Bulletins of the International Mathematical Union

Bulletin of the IMU, No. 74 (2022)

IMU

BULLETIN OF THE

INTERNATIONAL MATHEMATICAL UNION

No.74

December 2022

Secretariat:

International Mathematical Union
Secretariat
Hausvogteiplatz 11a
D-10117 Berlin, Germany

List of Abbreviations

AO	Adhering Organization
CDC	Commission for Developing Countries
CEIC	Committee on Electronic Information and Communication
CoD	Ad hoc Committee on Diversity
CoP	Ad hoc Committee on Permissions
CWM	Committee for Women in Mathematics
EC	Executive Committee
FIMU	Friends of the International Mathematical Union
GA	General Assembly
ICHM	International Commission on the History of Mathematics
ICM	International Congress of Mathematicians
ICMI	International Commission on Mathematical Instruction
IDM	International Day of Mathematics
IMU	International Mathematical Union
ISC	International Science Council

Dear Members of the International Mathematical Union

The introduction for the 2021 Bulletin ended with the following statement:

Finally, as we are all aware, the war in Ukraine has made it impossible to carry out the General Assembly and the ICM as scheduled in Saint Petersburg. The ICM will be converted into a fully virtual event, and the General Assembly will take place as an in-person event outside Russia. A full report on these events will follow in next year's Bulletin.

We can now give a report on the activities culminating with the IMU General Assembly (GA) and the virtual ICM 2022.

The IMU Executive Committee (EC) had its scheduled annual virtual meeting over 24–27 February 2022. The planning for the GA and ICM 2022 were already high on the agenda. However, with the aggressive Russian invasion of Ukraine on 24 February, it was clear that the IMU could not proceed with the GA and the ICM as planned. The EC issued several public statements via the IMU website. We decided to take over the organization of a virtual ICM – with participation free of charge for all – and an in-person GA. At that point, there were no additional financial or human resources available to us, and we only had four months to plan and execute our decisions.

We began by searching for a suitable host country for the GA and ultimately accepted a generous offer from Finland and the Council of Finnish Academies to host the meeting in Helsinki, Finland. Parallel to these preparations, we communicated with delegates, and with the uncertainty caused by the pandemic, we prepared for a hybrid meeting. In 2018, the IMU decided to offer partial travel support for one delegate from each member to attend the GA, in addition to covering accommodation expenses for all delegates. In a similar spirit, the IMU decided to do the same in 2022. Fortunately, a solid majority of the delegates were able to be present in Helsinki.

Many important decisions were made at the GA. Since the minutes of the GA have already been circulated, we will refer to them for further details. However, we will report here about two important decisions.

The GA decided that ICM 2026 will be held in Philadelphia, USA, in July 2026, with the 20th GA taking place in New York City shortly beforehand.

The IMU realizes that several countries are facing problems covering their membership dues due to temporary extreme, adverse circumstances. To assist countries in dire situations, the GA decided to create an IMU Reserve Fund. Further details can be found in the Circular Letter 24/2022.

A highlight of any GA is the election of new members and officers to various positions and committees and commissions of the IMU. The results for the coming 2023–2026 term appear in detail in the minutes of the GA. The IMU President expressed his gratitude on behalf of the IMU and the community to those members stepping down from their service and he welcomed newly elected members.

The GA again expressed its deep gratitude to Germany, and in particular to the Weierstrass Institute for Applied Analysis and Stochastics (WIAS) for their generous support of the IMU

Secretariat. Indeed, a new 10-year lease was secured in 2022 for the current premises of the Secretariat.

Let us now turn to the virtual ICM 2022. We started right away to re-establish contact with all speakers, re-inviting those that had declined the first invitation, and collecting titles and abstracts for the talks. At the same time, we investigated various options regarding the platform for the virtual ICM. The lack of additional funding and staff posed a serious challenge throughout the planning. We decided to organize the program according to Central European Summer Time (CEST). Knowing that this could potentially be problematic for speakers located in completely different time zones, each speaker was given the choice between giving a live talk or submitting a prerecorded one. About 2/3 of the talks were given live. To develop the platform for the virtual ICM was no small financial undertaking, and we are immensely grateful to the Heidelberg Laureate Forum Foundation in particular for their generous financial support. The virtual ICM was open to everyone for free without registration, and all lectures are now accessible via the IMU YouTube Channel.

The special circumstances this year did allow for some unique events. On 5 July we held the first ever IMU Award Ceremony, hosted at Aalto University in Helsinki. We were honored that the President of Finland opened the ceremony. The Fields Medalists and the IMU Abacus Medalist were all present in person for the event.

