

IMU

BULLETIN

OF THE

INTERNATIONAL MATHEMATICAL UNION

No. 5 September 1973

Secretariat

Box 41

S - 182 51 Djursholm

SWEDEN

INTERNATIONAL MATHEMATICAL UNION

Executive Committee

(1 January 1971 - 31 December 1974)

| | |
|-------------------------|---|
| President: | Professor K. Chandrasekharan |
| Vice-Presidents: | Professor Nathan Jacobson Academician L.S. Pontrjagin |
| Secretary: | Professor Otto Frostman |
| Members: | Professor M.F. Atiyah Professor Y. Kawada Professor N.H. Kuiper Academician M. Nicolescu Professor E. Vesentini |
| Past President: | Professor H. Cartan |

REPORT OF THE 32ND MEETING OF THE EXECUTIVE COMMITTEE

Hotel Frankfurter Hof, Frankfurt am Main, June 1-2, 1973

All members of the Executive Committee were present at the meeting.

Approval of Reports.

The financial report for 1972 that had been sent out in advance to the members of the E.C. was approved. The scientific activities of the Union in 1972 and in 1973 until April, reported on below, were discussed.

International Symposium on Partial Differential Equations and the Geometry of Normed Linear Spaces, Jerusalem, June 19-28, 1972.

It was sponsored by IMU, the Israel Academy of Sciences and Humanities, the National Council for Research and Development, the Hebrew University of Jerusalem, Tel-Aviv University and the Israel Institute of Technology. Lectures were given by 27 invited speakers part of whose travel expenses was paid by IMU. There were 99 registered participants from the following countries: Brazil 1, Canada 6, Denmark 3, France 7, W. Germany 1, Israel 47, Italy 2, Japan 2, Norway 1, Rumania 1, Sweden 4, UK 1, USA 23.

For the detailed scientific programme, see Appendix A.

International Colloquium on Analysis and Differential Topology, Strasbourg, June 20-29, 1972.

The Colloquium was organized by the Centre National de la Recherche Scientifique and co-sponsored by IMU. There were 105 participants from the following countries: Belgium 1, Finland 1, France 47, W. Germany 5, Great Britain 3, Japan 3, the Netherlands 4, Poland 2, Portugal 1, Rumania 2, Spain 4, Switzerland 3, USA 29.

For the detailed scientific programme, see Appendix B.

International Conference on Mathematical Problems of Quantum Field Theory and Quantum Statistics, Moscow, December 12-19, 1972.

The Conference was organized by the Academy of Sciences of the USSR with Academician N.N. Bogolubov as Chairman of the Organizing Committee. It was co-sponsored by IMU which paid a contribution to the organizational expenses. There were 271 participants from the following countries: Belgium 1, BRD 11, Bulgaria 8, Czechoslovakia 5, DDR 1, France 14, Great Britain 1, Hungary 4, Italy 4, Japan 3, Yugoslavia 2, the Netherlands 1, Norway 1, Poland 6, Rumania 2, Sweden 1, Switzerland 5, USA 12, USSR 189.

For the detailed scientific programme, see Appendix C.

International Colloquium on Discrete Subgroups of Lie Groups and Applications to Moduli, Bombay, January 8-15, 1973.

The Colloquium was held at the Tata Institute of Fundamental Research and was jointly sponsored by IMU and the Tata Institute. IMU paid contributions to the travel expenses of invited speakers. The Colloquium was a closed meeting of experts and others specially interested in the subject.

For the detailed scientific programme, see Appendix D.

International Conference on Manifolds and Related Topics in Topology, Tokyo, April 10-17, 1973.

The Conference was organized by the Mathematical Society of Japan and co-sponsored by IMU, the Ministry of Education and the Science Council of Japan. IMU paid the travel expenses of some of the invited speakers. There were about 400 Japanese participants and 44 from foreign countries, namely from Canada 5, England 4, France 7, W. Germany 1, India 1, Israel 1, Italy 1, Mozambique 1, USA 20, USSR 3.

