

# Notices from the ISMS

( Novae Scientiae Mathematicae )

November 2009

## CONTENTS

MASAHIRO NAKAMURA (1919 - 2007).....	1
<b>Communications:</b>	
(I) Conferences for Young Algebraists..... Klaus Denecke.....	9
(II) Call for Proposals and Organizers for Special Sessions in IVMS 2010.....	9
<b>The ISMS:</b>	
(I) Contributions (Gift to the ISMS).....	9
<b>Call for Papers for SCMJ</b>	
(I) Call for papers for SCMJ.....	10
(II) Items required in "Form for Submission".....	12
<b>Call for ISMS Members</b>	
(I) Call for Academic and Institutional Members.....	13
(II) Call for Regular (Individual) Members.....	14
(III) Membership Application Form.....	15



For the Welfare of the Humankind  
Promoting Mathematical Sciences

**INTERNATIONAL SOCIETY FOR MATHEMATICAL SCIENCES**  
**Scientiae Mathematicae Japonicae, Notices from the ISMS**

The International Society for Mathematical Sciences (ISMS) is an international society consisting of mathematical scientists throughout the world.

The main activities of the ISMS are to publish (1) the (**print and online**) journal **Scientiae Mathematicae Japonicae (SCMJ)** and (2) Notices from the ISMS and to hold **assembly meetings** in Japan and **international internet meetings** (distance symposium) of mathematical sciences (IVMS) accessible from all over the world.

SCMJ is the 21<sup>st</sup> Century New Unified Series of **Mathematica Japonica (MJ)** and **Scientiae Mathematicae (SCM)**. MJ was first published in 1948 and was one of the oldest mathematical journals in Japan. SCM was an online and print journal started in 1998 in celebration of the semi-centennial anniversary and received 26000 visits per month from 50 countries in the world. SCMJ contains original papers in mathematical sciences submitted from all over the world and receives **38000** visits per month now. Not only papers in pure and applied mathematics but those devoted to mathematical statistics, operations research, informatics, computer science, biomathematics, mathematical economics and other mathematical sciences are also welcome. The journal is published in January, March, May, July, September, and November in each calendar year.

The ISMS has enhanced the journal, beginning from July 1995, by including excellent Research-Expository papers in the section "**International Plaza** for Mathematical Sciences" as well as original research papers. The section provides papers dealing with broad overviews of contemporary mathematical sciences, written by experts mainly at our invitation. Papers shedding lights on open problems or new directions or new breakthroughs for future research are especially welcome.

As is shown in the **Editorial Board of SCMJ**, we have invited **many distinguished professors** of 20 countries as editors, who will receive and referee the papers of their special fields with their **high standard**.

Beginning from 2007, we make the online version of SCMJ more readable and convenient to the readers by adding the specialized contents. By this, the readers can access to the online version, in which the papers appear in the order of acceptance, from (i) the contents of the printed version, and (ii) the specialized contents of a volume. From 2007, the subscription fee of the printed version plus the online version of SCMJ becomes lower and the same of the printed version only. Therefore, the subscribers of the printed version can read the online version without no additional cost.

For benefit of the ISMS members, we publish "Notices from the ISMS" 6 times a year. We are enhancing it by adding interesting articles, including book reviewing, written by eminent professors.

The ISMS has set up a **videoconferencing system (IVMS)** which can connect up to twenty sites of a research group in the same or **different countries in the world**. Using this system, speakers of the session can write on a white board or an OHP sheet or use PowerPoint. On the other hand participants can ask questions or make comments from any connected site in the world. All these are performed similarly to the traditional meetings.

To connect with our system, you can use your own videoconferencing system only if it satisfies the International Telecommunication Union-Technical Committee Standards (ITU-T Standard).

### **Copyright Transfer Agreement**

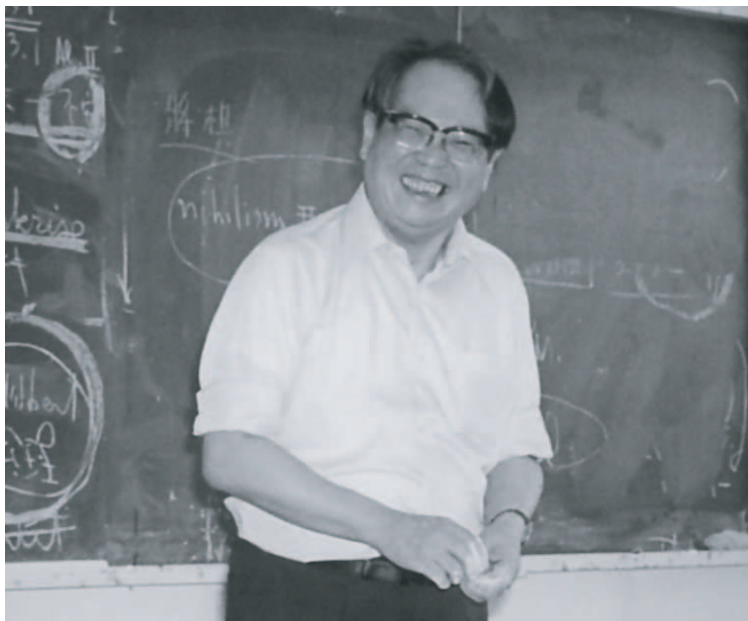
A copyright transfer agreement is required before a paper is published in this journal. By submitting a paper to this journal, authors are regarded to certify that the manuscript has not been submitted to nor is it under consideration for publication by another journal, conference proceedings or similar publication.

For more information, please visit <http://www.jams.or.jp>.

**Copyright** Copyright ©2009 by International Society for Mathematical Sciences. All rights reserved.

# MASAHIRO NAKAMURA

(1919 - 2007)



## IN MEMORY OF PROFESSOR MASAHIRO NAKAMURA IN DEEP SORROW

Professor Masahiro Nakamura, Professor Emeritus of Osaka Kyoiku University, passed away on November 9, 2007 in Japan.

I was very much shocked by this sad and surprising news.

Before his funeral ceremony at the Asia Hall on November 12, 2007, I met the corpse of Professor Nakamura and I expressed my appreciation to him for his kind suggestions and devoted encouragements to me for a long time.

Four months has passed with sad tear since this sad terrible fact, and I would like to remember Professor Masahiro Nakamura.

I first met Professor M. Nakamura in April 1962 at the university residence of Professor Ziro Takeda who was one of the professors of Ibaraki University. Since Professor M. Nakamura was one of the very excellent mathematicians and I knew him only by his famous name, but I had never met him before. After listening his passionate and instructive talk on Mathematics to me, I had been really impressed with his enthusiastic spirit to attack Mathematics.