On the opening of the virtual ICM 2022 on 6 July, we took advantage of the fact that the Fields Medalists and the IMU Abacus Medalist were present in Helsinki, and arranged for them all to give their plenary ICM prize lectures in front of a live audience.

The production of the ICM Proceedings, a tradition going back to the ICM in 1893, will be published by EMS Press and posted with free access on the IMU website as all previous proceedings.

Membership in the Union is as always of vital importance. In 2022, the Republic of Korea changed from group IV to group V. Furthermore, Uzbekistan became a group I member, and at the very end of the year, we received an application from Mongolia to move from associate to regular membership in group I, which at the time of this writing has been approved by the IMU membership. Unfortunately, the associate membership of Gabon and Papua New Guinea came to an end in 2022 following the maximum period of two terms. The next stage would be an application for regular membership, which we hope will be forthcoming in due course.

This will be the last Bulletin by the IMU President and Secretary General of the 2019–2022 term, and we take this opportunity to thank all our IMU members and colleagues for their support and collaboration over the course of this period.

With best wishes

Helge Holden
Secretary General of the International Mathematical Union

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1. IMU Leadership and Membership Information
1.1. Executive Committee 2019-2022

INTERNATIONAL MATHEMATICAL UNION

Executive Committee
January 1, 2019 – December 31, 2022

President:	Carlos E. Kenig	(USA)
Vice-Presidents:	Nalini Joshi	(Australia)
	Loyiso G. Nongxa	(South Africa)
Secretary General:	Helge Holden	(Norway)
Members-at-Large:	Luigi Ambrosio	(Italy)
	Andrei Okounkov	(Russia)
	Paolo Piccione	(Brazil)
	R. T. Ramadas	(India)
	Gang Tian	(China)
	Günter M. Ziegler	(Germany)
Ex-officio Member (Past President)	Shigefumi Mori	(Japan)

Image: IMU 2022 EC Virtual Meeting (Screenshot/Zoom)

Meetings of the Executive Committee in 2022:

94th EC Meeting, Virtual, February 24-27, 2022

95th EC Meeting, Helsinki, Finland, July 2, 2022

1.2. IMU Leadership 2019-2022

IMU Executive Committee (EC) 2019 – 2022

Carlos E. Kenig	IMU President	USA
Helge Holden	IMU Secretary General	Norway
Nalini Joshi	IMU Vice President	Australia
Loyiso G. Nongxa	IMU Vice President	South Africa
Luigi Ambrosio	IMU EC Member-at-Large	Italy
Andrei Okounkov	IMU EC Member-at-Large	Russia
Paolo Piccione	IMU EC Member-at-Large	Brazil
R. T. Ramadas	IMU EC Member-at-Large	India
Gang Tian	IMU EC Member-at-Large	China
Günter M. Ziegler	IMU EC Member-at-Large	Germany
Shigefumi Mori	IMU EC Ex-officio Member (Past President)	Japan

Commission for Developing Countries (CDC) 2019 – 2022

Dipendra Prasad	CDC President	India
Olga Gil Medrano	CDC Secretary Policy	Spain
Alf Onshuus	CDC Secretary Grants	Colombia
Mama Foupouagnigni	CDC, African Member	Cameroon
José Maria Balmaceda	CDC, Asian Member	Philippines
Andrea Solotar	CDC, Latin American Member	Argentina
Galina Rusu	CDC Member appointed by IMU EC	Moldova
Michel Waldschmidt	CDC Member appointed by IMU EC	France
Anjum Halai	CDC Member appointed by ICMI EC	Pakistan
Carlos E. Kenig	CDC Ex-officio Member (IMU President)	USA

International Commission on the History of Mathematics (ICHM) 2019 – 2022

Isobel Falconer	ICHM	UK
Catherine Goldstein*	ICHM	France

*Resigned May 2022

International Commission on Mathematical Instruction (ICMI) 2021 – 2024

Frederick K. S. Leung	ICMI President	SAR, China
Jean-Luc Dorier	ICMI Secretary-General	Switzerland
Merrilyn Goos	ICMI Vice President	Australia
Anjum Halai	ICMI Vice President	Pakistan
Marta Civil	ICMI EC Member-at-Large	USA
Patricio Felmer	ICMI EC Member-at-Large	Chile
Mercy Kazima	ICMI EC Member-at-Large	Malawi
Núria Planas	ICMI EC Member-at-Large	Spain
Susanne Prediger	ICMI EC Member-at-Large	Germany
Jill Adler	ICMI EC Ex-officio Member (ICMI President 2017-2020)	South Africa
Carlos E. Kenig	ICMI EC Ex-officio Member (IMU President)	USA
Helge Holden	ICMI EC Ex-officio Member (IMU Secretary General)	Norway

Committee on Electronic Information and Communication (CEIC) 2019 – 2022
(CEIC terms of membership are staggered.)

