

**Bulletins of the
International
Mathematical Union**



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IMU

BULLETIN OF THE INTERNATIONAL MATHEMATICAL UNION

**No. 32
November 1990**

SECRETARIAT

**Department of Mathematics
University of Helsinki
Hallituskatu 15
SF-00100 Helsinki
Finland**

NEW SECRETARIAT (starting 1 January, 1991)

**IMPA
Estrada Dona Castorina, 110
Rio de Janeiro - RJ
22460 Brazil**

List of Abbreviations

IMU	International Mathematical Union
- ICMI	International Commission on Mathematical Instruction
- CDE	Commission on Development and Exchange
- ICHM	(Joint) International Commission on the History of Mathematics
IUHPS	International Union of the History and Philosophy of Science
ICSU	International Council of Scientific Unions
- COSPAR	Committee on Space Research
- COSTED	Committee on Science and Technology in Developing Countries
- CTS	Committee on the Teaching of Science

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International Mathematical Union

Executive Committee

January 1, 1987–December 31, 1990

President:	Professor Ludwig D. Faddeev
Vice-Presidents:	Professor Walter Feit Professor Lars Hörmander
Secretary:	Professor Olli Lehto
Members:	Professor John Coates Professor Hikosaburo Komatsu Professor László Lovász Professor Jacob Palis Jr. Professor C.S. Seshadri
Past President:	Professor Jürgen Moser

January 1, 1991–December 31, 1994

President:	Professor J.-L. Lions
Vice-Presidents:	Professor John Coates Professor David Mumford
Secretary:	Professor Jacob Palis Jr.
Members:	Professor J. Arthur Professor A. Dold Professor Hikosaburo Komatsu Professor László Lovász Professor E. Zehnder
Past President:	Professor Ludwig D. Faddeev

Report of the 11th General Assembly of IMU

Kobe, Japan, August 18-19, 1990

1. Opening

The President opened the Assembly on August 18 at 10 a.m.

2. Address by the President

The address given by the President is given as Appendix 1.

It was decided that countries with at most two years of arrears are allowed to vote.

3. Committees

The following committees were appointed:

Credentials Committee:

V. Thomée, Chairman
C. Alsina
A.O. Kuku
P.G. Rooney
Olli Lehto, ex-officio

Resolutions Committee:

P.M. Cohn, Chairman
A.A. Ashour
A.A. Gonchar
J.-M. Lemaire
K. Tenenblatt
Olli Lehto, ex-officio

Tellers:

O. Riemenschneider, Chairman
P.S. Kenderov
L.H.Y. Chen

Committee for Finance and Dues:

J.P. Bourguignon, Chairman
S.D. Chatterji
Ding, Shisun
R.L. Graham
G. Riera
Olli Lehto, ex-officio

Nominating Committee:

Ludwig D. Faddeev, Chairman ex-officio
 D.G. Costa
 A. Dvoretzky
 A. Figà-Talamanca
 G.I. Gaudry
 L. Keen
 M. Nagata
 Cz. Olech
 S. Ramanan
 Jürgen Moser, ex-officio

4. Members

4.1. Saudi Arabia

Saudi Arabia will be admitted to the Union in Group I as of January 1, 1991. However, the membership shall not become effective until the composition of its Committee for Mathematics has been made known to the Union.

4.2. Israel

The group of adherence of Israel was raised from II to III. The change will take effect on January 1, 1991.

4.3. Georgia

The General Assembly decided to defer the application of Georgia to become a member of the Union in Group I, by a majority vote.

4.4. Dues arrears

The Secretary informed the Assembly that many countries with sizable dues arrears had been able to settle them. Countries with many years of dues arrears are Pakistan, Romania and Turkey. The Assembly decided, referring to the IMU Statutes, Article 21:

4.4.1. Turkey

Since Turkey had paid many of its dues arrears, Turkey can keep its membership with voting rights and the remaining past arrears will be excused.

4.4.2. Romania

Romania had repeatedly informed the Union of its wish to stay in IMU and of its intention to settle its dues arrears. It was decided that Romania can stay in IMU but in Group I, without voting rights. Romania shall become a voting member again when the dues of the ongoing period and three previous ones of Group I have been paid.

4.4.3. Pakistan

Pakistan had not paid any dues since 1982 and before that Pakistan had also sizable dues arrears. Moreover, Pakistan had not contacted the Union concerning its dues arrears. Therefore it was decided that Pakistan's membership in the Union will cease.

The first session was closed at 12 o'clock noon.

The second session started at 10.15 on August 19.

5. Activities of the Union

The activities of the Union in the years 1986-1989 had been reviewed in the Special Number Bulletin 31. The reports in the Bulletin covering symposia and conferences supported by IMU, IMU lectures, ICMI activities, CDE activities, ICHM activities and the IMU Bulletin and the World Directory of Mathematicians were approved.

6. Report of the Committee for Finance and Dues

Professor Bourguignon, Chairman of the Committee for Finance and Dues, reported on the work of the Committee. His report is printed as Appendix 3. The financial reports for the years 1986-1989 and the audited accounts for the years 1986-1989 as well as the work of the Executive Committee were accepted by acclamation.

The Committee recommended the acceptance of the budget the Executive Committee had proposed for the years 1991-1994 with one exception: funds assigned to ICMI: 3000 Swiss francs were removed from Schedule A and moved to ICMI Scientific activities. The budget was accepted; it is printed as Appendix 4.

7. Elections

The Nominating Committee had met during the break. The Committee had not received any names from the floor. Since no further names were suggested for any office, the Assembly decided to waive the provision of written ballots and accept the slates by acclamation.

