices"	63
---	-----------

Special Feature: The Takagi Lectures

S. Gukov
Quantization via mirror symmetry 65

C. Kenig
Critical non-linear dispersive equations:
global existence, scattering, blow-up and universal profiles 121

Volume 7 • Number 1–2 • 2012

T. Sunada
Lecture on topological crystallography 1

M. Gorelik, V.G. Kac, P. Möseneder Frajria, P. Papi
Denominator identities for finite-dimensional Lie superalgebras
and Howe duality for compact dual pairs 41

Special Feature: The 10th Takagi Lectures

Y. Benoist, J.-F. Quint
Introduction to random walks on homogeneous spaces 135

A. Naor
An introduction to the Ribe program 167

* * *

I.E. Shparlinski
Modular hyperbolas 235

Volume 8 • Number 1–2 • 2013

A. De Sole, V.G. Kac
The variational Poisson cohomology 1

N. Ozawa
About the Connes embedding conjecture
Algebraic approaches 147

Special Feature: The Takagi Lectures

R. Seiringer
Hot topics in cold gases
A mathematical physics perspective 185

* * *

A. De Sole, V.G. Kac

Non-local Poisson structures and applications to the theory of integrable systems

233

Volume 9 • Number 1–2 • 2014

Special Feature: The Takagi Lectures

L. Lafforgue

Noyaux du transfert automorphe de Langlands et formules de Poisson non linéaires

1

H. Oh

Apollonian circle packings: dynamics and number theory

69

A.-M. Aubert, P. Baum, R. Plymen, M. Solleveld

Geometric structure in smooth dual and local Langlands conjecture

99

A. Lubotzky

Ramanujan complexes and high dimensional expanders

137

* * *

Y.Z. Flicker

Harmonic analysis on the Iwahori–Hecke algebra

171

Volume 10 • Number 1–2 • 2015

Special Feature: The Takagi Lectures

G. Tian

Kähler–Einstein metrics on Fano manifolds

1

* * *

T. Ceccherini-Silberstein, F. Scarabotti, F. Tolli

Mackey’s theory of τ -conjugate representations for finite groups

43

E. Bannai, H. Tanaka

Appendix: On some Gelfand pairs and commutative association schemes

97

Special Feature: The Takagi Lectures

C. Manolescu

Floer theory and its topological applications

105

* * *

M. Gorelik, V.G. Kac
Characters of (relatively) integrable modules over affine Lie superalgebra 135

L. Illusie
From Pierre Deligne's secret garden: looking back at some of his letters 237

Volume 11 • Number 1–2 • 2016

Special Feature: The Takagi Lectures

M.J. Hopkins
The Kervaire invariant problem 1

P. Scholze
Perfectoid Shimura varieties 15

A. Guionnet
Free analysis and random matrices 33

V.F.R. Jones
Knots, groups, subfactors and physics 69

M. Kashiwara
Riemann–Hilbert correspondence for irregular
holonomic \mathcal{D} -modules 113

A.M. Vershik
Asymptotic theory of path spaces of graded graphs and
its applications 151

C. Villani
Synthetic theory of Ricci curvature bounds 219

S.-T. Yau
From Riemann and Kodaira to modern developments on
complex manifolds 265

* * *

R. Cavalieri
Hurwitz theory and the double ramification cycle 305

Volume 12 • Number 1 • 2017

Special Feature: The Takagi Lectures

A. Venkatesh

Cohomology of arithmetic groups and periods of automorphic forms

1

* * *

S. Carpentier

A sufficient condition for a rational differential operator
to generate an integrable system

33