For the detailed scientific programme, see Appendix E.

IMU Lectures.

IMU Lectures were given by Professor F. Hirzebruch at the University of Tokyo in February-March 1972 on "The Hilbert Modular Group" and by Professor J.-L. Lions at the Steklov Institute, Moscow, in November 1972 on "Optimization Problems in Partial Differential Equations". No IMU Lectures are scheduled for 1973, and there will be none in 1974, the year of the International Congress of Mathematicians.

International Symposium on Mathematical Theory of Optimal Control.

This Symposium will be held in Warsaw at the end of 1973 or the beginning of 1974. The E.C. decided to sponsor it and to allocate \$ 1.000 to the travel expenses of invited speakers. Academician Pontrjagin and Professor J.-L. Lions were appointed as the IMU representatives on the Organizing Committee.

Cooperation with IUTAM.

IUTAM was planning to organize a symposium on the Application of Methods of Functional Analysis to Problems of Mechanics, and wanted IMU to appoint members to a joint Study Group to prepare a detailed programme. The E.C. nominated the following mathematicians:

- Professor J.-L. Lions (France)
- Professor G. Stampacchia (Italy)
- Professor F. Stummel (BRD)

Applied Mathematics.

The E.C. affirmed the general policy of IMU of pursuing activities not only in pure but also in applied mathematics in its broad sense, giving as proof thereof the cooperation with the theoretical physicists at the Moscow Conference, the sponsorship of the Warsaw Symposium on Optimization Theory, and the Study Group appointed at the instance of IUTAM.

IMU Fellowship

The International Advisory Group (IMU Bulletin, No. 2, p. 8, and No. 3, p. 3) had recommended and the E.C. decided to award the IMU Fellowship of \$ 2.000 for 1973 to Dr. César Camacho (30) from Lima, Peru. He has worked in dynamical systems and plans to study actions of non compact abelian groups on manifolds. He intends to pursue his studies at the Institut des Hautes Etudes Scientifiques at Bures-sur-Yvette (France) and at the University of Warwick (Great Britain). Supplementary support has been guaranteed at both places.

Reviewing Journals

It was noted that no special action on the part of IMU was called for at this time, but that the Union would be glad to assist in the coordination if need arose. In particular, better coverage of applied mathematics could be furthered.

International Commission on Mathematical Instruction (ICMI).

The Second International Congress on Mathematical Education was held at Exeter (Great Britain) on August 29 - September 2, 1972. During the Congress a general ICMI meeting was arranged. For brief reports, see the IMU Bulletin, No. 4 (December 1972), p. 11-12.

It was reported that ICMI didn't want any change of the Terms of Reference with IMU. The E.C. considered it highly desirable to ask the National Committees to nominate their representatives in ICMI, several months in advance of the General Assembly, so as to facilitate the preparation of a balanced slate for the members-at-large.

International Congress of Mathematicians in Vancouver, August 21-29, 1974.

The scientific programme of the Congress is now being prepared by the Consultative and the Organizing Committees. A meeting, designed to be the last one, will be held in Toronto in September this year.

The E.C. decided to give the highest priority to IMU's support of the Congress. As in the past, IMU should pay travel grants to young mathematicians, with particular emphasis on developing countries, who would want to attend the Congress, though

not as invited speakers. The National Committees will be invited to make recommendations. The E.C. decided to reserve \$ 8,000 for this purpose.

The Secretary reported on the contacts he had had with some of the European airlines for charter flights from Europe to Vancouver at the time of the Congress. So far no definitive results had been obtained, due to the uncertainty about future air fares and currencies. The Secretary was requested to renew the discussion with European and other airlines about a year in advance of the Congress.

General Assembly of IMU.

The General Assembly of IMU will be held at Harrison Hot Springs (near Vancouver) on August 17-19, 1974. The National Committees will be notified in due course.