At that time, I just finished Tohoku University and I worked for Taira Technical College as an instructor and I did not know "*severity and hardness*" on "*Research of Mathematics*". Then I worked for Ibaraki University invited by Professor Takeda and I moved to Hirosaki University and then to Tokyo University of Science, I had been receiving a lot of letters from Professor Nakamura for a long time. Some of them are closely related to "*How to research mathematics*" or some of them are concerned with "*How to live in life*".

I had been really impressed with many instructive letters by Professor Nakamura and I had learnt a lot of things. Frankly speaking, "*How to consider this result on mathematics*" or "*How to generalize this result*" by Professor Nakamura had been encouraging and supporting my mathematics life.

I can't express how much I appreciate Professor Nakamura for his constant encouragement to me by his many continuous letters for a long time.

If I had not received them, I could not become a mathematician.

I would like to introduce the following episode on a letter from Professor Nakamura, which had changed "*my mathematics life*".

One day in 1970s, I had received a letter from Professor Nakamura reporting an excellent and simple proof of Löwner-Heinz inequality (denoted by LH briefly) by Pedersen, but unfortunately it contained some writing mistakes at 3 places, so I could not understand its proof immediately and I had been absorbed in reading its proof, so that it took 3 days to understand the content completely. Finally I had been really impressed with his exciting and breathtaking proof. *Fortunately this writing miss at 3 places could caused "Fortune" for me 15 years after and I would like to explain this story as follows.*

Although many proofs of LH are given by many mathematicians, for examples, E.Heinz (1951), T.Kato (1952), R.Bhatia (2007), this exciting proof by Pedersen was my starting key point to consider an extension of LH. A capital letter means a bounded linear operator on a Hilbert space. LH asserts that  $A \geq B \geq 0$  ensures  $A^p \geq B^p$  for any  $p \in [0, 1]$ .

Although LH is very useful, but the condition " $p \in [0, 1]$ " is too restrictive. In fact LH does not always hold for  $p \notin [0, 1]$ . Consider two magic boxes  $f(\square) = (B^{\frac{r}{2}} \square B^{\frac{r}{2}})^{\frac{1}{q}}$  and  $g(\square) = (A^{\frac{r}{2}} \square A^{\frac{r}{2}})^{\frac{1}{q}}$  under the following conditions,  $r \geq 0$ ,  $p \geq 0$ ,  $q \geq 1$  with  $(1+r)q \geq p+r$ . Although  $A \geq B \geq 0$  does not ensure  $A^p \geq B^p$  for  $p > 1$  in general, but the following "*two order preserving operator inequalities*" (i)  $f(A^p) \geq f(B^p)$  and (ii)  $g(A^p) \geq g(B^p)$  hold whenever  $A \geq B \geq 0$  under the condition stated above. It was shown by Tanahashi (1996) that the domain drawn for  $p, q$  and  $r$  was best possible. When we put  $r = 0$  in (i) or (ii), we have LH. *Paradoxically speaking, the writing mistakes at 3 places caused a great deal of "fortune" because my comprehensive understanding of Pedersen's proof was my starting key point to consider an extension of LH.* Needless to say, my paper on (i) and (ii) had been dedicated to Professor Nakamura as the following one; T.Furuta,  $A \geq B \geq 0$  assures  $(B^r A^p B^r)^{1/q} \geq B^{(p+2r)/q}$  for  $r \geq 0, p \geq 0, q \geq 1$  with  $(1+2r)q \geq p+2r$ , Proc. Amer. Math. Soc., **101** (1987), 85-88.

*I would like to express my sincere appreciation to Professor Nakamura for teaching me so many things on "Mathematics and Life". I decide to keep in mind that I have to attack "Mathematics" with strong enthusiastic spirit and I have to tell Nakamura's spirit to my colleagues forever. May his soul rest peacefully!*

March 11, 2008

Takayuki Furuta  
Department of Mathematical Information Science,  
Tokyo University of Science

## ENTRUSTING MATHEMATICA JAPONICA AS A MESSENGER

*To the memory of Professor Masahiro Nakamura*

Dear Professor Masahiro Nakamura,

Now, I think, "What did you want to tell us the most ? "

After leaving Tohoku University, you chose a new post in our university which is a so-called teachers university. At present, it is named "Osaka Kyoiku University". There, you gave lectures on "Functional Analysis," and organized seminars on the theory of

"von Neumann algebras". I was one of the members in the first class of the seminar. Before, you organized similar seminars in Tohoku University. I heard so.

Here, I enumerate what you told us occasionally.

"I want to teach that it is not difficult to write a paper on Mathematics."

"The best method to understand Mathematics is to write any original paper."

"You know? I want for every my student to write a paper."

"Every teacher should have an experience to write a paper on Mathematics. Then he or she can understand what is the most important to teach Mathematics."

You were not interested in a conference of a large scale. You loved a small seminar with active discussions. You organized your seminar in your office, which was before a class room of an attached school. There you went on telling "Write a paper!!".

In your office, you put a picture of von Neumann on the wall over the blackboard. You respected him the most. However, you did not like rank results by the other person, and also you detested for papers to be evaluated. For yourself, it was out of the question to choose a journal to submit by depending on the quality of the results.

To you who repeated "write a paper" toward the students, there was an important affair. It was to keep any mathematical journal where papers can appear freely. For yourself, it was *Mathematica Japonica*. You tied onto *Mathematica Japonica* papers of your students, which were presented in your seminar. *Mathematica Japonica* was your messenger, and it played surely the role.

Once, you told me an expression due to Masuda, who was one of your colleague in Tohoku University. That is, *A paper is a love letter without address*. *Mathematica Japonica* flew over the world trying to deliver such many love letters together with your dream for students to grow up as good mathematicians.

May 28, 2008

Marie Choda  
Osaka Kyoiku University,  
Asahigaoka, Kashiwara 582-8582, Japan

## MEMORIES OF MASAHIRO NAKAMURA

The first time I met Professor Nakamura was at one of the weekly seminars in mathematics at Osaka Kyoiku University at the Tennoji campus. They were long seminars starting at eleven before noon and going on to around five a clock in the afternoon. I had just arrived in Japan in April of 1977 on a two year scholarship from Mombusho after having completed a master's degree in Copenhagen. It was a period with rapid progress in operator algebra theory, and I had just begun to do research on my own.

