IMU

BULLETIN
OF THE
INTERNATIONAL MATHEMATICAL UNION

No. 27
September 1987

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

Members of the Union

The following countries were members of IMU as of January 1, 1987:

I: Cameroon, Chile, Cuba, Egypt, Greece, Hong Kong, Iceland, Iran, Ivory Coast, Democratic Republic of Korea, Republic of Korea, Mexico, New Zealand, Nigeria, Norway, Philippines, Portugal, Singapore, Turkey, Vietnam.

II: Argentina, Austria, Bulgaria, Denmark, Finland, Ireland, Israel, Pakistan, Romania, South Africa, Spain, Yugoslavia.

III: Australia, Belgium, Brazil, Czechoslovakia, Democratic Republic of Germany, Hungary, India, Netherlands, Poland, Sweden, Switzerland.

IV: Canada, Italy.

V: China, France, Federal Republic of Germany, Japan, United Kingdom, USA, USSR.

Malaysia has announced its withdrawal from the Union as of January 1, 1987.

The 51st meeting of the Executive Committee of IMU

The Executive Committee had a meeting in Leningrad, USSR, on May 22–23, 1987.

Meeting of CDE

The Commission on Development and Exchange had a meeting in Paris, France, on June 22, 1987. The Commission discussed plans for its four-year period and elected Professor J.P. Bourguignon as Secretary and P. Griffiths as Treasurer.

UNESCO had invited a group of mathematicians to Nice, France, on June 20, 1987, to discuss the plans of UNESCO concerning mathematics, especially in developing countries.

Instructions for seeking support for conferences

1. The International Mathematical Union sponsors, or co-sponsors, "colloquia"; it does not sponsor or co-sponsor "institutes". A colloquium is understood to mean a closed meeting (closed in a weak sense) of experts, together with a limited number of other invited participants, convened to discuss the results of recent research. (Expository lectures are not meant to be included.) A colloquium is intended to last about a week.

2. Any colloquium sponsored or co-sponsored by the Union is to be designated "an international colloquium".

3. The co-sponsorship of the Union usually (though not always) implies a financial contribution by the Union of a few thousand Swiss francs. It is understood that such a contribution will be matched by at least an equal contribution from the organizers themselves.

4. The Union's contribution is to be utilized for meeting the travel expenses of the invitees. The living expenses are to be met from other sources.

5. If the Union co-sponsors a colloquium, it has the right to nominate two members to the Organizing Committee of the Colloquium. It does not make any stipulation regarding the rest of the membership of the Organizing Committee. The Union's nominees should have a share in the preparation of the scientific program and in the selection of speakers. It is customary that one of the nominees of the Union is a member of the Executive Committee of the Union, while the other is usually a mathematician of eminence conversant with the needs of the Colloquium. The Union's nominees have generally drawn high praise from the Organizing Committees, and we have never had any kind of trouble on their account.

6. Immediately after the Colloquium is over, a financial statement giving the full budget of the Colloquium (showing the income from *all* sources, and the expenditure on all accounts) is to be sent by the Chairman of the Organizing Committee to the Secretary of the Union.

7. The Union's deadline for receiving applications for colloquia is March 1 of the year preceding the Colloquium. Even if the full picture of the Colloquium is not clear by that date, an application giving the topic, the names of the officers of the Organizing Committee, if possible the names of the invited speakers, the probable size of the Colloquium, and the probable size of the budget, together with the place where the Colloquium will be held, should be sent in.

8. The ICSU resolution on the free circulation of scientists stating that *before the Symposia or meetings are arranged, an assurance in writing should be obtained from the organizers in the country concerned that visas will be granted to bona fide scientists if proper applications are made* should be observed.

Conferences supported by IMU

1987:

Seminar on Approximation and Optimization, Havana, Cuba, January 12–16, 1987.

IMU representatives: C. Ciesielski and H. Wallin. IMU contribution: 5000 Swiss francs. Besides, ICSU granted $ 7000.

Potential Theory, Prague, Czechoslovakia, July 19–24, 1987.

IMU representatives: H. Bauer and Eugene Fabes. IMU contribution: 3000 Swiss francs.

The International Symposium on K-Theory and its Applications, Ibadan, Nigeria, August 10–15, 1987.

IMU representative: J. Coates. IMU contribution: 5000 Swiss francs.