World Directory of Mathematicians.

A preliminary decision had been taken at the E.C. meeting last year (IMU Bulletin, No. 4, p. 4-5). The E.C. now resolved to re-create a Bureau for the World Directory of Mathematicians, with Professor Frostman in charge of it, for producing the next edition. The E.C. further decided to accept the offer for the printing made by Messrs. Almqvist & Wiksell, Uppsala, Sweden, and that IMU itself should act as publisher.

Financial questions.

The E.C. decided to apply to ICSU for an extra grant for 1974, the year of the International Congress. However, even if such a subvention was granted, IMU must face the necessity of digging into its reserves. To this end, the E.C. decided to ask for the authority of the General Assembly (by postal ballot, if necessary) to expend a sum not exceeding \$ 15,000 of the Union's reserves, the exact amount to be determined after the ICSU grant for 1974 is known.

It was also noted that it would be necessary for IMU to increase its income from dues if the present activity was to be maintained. At least, an upward valuation of the unit of its dues to its value before August 1971, was desirable. The E.C. appointed a Committee with Professor Jacobson as convener, Academician Pontrjagin and Professor Atiyah as members and the Secretary ex officio, to study the question of the raising of dues, and to report before October 1973.

Change of Group of Adherence.

It was reported that the members of IMU by postal ballot had approved the change of group of Australia from II to III, effective on January 1, 1973.

MEMBERS OF IMU

The following 41 countries were members of the Union on January 1, 1973:

- Group I Argentina, Brazil, China-Taiwan, Cuba, Greece, Iceland, Ireland, Mexico, New Zealand, North Korea, Norway, Portugal, South Africa, Turkey;
- Group II Austria, Bulgaria, Denmark, Finland, Israel, Pakistan, Rumania, Spain, Yugoslavia;
- Group III Australia, Belgium, Canada, Czechoslovakia, German Democratic Republic, Hungary, India, the Netherlands, Sweden, Switzerland;
- Group IV Federal Republic of Germany, France, Italy, Japan, Poland;
- Group V Great Britain, USA, USSR.

This membership corresponds to a total voting strength of 97 and an annual income from dues of \$ 14.474.40 (equivalent to 111 units). This means an increase of 3 votes and 3 units since January 1, 1972 (1 vote and 1 unit each for Australia, Bulgaria and Sweden).

ANNOUNCEMENTS

Request to the National Adhering Organizations

The National Organizations for the International Mathematical Union are urgently requested to provide the Secretariat with the names and addresses of the

1. Chairman of the National Committee for Mathematics;
2. Members of the National Committee for Mathematics;
3. National representatives in ICMI;
4. Office to which invoice for annual dues should be sent.

Information is needed to make it possible for the Secretariat to distribute, with certainty and promptness, forthcoming communications about the General Assembly of IMU in 1974, and also for correspondence concerning the World Directory of Mathematicians. It should reach the Secretary before October 15, 1973.

Salem Prize

The Salem prize for 1973 was awarded to Dr. E.M. Nikisin, University of Moscow, for his work on convergence of general series of functions. The jury consisted of Professors A. Zygmund, L. Carleson, J.-P. Kahane and Ch. Pisot. (IMU Bulletin, No. 4).

FINANCIAL REPORT

for the period January 1 to December 31, 1972

1. INCOME

The Union had the following six sources of income during the year:

- A Dues from the member nations;
- B UNESCO/ICSU contribution;
- C Interest on Bank Accounts;
- D Reimbursement of ICSU dues;
- E Reimbursement of travel expenses;
- F Cancellation of cheques.