Professor Nakamura had at the time already 37 years of experience as an accomplished researcher and author of numerous papers in mathematics. I was received with great kindness by professor Nakamura and all the other participants in the seminar. I quickly realized that the Nakamura seminar was a very special thing that had a history going back decades earlier into post-war Japan. The seminar took place in a very old wooden structure of a Western design and was probably built in the Taisho or even Meiji era. I was in particular impressed with the stairs leading up to the seminar room on the second floor. They had not been repaired for many decades, if at all since the construction of the building, and I later learned that this is not unusual in Japanese

universities. Part of the stairs was completely missing and Professor Nakamura made sure that I would not get hurt.

The Nakamura seminar kept a record on the names of the speakers and the content of the talks, and I felt very honoured when professor Nakamura asked me to give talk number 999 in the series. The seminar no. 1000 was suspended, and the participants celebrated the long running seminar in an upscale Chinese restaurant. Decades later I was asked by professor Nakamura to give talk no. 2000 in the seminar series.

The seminar was a serious undertaking and people worked hard, but there were also time for amusement. Since I know the game of Go, Professor Nakamura introduced me to a graduate student of approximately the same strength, and he was very interested in the outcome of the game. He also arranged that each time I participated in the seminar, we would end a little early so I could play a game of go with Professor H. Choda in the seminar room. I never succeeded in obtaining a game with professor Nakamura himself, but he would watch some of the games, and I understood from his remarks and facial expressions that he very much followed what was going on.

In 1979, when I introduced the operator inequality for operator monotone functions (to be published in 1980 in *Mathematische Annalen*), in the seminar, Professor Nakamura, who in 1960 had written a joint work with Umegaki and Takesaki on non-commutative conditional expectations, took a keen interest in the subject. This led to a paper, Around Jensen 's inequality, by Nakamura and Kainuma where the authors, based on Ando 's theory of operator means and Loewner 's theory, proved what today is called Jensen 's operator inequality. A note of their result was added in proof in my own paper on the subject written in collaboration with Gert K. Pedersen.

May 28, 2008

Frank Hansen  
Institute of Economics  
Copenhagen University

## LIST OF PUBLICATIONS OF MASAHIRO NAKAMURA

- 1 Partially ordered rings, Tôhoku Math. J. 47, (1940), 251-254.
- 2 Closure in general lattices, Proc. Imp. Acad. Tokyo 17, (1941), 5-6.
- 3 Note on Banach spaces. III. A proof of Tietze-Matsumura's theorem, Proc. Imp. Acad. Tokyo 18, (1942), 267-268.
- 4 Note on Banach spaces. II. An ergodic theorem for Abelian semi-groups, Proc. Imp. Acad. Tokyo 18, (1942), 131.
- 5 Note on Banach spaces. IV. On a decomposition of additive set functions, with Sunouchi G., Proc. Imp. Acad. Tokyo 18, (1942), 333-335.
- 6 An abstract integral, VI, Proc. Imp. Acad. Tokyo 18, (1942), 50-52.
- 7 Banach limits and the Čech compactification of a countable discrete set, with Kakutani S., Proc. Imp. Acad. Tokyo 19, (1943), 224-229.
- 8 Note on Banach space. VIII. A generalization of Silov's theorem, Tôhoku Math. J. (2) 1, (1949), 66-68.
- 9 Note on Banach space. IX. Vitali-Hahn-Saks' theorem and  $K$ -spaces, Tôhoku Math. J. (2) 1, (1949), 100-108.
- 10 Notes on Banach space. XII. A remark on a theorem of Gelfand and Neumark, Tôhoku Math. J. (2) 2, (1950), 182-187.
- 11 Notes on Banach space. XI. Banach lattices with positive bases, Tôhoku Math. J. (2) 2, (1950), 135-141.
- 12 A proof of the Hahn-Birkhoff theorem, Notes on Banach space, X, Proc. Japan Acad. 26, (1950), no. 10, 9-10.
- 13 Group representation and Banach limit, with Takeda Z., Tôhoku Math. J. (2) 3, (1951), 132-135.
- 14 The two-sided representations of an operator algebra, Proc. Japan Acad. 27, (1951), 172-176.
- 15 A remark on theorems of Stone and Bochner, with Umegaki H., Proc. Japan Acad. 27, (1951), 506-507.
- 16 Centering of an operator algebra, with Misonou Y., Tôhoku Math. J. (2) 3, (1951), 243-248.
- 17 Complete continuities of linear operators, Proc. Japan Acad. 27, (1951), 544-547.
- 18 On the representations of positive definite functions and stationary functions on a topological group, with Turumaru T., Tôhoku Math. J. (2) 4, (1952), 1-9.
- 19 Simple algebras of completely continuous operators, with Turumaru T., Tôhoku Math. J. (2) 4, (1952), 303-308.
- 20 The Radon-Nikodým theorem of traces for a certain operator algebra, with Takeda Z., Tôhoku Math. J. (2) 4, (1952), 275-283.
- 21 Uniform space having volume, Math. Japon. 2, (1952), 193-194.
- 22 On a lemma of Sunouchi and Yano, Kōdai Math. Sem. Rep. 1953, (1953), 127-128.
- 23 Normal states of commutative operator algebras, with Takeda Z., Tôhoku Math. J. (2) 5, (1953), 109-121.
- 24 On a proof of a theorem of Rosenberg, with Turumaru T., Proc. Japan Acad. 29, (1953), 501-502.
- 25 Completely continuous operators with property F, with Turumaru T., Tôhoku Math. J. (2) 6, (1954), 174-176.
- 26 Expectations in an operator algebra, with Turumaru T., Tôhoku Math. J. (2) 6, (1954), 182-188.
- 27 On the direct product of finite factors, Tôhoku Math. J. (2) 6, (1954), 205-207.
- 28 A remark on the integral decomposition of a measure, Mem. Osaka Univ. Lib. Arts Ed. Ser. B. (1954), no. 3, 25-28.
- 29 On extensions of pure states of an abelian operator algebra, with Turumaru T., Tôhoku Math. J. (2) 6 (1954), 253-257.
- 30 Center of closure operators and a decomposition of a lattice, Math. Japon. 3 (1954), 49-52.
- 31 On the theory of independent random variables, Mem. Osaka Univ. Lib. Arts Ed. Ser. B 4 (1955), 46-50.
- 32 On a proposition of von Neumann, with Umegaki, H., Kōdai Math. Sem. Rep. 8 (1956), 142-144.