The IMU Executive Committee, elected unanimously, for the years 1991-1994 consists of

President:	J.L. Lions
Vice-Presidents:	J. Coates D. Mumford
Secretary:	J. Palis
Members:	J. Arthur

A. Dold
 H. Komatsu
 L. Lovász
 E. Zehnder

The Past President, Ludwig D. Faddeev, will be a member ex-officio.

The ICMI Executive Committee, elected unanimously, for the years 1991–1994 consists of

President:	M. de Guzmán
Vice-President:	J. Kilpatrick Lee Peng-Yee
Secretary:	M. Niss
Members:	Yu. L. Ershov E. Luna A. Sierpiska

Members ex-officio are J.-P. Kahane, J.L. Lions, Jacob Palis and the IMU representative at ICSU/CTS.

The following Commission for Development and Exchange, elected unanimously, for the years 1991–1994 consists of

Chairman:	M.S. Narasimhan
Members:	P. Bérard C. Camacho A. Grunbaum A.O. Kuku J. Mawhin T. Ochiai P.L. Papini Wu Wen Tsun

Members ex-officio are J.L. Lions and Jacob Palis and the IMU representative at COSTED (ICSU).

Professors Jean Dhombres and H. Edwards were elected as IMU members to the Executive Committee of the joint International Commission on the History of Mathematics for the years 1991–1994.

8. IMU representatives to ICSU bodies

Professor Jacob Palis was elected to represent IMU at ICSU in the years 1991–1994.

Professor J.L. Lions was elected to represent IMU at COSPAR in 1991–1994.

Professor J.H. van Lint was elected to represent IMU at CTS in 1991–1994.

Professor M.S. Narasimhan was elected to represent IMU at COSTED.

The IMU representatives at these organizations should report to the General Assembly of their activities.

9. ICM-1994

The President announced that the Site Committee recommends Zürich as the site for the 1994 International Congress of Mathematicians. The Assembly decided by majority vote that the 1994 Congress be held in Zürich. Professor Chatterji welcomed the mathematical community to Switzerland in 1994.

The next Executive Committee shall formulate the rules for the Site Committee, giving it to the members in 1991.

There was a break from 12 noon till 2 p.m.

10. Resolutions

The Resolutions Committee presented Resolutions 1–9 for approval. Following a discussion the following resolutions were accepted:

Resolution 1

The General Assembly resolves that the next meeting of the General Assembly be held at a time and place conveniently linked to the International Congress of Mathematicians in Zürich, Switzerland in 1994.

Resolution 2

Whereas the IMU wishes to mark the turn of the century in a manner appropriate to the standard set by David Hilbert in 1900, the General Assembly directs the Executive Committee to set up a committee to report to the adhering bodies by September 1991 how to accomplish this so that in 1994 the Assembly can discuss it and decide how to proceed.

Resolution 3

The General Assembly records its satisfaction that more women than ever before have been invited to speak at ICM-90 and expresses the wish that this trend continue in the future.

Resolution 4

The General Assembly

- i) expresses its gratitude to UNESCO and ICSU for the help and support that these organizations have provided to various mathematical activities, in particular those carried out in cooperation with the Commission for Development and Exchange (CDE) and International Commission on Mathematical Instruction (ICMI) of the IMU;

- ii) points out, however that the funds currently allocated to the UNESCO research and higher education programme in Mathematics seem quite insufficient to respond to the needs of the International Community, in particular those of developing countries;
- iii) expresses its strong wish that the financial provisions devoted by UNESCO to its above-mentioned mathematical programme be significantly increased;
- iv) requests the President of the IMU to transmit these wishes to the International Council of Scientific Unions (ICSU) and the Director General of UNESCO.

Resolution 5

All Adhering Organizations are reminded that they should review their national representation on ICMI and that normally national representatives should not be asked to serve for more than two consecutive four-year terms.

Resolution 6

The General Assembly expresses its gratitude to those bodies who contributed to the Special Development Fund in the past four years, which allowed 47 young mathematicians from developing countries to attend the ICM-90. The General Assembly hopes that they will continue their efforts and urges other adhering bodies and Committees for Mathematics to work towards ensuring more contributions to the Special Development Fund.

Resolution 7

The General Assembly expresses its gratitude to the Japanese organizers of the 1990 Congress for its hospitable reception and excellent arrangements for this meeting of the General Assembly as well as for their generosity in helping to bring several mathematicians from developing countries to the Congress.

Resolution 8

The eleventh General Assembly gives warm thanks to the Executive Committee and to the President of the IMU for their work during the period 1986-90.

Resolution 9

The General Assembly gives special thanks to Professor Olli Lehto for his excellent work as Secretary to the IMU over the last eight years ably assisted by Mrs. Tuulikki Mäkeläinen. It also thanks the University of Helsinki and the Finnish Ministry of Education for their generous support of the IMU secretariat over this period.

11. Regional conferences

The Assembly expressed the wish that the Executive Committee should find ways to give financial support to regional conferences.

12.

The Assembly discussed the problem of recruitment to, and retention on, mathematics degrees courses. The Assembly was informed that a panel discussion on the topic was organized during ICM-90.

13.

The Assembly expressed again its concern that IMU should support also applied fields.

The President declared the 11th General Assembly of IMU closed at 4 p.m.

The report of the Credentials Committee is printed as Appendix 2, the list of participants as Appendix 5.

Report of the International Congress of Mathematicians 1990

The International Congress of Mathematicians 1990 was held in the Kyoto International Conference Hall in Kyoto, Japan on August 21–29, 1990. A total of 4107 mathematicians from 79 countries and districts registered and 3955 from 76 countries and districts attended in person together with 470 accompanying members and 92 child members.