Henry Cohn	CEIC Chair	2019 – 2022	USA
Jean-Pierre Bourguignon	CEIC Member	2021 – 2023	France
Kevin Buzzard	CEIC Member	2021 – 2024	UK
Marie Farge	CEIC Member	2019 – 2022	France
Patrick Ion	CEIC Member	2015 – 2022	USA
Rajeeva Karandikar	CEIC Member	2019 – 2022	India
Ingrid Rewitzky	CEIC Member	2021 – 2024	South Africa
Mila Runnwerth	CEIC Member	2019 – 2022	Germany
Victoria Stodden	CEIC Member	2015 – 2022	USA

Committee for Women in Mathematics (CWM) 2019 – 2022

Marie-Françoise Roy	CWM Chair	France
Carolina Araujo	CWM Vice-Chair	Brazil
Alejandro Adem	CWM Member-at-Large	Canada
Petra Bonfert-Taylor	CWM Member-at-Large	USA
Tony Ezome	CWM Member-at-Large	Gabon
Josephine Kagunda	CWM Member-at-Large	Kenya
Motoko Kotani	CWM Member-at-Large	Japan
Neela Nataraj	CWM Member-at-Large	India
Ekin Ozman	CWM Member-at-Large	Turkey
Cheryl Praeger	CWM Member-at-Large	Australia

Persons representing IMU in various organizations

Body	Representative/liaison	Term
Committee on Data of the ISC (CODATA)	Henry Cohn	2019 – 2022
Consultative Committee for Units (CCU)	Helge Holden	2020 – 2022
COSPAR, International Scientific Union Representative	Nalini Joshi	2019 – 2022
Gruber Foundation, Cosmology Prize, Selection Advisory Board	Hans Ringström	2021 – 2023
ISC	Loyiso G. Nongxa	2019 – 2022
UNESCO	Loyiso G. Nongxa	2019 – 2022
Ramanujan Prize	R. T. Ramadas	2019 – 2022
ICMI (IMU EC liaison)	Paolo Piccione	2019 – 2022
CDC (IMU EC liaison)	Luigi Ambrosio	2019 – 2022
ICHM (IMU EC liaison)	Gang Tian	2019 – 2022
CEIC (IMU EC liaison)	Nalini Joshi	2019 – 2022
CWM (IMU EC liaison)	Carlos E. Kenig	2019 – 2022
IMU News Editor	Yoshiharu Kohayakawa	2021 – 2024
IMU News EC correspondent	Andrei Okounkov	2019 – 2022
IDM (IMU EC liaison)	Günter M. Ziegler	2019 – 2022
Curator of the IMU Archive	June Barrow-Green	2021 – 2024

1.3. Members of the Union

The following countries were Members of IMU through December 2022:

Algeria	Hong Kong	Paraguay*
Argentina	Hungary	Peru
Armenia	Iceland	Philippines
Australia	India	Poland
Austria	Indonesia	Portugal
Bangladesh*	Iran	Romania
Belarus	Ireland	Russia
Belgium	Israel	Saudi Arabia
Bosnia & Herzegovina	Italy	Senegal
Brazil	Ivory Coast	Serbia
Bulgaria	Japan	Singapore
Cameroon	Kazakhstan	Slovakia
Canada	Kenya	Slovenia
Chile	Korea, Republic of	South Africa
China	Kyrgyzstan	Spain
Colombia	Latvia	Sweden
Croatia	Lithuania	Switzerland
Cuba	Luxembourg	Thailand
Cyprus	Malaysia	Tunisia
Czech Republic	Mexico	Turkey
Denmark	Mongolia*	Ukraine
Ecuador	Montenegro	United Kingdom
Egypt	Morocco	United States
Estonia	Netherlands	Uruguay
Finland	New Zealand	Uzbekistan
France	Nigeria	Venezuela
Gabon**	Norway	Vietnam
Georgia	Oman	
Germany	Pakistan	
Greece	Papua New Guinea*	

*Associate Member | **Associate Member till August 2022

The following organizations are Affiliate Members of IMU:

African Mathematical Union (AMU)
European Mathematical Society (EMS)
Mathematical Council of the Americas (MCofA)
South East Asian Mathematical Society (SEAMS)
Unión Matemática de América Latina y el Caribe (UMALCA)

2. Financial Information

2.1. Approved IMU Membership Dues

For the Period 2019−2022

At the IMU General Assembly meeting 2018 in São Paulo, Brazil, the delegates decided on the dues structure for the years 2019-2022, see schedule below.
Associate and Affiliate IMU members do not pay dues.