13th Rolf Nevanlinna Colloquium, Joensuu, Finland, August 10–13, 1987.
IMU representatives: L. Carleson and O. Lehto. IMU contribution: 7000 Swiss francs.

Second International Conference on Combinatorial Mathematics and Computing, Canberra, Australia, August 24–28, 1987.
IMU representative: J. Coates. IMU contribution: 7000 Swiss francs.

The International Conference on Computational Geometry and Topology and Computers in the Teaching of Mathematics, Sevilla, Spain, August 31–September 4, 1987.
IMU representative: J. Palis Jr. IMU contribution: 5000 Swiss francs.

Workshop on Mathematical Physics, Bujumbura, Burundi, September 28–October 10, 1987.
IMU representative: J. Palis. IMU contribution: 5000 Swiss francs through CDE.

International Conference in Topology and its Applications, Baku, U.S.S.R., October 3–8, 1987.
IMU representative: L.D. Faddeev. IMU contribution: 5000 Swiss francs.

1988:

The Ramanujan Birth Centenary International Colloquium, Bombay, India, January 4–11, 1987.
IMU representatives: M.S. Narasimhan and C.S. Seshadri. IMU contribution: 10000 Swiss francs.

The IXth Congress of the International Association of Mathematical Physics, Swansea, United Kingdom, July 17–27, 1988.
IMU representative: L.D. Faddeev. IMU contribution: 10000 Swiss francs.

The 9th Latin American School of Mathematics, ELAM, Santiago, Chile, July 20–31, 1988.
IMU representative: J. Palis Jr. IMU contribution: 10000 Swiss francs.

6th International Congress on Mathematical Education, ICME–6, Budapest, Hungary, July 27–August 3, 1988.
IMU contribution: $ 15 000.

1990:

International Congress of Mathematicians, Kyoto, Japan, August 21–29, 1990.
IMU contribution: 66 000 Swiss francs for ICM 1990, 22 000 Swiss francs for travel grants to ICM 1990.

ICME–6

The Sixth International Congress on Mathematical Education will be held on July 27–August 3, 1988, in Budapest, Hungary. The Second Announcement can

be obtained from János Bolyai Mathematical Society, POB 240, H–1368 Budapest, Hungary.

Special Development Fund

The Special Development Fund aids IMU to fulfill the important obligation of helping developing countries within the framework of mathematical research. The means of the Fund, which go unreduced to mathematicians from developing countries, come from donations. They are used primarily for travel grants to young mathematicians, to make it possible for them to participate in International Congresses of Mathematicians. The Executive Committee of IMU elects an international committee to distribute the grants.

The following contributions were received before the Berkeley Congress:

1983:	Swiss francs
Wiskundig Genootschap, Netherlands	2403
London Mathematical Society, United Kingdom	1595
1985:	
London Mathematical Society, United Kingdom	3050
Danish Mathematical Society, Denmark	421
1986:	
Wiskundig Genootschap, Netherlands	1878
Australian Mathematical Society, Australia	973

The next goal is to collect money for travel grants for the 1990 International Congress of Mathematicians in Kyoto. So far, we have received the following contributions:

1986:	Swiss francs
Swedish Mathematical Society, Sweden	76
Finnish Mathematical Society, Finland	323
1987:	
Norwegian Mathematical Society, Norway	1079
London Mathematical Society, United Kingdom	2245

The Executive Committee expresses its heartfelt thanks for them. The E.C. hopes that the generosity of these societies will continue and appeals strongly to the Mathematical Societies of the other member countries of IMU for further contributions.

Donations to the Special Development Fund can be sent, at any time and in any convertible currency, to the following accounts:

Account no. 0862-656208-21
Schweizerische Kreditanstalt
Stadtfiliale Zürich-Rigiplatz
Universitätstraße 105
CH-8033 Zürich
Switzerland

Account no. 100020-411-CHF-5706 FR
Kansallis-Osake-Pankki
Aleksanterinkatu 42
SF-00100 Helsinki
Finland.

IMU Fellowship Fund

The IMU Fellowship Fund is intended to provide help to advanced level graduate students, especially to those coming from less well-off countries, to take benefit from a long-period stay abroad at a well-known university or institute. Suggestions for possible candidates from the Committees for Mathematics should reach the Secretary before March 1, 1988.