The Congress was organized under the auspices of the International Mathematical Union by the Science Council of Japan, the Mathematical Society of Japan, the Japan Society of Mathematical Education, The History of Science Society of Japan, The Institute of Actuaries of Japan, the Japan Society for Software Science and Technology, The Japan Statistical Society and the Operations Research Society of Japan, and was supported by the Ministry of Education, Science and Culture, by Kyoto Prefecture, Kyoto City, Kyoto University and the Information Processing Society of Japan.

The Opening Ceremony took place in the Event Hall of KICH in the morning of Tuesday August 21. The President of the International Mathematical Union, Ludwig D. Faddeev, declared the Congress open and announced the following members of the Program Committee which was responsible for the scientific program of the Congress: Nicolaas H. Kuiper (Chairman), V. I. Arnold, Alain Connes, Ronald L. Graham, Heisuke Hironaka, Masaki Kashiwara, Robert P. Langlands,

Sigeru Mizohata and Daniel G. Quillen. Then, by his proposal Hikosaburo Komatsu, a Vice-President of the Organizing Committee, was elected President of the Congress, and by the proposal of Akio Hattori, the President of the Mathematical Society of Japan, Kiyosi Itô was elected Honorary President. Welcome Addresses were given by Professor Jiro Kondo, the President of the Science Council of Japan, Mr. Kosuke Hori, the Minister of Education, Science and Culture, Mr. Teiichi Aramaki, the Governor of Kyoto Prefecture, Dr. Tomoyuki Tanabe, the Mayor of Kyoto City and Professor Masanori Nishijima, the President of Kyoto University. Then followed the Presentation of Commemorative Stamps by Mr. Tomoyuki Onozawa, the Director General of Posts.

The Chairman of the Fields Medals Committee, Faddeev announced the recipients of the Fields Medals; V. G. Drinfeld, Vaughan F. R. Jones, Shigefumi Mori and Edward Witten. Mr. Hori handed the Medals and the Prizes to the winners. The Chairman of the Rolf Nevanlinna Prize Committee, László Lovász announced A. A. Razborov as the recipient of the Prize. Mr. Hori handed him the Prize. The Fields Medals Committee consisted of Ludwig D. Faddeev (Chairman ex-officio), M. F. Atiyah, J. M. Bismut, E. Bombieri, C. Fefferman, Kenkichi Iwasawa, P. D. Lax, and I. Shafarevich, and the Rolf Nevanlinna Prize Committee László Lovász (Chairman), A. Chorin, M. Rabin and V. Strassen.

In the afternoon of August 21 Addresses on the Works of Prize Winners were given in the Main Hall. M. Jimbo read Y. I. Manin's report on the work of Drinfeld, J. S. Birman described the work of Jones, H. Hironaka the work of Mori, Faddeev explained the work of Witten, quoting Atiyah's report, and Lovász described the work of Razborov. Then Reception was held in the Event Hall.

From the next day August 22 to the last day August 29, except for Sunday 26 and the afternoon of Saturday 25 and 29, one-hour Plenary Addresses were delivered in the Main Hall in the morning, and then 45-minutes Section Lectures in 6 parallel sessions and 10-minutes Short Communications in 8 rooms were given in the afternoon. In total, there were 15 Plenary Addresses and 138 Section Lectures in 18 Sections which were actually delivered. The Organizing Committee invited those speakers according to the decision of the Program Committee. No invited speakers declined for political or economical reasons. In addition, there were five 45-minutes lectures invited by the International Commission on Mathematical Instruction, which were scheduled along with the Section Lectures. The participants gave 620 Short Communications in total and conducted many informal seminars and other meetings. The details of scientific activities will be reported in the Proceedings of the Congress, which will be published by the end of 1991.

The Organizing Committee was able to support only the prize winners and some officials of IMU but the Japan Association for Mathematical Sciences, the Mathematical Society of Japan, the Oriental Life Insurance Cultural Development Center, the Commemorative Association for the Japan World Exposition (1970) and The Kajima Foundation allocated 61,806,695 Yen in total for the support of

269 foreign participants from 50 countries. Most of them came from developing countries or countries in tight currency situations. The number includes 41 invited speakers and 47 IMU Scholars whose travel expenses were supported by the Special Development Fund of IMU.

At the Closing Ceremony in the afternoon of August 29 the President of IMU, Faddeev, announced the new officials of IMU for 1991–94 and the site of ICM-94 as decided by the General Assembly of IMU which met in Kobe on August 18–19. S. D. Chatterji invited mathematicians of the world to the next ICM in Zürich, Switzerland in 1994. Carol S. Wood from U.S.A. and J. F. Voloch from Brazil expressed their thanks to the Organizers of the Congress. Finally the President of the Congress, Komatsu, thanked all people concerned and declared the Congress closed.

Ancient court music and dance accompanied the Opening Ceremony. A Cello Recital was held in the evening of August 23, and Traditional Musical Performances in the afternoon of August 25. Sunday August 26 was a holiday on which several guided tours were arranged. The Closing Ceremony was followed by Banquet with an entertainment of folk music and dance.

Hikosaburo Komatsu, President of ICM-90

Members

Akademie der Wissenschaften der DDR, the Adhering Organization of the German Democratic Republic, has informed the Union that the German Democratic Republic resigns its membership in IMU as of December 31, 1990.

Conferences supported by IMU

1991:

IAMP Congress, to be held in Leipzig, DDR, on July 30–August 8, 1991.

IMU Contribution: 10000 CHF

IMU representative: L.D. Faddeev

Contact person: Professor John R. Klauder, Department of Mathematics, University of Florida, Gainesville, FL 32611, U.S.A. Fax: 1-904-392-0524, e-mail: klauder@neptune.phys.ufl.edu.

Seventh Symposium on General Topology and its Relations to Modern Analysis and Algebra, to be held in Prague, Czechoslovakia, on August 19–24, 1991.