Approved membership dues 2019 – 2022 All amounts in EUR				
Year	*2019*	*2020*	*2021*	*2022*
Group I	1,430	1,430	1,430	1,430
Group II	2,860	2,860	2,860	2,860
Group III	5,720	5,720	5,720	5,720
Group IV	11,440	11,440	11,440	11,440
Group V	17,160	17,160	17,160	17,160

2.2. Approved IMU Budget

For the Period 2019–2022

International Mathematical Union

Proposed new Budget for 2019-2022, in Euro (EUR)

	% of General Income	2019 General	2019 Special	2019 Sum	2020 General	2020 Special	2020 Sum	2021 General	2021 Special	2021 Sum	2022 General	2022 Special	2022 Sum
INCOME													
I. General													
I.a Membership Dues		417.560			417.560			417.560			417.560		
Sum General Income		417.560			417.560			417.560			417.560		
II. Special													
II.a Special Development Fund			14.000			14.000			14.000			14.000	
II.b Donations and Grants			80.000			80.000			80.000			80.000	
Sum Special Income from Third Parties			94.000			94.000			94.000			94.000	
II.c Income from IMU bank accounts			100			100			100			100	
II.d Other Income			30.000			30.000			30.000			30.000	
Sum Special Income from Other Sources			30.100			30.100			30.100			30.100	
TOTAL INCOME		417.560	124.100	541.660	417.560	124.100	541.660	417.560	124.100	541.660	417.560	124.100	541.660
EXPENDITURE													
1. Commissions & Committees (C&C)	45,0%												
1.1 CDC	20,0%	83.512	44.000	127.512	83.512	44.000	127.512	83.512	44.000	127.512	83.512	44.000	127.512
1.2 ICMI	15,0%	62.634			62.634			62.634			62.634		
1.3 CWM	5,0%	20.878	10.000	30.878	20.878	10.000	30.878	20.878	10.000	30.878	20.878	10.000	30.878
1.4 CEIC	4,0%	16.702	4.176	20.878	16.702	4.176	20.878	16.702	4.176	20.878	16.702	4.176	20.878
1.5 Ad hoc committees	1,0%	4.176	4.176	8.352	4.176	4.176	8.352	4.176	4.176	8.352	4.176	4.176	8.352
1.6 Special support	0,0%	0	26.000	26.000	0	26.000	26.000	0	26.000	26.000	0	26.000	26.000
C&C Expenditure		187.902	88.352	276.254	187.902	88.352	276.254	187.902	88.352	276.254	187.902	88.352	276.254
2. ICM	22,0%												
2.1 Site Committee	1,0%	4.176			4.176			4.176			4.176		
2.2 Program Committee	2,0%	8.351			8.351			8.351			8.351		
2.3 Prize Committees	2,0%	8.351			8.351			8.351			8.351		
2.4 Congress Subvention	5,0%	20.878			20.878			20.878			20.878		
2.5 Travel Grants (Young & Senior)	7,0%	29.229	14.000	43.229	29.229	14.000	43.229	29.229	14.000	43.229	29.229	14.000	43.229
2.6 ICM related admin., outreach	5,0%	20.878			20.878			20.878			20.878		
ICM Expenditure		91.863	14.000	105.863	91.863	14.000	105.863	91.863	14.000	105.863	91.863	14.000	105.863
3. Union Administration	20,0%												
3.1 General Assembly	1,0%	4.176			4.176			4.176			4.176		
3.2 President & Secretary	12,0%	50.107			50.107			50.107			50.107		
3.3 Executive Committee	6,0%	25.054			25.054			25.054			25.054		
3.4 Other	1,0%	4.176			4.176			4.176			4.176		
Union Administration Expenditure		83.512	0	83.512	83.512	0	83.512	83.512	0	83.512	83.512	0	83.512
4. Outreach	6,0%												
4.1 ICSU Union Member Contribution	2,0%	8.351			8.351			8.351			8.351		
4.2 Awards	1,0%	4.176			4.176			4.176			4.176		
4.3 Website Support, Media Relations	2,0%	8.351	4.176	12.527	8.351	4.176	12.527	8.351	4.176	12.527	8.351	4.176	12.527
4.4 Bulletin	0,0%	0			0			0			0		
4.5 Other	1,0%	4.176	5.600	9.776	4.176	5.600	9.776	4.176	5.600	9.776	4.176	5.600	9.776
4.6 Scientific activity support	0,0%	0	6.972	6.972	0	6.972	6.972	0	6.972	6.972	0	6.972	6.972
Outreach Expenditure		25.054	16.748	41.802	25.054	16.748	41.802	25.054	16.748	41.802	25.054	16.748	41.802
5. Overhead	7,0%												
5.1 Office Expenses	1,0%	4.176	1.600	5.776	4.176	1.600	5.776	4.176	1.600	5.776	4.176	1.600	5.776
5.2 Bank Charges	1,0%	4.176	1.000	5.176	4.176	1.000	5.176	4.176	1.000	5.176	4.176	1.000	5.176
5.3 Legal Advice, Audit Fees	2,0%	8.351	1.600	9.951	8.351	1.600	9.951	8.351	1.600	9.951	8.351	1.600	9.951
5.4 Other	3,0%	12.527	800	13.327	12.527	800	13.327	12.527	800	13.327	12.527	800	13.327
Overhead Expenditure		29.229	5.000	34.229	29.229	5.000	34.229	29.229	5.000	34.229	29.229	5.000	34.229
TOTAL EXPENDITURE				541.660			541.660			541.660			541.660
INCOME LESS EXPENSES				0			0			0			0