IMU Lecturers

In 1971, the Executive Committee of IMU decided to invite, from time to time, a distinguished and active mathematician, of international standing, to give a set of four to six lectures, on important new developments in mathematics to which the lecturer, directly or indirectly, has made a contribution, and which deserve to be 'surveyed' at some length, for the benefit of younger mathematicians as well as others.

The lectures should be given at mathematical centers and they will be published in the L'Enseignement Mathématique.

Suggestions for IMU lecturers should reach the Secretary by March 1, 1988.

Below is a list of the IMU lectures. Most of the lectures have been published in the monograph series of L'Enseignement Mathématique; the number and the year of publication are indicated in the list.

1971:

W.M. Schmidt, Approximation to algebraic numbers. Princeton, U.S.A., February 1971. No. 19, 1972, 70 pp.

L. Hörmander, On the existence and the regularity of solutions of linear pseudo-differential equations. Princeton, U.S.A., March–April 1971. No. 18, 1971, 69 pp.

1972:

F. Hirzebruch, Hilbert modular surfaces. Tokyo, February–March 1972. No. 21, 1973, 103 pp.

J.L. Lions, Sur le contrôle optimal de systèmes distribués. Moscow, November 1972. No. 20, 1973, 45 pp.

1975:

David Mumford, Stability of projective varieties. Bures-sur-Yvette, March–April 1976. No. 24, 1977, 74 pp.

1977:

A.G. Vitushkin, On representation of functions by means of superpositions and related topics. Los Angeles, April–May 1977. No. 25, 1978, 68 pp.

1980:

Harry Furstenberg, Les frontières de groupes et leurs applications. Bures-sur-Yvette. Not published.

1981:

W. Jaco, Variétés de dimension 3. Lausanne. Not published.

1981:

S.T. Yau, Nonlinear analysis in geometry. Zürich, November 1981. No. 33, 1986, 54 pp.

1984:

M. Kashiwara, Introduction to microlocal analysis. Bern, June 1984. No. 32, 1986, 37 pp.

1986:

E. Bombieri, Questions of effectivity in number theory. Zürich, June 1986.

The following pages consist of the financial report of the Union for the year 1986.

SALMI, VIRKKUNEN & HELENIUS KY

AUTHORISED PUBLIC ACCOUNTANTS

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Helsinki, March 24, 1987

AUDITORS' REPORT

We have audited the Financial Statements of the International Mathematical Union (IMU), prepared by the Executive Secretary of IMU, for the year ended December 31, 1986. The Statement of Income and Expenditure was prepared in accordance with the instructions given by the International Council of Scientific Unions in a letter dated November 24, 1986. 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 translated into US dollars by applying the UNESCO standard average rates of exchange based on December 1986.

Income and expenditure for each month was translated into US dollars at the UNESCO average rate for the month.

2. Income

The contributions from national members have been recorded on a cash basis. From the total amount of the contributions from national members due but not paid in 1986, USD 10.120 is for the year 1986 and USD 10.179 for the previous years (the list of dues unpaid is attached to the financial statements).

3. Income from the 7th edition of WDM

The income from the sale of the 7th edition of the World Directory of Mathematicians is based on the royalty statement of North Holland Publishing Co (1985), 15 copies USD 225, and on the reports of professor Mostow, Yale University, USA (1985-1986), 112 copies USD 2.015.

No further income is to be expected on the stock of the 7th edition.

4. The 8th edition of WDM

The costs of the 8th edition of the WDM billed by the American Mathematical Society are USD 30.525,17. The costs covered by the WDM-fund are USD 9.372,16 and the costs for the year 1986 are USD 21.153,01.

5. Expenditure

Expenditure is recorded on accruals basis. The Statement of Income and Expenditure includes gain on exchange USD 35.782,97 and loss of exchange USD 794,92.

6. Bank Accounts

We have not been in position to confirm the accounts of Colonial Bank, USA, balance USD 3.560,61, at December 31, 1986.

SALMI, VIRKKUNEN & HELENIUS KY

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In our opinion, with reservation of the comments above, 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, 1986.