IMU contribution: 5000 CHF

IMU representative: L. Lovász

Contact person: Professor Miroslav Fiedler, Academy of Sciences, Institute of Mathematics, Žitná ul. 25, Praha 1, Czechoslovakia 115 67.

3rd Pan-African Congress of Mathematicians, to be held in Nairobi, Kenya, on August 13–23, 1991.

IMU contribution: 10 000 CHF

Contact person: Professor A.O. Kuku, Mathematics Department, University of Ibadan, Ibadan, Nigeria; telex: campus 31128 ng.

International Conference on Algebra in Honour of A.I. Shirshov's 70th Anniversary, to be held at the Altai University, Barnaul, U.S.S.R., on August 23–27, 1991.

IMU contribution: 5000 CHF

IMU representative: W. Feit

Contact person: Professor Sergei A. Syskin, Institute of Mathematics, Novosibirsk 90, U.S.S.R. 630090. Telex: 133146 tevus su, fax: 7-3832-352653.

The international symposium *Algebraic Groups and Related Number Theory*, to be held in Minsk, U.S.S.R., on May 22–29, 1991.

IMU contribution: 5000 CHF

IMU representative: W. Feit

Contact person: Professor V. Platonov, Academy of Sciences, Byelorussian S.S.R., Institute of Mathematics, ul. Surganova, 11, 220604 Minsk, U.S.S.R.

1994:

International Congress of Mathematicians, to be held in Zürich, Switzerland, on August 3–11, 1994.

Contact person: Professor H. Carnal, Universität Bern, Institut für mathematische Statistik, Sidlerstraße 5, CF-3012 Bern, Switzerland.

The twelfth General Assembly will be held in Switzerland on July 31–August 2, 1994.

World Directory of Mathematicians

The 9th edition of the World Directory of Mathematicians, compiled and printed by the American Mathematical Society under the supervision of Professor Walter Feit, is now available.

Special Development Fund

The Executive Committee acknowledges with gratitude the following donations to the Special Development Fund:

Wiskundig Genootschap	1500 CHF
Swedish Mathematical Society	177 CHF

Appendix 1

Address of the President

Ladies and Gentlemen,

I declare the 11th General Assembly of IMU open. At the moment our Union has 52 members with 121 votes. Most of the Adhering Organizations are represented here.

I am supposed to give a short account of the work of the Executive Committee during the last four years. This task is greatly simplified by the written text distributed to you in a form of the Special Bulletin of IMU No. 31. It appeared due to the very effective role of our Secretary General O. Lehto and Mrs. Tuulikki Mäkeläinen.

The main goal of IMU is to support and promote the development of Mathematics within the international cooperation. To achieve this the EC of IMU takes an active part in the preparation of ICM, sponsors the topical international conferences and participates in other activities.

As you know, the program of ICM is prepared by the Program Committee and one of the tasks of the EC is to nominate this Committee. For the ICM-90 the following people were nominated and served for the PC: N. Kuiper—chairman, V. Arnold, A. Connes, R. Graham, H. Hironaka, M. Kashiwara, L. Langlands, M. Mizohata, D. Quillen—members.

The Awards of the Union—Fields Medals and the Rolf Nevanlinna Prize will be presented at the Opening Ceremony of ICM. The EC has nominated the committees to select the winners. For the Fields Committee the following people served: M. Atiyah, J.M. Bismut, E. Bombieri, C. Fefferman, K. Iwasawa, P. Lax and I. Shafarevich. As the President of IMU I chaired this Committee.

For the Rolf Nevanlinna Prize L. Lovász was the chairman and A. Chorin, M. Rabin and M. Strassen were members.

The financial support of IMU to ICM came from the budgetary funds of IMU. In addition, generous contributions of our members and some other organizations to the Special Development Fund enabled the Union to help 47 mathematicians from the Third World to attend ICM. The list of donors to the Special Development Fund is found in the Bulletin.

The full list of Conferences, supported by IMU can be found in the Bulletin. In all, more than 20 conferences got the grants, 8 in 1987, 5 in 1988 and 10 in 1989; traditionally in the year of ICM topical conferences are not supported.

Among other activities I would like to mention

1. IMU lectures. This institution of the Union is not used to its merit. Indeed, only two lectures were invited during the term: E. Bombieri lectured in Zürich in 1986 and V. Arnold in Oxford in 1988. I believe that it is worthwhile to use the IMU lectureship more actively in the future.

2. Commissions of IMU worked very actively to great extent due to very competent and devoted chairmen—J.P. Kahane for ICMI and M.S. Narasimhan for CDE. The detailed account is included in the Bulletin.
3. The task of editing the World Directory of Mathematicians now is in the hands of AMS. The last, 9th, edition prepared under the guidance of W. Feit will be ready at the ICM.

During the four years the EC has convened 5 times. I would like to stress that our meetings were constructive and friendly. Three times—in Leningrad (1987), Rio de Janeiro (1988) and Cambridge (1990) we combined the administrative meeting with a scientific workshop. In this way we showed the mathematical community and ourselves that first of all we are mathematicians. Also in this way the financial burden for the EC was eased.

Let me finish with some more general comments. It is traditional at such meetings to reiterate our commitment to the principle of free circulation of scientists. The political issues in connection with this were sometimes a source of tension. Now due to changes in many countries this topic became selfevident as it must be. This makes it possible for us to concentrate on our main professional duty—mathematics.

Thank you.

Appendix 2

Report of the Credentials Committee

The Committee verified that on August 18, 1990, there were representatives from 41 countries with a total of 106 votes. Absent were 11 countries.

The Committee verified that on August 19, 1990, there were representatives from 42 countries with a total of 107 votes. Absent were 10 countries.

Professor Marzollo, UNESCO, was present on both days as an observer.