A During the financial year 1972, dues were paid at the

(i) Chase Manhattan Bank by

| | | | |
|--------------|-----|------|----------------------|
| Canada | III | 1972 | |
| Ireland | I | 1972 | |
| Israel | II | 1972 | |
| South Africa | I | 1972 | |
| Spain | II | 1972 | Total US \$ 1.173.60 |

(ii) Swiss Credit Bank by

| | | | |
|-------------|-----|-------------------------|------------------------|
| Austria | II | 1972 | |
| FRG | IV | 1972 | |
| GDR | III | 1972 | |
| India | III | 1972 | |
| Netherlands | III | 1972 | |
| Sweden | II | 1972 part | |
| Switzerland | III | 1972 | |
| USSR | V | 1971 rest and 1972 part | |
| Yugoslavia | II | 1968-1971 and 1972 part | Total Sw.Fr. 17.298.95 |

(iii) Swedish Postal Giro Account by

| | | | |
|----------------|-----|---------------|--|
| Australia | II | 1972 | |
| China-Taiwan | I | 1972 | |
| Cuba | I | 1972 | |
| Czechoslovakia | III | 1972 and 1973 | |
| Denmark | II | 1972 | |
| Finland | II | 1972 | |
| France | IV | 1972 | |
| Great Britain | V | 1972 | |

| | | | |
|-------------|-----|-------------------------|------------------------|
| Greece | I | 1972 | |
| Hungary | III | 1972 | |
| Iceland | I | 1972 | |
| Italy | IV | 1971 rest and 1972 part | |
| New Zealand | I | 1972 | |
| North Korea | I | 1971 and 1972 part | |
| Norway | I | 1972 | |
| Rumania | II | 1972 | |
| Sweden | II | 1972 part | |
| USA | V | 1972 | Total Sw.Cr. 32.406.58 |

Total income from membership dues in 1972:

| | | |
|-------|--------------------------|---------------------|
| (i) | US Dollars | \$ 1.173.60 |
| (ii) | Swiss Francs 17.298.95 | " 4.552.35 |
| (iii) | Swedish Crowns 32.406.58 | " 6.822.44 |
| | | <u>\$ 12.548.39</u> |

(Ex. \$ 1.00 = Sw.Fr. 3.80 = Belg.Fr. 44.00 = Sw.Cr. 4.75)

Subscriptions were due from the following countries at the end of 1972:

1966: Mexico (part)
1967-1969: Mexico
1970: Mexico, Pakistan and Turkey
1971: Belgium (part), Mexico, Pakistan and Turkey
1972: Argentina, Belgium, Brazil, Bulgaria *), Italy (part), Japan, Mexico, North Korea (part), Pakistan, Portugal, Turkey, USSR (part) and Yugoslavia (part) *).

*) Paid in January 1973.

B. UNESCO/ICSU contribution \$ 8.750.00

C. Interest on Bank Accounts:

Swiss Credit Bank (fixed deposit a/c)
Sw.Fr. 1.942.90 \$ 511.29

Jean Degroof & Cie
Belg.Fr. 100.- " 2.28 \$ 513.57

D. Reimbursement of ICSU dues \$ 222.91

E. Reimbursement of travel expenses,
SAS, June 1970, Warszawa-Nice \$ 277.27

F. Cancellation of cheques issued in 1970 and not presented as at 1972-12-31

| | | |
|------------------------|----------------|-----------|
| in favour of E. Calabi | \$ 100.00 | |
| Y. Katznelson | " 100.00 | |
| H.M. Stark | <u>" 50.00</u> | \$ 250.00 |

The total income received during the year 1972 was:

| | |
|------------------------------------|---------------------|
| A Membership dues | \$ 12,548.39 |
| B UNESCO/ICSU subvention | " 8,750.00 |
| C Interest on Bank Accounts | " 513.57 |
| D Reimbursement of ICSU dues | " 222.91 |
| E Reimbursement of travel expenses | " 277.27 |
| F Cancellation of cheques | <u>" 250.00</u> |
| | <u>\$ 22,562.14</u> |