- 33 The permutability in a certain orthocomplemented lattice, *Kōdai Math. Sem. Rep.* 9 (1957), 158-160.
- 34 On operators of Schaefer class in the theory of singular integral equations, *Proc. Japan Acad.* 33 (1957), 455-456.
- 35 A proof of a theorem of Takesaki, *Kōdai Math. Sem. Rep.* 10 (1958), 189-190.
- 36 On some elementary properties of the crossed products of von Neumann algebras, with Takeda Z., *Proc. Japan Acad.* 34 (1958), 489-494.
- 37 On certain examples of the crossed product of finite factors. I, with Takeda Z., *Proc. Japan Acad.* 34 (1958), 495-499.
- 38 On certain examples of the crossed product of finite factors. II, *Proc. Japan Acad.* 34 (1958), 500-502.
- 39 On the extensions of finite factors. I, with Takeda Z., *Proc. Japan Acad.* 35 (1959), 149-154.
- 40 A remark on a paper of Greub and Rheinboldt, *Proc. Japan Acad.* 36 (1960), 198-199.
- 41 A Galois theory for finite factors, with Takeda Z., *Proc. Japan Acad.* 36 (1960), 258-260.
- 42 On the fundamental theorem of the Galois theory for finite factors, Takeda Z., *Proc. Japan Acad.* 36 (1960), 313-318.
- 43 A remark on the expectations of operator algebras, with Takesaki M. and Umegaki, H., *Kōdai Math. Sem. Rep.* 12 (1960), 82-90.
- 44 On inner automorphisms of certain finite factors, with Takeda Z., *Proc. Japan Acad.* 37 (1961), 31-32.
- 45 On outer automorphisms of certain finite factors, with Takeda Z., *Proc. Japan Acad.* 37 (1961), 215-216.
- 46 On the Blackwell theorem in operator algebras, with Umegaki H., *Proc. Japan Acad.* 37 (1961), 312-315.
- 47 A note on the entropy for operator algebras, with Umegaki H., *Proc. Japan Acad.* 37 (1961), 149-154.
- 48 Heisenberg's commutation relation and the Plancherel theorem, with Umegaki H., *Proc. Japan Acad.* 37 (1961), 239-242.
- 49 Multipliers of Banach algebras, with Choda H., *Proc. Japan Acad.* 38 (1962), 93-94.
- 50 On von Neumann's theory of measurements in quantum statistics, with Umegaki, H., *Math. Japon.* 7 (1962), 151-157.
- 51 A remark on the concept of channels, with Echigo M., *Proc. Japan Acad.* 38 (1962), 307-309.
- 52 On Bückner's inclusion theorems for Hermitean operators, with Yoshida M., *Proc. Japan Acad.* 40 (1964), 180-182.
- 53 A remark on the carrier projections in abelian operator algebras, with Otomi Y. and Urata Y., *Mem. Osaka Univ. Lib. Arts Ed. Ser. B No. 13* (1964), 25-26.
- 54 On a theorem of Hasumi and Srinivasan, with Matoba K., *Mem. Osaka Univ. Lib. Arts Ed. Ser. B No. 13* (1964), 23-24.
- 55 On theorems of Korovkin. II, with Nakamoto R., *Proc. Japan Acad.* 41 (1965), 433-435.
- 56 On a generalization of a theorem of Cox, with Yoshida M., *Proc. Japan Acad.* 43 (1967), 108-110.
- 57 *Kansū kaiseki nyūmon.* (Japanese) [Introduction to functional analysis], Maki Shoten, Tokyo (1968).
- 58 A minimal property for an operator of Hilbert-Schmidt class, with Kasahara I., *Proc. Japan Acad.* 44 (1968), 298-300.
- 59 A remark on a class of semi-normal operators, with Nakamoto R., *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* 17 (1968), no. 1, 11-13.
- 60 A remark on the concept of channels. II, with Choda M., *Proc. Japan Acad.* 46 (1970), 932-935.
- 61 A remark on the concept of channels, III. An algebraic theory of extended Toeplitz operators, with Choda M., *Proc. Japan Acad.* 47 (1971), 464-469.
- 62 Elementary proofs of Gleason-Kahane-Zelazko's theorem for  $B^*$ -algebras, with Choda H., *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* 20 (1971), 111-112.
- 63 On the Toeplitz-Hausdorff theorem. (Japanese), with Fujii M., *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* 20 (1971), 129-133.
- 64 A note on the dilation theorems. II, with Takai H., *Proc. Japan Acad.* 48 (1972), 302-307.