Aug. 19, 1990

Vidar Thomée
(signed)

Appendix 3

Report of the Finance and Dues Committee

Report of the finance and dues committee
to the eleventh General Assembly of the I.M.U.

The committee consisted of Olli LEHTO, IMU secretary, ex officio, Mrs Tuulikki MÄKELÄINEN, Professor Lehto's secretary, Jean Pierre BOURGUIGNON, France (chairman), S.D. CHATTERJI, Switzerland, Shisun DING, China, Ronald L. GRAHAM, United States, Gonzalo RIERA, Chile.

The committee met for more than two hours on August, 18, 1990, and briefly on August 19, 1990.

It accepted the audited accounts for the years 1986, 1987, 1988, and 1989. These accounts are in US dollars following the ICSU rules.

The committee studied the financial reports for the years 1986–1989 presented by the secretariat of the IMU and examined the budget for the period 1991–1994 prepared by the Executive Committee.

The committee recommends to the General Assembly the acceptance of the financial reports for the years 1986–1990.

The committee also resolves that the Executive Committee budget for the 1991–1994 period be accepted by the General Assembly with one modification. This latter concerns the distribution between schedules A and B of funds assigned to ICMI. The total amount budgeted to ICMI is not affected.

The budget for the period 1991–1994 has been prepared on the basis of a 10 % increase in the income of the Union. The committee supports the proposal of a raise of the basic yearly dues to 1100 Swiss francs. This increase seems amply justified in view of the probable inflation during the period in question.

The committee suggests that the possibility of auditing in a suitable manner the financial accounts of CDE and ICMI be considered, and that these records be presented according to Schedules A and B as the IMU accounts.

The Committee decided to bring the following points to the attention of the General Assembly:

- the IMU can operate with the efficiency that we know on such a limited budget only because it gets some hidden support (e.g., the support given by Finland to operate the Secretariat, or the help of the American Mathematical Society to produce the World Directory of Mathematicians);
- thanks to the excellent efforts of Professor Lehto and Mrs Mäkeläinen, a large part of the amounts budgeted for secretarial help was able to be moved to the Special Development Fund;
- the production of the World Directory of Mathematicians is an important service that the IMU offers to the community, in particular to colleagues who are isolated. The difficulty of its financial planning should be noted;

- the Special Development Fund has been particularly successful in the last period. In particular the call by Professor Zeeman at the last General Assembly for donations from Societies has produced substantial new income which together with funds coming from other sources has permitted the support of 47 young mathematicians from developing countries to participate in the ICM 90. It seems appropriate to reiterate this call at this General Assembly;
- the committee approves the shift of the IMU fellowship fund to the scientific activities of CDE.

Finally, the committee expresses its warm appreciation to Professor Lehto, and to Mrs Mäkeläinen for their full cooperation with the committee and their patience in answering all queries.

Jean Pierre BOURGUIGNON, Chairman
August 1990

Appendix 4
INTERNATIONAL MATHEMATICAL UNION

Budget for the years 1991–1994, in Swiss francs

The General Assembly of IMU accepted the following budget for each of the years 1991–1994, on the understanding that transfers are permitted from one item to another, and from one year to another, provided that no appropriation from Schedule B is allowed to augment the provision made in Schedule A.

Authorized annual expenditure for the period 1991–1994 in Swiss francs:

Expenditure	1991–1994
Schedule A:	
Secretarial help, IMU office	19 400
Secretarial help, President	2 000
ICMI	10 000
CDE	5 500
CTS	600
Office expenses (including postage)	7 500
Travel expenses of the E.C.	25 000
President's and Secretary's expenses	2 000
Contribution to ICSU	5 000
IMU Bulletin	2 000
Audit fee	2 000
General Assembly 1994	3 500
World Directory of Mathematicians	18 000
Contingencies	2 000
Subtotal	104 500
Schedule B:	
Symposia, conferences, IMU lectures	56 000
ICMI scientific activities	18 000
CDE scientific activities	15 000
Program Committee for ICM 1994	5 500
Travel grants	15 000
Subvention to ICM 1994	24 000
Subtotal	133 500
Total	238 000
Income:	
Membership dues (170 × 1100)	187 000
ICSU subvention	20 000
Sales of W.D.M.	12 500
Special Development Fund	15 000
Interest on bank accounts	3 500
Total	238 000

Appendix 5
General Assembly
 Kobe, Japan, August 18–20, 1990

Participants

The Executive Committee:

L.D. Faddeev
 W. Feit
 O. Lehto
 J. Coates
 H. Komatsu
 L. Lovász
 J. Palis Jr.
 C.S. Seshadri
 J. Moser

Member	Group	Delegate(s)
Argentina	II	
Australia	III	G.I. Gaudry M.F. Newman J.H. Rubinstein (August 19)
Austria	II	
Belgium	III	L. Vanhecke
Brazil	III	K. Tenenblat C. Camacho D.G. Costa
Bulgaria	II	Bl. Sendov P.S. Kenderov
Cameroon	I	H. Hogbe-Nlend
Canada	IV	B. Aupetit C.S. Herz P.G. Rooney J.G. Timourian
Chile	I	Riera, Gonzalo
China	V	
- Chinese Mathematical Society		Ding, Shisun Shi, Zhongci Hu, Hesheng