Audit Report

Annual Financial Statements as at 31 December 2022

International Mathematical Union
Berlin

Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

115286-001

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   Special Engagement Terms

   General Engagement Terms

To the International Mathematical Union, Berlin:

A.   Audit engagement

We were engaged by the Secretary General of the

<div align="center">

International Mathematical Union
Berlin
(hereinafter "IMU" or "Association")

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to audit and report on the annual financial statements for the reporting year ending 31 December 2022.

In performing the audit engagement awarded to us by the Secretary General, we conducted our audit of the annual financial statements as at 31 December 2022 together with the accounting system in accordance with § 317 HGB (German Commercial Code) and the German generally accepted standards for the audit of financial statements.

In addition, we were engaged to provide an economic analysis of the net assets, financial position and results of operations of the Union in this audit report. We have presented this analysis in section D. of this audit report.

In accordance with § 321 (4a) HGB, we confirm our observance of the applicable regulations governing independence during the performance of our audit.

The IMU is an international association. According to German law, the IMU is an "ideal association" (§ 21 German Civil Code (BGB) non-profit association) since it pursues ideal rather than financial purposes. The Union does not have legal capacity in Germany because it is not registered with the German Register of Associations.

The Union is not required by law to have its annual financial statements audited. In accordance with Article 45 of the IMU Statutes, the Executive Committee must have the annual accounts audited at least once every four years and present this audit report to the General Assembly, which takes place every four years. In continuation of current practice, the audit of the annual financial statements is performed annually. The financial statements consist of a statement of assets and liabilities as well as a statement of income and expenditures. According to the size definitions of § 267a German Commercial Code (HGB), the IMU would be classified as a micro entity. However, the audit was performed in conformity with the accounting regulations applicable to small entities.

This report was prepared by us in accordance with the auditing standards of the *Institut der Wirtschaftsprüfer in Deutschland e.V.* IDW PS 450 n.v. "Generally Accepted Standards for the Presentation of Long-form Audit Reports for the Audit of Financial Statements" (10.2021).

The performance of our engagement and our responsibility, also towards any third parties, are governed by the Special Engagement Terms for Audits and Audit-related Services of Mazars GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft from 1 June 2019 as well as by the General Engagement Terms for Wirtschaftsprüfer (*German Public Auditors*) and Wirtschaftsprüfungsgesellschaften (*Public Audit Firms*) as amended on 1 January 2017, attached as appendices. Accordingly, our liability is limited in accordance with No. 9 of the General Engagement Terms for Wirtschaftsprüfer. Towards third parties, No. 1 (2) and No. 9 of the General Engagement Terms apply.

This document is a translation of the German report, which is the solely legally binding version.

B. SUBJECT, NATURE AND SCOPE OF THE AUDIT

I.   Subject of the audit

The subject of our audit was the annual financial statements (statements of assets and liabilities and income and expenditures) together with the bookkeeping system, prepared in accordance with German accounting principles.

Bookkeeping and the preparation of the annual financial statements are the responsibility of the IMU's Treasurer.

In preparing the financial statements, the legal representatives are responsible for assessing the IMU's ability to continue functioning as an association. Furthermore, they are responsible for disclosing, as applicable, matters related to the association's ability to continue as a going concern. Furthermore, they are responsible for preparing the financial statements on the basis of the going concern principle, unless factual or legal circumstances prevent this.

Our responsibility is to provide an opinion on the annual financial statements including the bookkeeping system based on our audit.

As of 1 January 2011, the IMU has kept its Permanent Secretariat in Berlin which is hosted by the *Weierstraß-Institut für Angewandte Analysis und Stochastik (WIAS)*, Berlin. The Federal Republic of Germany and the State of Berlin grant annual financial support for the IMU Secretariat, in particular by assuming personnel and material costs in the amount of approximately k€ 500 borne directly by the WIAS, which are therefore not recorded in the statement of income and expenditures.