- 65 A remark on the approximate spectra of operators, with Nakamoto R., Proc. Japan Acad. 48 (1972), 103-107.
- 66 Nondegeneracy and discrete models, with Takai H., Proc. Japan Acad. 48 (1972), 566-568.
- 67 On normal approximate spectrum. VI, with Fujii M., Proc. Japan Acad. 49 (1973), 596-600.
- 68 A comment on the inequalities of Arveson-Parrott and Mlak, Collection of articles dedicated to Tatsujiro Shimizu on the occasion of his 77th birthday, with Fujii, M., Math. Japon. 20 (1975), special issue, 65-67.
- 69 A characterization of finiteness of von Neumann algebras, With an appendix by Ritsuo Nakamoto, with Kato Y., Math. Japon. 22 (1977), no. 1, 69-71.
- 70 A variation of spectra of operators, with Fujii M., Math. Japon. 22 (1977/78), no. 4, 439.
- 71 Around Jensen's inequality, with Kainuma D., Math. Japon. 25 (1980), no. 5, 585-588.
- 72 Performance/reliability modeling for multiprocessor systems with computational demands, Stochastic models in reliability theory (Nagoya, 1984) with Osaki S., Lecture Notes in Econom. and Math. Systems, 235, Springer, Berlin, (1984), 105-119.
- 73 The Krylov-Weinstein theorem for nonnormal operators, with Choda H. and Fujii M., Math. Japon. 30 (1985), no. 1, 107-108.
- 74 Convergence of sequences defined by operator means, with Fujii J. and Seo Y., Math. Japon. 34 (1989), no. 1, 9-14.
- 75 Measures of fuzziness in noncommutative information theory, with Fujii J., Math. Japon. 34 (1989), no. 4, 549-553.
- 76 Operator entropy and fuzziness in noncommutative information theory, with Fujii J. I., Math. Japon. 35 (1990), no. 3, 509-512.
- 77 Cordes' inequality via Cordes' method, with Izumino S., Math. Japon. 35 (1990), no. 3, 513-514.
- 78 An extension of the Perron-Frobenius theorem, with Watatani Y., Math. Japon. 35 (1990), no. 3, 569-572.
- 79 Closure in positive operators, with Fujii M., Math. Japon. 37 (1992), no. 1, 111-115.
- 80 An operator version of the Eneström-Kakeya theorem, with Furuta T., Math. Japon. 37 (1992), no. 3, 495-497.
- 81 On Hummel's theorem, with Fujii J. and Izumino S., Math. Japon. 37 (1992), no. 5, 985-986.
- 82 Uchiyama's commutativity theorem on positive operators, with Fujii M. and Nakamoto R., Math. Japon. 38 (1993), no. 6, 1085-1087.
- 83 Fuzzy's but walking shadow, with Fujii J., Math. Japon. 40 (1994), no. 2, 255-257.
- 84 Conditional expectation and Hadamard product of operators, with Fujii M. and Nakamoto R., Math. Japon. 42 (1995), no. 2, 239-244.
- 85 Graphs and Kolmogorov's complexity, with Fujii M., Seo Y. and Watatani Y., Math. Japon. 44 (1996), no. 1, 113-117.
- 86 Operator mean and Kantorovich inequality, with Nakamoto R., Math. Japon. 44 (1996), no. 3, 495-498.
- 87 An application of operator means arising from a study on Wazan, with Fujii M., Math. Japon. 46 (1997), no. 3, 385-386.
- 88 Spectral order and operator means, with Fujii M. and Nakamoto R., Sci. Math. 1 (1998), no. 2, 149-152 (electronic).
- 89 Bonsall's construction of spectral measures and operator means, with Fujii M., Sci. Math. 2 (1999), no. 2, 145-146 (electronic).
- 90 Remark on chaotic Furuta inequality, with Kamei, E., Sci. Math. Jpn. 53 (2001), no. 3, 535-539.
- 91 Bonsall's constructions of spectral measures and successive approximation in wazan, with Fujii M., Sci. Math. Jpn. 55 (2002), no. 3, 581-582.
- 92 Operator valued determinant and Hadamard product, with Fujii J. I. and Seo Y., Sci. Math. Jpn. 60 (2004), no. 1, 1-8.
- 93 Jensen inequality is a complement to Kantorovich inequality, with Fujii M., Sci. Math. Jpn. 62 (2005), no. 1, 39-45.
- 94 An extension of Kantorovich inequality, with Izumino S., Nihonkai Math. J. 16 (2005), no. 1, 23-29.
- 95 Kadison's Schwarz and Kantorovich inequalities on correlation operators, with Izumino S., Toyama Math. J. 28 (2005), 133-138.

- 96 Kadison's Schwarz inequality and noncommutative Kantorovich inequality, with Fujii M., *Sci. Math. Jpn.* 63 (2006), no. 1, 101-102.
- 97 A characterization of the harmonic operator mean as an extension of Ando's theorem, with Fujii J. I., *Sci. Math. Jpn.* 63 (2006), no. 2, 205-210.
- 98 Cooper's approach to chaotic operator means, with Fujii J. I. and Takahasi S., *Sci. Math. Jpn.* 63 (2006), no. 2, 319-324.
- 99 Kadison's Schwarz inequality and Furuta's theorem, with Fujii M. and Seo Y., *Sci. Math. Jpn.* 64 (2006), no. 1, 141-145.
- 100 Bounds for the ratio and difference between parallel sum and series via Mond-Pečarić method, with Fujii, J. I., Pečarić, J. and Seo, Y., *Math. Inequal. Appl.* 9 (2006), no. 4, 749-759.
- 101 Ando's theorem for Hadamard products and operator means, with Fujii J. I. and Seo Y., *Sci. Math. Jpn.* 64 (2006), no. 3, 557-562.
- 102 A comment on spectral sets of operators, *Mem. Osaka Kyoiku Univ. Ser. III Nat. Sci. Appl. Sci.* 55 (2006), no. 1, 21-22.
- 103 Wigner's weakly positive operators, with Izumino S., *Sci. Math. Jpn.* 65 (2007) no. 1, 61-67.
- 104 Approximation to the square root of a positive operator, with Seo Y., *Sci. Math. Jpn.* 65 (2007), no. 1, 69-75.
- 105 Riccati equation and the Fiedler-Pták spectral geometric mean, with Fujii J. I. and Matsumoto A., *Sci. Math. Jpn.* 66 (2007), no. 1, 63-66.
- 106 A reverse inequality for the weighted geometric mean due to Lawson-Lim, with Fujii J. I., Fujii M., Pečarić J. and Seo Y., *Linear Algebra Appl.* 427 (2007), no. 2-3, 272-284.
- 107 Spectral order of operators and Furuta inequality, with Matsumoto A. and Seo Y., *Sci. Math. Jpn.* 66 (2007), no. 3, 325-334.

## Communications :

### ( ) Conferences for Young Algebraists

Klaus Denecke

The following list gives some information on the future conferences of young algebraists:

1. CYA (79. AAA), Olomouc (Czech Republic), February 2010

See also pages 10 and 11 of Notices from the ISMS, January 2007.

### ( ) Call for Proposals and Organizers for Special Sessions in IVMS 2010

For details, please see pages 18 to 20 of Notices from the ISMS, March 2008.

Organizers should access to the following URL and send us the application form.

[http://www.jams.or.jp/hp/ivms\\_organizers.html](http://www.jams.or.jp/hp/ivms_organizers.html)

## The ISMS:

### (I) Contributions (Gift to the ISMS)

We deeply appreciate your generous contributions to support the activities of our society. The donation are used (1) to make medals for the new prizes (Kitagawa Prize, Kunugi Prize, and ISMS Prize), (2) to support the IVMS at Osaka University Nakanoshima Center, and (3) for a special fund designated by the contributors.

The contributions are classified into the following five categories.

- (A) ¥ 500,000 (or \$5,000) and above
- (B) ¥ 100,000 (or \$1,000) and above
- (C) ¥ 50,000 (or \$500) and above
- (D) ¥ 10,000 (or \$100) and above
- (E) Less than ¥10,000 ( or \$100)

Your remittance to the following accounts of ours will be very much appreciated.

- (1) Through a post office, remit to our giro account ( in Yen only ):  
No. 00930-1-11872, Japanese association of Mathematical Sciences (JAMS )  
or send International Postal Money Order (in US Dollar or in Yen) to our address:  
International Society for Mathematical Sciences  
2-1-18 Minami Hanadaguchi, Sakai, Osaka 590-0075, Japan
- (2) A/C 94103518, ISMS  
CITIBANK, Japan Ltd., Shinsaibashi Branch  
Midosuji Diamond Building  
2-1-2 Nishi Shinsaibashi, Chuo-ku, Osaka 542-0086, Japan

# Call for Papers for SCMJ :

## ( I ) Call for Papers for SCMJ

Scientiae Mathematicae Japonicae(SCMJ) calls for excellent papers.