- Mathematical Society located in Taipei, China		Fon-Che Liu Thakyin Hu
Cuba	I	
Czechoslovakia	III	J. Souček
Denmark	II	B. Fuglede J. Dupont
Egypt, Arab Republic of	I	A.A. Ashour
Finland	II	S. Rickman O. Martio
France	V	J.-M. Lemaire J.-P. Bourguignon J.-P. Kahane (August 19) J.-C. Nedelec G. Schiffmann P. Berard (August 18)
German Demo- cratic Republic	III	H. Koch
Germany, Federal Republic of	V	W. Walter K.-D. Bierstedt K. Hulek O.H. Kegel O. Riemenschneider
Greece	I	N.K. Artemiadis
Hong Kong	I	K.P. Shum (August 19)
Hungary	III	V.T. Sós G. Katona
Iceland	I	J.R. Stefánsson
India	III	S. Ramanan B.L. Sharma
Iran	I	J. Zafarani
Ireland	II	T.J. Laffey S. Toibin
Israel	II	J. Lindenstrauss A. Dvoretzky
Italy	IV	A. Figà-Talamanca C. Ciliberto C. Cercignani A. Conte
Ivory Coast	I	Saliou Toure

Japan	V	M. Nagata H. Araki H. Murakami T. Oda T. Sunada
Korea, Democratic Republic of	I	
Korea, Republic of	I	T.-G. Cho
Mexico	I	
Netherlands	III	J.H. van Lint J.P. Murre J.D. Stegeman
New Zealand	I	G.M. Thornley
Nigeria	I	A.O. Kuku
Norway	I	E. Størmer (August 18) A. Holme (August 19)
Pakistan	II	
Philippines	I	
Poland	III	B. Bojarski Cz. Olech W.T. Żelazko
Portugal	I	F. Dias-Agudo
Romania	II	
Singapore	I	L.H.Y. Chen
South Africa	II	A.P.J. van der Walt R.I. Becker
Spain	III	C. Alsina J. Margalef-Roig J.M. Aroca
Sweden	III	L.I. Hedberg P. Sjögren V. Thomée
Switzerland	III	N. A'Campo (August 19) S.D. Chatterji
Turkey	I	
United Kingdom	V	P.M. Cohn M.T. Barlow M.N. Huxley C.T.C. Wall D.A.R. Wallace

U.S.A.	V	A.M. Gleason L. Blum S.-Y. A. Chang R.L. Graham L. Keen
U.S.S.R.	V	A.A. Gonchar M.M. Lavrentiev V.P. Platonov V.S. Vladimirov A.B. Zhizhchenko
Vietnam	I	D.T. Nguyen
Yugoslavia	II	I. Ivanić

Professor A. Marzollo from UNESCO was present on both days as an observer.

Appendix 6
Travel Grants
Report

The Travel Grants Committee (Professor M.S. Narasimhan, Chairman, Professors A.O. Kuku, O. Lehto, J. Palis, members) met in Cambridge, United Kingdom, on April 5, 1990. The Committee received 97 applications by February 7. The Committee decided to give a travel grant to 42 mathematicians and 5 grants for local support. Two of the original grantees were not able to attend the Congress. The Committee met during the Congress and decided on two further grants.

Travel Grants

	CHF
Abd-alla, Abo-el-nour N., Egypt	3 584
Andruskiewitsch, Nicolás, Argentina	2 992
Antonio de la Pena, José, Mexico	2 316
Bhandari, A.K., India	1 224
Bory Reyes, Juan, Cuba	3 148
Bouzar, Chikh, Algeria	3 676
Chari, Vyjayanthi, India	1 470
Contreras-Barandiarán, Gonzalo A., Peru	3 033
Dickenstein, Alicia, Argentina	3 130
Dimitrić, Radoslav, Yugoslavia	1 605
Doguwa, S.I., Nigeria	2 795
Estrada, Ricardo, Costa Rica	2 335
Haouba, Ahmedou, Mauretanie	4 136
Hebisch, Waldemar, Poland	3 192
Kaimanovich, Vadim A., U.S.S.R.	2 206
Kamal, Ahmed A.M., Egypt	3 124
Karandikar, R.L., India	1 197
Korbaš, Július, Czechoslovakia	2 492
Kasonga, Raphael A., Tanzania	4 254
Labarca, Rafael, Chile	2 803
Le Hong Van, Viet Nam	2 206
Mora, Leonardo, Venezuela	3 033
Moreno, Guillermo, Mexico	2 992
Ngyen Dinh Cong, Vietnam	2 206
Paranjape, Kapil H., India	1 470
Pawłucki, Wiesław, Poland	2 821
Phan Thien Thach, Vietnam	2 206

Prasad, Dipendra, India	1 470
Putinar, Mihai, Romania	3 482
Rădulescu, Florin, Romania,	2 137
Rejali, Ali, Iran	1 470
Shpilrain, Vladimir E., U.S.S.R.	1 380
Singh, Neeta, India	1 296
Solarin, A.R.T., Nigeria	3 676
Srinivas, V., India	1 470
Stefanov, Plamen, Bulgaria	2 022
Thakur, Dinesh S., India	1 470
Tomei, Carlos, Brazil	3 033
Vallejo, Ernesto, Mexico	2 439
Viana, Marcelo, Brazil	3 033
Voloch, José Felipe, Brazil	3 124
Vu Dinh Hoa, Vietnam	2 206
 Total	 105 354

The funds for these grants came from:

IMU budget	22 000
ICSU	13 600
The Royal Society, United Kingdom	22 174
Donations from mathematical societies	44 994
Interest 1986-90 to the Special Dev. Fund	2 586

The following pages consist of the Audited Accounts of the Union for the year 1989.

INTERNATIONAL MATHEMATICAL UNION

ACCOUNTS

YEAR ENDED DECEMBER 31, 1989

International Mathematical Union
University of Helsinki
Department of Mathematics
Hallituskatu 15
00100 HELSINKI FINLAND

Helsinki, March 19, 1990

AUDITORS' REPORT

We have audited the Financial Statements of the International Mathematical Union (I.M.U.) prepared by the Executive Secretary of I.M.U. for the year ended December 31, 1989. The Statement of Income and Expenditure is prepared in accordance with the instructions given by the International Council of Scientific Unions in a letter dated November 16, 1987. The Balance Sheet and the accounting principles are similar to those of the previous years.