2. EXPENDITURE

A. Actual expenditure in 1972 compared with the amounts authorized by the Sixth General Assembly (Schedule A of the budget)

| | Authorized | Expenditure | | |
|--|---------------|-------------|---------------|--------|
| | | Actual | Difference | |
| | \$ | \$ | \$ | \$ |
| 1. a) Secretarial help, IMU office | 2,750.00 | 984.78 | 1,765.22 | — |
| b) Secretarial help, President | 300.00 | 250.18 | 49.82 | — |
| c) ICMI | 300.00 | 300.00 | — | — |
| d) CST | 200.00 | 200.00 | — | — |
| 2. Office expenses (incl. postage) | 800.00 | 479.11 | 320.89 | — |
| 3. Travel expenses of the E.C. | 4,000.00 | 4,567.93 | — | 567.93 |
| 4. President's and Secretary's expenses | 300.00 | 55.66 | 244.34 | — |
| 5. Contribution to ICSU (2 1/2% of dues) | 300.00 | 335.75 | — | 35.75 |
| 6. Publication and Dissemination of the IMU Bulletin | 300.00 | 323.16 | — | 23.16 |
| 7. Audit fee | 100.00 | 105.27 | — | 5.27 |
| 8. Contingencies | <u>850.00</u> | — | <u>850.00</u> | — |
| | 10,200.00 | 7,601.84 | 3,230.27 | 632.11 |

B. Scientific activities of the
Union and its Commissions and
Committees (including ICMI,
Exchange, Colloquia, Symposia,
Conferences, Summer Schools,
Lectureships)

| | | | | |
|--|---------------------|-----------------|-----------------|---------------|
| | 6.000.00 | 1.394.63 | 4.605.37 | — |
| | <u>\$ 16.200.00</u> | <u>8.996.47</u> | <u>7.835.64</u> | <u>632.11</u> |

C. Details of expenditure under UNESCO/ICSU/IMU Grant (Schedule B of the budget)

(i). UNESCO/ICSU Grant

| | | |
|--|--------------------|--------------------|
| International Symposium on Partial Differential Equations and the Geometry of Normed Linear Spaces, Jerusalem, June 19-28, 1972 | \$ 3.499.53 | |
| The Exeter Congress | " 1.500.00 | |
| International Symposium on Discrete Subgroups of Lie Groups and Applications to Moduli, Bombay, January 1973 | <u>" 2.783.16</u> | \$ 7.782.69 |
| Reserved for 1973 | \$ 967.31 | <u>" 967.31</u> |
| | | <u>\$ 8.750.00</u> |
| Reserved for 1972 | <u>" 2.619.44</u> | |
| Total | <u>\$ 3.586.75</u> | |

(ii) IMU Grant

| | |
|------------------------|--------------------|
| Consultative Committee | <u>\$ 1.394.63</u> |
|------------------------|--------------------|

TOTAL EXPENDITURE

| | |
|-----------------------------------|---------------------|
| a) under IMU Budget (Schedule A) | \$ 7.601.84 |
| b) under IMU Budget (Schedule B) | " 1.394.63 |
| c) under UNESCO/ICSU (Schedule B) | <u>" 7.782.69</u> |
| Total | <u>\$ 16.779.16</u> |

Total income 1972 \$ 22.562.14

Total expenditure 1972 \$ 16.779.16

Surplus \$ 5.782.98

3. Financial Statement for the period January 1 to December 31, 1972.

| | \$ | Sw.Fr. | Belg.Fr. | Sw.Cr. |
|--|-----------------|-------------------|------------------|------------------|
| a) 1. Bank balance in current a/c on 1.1. 1972 | 6.624.89 | 7.837.85 | 18.655.00 | 8.095.23 |
| 2. In fixed deposit with Swiss Credit Bank | | 84.136.28 | | |
| Add.: Receipts during 1972 | | | | |
| 1. Membership dues | 1.173.60 | 17.298.95 | — | 32.406.58 |
| 2. UNESCO/ICSU Grant | | 33.600.00 | | |
| 3. Interest on Bank a/c | | 1.942.90 | 100.00 | |
| 4. Reimbursement of ICSU dues | 222.91 | | | |
| 5. Reimbursement of travel expenses | | | | 1.317.00 |
| 6. Cancellation of cheques issued in 1970 and not presented as at 1972- 12-31 | 250.00 | | | |
| 7. Inter Bank Transfer | | | | 1.188.68 |
| | <u>8.271.40</u> | <u>144.815.98</u> | <u>18.755.00</u> | <u>43.007.49</u> |