Antti Helenius

Annikki Rasilainen

INTERNATIONAL MATHEMATICAL UNION

Statement of Income and Expenditure
for the Year Ended 31 December 1986

		NOTES	
1. INCOME			US dollars
Allocation from Unesco Subvention to ICSU			20.084,80
Contributions from National Members		1.	74.022,15
Sale of publications			2.240,-
Bank interest and gain on exchange			41.741,43
			138.088,38
II. EXPENDITURE			
a. Scientific Activities			
Conferences			6.327,-
Grants to Individuals/Organizations		2.	29.630,48
b. Routine Meetings			
Bureau/Executive Committee			23.662,88
Other			1.547,62
c. Publications		3.	21.892,75
d. Administrative Expenses			
General Office Expenses			4.137,35
Audit fees			500,-
Bank charges and loss on exchange			1.290,39
			88.988,47
Excess of Income Over Expenditure			49.099,91
Accumulated Balance at 1 January 1986			161.533,44
Accumulated Balance at 31 December 1986			210.633,35

	Notes		1986		1985
ASSETS					
Bank accounts and cash	4				
Current accounts		161.703		130.002	
Deposit accounts		55.596	217.299	63.105	193.107
Prepayments	5		7.000		500
TOTAL ASSETS			224.299		193.607
LESS: LIABILITIES	6				
Creditors and accruals			8.154		3.158
			216.145		190.449
			=======		=======
ACCUMULATED FUNDS					
General fund	7				
Balance at December 31, 1985		161.534		98.726	
Excess of income over expenditure		49.100		62.808	
Balance at December 31, 1986			210.634		161.534
		Transfer	210.634		161.534

	Notes				
		Transfer	210.634		161.534
Special Appeal fund	7				
Balance at December 31, 1985		8.396		1.433	
Interest		252			177
Donations		235		6.786	
Travel grants		(8.396)		-	
Balance at December 31, 1986			487		8.396
General Assembly fund					
Balance at December 31, 1985		3.477		2.233	
General Assembly 1986		1.547		1.244	
Balance at December 31, 1986			5.024		3.477
World Directory of Mathematicians fund					
Balance at December 31, 1985		9.372		4.587	
World Directory, VIII ed.		(9.372)		4.785	
Balance at December 31, 1986			-		9.372
IMU Development fund					
Balance at December 31, 1985		7.670		4.800	
Travel grants 1986		(7.670)		2.870	
Balance at December 31, 1986			-		7.670
			216.145		190.449
			=======		=======

INTERNATIONAL MATHEMATICAL UNION

1. STATEMENT OF CONTRIBUTIONS RECEIVED FROM MEMBERS DURING THE YEAR
   ENDED DECEMBER 31, 1986

MEMBER	PRE 1986	PAYMENT CONCERNING THE YEAR 1986	1987	TOTAL
Argentina		939		
Australia		1726		
Austria		934		
Belgium	1726			
Brazil		1784		
Bulgaria		1012		
Canada		2960		
Cuba		426		
Czechoslovakia	1627	1627		
Denmark		895		
Finland		1018		
France		4852		
Germany, D.R.		1789		
Germany, F.R.		4570		
Greece	407	470		
Hungary		1726		
Iceland	407			
India		1878		
Iran		457		
Ireland		1006		
Israel		846		
Italy		3606		
Japan		5030		
Korea, D.P.R.		503		
Korea, R.		423		
Mexico		435		
Netherlands		2060		
New Zealand		423		
Norway	423	423		
Philippines	447			
Poland		2060		
Portugal	457	506		
Singapore		407	595	
South Africa		813		
Spain		914		
Sweden		2012		
Switzerland		1789		
Turkey	506			
United Kingdom		5030		
U.S.A.		4474		
U.S.S.R.		4670		
Viet Nam	934			
	6934	66493	595	74022

2. GRANTS TO INDIVIDUALS/ORGANIZATIONS

I.C.M.I	3.349
C.D.E	1.435
C.T.S	396
I.C.S.U	1.400
Travel grants	23.050
	29.630
	======

3. PUBLICATIONS

Publications expenditure is made up as follows:

	1986	1985
I.M.U bulletin	740	233
World Directory of Mathematicians, VIII ed.	21.153	4.785
	21.893	5.018
	======	======

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

			1986		1985	
			Currency	USD	Currency	USD
4. Banks and cash						
The amount held with banks is made up as follows						
Credit Swiss	SWITZERLAND					
- Current account		FS	83.881	49.929	116.134	55.566
Kansallis-Osake-Pankki	FINLAND	FIM	10.750	2.194	4.049	743
Kansallis-Osake-Pankki	FINLAND	USD	-	1.450	-	27.676
Kansallis-Osake-Pankki	FINLAND	FS	82.762	49.263	43.927	21.018
Kansallis-Osake-Pankki	FINLAND					
- Deposit account		FS	93.402	55.596	42.940	20.546
- Longterm account (RESERVE)		FS	92.914	55.306	88.949	42.559
Colonial Bank	USA	USD	-	3.561	-	24.999
			=======	-------	=======	-------
				217.299		193.107
				=======		=======