- (1) Authors can choose one of the editors in the Editors List and send their papers directly to him/her for refereeing which promises **quick refereeing and publication**.
- (2) If the SCMJ authors prepare their files in ISMS standard format (Js.), the lead time from acceptance to the online publication **will be extremely short or nil**.
- (3) In the proofreading is made by the SCMJ (Paper or TeX) author, we will publish the paper on the Web as soon as we receive the corrected galley proof.
- (4) The Journal is reviewed by **Mathematical Review** and **Zentralblatt from cover to cover**.

### (A) Submission

Authors are requested to choose one of the editors in the SCMJ editors list and send their papers, satisfying all of the following conditions, **directly to the editor**. The editors list can be obtained from (i) URL:<http://www.jams.or.jp/> (ii) “ Editorial Board” of SCMJ(Vol.68, No. 3, November 2008).

Prepare **e-mail Form for Submission and three** hard copies of your paper, **three** hard copies of Form for Submission, and send them as follows.

- **To the editor’s e-mail address**; Form for Submission (with the abstract)
- **To the editor’s postal address**; **Two** hard copies of your paper, **two** hard copies of the Form for Submission (with the abstract)
- **To the e-mail address of ISMS** (<http://www.jams.or.jp/hp/submission f.html>); Form for Submission (with the abstract)
- **To the postal address of ISMS**; **One** hard copy and **one** Form for Submission

The received date of the paper is the date when the editorial office receives the paper together with the Form for Submission, and not necessarily the date when the editors receive them.

**To e-mail Form for Submission is mandatory to support** the editor-receive-system, not to waste the precious research time of the editors and promote efficiency in the editorial procedure.

### (B) Abstract

Every paper should contain an abstract. Try to limit your abstract to 20 lines when typed in TeX. The abstract should be a kind of mini research announcement which is **self-contained** and gives **the overview** of your paper. Abstracts of accepted papers are **very rapidly displayed** on ISMS home page and are announced **all over the world via Internet**. Abstracts in Paper Form and E-mail Form should be typed in **Text file**. If it is inevitable for you to use symbols in the abstract, you may make it in a TeX source file indicating **the kind of TeX** as notes, for example, (via LaTeX2e).

### (C) Data

The full postal address, telephone and facsimile numbers, e-mail address of the author should be specified at the bottom of the last page of the manuscript. 2000 AMS Subject Classification and Keywords should be written both in Paper, E-mail Form and at the **footnote** on the first page of the manuscript.

### (D) Receipt

ISMS will send a letter of receipt when we receive a hard copy, a Paper Form and E-mail Form (if the author has e-mail facility). The received date is to be specified in the letter.

### (E) Revision

If revision of your paper is necessary, the editor informs you directly. When you revise abstract of your paper in that case, you should send new Paper Form with new abstract and E-mail Form with new abstract also.

### (F) Acceptance or Rejection, Page Charges

ISMS will inform authors of **acceptance or rejection** of their papers **by e-mail**.

Authors should choose one of the following 3 types of his final draft he will send after acceptance of his paper, (1) **P**: Paper draft only (2) **T**: Paper prepared using TEX and its source file (3) **Js**: Paper prepared using TEX with ISMS style file, and its source file.

### List of the page charges for SCMJ

Every accepted paper is charged ① **¥1,000 (US\$10, €7) as handling charges** plus ② **page charges**. The page charges per printed page are reduced as follows.

	ISMS members	Non-members
P	¥ 3,500 ( US\$35, €23 )	¥ 4,000 ( US\$40, €27 )
Tex	¥ 2,000 ( US\$20, €14 )	¥ 2,500 ( US\$25, €17 )
LateX2e, LaTeX	¥ 700 ( US\$ 7, € 4 )	¥ 1,000 ( US\$10, €7 )
Js ( ISMS style file )	¥ 500 ( US\$ 5, € 3 )	¥ 800 ( US\$ 8, €5 )

The above page charges include 20 offprints. The additional page charge may be required for the figures contained in the papers. For more information, see our Web Page.

1) **Js (ISMS style TeX)** files mean the files which are ready for publication without any process by our Publication Dept.

Please note whether the file meets the requirement of the ISMS style or not **is judged by ISMS Publication Dept.**

Js files can be made using the ISMS style file for LaTeX, or LaTeX2e, which can be downloaded from ISMS Web Page.

### The procedure to make Js files :

- (a) Prepare your paper in LaTeX, or LaTeX 2e.
- (b) Use the following ISMS style file to make your paper "ISMS style TeX" (Js). (The ISMS style files can be obtained from ISMS Web Pages.)  
If your paper contains graphs or figures which cannot be processed even in LaTeX(2e), make them EPS (Encapsulated Post Script) files and then PDF files.

### (G) After Acceptance

If the paper is accepted, P authors are requested to send the following (1) & (2), T and Js authors (1) – (4).

#### (1) A hard copy of the final draft(for publishing)

- (2) Paper Form for WWW
- (3) The source file of the final draft in TeX, by e-mail or on diskette.
- (4) E-mail Form for WWW

### (H) Proofreading

ISMS will send a galley proof to P and T authors only but **not to Js authors**. We regard the final files sent by Js authors as ready for publication.

### (I) Offprints

**Every author** can obtain a **password to read his paper and** can make **as many offprints as they want**, using Acrobat Reader.

### (J) Online version of SCMJ

The full texts of the accepted papers will be located on the online version of SCMJ in the following two manners from Vol.66, No. 1 (July 2007).

- (1) A list of papers in the order of the accepted date.
- (2) A list of accepted papers organized by field of specialization with a link to (1). The field of specialization of the accepted papers will be chosen by the authors in the fields of f-1 - f-14.  
(See a list on page 25)

## (II) Items required in “ Form for Submission ”

Give the following information by filling in the items on the list.