b) E x p e n d i t u r e

| | \$ | Sw.Fr. | Belg.Fr. | Sw.Cr. |
|---------------------------------------|----------|----------|----------|-----------|
| 1. a) Secretarial help, IMU office | 389.00 | | | 2.830.00 |
| b) Secretarial help, President | | 950.65 | | |
| c) ICMI | 300.00 | | | |
| d) CST | 200.00 | | | |
| 2. Office expenses (incl. postage) | 12.00 | 11.12 | | 2.204.90 |
| 3. Travel expenses of the E.C. | 1.328.77 | 1.173.20 | | 13.919.51 |

| | | | | |
|--|-----------------|-----------------|----------|------------------|
| 4. President's and Secretary's expenses | | | | 264.40 |
| 5. Contribution to ICSU (2 1/2% of dues) | 335.75 | | | |
| 6. Publication and Dissemination of the IMU Bulletin | | | | 1.535.00 |
| 7. UNESCO/ICSU (Schedule B) | 4.565.00 | | | 15.284.00 |
| 8. IMU Grants (Schedule B) | 722.00 | 1.156.68 | | 1.749.07 |
| 9. Audit fee | | | | 500.00 |
| 10. Reimbursement of dues (Greece) | 130.40 | | | |
| 11. Contingencies | — | — | — | — |
| 12. Inter Bank Transfer | 94.50 | | | 784.00 |
| | <u>8.077.42</u> | <u>3.291.65</u> | <u>—</u> | <u>39.070.88</u> |

| | | | | |
|---------|--------|------------|-----------|----------|
| Balance | 193.98 | 141.524.33 | 18.755.00 | 3.936.61 |
|---------|--------|------------|-----------|----------|

Summary of Net Assets as on 31.12.1972

| | \$ | Sw.Fr. | Belg.Fr. | Sw.Cr. |
|--------------------------|--------|------------------|-----------|----------|
| In current account | 193.98 | 52.934.70 | 18.755.00 | 3.936.61 |
| In fixed deposit account | | <u>88.589.63</u> | | |
| Net Assets | 193.98 | 141.524.33 | 18.755.00 | 3.936.61 |

Prepared by:

Otto Frostman
Secretary
International Mathematical Union

Audited by:

Bo Lillieström-Tjus
Authorized Public Accountant

Appendix A

International Symposium on Partial Differential Equations and the Geometry of Normed Linear Spaces.