Principles and comments:

1. Currency

The Financial Statements are expressed in US dollars. Balances in other currencies have been exchanged into US dollars by applying the Unesco Standard Rates of Exchange based on December 1989.

Income and Expenditure for each month was translated into US dollars at the Unesco Rate of Exchange, which the International Council of Scientific Unions (I.C.S.U.) has made available throughout the year.

2. Income

The contributions from national members, USD 92,063.12 (in 1988 USD 110,672) have been recorded on cash basis. The number of members having unpaid dues, and most of them for

several previous years, is increasing. The total of unpaid dues is USD 51,358 (in 1988 USD 44,408).

The list of the unpaid dues is attached to the Financial Statements.

3. Sales of publications

The income of the editions of the World Directory of Mathematicians is USD 9,705. These editions have been sold in the year 1988 according to the bank statement of the Bank of Boston, USA.

4. Expenditure

Expenditure is recorded on accrual basis. The Statement of Income and Expenditure includes loss of exchange for the year 1989 USD 33,782.

5. Bank accounts

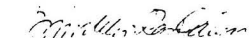
The balances of the bank accounts agree with the respective bank statements.

In our opinion the Balance Sheet and the Statement of Income and Expenditure give a true and fair view of the financial status of the International Mathematical Union at December 31, 1989.

SALMI, VIRKKUNEN & HELENIUS OY
Authorised Public Accountants


Antti Helenius

Authorised Public Accountant



Annikki Rasilainen
Approved Accountant

Balance Sheet at December 31, 1989

	Notes	1989	1988
ASSETS			
Bank accounts and cash	4		
Current accounts		203.452	211.622
Deposit accounts		128.814	332.266
Prepayments	5	4.139	5.387
TOTAL ASSETS		<u>336.405</u>	<u>353.228</u>
LESS: LIABILITIES			
Creditors and accruals	6	3.932	17.674
		<u>332.473</u>	<u>335.554</u>
ACCUMULATED FUNDS			
General fund	7		
Balance at December 31, 1988		279.872	273.974
Excess of Expenditure Over Income		29.296	5.898
Balance at December 31, 1989		<u>250.576</u>	<u>279.872</u>
		Transfer	250.576
			<u>279.872</u>

INTERNATIONAL MATHEMATICAL UNION

Statement of Income and Expenditure
for the Year Ended 31 December 1989

	NOTES	US dollars
I. INCOME		
Allocation from Unesco Subvention to ICSU		9.774,44
Contributions from Members	1.	92.063,12
Sale of publications		4.966,00
Bank interest and gain on exchange		13.138,74
		<u>119.942,30</u>
II. EXPENDITURE		
a. Scientific Activities		53.824,39
Conferences		18.309,03
Grants to Individuals/Organizations	2.	
b. Routine Meetings		13.838,83
Bureau/Executive Committee		2.019,72
Other		
c. Publications	3.	9.705,53
d. Administrative Expenses		14.679,53
General Office Expenses		1.000,00
Audit fees		35.861,73
Bank charges and loss on exchange		
		<u>149.238,76</u>
Excess of Expenditure Over Income		29.296,46
Accumulated Balance at 1 January 1989		279.872,33
Accumulated Balance at 31 December 1989		<u>250.575,87</u>

INTERNATIONAL MATHEMATICAL UNION

1. STATEMENT OF CONTRIBUTIONS RECEIVED FROM MEMBERS DURING THE YEAR ENDED DECEMBER 31, 1989

MEMBER	PRE 1989	PAYMENT CONCERNING THE YEAR		TOTAL
		1989	1990	
Australia		2.424		
Austria		1.212		
Belgium	2.581			
Brazil		2.395		
Bulgaria		1.273		
Cameroon		611		
Canada		4.636		
China		2.424		
- Chinese Mathematical Society		1.325		
- Mathematical Society, Taipei	986			
Chile				
Cuba		605		
Czechoslovakia		2.516		
Denmark		1.212		
Finland		1.143		
France		5.720		
German D.R.		2.424		
Germany, F.R.		6.289		
Hungary		2.424		
Iceland	617			
India		2.286		
Iran		606		
Ireland		1.235		
Israel		1.290		
Italy		4.192		
Japan		6.173		
Korea, D.P.R.	662	599		
Korea, Rep.		645		
Netherlands		2.424		
New Zealand		621		
Nigeria		783		
Norway		599		
Philippines		627		
Portugal		645		
Singapore			621	
South Africa		1.325		
Spain	1.143			
Sweden		2.395		
Turkey	621	617		
United Kingdom		6.623		
U.S.A.		6.173		
U.S.S.R.		5.152		
	<u>7.799</u>	<u>83.643</u>	<u>621</u>	<u>92.063</u>

Special Development fund	7	Transfer	250.576	279.872
Balance at December 31, 1988			21.246	2.777
Interest			1.275	167
American Mathematical Society, USA			10.858	5.124
Royal Society, United Kingdom			-	7.970
London Mathematical Society, United Kingdom			1.729	-
Instituto de Mathema'tica e Aplicada do CNPq, Rio de Janeiro, Brazil			-	5.208
Wiskundig Genootschap, Netherlands			972	-
Swiss mathematicians			201	-
Balance at December 31, 1989			<u>36.281</u>	<u>21.246</u>
General Assembly fund				
Balance at December 31, 1988			9.313	7.230
General Assembly 1990			1.864	2.083
Balance at December 31, 1989			<u>11.177</u>	<u>9.313</u>
World Directory of Mathematicians fund				
Balance at December 31, 1988			25.123	14.706
World Directory, IX ed.			9.316	10.417
Balance at December 31, 1989			<u>34.439</u>	<u>25.123</u>
			<u>332.473</u>	<u>335.554</u>