105. Write the name of the editors whom you will send your manuscript to be refereed.
  110. Date of dispatching this form
  120. Title of Paper
  125. Abbreviated Title (Running Title) of Paper (**Less than 35 letters**)
  130. The field of specialization in the fields of f-1~f-14 ( see page 13) of the paper
  132. Keywords and phrases
  135. Number of Pages of the manuscript
  140. Number of Authors
  151. First author's name, affiliation (institution /university) and its postal address
  152. Second author's name, affiliation (institution /university) and its postal address
  153. Third author's name, affiliation (institution /university) and its postal address
- In typing author's names the order should be Last (Family) name, First name, Middle name. In case there are four authors or more, please write their names, affiliations and their postal addresses as items 154, 155. . . . If the authors are temporarily studying or teaching in Japan, please type the affiliations (or universities they graduated from) in their own countries.
170. Author's name to whom correspondences should be sent
  180. Author's address of 170
  190. Phone
  195. Fax
  197. E-mail address
200. Please type P or T or Js (see CALL FOR PAPERS (F)).  
For the following 201~210 items, authors T and Js are requested to answer. Authors P may skip these items.
201. Do you send your files via e-mail or on diskette? Please type “e-mail” / “diskette” or both.
  202. What kind of TeX; do you use?  
Please type, LaTeX(old version), LaTeX2e or other TeX
  203. Please type you platform you are using. Type WINDOWS, Macintosh or others.
  204. If you have used the ISMS style file, then please type the name of the style file you have used.
  207. Are you using figures in your paper?  
If yes, please type `a figure' or `figures', and type also they will be processed in LaTeX or not?
  208. Is your electronic graphics file (if any) is saved in Encapsulated PostScript (EPS) format or in TIFF, PICT, GIF or other standard graphics format?
  209. If you send the above files with attachments, you should also send its extension name . Please type the file name and the extension name.
  210. If you use compress utility of your file, please type ZIP, gzip, tar, tar + gzip, tar + compress, or etc.
  213. Are you a member of the ISMS? If yes, type M. If you are not a member, type NM in case you apply for the membership together with an application form, and type NN in case you do not apply for the membership.
  214. What is the special field of the paper? Choose one of the category from f-1 - f-14. (See the next page.)
  217. Are you sure that you or your institution will pay the required page charge when this paper is accepted for publication? ; YES or NO.
  218. Signature
  219. Type Abstract of your paper **in Text file**. (If you use TeX file, you should write the kind of TeX as notes.)
- 159, 179, 189. For Japanese Author(s), write 151~158, 170, 180 in Japanese.

\*\*\*\*\*

**Special Fields (f-1 - f-14)**

- f-1. Mathematical logic, Set theory, Relative systems, Algebra systems
- f-2. Classical algebra, Number theory, Combinatorics, Cryptology
- f-3. Topology, Geometry, Imaging
- f-4. Real analysis, Complex analysis
- f-5. Functional analysis, Operator theory
- f-6. Differential equations, Integral equations, Functional equation, Numerical analysis
- f-7. Infinite dimensional dynamical systems, Inverse problems
- f-8. Fluid dynamics, Atmospheric research, Rheology, Computer aided design, Control theory, Nanoscience
- f-9. Probability theory, Statistics, Experimental Design, Quality control
- f-10. Operations Research, Decision theory, Queuing theory, Scheduling, Mathematical finance, Mathematical economics
- f-11. Informatics, Pattern recognition, Imaging, Computer science, Computer simulation
- f-12. Biomathematics, Proteomics, Imaging, Bioscience, System biology
- f-13. Mathematical education, History of mathematics
- f-14. Over several fields (Ex. Fixed point theory)

\*\*\*\*\*

**Call for ISMS Members  
Call for Academic and Institutional Members**

**Discounted subscription price:** When organizations become the Academic and Institutional Members of the ISMS, they can subscribe our journal *Scientiae Mathematicae Japonicae* at the yearly price of US\$300. At this price, they can add the subscription of the online version upon their request.

**Invitation of two associate members:** We would like to invite two persons from the organizations to the associate members with no membership fees. The two persons will enjoy almost the same privileges as the individual members do including the discount of the page charge. Although the associate members cannot have their own ID Name and Password to read the online version of SCMJ, they can read the online version of SCMJ at their organization.

To apply for the Academic and Institutional Member of ISMS, please use the following application form.

-----  
**Application for Academic and Institutional Member of ISMS**

<b>Subscription of SCMJ</b> Check one of the two.	Print (US\$300)	Print + Online (US\$300)
<b>University (Institution)</b>		
<b>Department</b>		
<b>Postal Address</b> where SCMJ should be sent		
<b>E-mail address</b>		
<b>Person in charge</b>	Name: Signature:	
<b>Payment</b> Check one of the two.	Bank transfer	Credit Card (Visa, Master)
<b>Name of Associate Membership</b>	1.	
	2.	

# Call for Regular Members

## ISMS Membership Dues

A new category "life member" has been established and can be applied for from 2005. An eligible member may become a life member by making a one-time payment of dues. A member who has been an ISMS member for ten years or more is eligible for a life member. The amounts of dues are : ¥70,000 for the domestic members, US\$ 600 (€480) for the foreign members, and US\$ 500 (€400) for the members in developing countries.

We have reduced the ISMS membership dues since 2001 and copies of the printed journal have not been distributed to the members, free of charge. Instead, we give User Name and Password to each member so that he/she can view or print out the full text of the papers published in SCMJ except papers in the international plaza from our Web site (<http://www.jams.or.jp>).

The Membership Dues for each category is as follows. Applications for the 3-year members can be made only in 2005 and in every three years.

### Membership Dues for this year

Categories	Domestic	Overseas	Developing countries
1-year member (1A)	A1: ¥9,000	F1: US\$75, €60	D1: US\$45, €36
3-year member (3A)	A3: ¥24,000	F3: US\$200, €160	D3: US\$117, €93
1-year students or aged (1S)	SA1: ¥5,000	SF1: US\$40, €32	SD1: US\$27, €21
3-year students or aged (3S)	SA3: ¥12,000	SF3: US\$100, €80	SD3: US\$71, €57
Life member* (L)	AL: ¥90,000	FL: US\$740, €592	DL: US\$616, €493

\*The members who have been the ISMS members for more than 10 years are eligible for this category. The categories 1S and 3S are for students or persons over 70 years old. The figure 1 and 3 means a year and 3 years respectively. Category D is for those who reside in the countries of Eastern Europe, CIS or developing countries.

\*\*\*\*\*

## Payment Instructions

Payment can be made through a post office or a bank, or by credit card. Members may choose the most convenient way of remittance. Please note that we do not accept payment by bank drafts (checks). For more information, please refer to an invoice.

### Methods of Overseas Payment:

Payment can be made through (1) a post office, (2) a bank, (3) by credit card, or (4) UNESCO Coupons.

Authors or members may choose the most convenient way of remittance as are shown below. Please note that **we do not accept payment by bank drafts (checks)**.

(1) Remittance through a post office to our giro account No. 00930-1-11872 or send International Postal Money Order to our postal address (2) Remittance through a bank to our account No. 94103518 at Shinsaibashi Branch of CITIBANK (3) **Payment by credit cards** (AMEX, VISA, MASTER or NICOS), or (4) Payment by UNESCO Coupons.