- E. Alfsen (Norway): M-structures and intersection properties of balls in Banach spaces.
- E. Asplund (Denmark): A survey of renorming techniques.
- H. Brezis (France): Some convex functionals on Sobolev spaces.
- J.P.R. Christensen (Denmark): Sets of Haar measure zero in infinite dimensional separable Banach spaces and some applications.
- D. Dacunha Castelle (France): On a theorem of J.L. Krivine about classes of spaces isomorphic to generalized Orlicz spaces and related classes.
- M.M. Day (USA): On Asplund's differentiability theorem.
- L. Ehrenpreis (USA): Differential equations and Lie Groups.
- P. Enflo (Sweden and USA): A counter example to the approximation problem.
- L. Frank (Israel): Espaces des fonctions de mailles et théorie générale des operateurs aux différences finies.
- A. Friedman (USA): Probabilistic methods in partial differential equations.
- L. Gårding (Sweden): Local hyperbolicity.
- L. Hörmander (Sweden): On the singularities of solutions of partial differential equations with constant coefficients.
- W.B. Johnson (USA): The spaces C_p and their relation to the approximation problem.
- Y. Kannai (Israel): Hypoelliptic ordinary differential operators.
- D. Kinderlehrer (USA): How a minimal surface leaves on obstacle.
- S. Mizohata (Japan): On the finiteness of the propagation speed.
- L. Nachbin (Brazil and USA): A look at convolution operators on entire functions in infinite dimensions.
- E. Newberger (USA): Some notions of Q – hypoellipticity.
- R.R. Phelps (USA): Some topological properties of support points of convex sets.
- J.R. Retherford (USA): Operator characterizations of \mathfrak{L}_p spaces.
- H.P. Rosenthal (USA): Complemented subspaces of $C(0,1)$ with nonseparable duals.
- P. Saphar (Israel). Approximation of p -absolutely summing operators.
- M. Sato (Japan): Local theory of theta functions.
- H.H. Schäffer (W. Germany): Normed tensor products of Banach lattices.
- J. Serrin (USA): A nonlinear analytic overdetermined system in fluid mechanics.
- G. Stampacchia (Italy): A variational inequality with mixed boundary conditions.
- R. Vaillancourt (Canada): A class of bounded pseudo-differential operators.

Appendix B

International Colloquium on Analysis and Differential Topology.

The programme of the first days is represented below; the remaining part was decided upon by the Organizing Committee at Strasbourg.

- N. A'Campo (France): Sur la monodromie.
- W. Browder (USA): Surgery theory of G-manifolds.
- S. Cappell and J. Shaneson (USA): The codimension two embedding problem and homology equivalent manifolds.
- A. Haefliger (Switzerland): Classes caractéristiques des fibrés feuilletés.
- M. Herman (France): $\text{Diff}(\mathbb{T}^n)$ est un groupe parfait.
- J. Milnor (USA): Swartz's vector field without closed orbit on S^3 .
- T. Petrie (USA): Real algebraic actions on projective spaces.
- F. Sergeraert (France): Un théorème de fonctions implicites. Applications.
- I. Tamura (Japan): Spinnable structures and foliations.
- C. Titus (USA): Sense preserving mappings in codimension one.

Appendix C

International Conference on Mathematical Problems of Quantum Field Theory and Quantum Statistics.

There were 90 reports during the Conference, among them 38 by foreign participants. Two one-hour lectures were given at the opening ceremony, viz.

- N.N. Bogolubov, V.S. Vladimirov and A.N. Tavkchelidze (USSR): On the automodel asymptotics in quantum field theory;
- S. Doplicher (Italy), R. Haag and J.E. Roberts (BRD): Locality and statistics.

The programme covered the following matters:

1. Algebraic and axiomatic approaches in quantum field theory.
2. Analytic properties of the amplitudes.
3. Approximate methods and models.
4. Problems of the dynamical description of systems of interacting relativistic particles.
5. Group-theoretic aspects of quantum field theory.
6. Mathematical problems of quantum mechanics.
7. Mathematical problems of quantum statistical physics.

Proceedings of the Conference will be published in 1973/74.

Appendix D

International Colloquium on Discrete Subgroups of Lie Groups and Applications to Moduli.

W.L. Baily (USA): Fourier coefficients of Eisenstein series on the adèle group.

E. Freitag (FRG): Automorphy-factors of Hilbert's modular group.

H. Garland (USA): On the cohomology of discrete subgroups of Lie groups.

P.A. Griffiths (USA): Differential geometric properties of the classifying map for Hodge structures.

G. Harder (USA): On the cohomology of discrete arithmetically defined groups.

Y. Ihara (Japan): Some applications of $(\ell \neq p)$ -adic discrete subgroups to modular curves over finite fields.

G.D. Mostow (USA): Rigidity of discrete subgroups.

D. Mumford (USA): Equivariant embeddings of tori and blowing up $\mathbb{P}^n \backslash G/K$.

M.S. Raghunathan (India): Discrete groups and \mathbb{Q} -structures on semisimple groups.