An audit of compliance with other statutory regulations is part of our engagement only to the extent that those regulations typically have an effect on the annual financial statements.

Pursuant to § 317 (4a) HGB the audit does not extend to whether the ability of the International Mathematical Union to continue as a going concern or the effectiveness and efficiency of its management can be assured.

II.   Nature and scope of the audit

Our audit was conducted analogous to § 317 HGB taking into account the German generally accepted accounting standards as promulgated by the *Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW)*, in particular observing IDW PS 750 "Audits of Associations".

Those standards require that we plan and perform the audit such that misrepresentations due to fraudulent acts or errors materially affecting the presentation of the net assets, financial position and results of operations in the annual financial statements in accordance with German principles of proper accounting are detected with reasonable assurance.

The audit included assessing the accounting policies, measurement methods and classification principles applied and significant estimates made by management as well as critically evaluating the overall presentation of the annual financial statements.

Our audit commenced with our unqualified independent auditor's report on the prior year's financial statements for the year ended 31 December 2021. The Statutes do not provide for an adoption of the annual financial statements. Instead, on the basis of every fourth annual financial statement (most recently on 31 December 2021) the preparation of a budget for the following four-year-period is anticipated. The budget for the period from 1 January 2019 to 31 December 2022 was approved by the 18th General Assembly in São Paulo/Brazil on 29 and 30 July 2018.

On the basis of the risk of material misstatements, we prepared a risk profile for disclosures in the accounting. For this purpose we conducted audit procedures for assessing risk and first obtained an understanding of the Union as well as an overview of its economic and legal environment. Based on this understanding, we analysed the objectives and strategies of the Union as well as their implementation in order to determine business risks that could lead to significant errors in accounting.

Based on our professional judgement, we reviewed and assessed the design of the association's internal control system and which measures the Union has taken to particularly ensure the propriety and reliability of the accounting in order to mitigate business risks, however without conducting a detailed system analysis.

We audited the complete and timely recording of business transactions on a test basis and were convinced of the implementation of the four-eye principle as the main instrument of the internal control system.

We refrained from obtaining balance confirmations from debtors since they exclusively involve members of the Union.

We conducted our audit, with interruptions from April to July 2023.

Management provided us with the information and documentation we requested. In the written letter of representation provided to us, the management as the legal representative of the Union assured us that the explanations and evidence were complete. Furthermore, it stated that all business transactions have been recorded and disclosed in the annual financial statements.

C.   FINDINGS ON AND EXPLANATIONS OF THE ACCOUNTING

I.   Generally accepted accounting principles

1.   Accounting records and other documents audited

Our audit verified that the formal and material propriety of the accounting complied with German generally accepted accounting principles and other legal requirements.

The accounting records of the Union were maintained properly. The records were complete. Based on the findings of our audit, the accounting records and other documents audited complied with legal regulations in all material respects. The information extracted from other documents audited was properly reflected in the accounting records and in the annual financial statements in all material respects.

The organization of the accounting, the accounting-related internal control system, data flows and recordkeeping were fundamentally appropriate for ensuring the completeness, the accuracy, the timely and orderly recording and booking of business transactions.

2.   Annual financial statements

The annual financial statements we have audited for the financial year from 1 January 2022 to 31 December 2022 have been properly derived from the accounting records and the underlying documents of the Union in all material respects. The enclosed annual financial statements were prepared in analogous application of the regulations of the Third Book of the HGB (§§ 238 *et seq*.) in all material respects, under observance of the supplementary regulations for corporations in the Second Section (§§ 264 *et seq*.).

The opening balances were properly taken over from the prior years' annual financial statements. Statutory regulations on recognition, disclosure and measurement were observed in all material respects.

The Union does not have a legal obligation to prepare notes to the annual financial statements. Accordingly, the IMU has permissibly waived the preparation of notes.

3. Management report

The Union does not have a legal obligation to prepare a management report. Accordingly, the IMU has permissibly waived the preparation of a management report.

The IMU provides its members with an annual accounting of its activities in the Bulletin of the International Mathematical Union. The current Bulletin is No. 73 from December 2021. Printed versions of the Bulletin are provided to members. The electronic documents are available on the homepage of the IMU (https://www.mathunion.org/membership/imu-bulletins).

The Bulletin provides, in particular, a description of IMU activities for the promotion of mathematics in the world and the proper use of member contributions and donations.

According to information of the legal representatives and the results of our audit, no events of particular importance occurred after the conclusion of the reporting year.

II. Overall presentation of the annual financial statements

1. Explanations of the overall presentation

The exercise of accounting policy and measurement elective options as well as the use of discretionary judgment correspond to the prior year and do not indicate any tendency with a significant influence on the net assets, financial position and results of operations in the annual financial statements.