### Methods of Domestic Payment:

Make remittance to:

(1) our Post Office Transfer Account - 00930-3-73982 or

(2) our account No.1565679 at SUMITOMO BANK, Sakai, Osaka, Japan.

All of the correspondences concerning subscriptions, back numbers, individual and institutional memberships, should be addressed to the Publications Department, International Society for Mathematical Sciences.

## Membership Application Form

To determine what membership category you are eligible for, read "Join ISMS" on the inside of the back cover.

1. Name: Family Name, First Name, Middle Name (in this order)

2. Home Address

3. Name of Firm or Institution affiliation

4. Postal address to which correspondence should be sent

5. e-mail address

6. Telephone Number, Fax Number

7. Membership Category

8. Panel (Please choose one out of the following 14panels in the page 26 and write the panel number. You could choose one or more.)

9. Would you like to buy the printed copies of SCMJ, whose prices a year are US\$60(6,000yen) for 1-year-members(A1, F1, D1, SA1, SF1, SD1)and US\$55(5,500yen) for 3-year-members(A3, F3, D3, SA3, SF3, SD3) ? Type YES or NO.

10. If you apply for an aged member (70 years old or over), please type the year of your birth.

11. If you wish to be a student member, please verify.

12. Is your university (institution) an Academic or Institutional Member of the ISMS? Yes or No.

13. If the answer of 12 is Yes, please answer the following. Are you designated associate member by your university (institution)?

14. Date

15. Signature

For Japanese Applicants, please send two application forms, one in English and the other in Japanese.

I wish to enroll as a member of ISMS and will pay to International Society for Mathematical Sciences the annual dues upon presentation of an invoice. Copies of *Mathematica Japonica*, *Scientiae Mathematicae* and *Scientiae Mathematicae Japonicae* received as an ISMS member will be for my personal use and shall not be placed in institutional, university or other libraries or organizations, nor can membership subscriptions be used for library purposes.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

## Join ISMS !

**ISMS Publications:** We published **Mathematica Japonica (M.J.)**, which enjoyed an international reputation, for about sixty years in print and its offshoot **Scientiae Mathematicae (SCM)** both online and in print. In January 2001, the two publications were unified and changed to **Scientiae Mathematicae Japonicae (SCMJ)**, which is the “21<sup>st</sup> Century New Unified Series of Mathematica Japonica and Scientiae Mathematicae” and published both online and in print. Ahead of this, the online version of SCMJ was first published in September 2000. The number of the annual total pages of the print version has been from 900 to 1,200 pages in six issues since January 1978. The whole number of SCMJ exceeds 240, which is the largest amount in the publications of mathematical sciences in Japan. The features of SCMJ are:

- 1) About 90 eminent professors and researchers of not only Japan but also 20 foreign countries join the Editorial Board. The submitted papers are received directly by the editors and are refereed quickly. The accepted papers are published online with no lead time after compiling or proofreading. SCMJ is reviewed by Mathematical Review and Zentralblatt from cover to cover.
- 2) SCMJ is distributed to many libraries of the world. The papers in SCMJ are introduced to the relevant research groups for the positive exchanges between researchers.
- 3) The original papers and surveys of distinguished mathematical scientist appear in every issue of SCMJ. The section called “International Plaza” of SCMJ has very interesting expository papers written by the eminent mathematical scientist of the world. Presentations of recent research frontier including award lectures by the winners of the ISMS Prize or Shimizu Prize are made.
- 4) **ISMS Annual Meeting:** Many researchers of ISMS members and non-members gather and take time to make presentations and discussions in their research groups every year.
- 5) The ISMS holds inter-regional videoconferences called **International Videoconference of Mathematical Sciences (IVMS)** via internet. There is no need for the participants to travel abroad.

**Privileges to ISMS Members:** (1) Free access (**including printing out**) to the online version of SCMJ, (2) Discounted price for the printed version of SCMJ (See **Table 1**), (3) Discounted page charges (See **Table 2**).

**Privileges to Institutional Members:** (1) Two associate members can be registered, free of charge, from an institution. (2) The discounted page charges (Table 2) are applied to the associate members.

**Table 1: Subscription Price**

	Individual 1-year mem.	Individual 3-year mem.	Institutional member	List Price
Print / year	¥ 6,000 US\$60, €48	¥ 5,500 * US\$55, €44	¥ 33,000 US\$300, €240	¥ 45,000 US\$400, €320
Online/year	Free	Free		
Online+Print / year	¥ 6,000 US\$60, €48	¥ 5,500 * US\$55, €44	¥ 33,000 US\$300, €240	¥ 45,000 US\$400, €320

Postal charge is US\$2 (€1.6) per issue. \*In case three-year members make the payment at a time in advance, the price for 3 years is ¥ 15,000 (US\$150, €120). The authors can buy a copy of the print version at a price of ¥ 1,200 (US\$12) per issue including postage.

**Table 2: Publication charge for accepted papers**

The charge system for accepted papers has been changed and the basic publication charge has been introduced to reduce the total publication charge. The publication charge consists of the **basic publication charge (¥1,000(US\$10, €7))** and the **page charge**. The page charges per printed page are **drastically reduced** as follows.

	ISMS members	Non-members
p	¥ 3,500 ( US\$35, € 23 )	¥ 4,000 ( US\$40, €27 )
Tex	¥ 2,000 ( US\$20, € 14 )	¥ 2,500 ( US\$25, €17 )
LateX2e, LaTeX	¥ 700 ( US\$ 7, € 4 )	¥ 1,000 ( US\$10, € 7 )
Js ( ISMS style file )	¥ 500 ( US\$ 5, € 3 )	¥ 800 ( US\$ 8, € 5 )

**Table 3: Membership Dues for this year**

Categories	Domestic	Overseas	Developing countries
1-year member (1A)	A1: ¥ 9,000	F1: US\$75 , €60	D1: US\$45, €36
3-year member (3A)	A3: ¥ 24,000	F3: US\$200, €160	D3: US\$117, €93
1-year students or aged (1S)	SA1: ¥ 5,000	SF1: US\$40, €32	SD1: US\$27, €21
3-year students or aged (3S)	SA3: ¥12,000	SF3: US\$100, €80	SD3: US\$71, €57
Life member* (L)	AL: ¥ 90,000	FL: US\$740, €592	DL: US\$616, €493

\*The members who have been the ISMS members for more than 10 years are eligible for this category. The categories 1S and 3S are for students or persons over 70 years old.