



---

Official Journal of the Mathematical Society of Japan

---

**Volume 1 • Number 1–2 • 2006**

<b>V.I. Arnold</b> On the matricial version of Fermat-Euler congruences	1
<b>S. Iyanaga</b> Travaux de Claude Chevalley sur la théorie du corps de classes: Introduction	25
<b>S. Gindikin</b> Harmonic analysis on symmetric Stein manifolds from the point of view of complex analysis	87
<b>L. Illusie</b> Miscellany on traces in $\ell$ -adic cohomology: a survey	107
<b>A. De Sole, V.G. Kac</b> Finite vs affine $W$ -algebras	137
<b>B. Roynette, P. Vallois, M. Yor</b> Some penalisations of the Wiener measure	263
<b>K.-H. Neeb</b> Towards a Lie theory of locally convex groups	291
<b>V.I. Arnold</b> <i>Publisher's Erratum</i> : On the matricial version of Fermat-Euler congruences	469
<b>S. Kojima</b> Foreword to the <i>Japanese Journal of Mathematics</i>	471
<b>Y. Morita</b> 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  $\ell$ -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. Peyerimhoff, O. Post, I. Veselić  
Continuity properties of the integrated density of states on manifolds 121

## Special Feature: Takagi Lectures

<b>D.-V. Voiculescu</b> Aspects of free analysis	163
<b>O. Viro</b> From the sixteenth Hilbert problem to tropical geometry	185

\* \* \*

<b>C.F. Dunkl</b> Reflection groups in analysis and applications	215
<b>M. Pevzner</b> Covariant quantization: spectral analysis versus deformation theory	247

## Volume 4 • Number 1 • 2009

### Special Feature: The 5rd Takagi Lectures

<b>M. Kontsevich</b> Holonomic $\mathcal{D}$ -modules and positive characteristic	1
<b>J.-P. Bourguignon</b> Ricci curvature and measures	27
<b>É. Ghys</b> Right-handed vector fields & the Lorenz attractor	47
<b>N.A. Nekrasov</b> Instanton partition functions and M-theory	63