NOTES TO BE READ IN CONNECTION WITH THE FINANCIAL STATEMENT
OTHER NOTES

			1989		1988	
			Currency	USD	Currency	USD
4. Banks and cash						
The amount held with banks is made up as follows						
Credit Swiss	SWITZERLAND					
- Current account		FS	107.241	66.609	131.961	91.639
Kansallis-Osake-Pankki	FINLAND	FIM	70.316	16.545	67.267	16.407
Kansallis-Osake-Pankki	FINLAND	USD	-	16.342	-	5.458
Kansallis-Osake-Pankki	FINLAND	FS	55.894	34.717	47.264	32.822
Kansallis-Osake-Pankki	FINLAND					
- Deposit account (RESERVE)		FS	207.391	128.814	196.156	136.219
- Longterm account		FS	72.131	44.802	68.223	47.377
Bank of Boston	USA	USD	-	24.437	-	17.919
				332.266		347.841

2. GRANTS TO INDIVIDUALS/ORGANIZATIONS

I.C.M.I	5.660
C.D.E	9.482
I.C.S.U	2.767
C.T.S	400
	<u>18.309</u>

3. PUBLICATIONS

Publications expenditure is made up as follows:

	1989	1988
I.M.U. Bulletin	389	298
World Directory of Mathematicians, VIII and IX ed.	9.317	10.416
	<u>9.706</u>	<u>10.714</u>

7. FUNDS

These funds represent the amounts set aside to cover the following

Provided in year ended	1989 General fund	1989 General Assembly	1989 World Directory	1989 Special Development fund
-----	-----	-----	-----	-----
General fund				
Balance 31.12.1988	279.872			
Transfer from the excess of expenditure over income	29.296			
Special Development fund				
Balance 31.12.1988				21.246
Interest				1.275
Donations				13.760
General Assembly fund				
Balance 31.12.1988		9.313		
General Assembly 1990		1.864		
World Directory of Mathematicians fund				
Balance 31.12.1988			25.123	
World Directory, IX ed.			9.316	
	<u>250.576</u>	<u>11.177</u>	<u>34.439</u>	<u>36.281</u>

5. PREPAYMENTS

Secretarial help, President 1990
 CDE, Scientific activities
 Program Committee for ICM 1990

927
2.858
354
<u>4.139</u>

6. CREDITORS AND ACCRUALS

Audit
 Office expenses

1.448
2.484
<u>3.932</u>

D. ADMINISTRATIVE EXPENSES			
Grant to C.T.S.	400		400
Grant to I.C.M.I.	5.660		6.977
Grant to C.D.E.	2.199		3.507
Contribution to I.C.S.U.	2.767		2.377
Audit fees	1.000		1.316
General office expenses	12.480		5.864
Bank charges	1.422		285
		<u>25.928</u>	<u>20.726</u>
		<u>114.798</u>	<u>124.064</u>
		(29.296)	5.898
EXCESS OF INCOME OVER EXPENDITURE			
Allocated to:			
General fund			<u>5.898</u>
			<u>5.898</u>
EXCESS OF EXPENDITURE			
Allocated from:			
General fund	(29.296)		
		<u>(29.296)</u>	

STATEMENT OF INCOME AND EXPENDITURE:
FINANCIAL YEARS 1988 AND 1989 COMPARED

INCOME	1989	1988
Allocation from Unesco grant to ICSU	9.774	14.601
Contributions from Members	92.063	110.672
Sale of publications	4.966	11.705
Bank interest	12.481	6.833
Next exchange loss / (gain)	33.782	13.849
	<u>85.502</u>	<u>129.962</u>
EXPENDITURE		
A. MEETINGS		
Representation at meetings	10.111	15.944
Program Committee	3.728	6.800
General Assembly	2.019	2.083
	<u>15.858</u>	<u>24.827</u>
B. PUBLICATIONS		
	9.706	10.714
C. SCIENTIFIC ACTIVITIES		
Colloquia	28.548	26.317
Other activities		
ICM 1990	13.836	16.296
I.C.M.I	9.434	11.655
Conferences/ICSU	2.006	7.086
CDE	9.482	6.443
	<u>63.306</u>	<u>67.797</u>

INTERNATIONAL MATHEMATICAL UNION

Dues arrears as of January 1, 1990:

Member	Dues (Swiss francs)	Year(s)	USD
Argentina	2.000	1989	1.242
Belgium	4.000	1989	2.485
Chile	2.232	1989, 1988, 1987	1.386
Egypt	1.000	1989	621
France	175	part of 1988, 1987	109
Greece	1.000	1989	621
Hong Kong	2.000	1989, 1988	1.242
Iceland	2.000	1989, 1988	1.242
Ivory Coast	1.000	1989	621
Mexico	2.000	1989, 1988	1.242
Nigeria	3.440	1988, 1987, 1986, 1985	2.137
Pakistan	12.800	1989, 1988, 1987, 1986, 1985, 1984, 1983	7.950
Philippines	1.140	1988, 1987	708
Poland	8.000	1989, 1988	4.969
Romania	14.000	1989, 1988, 1987, 1986, 1985, 1984, 1983, 1982	8.696
Spain	2.000	1989	1.242
Switzerland	4.000	1989	2.484
Turkey	3.850	1987, 1983, 1982, 1981, 1980, 1979, 1978	2.392
U.S.S.R.	4.500	part 1989, part 1988, part 1987	2.795
Viet Nam	3.850	1989, 1988, 1987, 1986	2.391
Yugoslavia	7.700	1989, 1988, 1987, 1986	4.783
			<u>51.358</u>

1 USD = 1,61 SFR = December 31, 1989