5. PREPAYMENTS

Advance payment of ICSU
Grant to the Seminar on Approxi-   7.000
mation and Optimization   -----
                                     7.000
                                     =====

6. CREDITORS AND ACCRUALS

World Directory of Mathema-
ticians, 8 th edition   5.526
I.M.U lectures   1.884
Audit   744

                                     8.154
                                     =====

7. FUNDS

These funds represent the amounts set aside to cover the following

Provided in year ended	1986 General fund	1986 General Assembly	1986 World Directory	1986 Special Appeal fund	1986 IMU Development fund
General fund					
Balance 31.12.1986	161.534				
Transfer from the excess of income over expenditure	49.100				
Special Appeal fund					
Balance 31.12.1986				8.396	
Interest				252	
Donations				235	
Travel grants				(8.396)	
General Assembly fund					
Balance 31.12.1986		3.477			
General Assembly 1986		1.547			
World Directory of Mathematicians fund					
Balance 31.12.1986			9.372		
World Directory, VIII ed.			(9.372)		
IMU Development fund					
Balance 31.12.1986					7.670
Travel grants					(7.670)
	210.634	5.024	–	487	–

STATEMENT OF INCOME AND EXPENDITURE:
FINANCIAL YEARS 1985 AND 1986 COMPARED

INCOME	1986		1985	
Allocation from Unesco grant to ICSU	20.085		19.606	
Contributions from National Members	74.022		56.007	
Sale of publications	2.240		4.313	
Bank interest	5.959		6.787	
Next exchange (loss) / gain	34.988		21.997	
Other income	–		2.000	
		137.294		110.710

EXPENDITURE				
A. MEETINGS				
Representation at meetings	22.345		6.690	
Program Committee	–		3.843	
General Assembly	1.548		1.244	
		23.893		11.777
B. PUBLICATIONS		21.893		5.018
C. SCIENTIFIC ACTIVITIES				
Colloquia	3.530		5.651	
Other activities				
ICM 1986	–		7.267	
I.C.M.I	2.797		2.000	
CDE	–	6.327	5.000	19.918

D. ADMINISTRATIVE EXPENSES

Grant to C.T.S.	396		400	
Grant to I.C.M.I.	3.349		1.550	
Grant to C.D.E.	1.435		1.163	
Contribution to I.C.S.U	1.400		1.539	
Travel grants	23.050		2.870	
Audit fees	500		600	
General office expenses	5.456		2.719	
Bank charges	495		348	
		36.081		11.189
		88.194		47.902
		======		======
		49.100		62.808

EXCESS OF INCOME OVER EXPENDITURE

Allocated to:

General fund	49.100		62.808	
		49.100		62.808
		======		======

The following countries have not paid their dues for the year 1986:

Country	Dues CHF	USD
Belgium	3 400	2 024
Cameron	850	506
Chile	850	506
Egypt	850	506
Hong kong	850	506
Iceland	850	506
Malaysia	850	506
Nigeria	850	506
Pakistan	1 700	1 012
Philippines	850	506
Romania	1 700	1 012
Turkey	850	506
Viet Nam	850	506
Yugoslavia	1 700	1 012
		10 120

The following countries have earlier dues unpaid as follows:

Country	Sum CHF	USD	Years
Nigeria	1 850	1 101	1983–85
Pakistan	5 100	3 036	1983–85
Romania	6 300	3 750	1982–85
Turkey	3 850	2 292	1978–83
		10 179	

TOTAL 20 299
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1 USD = 1,680 SFR = December 31, 1986

WORLD DIRECTORY OF MATHEMATICIANS, VIIIth EDITION

The 8th edition of the World Directory of Mathematicians is now available.
This 976 page directory contains the names and addresses of approximately
40 000 individual mathematicians from 83 countries.

The price of the Directory is $ 30, plus shipping and handling, and no
discounts are allowed. Shipping and handling charges are: for surface
delivery - $ 2 for the first copy, $ 1 for each additional copy; for air
delivery - $ 5 for the first copy, $ 3 for each additional copy. Orders
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> Providence, RI 02940
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orders that are received.