W. Schmid (USA): On the asymptotic behaviour of the periods of algebraic manifolds.

Appendix E

International Conference on Manifolds and Related Topics in Topology.

N. A'Campo (France): On monodromy maps of hypersurface singularities.

J.F. Adams (England): Idempotent functors in homotopy theory.

K. Akao (Japan): On prehomogeneous compact Kähler manifolds.

M.F. Atiyah (England): Eigenvalues and Riemannian geometry.

E. Bombieri (Italy): Canonical models of surfaces.

R. Bott (USA): On continuous cohomology.

E. Brieskorn (W. Germany): On singularities of complete intersections.

W. Browder (USA): Perspectives in surgery theory.

S. Fukuhara (Japan): On homotopy projective 5-spaces.

A. Hattori (Japan): Equivariant characteristic numbers and integrality theorem for unitary T^n -manifolds.

H. Hironaka (USA): Flattening of complex-analytic maps.

T. Homma (Japan): On PL total curvature.

E. Horikawa (Japan): On deformations of holomorphic maps.

S. Itaka (Japan): Projective manifolds whose universal covering manifolds are C^3 .

G. Ikegami (Japan): On structural stability and weak stability of dynamical systems.

M. Inoue (Japan): On surface of class VII.

M. Kato (Japan): Topology of k -regular spaces and algebraic sets.

K. Kawakubo (Japan): The index and the generalized Todd genus of Z_p -actions.

R.C. Kirby (USA): Structures on topological manifolds.

- S. Kobayashi (USA): On hyperbolic complex spaces and extension problems.
- N.H. Kuiper (France): The topology of the solutions of a linear differential equation on \mathbb{R}^n .
- M.E. Mahowald (USA): Description homotopy of the elements in the image of the J-homomorphism.
- J.N. Mather (USA): Loops and foliations.
- Y. Matsumoto and M. Kato (Japan): On the connectivity of the Milnor fiber of a holomorphic function at a critical point.
- M. Mimura (Japan): On the mod p H-structures of spherical fibrations.
- T. Mizutani and I. Tamura (Japan): Foliations of even-dimensional manifolds.
- B.G. Moishezon (Israel): Singular Kählerian spaces.
- S. Morita (Japan): Smoothability of PL manifolds is not topologically invariant.
- I. Nakamura (Japan): On complex parallelisable manifolds.
- S. Nakano (Japan): On weakly 1-complete manifolds.
- M. Nakaoka (Japan): Characteristic classes with values in complex cobordism.
- Y. Namikawa (Japan): On fibres in families of curves of genus two.
- G. Nishida (Japan): The nilpotency of elements of the stable homotopy groups of spheres.
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- M. Oka (Japan): On the cohomology structure of projective varieties.
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- H. Sato (Japan): Constructing manifolds by homotopy equivalences, II.
- K. Shiga (Japan): Cohomology of Lie algebras over a manifold.
- T. Shioda (Japan): Algebraic cycles on certain K_3 surfaces in characteristic p .
- K. Shiraiwa (Japan): Some conditions on Anosov diffeomorphisms.
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- D.C. Spencer (USA): Construction of complexes for Lie equations.
- D. Sullivan (USA): Differential forms and the topology of manifolds.
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- R. Thom (France): On singularities of foliations.
- H. Toda (Japan): Cohomology of the classifying space of exceptional Lie groups.
- A. Tsuchiya (Japan): Higher order Dyer-Lashof operations and Eilenberg-Moore spectral sequences.

K. Ueno (Japan): Classification of algebraic varieties.

A.C. Vitushkin (USSR): On polynomial transformations of C^n .

C.T.C. Wall (England): Periodicity in algebraic L-theory.

Z. Yosimura (Japan): Projective dimension of MU_* -modules of CW-spectra.

E.C. Zeeman (England): Applications of catastrophe theory.