Foreign currency receivables and payables are recorded in the bookkeeping in euro at the exchange rate valid on the date of their accrual. Measurement on the balance sheet date is at the lower (for receivables) or higher (for liabilities) exchange rate valid on that date.

2. Findings on the overall presentation of the annual financial statements

On the basis of the audit we performed by executing our professional duties, the annual financial statements correspond in all material respects to the statutory regulations. Because the Association is not required to prepare notes, the annual financial statements do not satisfy the general standard in accordance with § 264 (2) HGB.

D. OTHER CLASSIFICATIONS AND EXPLANATIONS OF THE ANNUAL FINANCIAL STATEMENTS

I. Results of operations

The summarized statements of income and expenditures for the past two financial years show the following structure and changes in the results of operations:

	2022		2021		Change
	k€	%	k€	%	k€
Revenues	820	100,0	576	100,0	244
Expenditures for scientific promotion and scientific activities	-918	-112,0	-247	-30,1	-671
Administrative expenses	-67	-8,2	-63	-10,9	-4
Expenses	-985	-120,1	-310	-53,8	-675
Operating result	-165	-20,1	266	46,2	-431
Interest result	0	0,0	0	0,0	0
Result before taxes on income	-165	-20,1	266	46,2	-431
Taxes on income	0	0,0	0	0,0	0
Annual surplus	-165	-20,1	266	46,2	-431
Withdrwal from/Allocation to reserves (net)	165	20,1	-266	-46,2	431
Unallocated cash balance	0	0,0	0	0,0	0

The IMU had **revenues** of k€ 820 in the reporting year, which in addition to member contributions also include one-time contributions for the organization of the 19th General Assembly in Helsinki/Finland. In addition, the IMU received donations which usually come from scientific organizations.

Revenues are composed of the following:

	k€
Member contributions	439
Donations - international	331
Other income	50
	820

The composition of **Member contributions** is shown in Appendix 3 to this report.

Donations - international are composed of the following:

	k€
ICM and General Assembly	215
FIMU – IMU Breakout Fellowship	79
Niels Henrik Abel Board, Norway	36
Others	1
	331

Other income (k€ 50) largely involves profits from currency rate fluctuations (k€ 34).

Expenditures of k€ 985 (prior year: k€ 310) are shown in detail in the statement of income and expenditures (Appendix 2) as well as in the Budget Comparison (Appendix 4). While general administrative expenditures increased only minimally during the reporting year, expenditures for scientific promotion and scientific activities have increased significantly by k€ 672. This is primarily due to the expenses incurred every four years during the implementation of the IMU General Assembly, including travel costs, as well as higher costs associated with the fully virtual International Congress of Mathematicians (ICM 2022). Additionally, higher expenses were generated during the reporting year to support the international mobility of mathematicians through various funding programs and publication, after these expenses were notably lower in previous years due to the global COVID-19 pandemic.

II. Net assets

In order to evaluate the net assets and changes thereto, the statements of assets and liablities of the last two financial years are compared in condensed form:

	31.12.2022		31.12.2021		Change
	k€	%	k€	%	k€
A S S E T S					
Current assets					
Receivables from member contributions	92	3,9	71	2,8	21
Other assets (including Prepaid expenses)	1	0,0	41	1,6	-40
Cash and cash equivalents	2.274	96,1	2.449	95,6	-175
	2.367	100,0	2.561	100,0	-194
L I A B I L I T I E S					
Net assets (own funds)	1.968	83,1	2.133	83,3	-165
Borrowed capital					
Provisions	72	3,0	37	1,4	35
Liabilities from restricted donations	257	10,9	322	12,6	-65
Other liabilities (incl. Deferred income)	70	3,0	69	2,7	1
	399	16,9	428	16,7	-29
	2.367	100,0	2.561	100,0	-194

Receivables from member contributions are broken down by country as follows:

Country	Year	WD	Amount
			€
Algeria	2022	*	1.430,00
Belgium	2022		5.720,00
Cameroon	2022	*	1.430,00
Cuba	2022		1.430,00
Egypt	2022		2.860,00
Indonesia	2022		1.430,00
Iran	2022	*	11.440,00
Kazakhstan	2022		1.430,00
Kenya	2022	*	1.430,00
Kyrgyzstan	2022	*	1.430,00
Latvia	2022		1.430,00
Montenegro	2022		1.430,00
Nigeria	2022		1.430,00
Oman	2022		1.430,00
Peru	2022	*	1.430,00
Russia	2022		17.160,00
Saudi Arabia	2022		1.430,00
Senegal	2022	*	1.430,00
Tunisia	2022		1.430,00
Venezuela	2022		1.430,00
Belarus	2022		1.430,00
			61.490,00
Algeria	2021		1.430,00
Cameroon	2021	*	1.430,00
Iran	2021	*	11.440,00
Kenya	2021		1.430,00
Kyrgyzstan	2021	*	1.430,00
Montenegro	2021	*	1.430,00
Oman	2021		1.430,00
Peru	2021	*	1.430,00
Senegal	2021		1.430,00
Tunisia	2021		35,00
Venezuela	2021		409,99
			23.324,99
Algeria	2020	*	1.430,00
Cameroon	2020	*	1.430,00
Iran	2020	*	11.440,00
Kenya	2020	*	1.402,62
Kyrgyzstan	2020	*	1.430,00
Montenegro	2020		126,44
Peru	2020	*	1.430,00
Senegal	2020	*	1.430,00
			20.119,06

Country	Year	WD	Amount
		*	€
Carry forward:			104.934,05
Cameroon	2019	*	1.430,00
Iran	2019	*	11.408,23
Kyrgyzstan	2019	*	1.430,00
Peru	2019	*	388,87
			14.657,10
Kyrgyzstan	2018	*	581,25
			581,25
Total receivables			120.172,40
Write-down 50 % (marked with a *)			-28.705,49
			91.466,91

At the end of 2022 the outstanding member contributions were k€ 120. Contributions of the reporting year in the amount of k€ 60 were still outstanding at the time of our audit. As a result of consistent non-payment of their member contributions, open receivables of the above countries, marked with a star "*", were directly written down by 50%.

Cash and cash equivalents, parts of which are in foreign currency, are located in accounts with the Deutsche Bank AG and are composed of the following:

	Foreign currency	€
Account in € (5113915 10)		928.404,97
Account in CHF (5113915 01)	CHF 74.372,37	74.372,37
Account in USD (5113915 00)	USD 254.445,69	238.307,00
Account in USD (5113915 06)	USD 269.972,32	252.849,00
Account in € (5113915 00)		311.768,42
Account in € (5113915 05)		226.788,42
Account in € (5113915 04)		197.645,56
Account in € (5113915 11)		44.094,43
Cash in €		199,25
		2.274.429,42

The conversion of foreign currency into euro occurred at the period-end exchange rate.

Net assets (own funds) at the period-end date are composed of the following:

	k€	k€
Association net assets		307
Reserves		
- Annual surplus 2007 - 2021	1.310	
- Annual loss 2022	-165	
- ICMI and CDC (Commission Fund)	515	1.660
		1.967

The Statutes do not make reference to association net assets.

Of the Net assets of the Association, € 307.465,98 originates from the time before moving the domicile of the IMU to Germany as of 1 January 2007. Revenues earned as of 2007 are allocated to reserves in accordance with the recommendations of the IMU Secretary General and of the Treasurer at the end of the reporting year. The General Assembly reaches a resolution every four years on the creation of reserves.

Reserves are allocated as follows:

	k€
Fields-Medal 2022 and 2026	20
General Assembly 2026	15
ICM subsidy	22
Support Program/Structure Committee	9
ICM travel grants	32
ICMI and CDC 2022	404
ICM default reserve	450
Project Breakout Fellowship/FIMU	80
Project CDC/GRAID	52
Project Simons Fellowships	42
Support CEIC	18
Support CWM	22
IMU internet site	10
Outreach (IDM 2023 / 100 years IMU)	15
Support Gender GAP/SCGES	18
Co-financing and support of international projects	40
CDC grant management software	7
Unrestricted reserves	404
	1.660

Disclosed under <u>ICMI und CDC</u> (Commission Fund) are funds which the IMU has made available to its ICMI and CDC commissions for their work in the coming year. The restricted reserves for ICMI amount to € 167.261,43 and for CDC to € 236.782,51.

Provisions involve expenses for the proceedings of the International Congress of Mathematicians (ICM Proceedings 2022) (k€ 55), the audit of the annual accounts and the preparation of the 2022 tax declarations (k€ 10) as well as the IDM contributions for 2022 (k€ 7).

The main Liabilities from restricted donations developed as follows:

	€	€
Special Development Fund		
Per 1 Jan 2022		14.384,46
London Mathematical Society (USD 5.000)		4.494,14
Allocation for ICM/GA 2022		-18.878,60
Per 31 Dec 2022		0,00

Simons Foundation Africa Fund		
Per 1 Jan 2022		120.203,07
Travel Fellowship for 6 mathematicians		-71.936,58
Per 31 Dec 2022		48.266,49

Commemorative publication 100 Years IMU		
Per 1 Jan 2022		100.000,00
Expenditure on publication "Framing Global Mathematics"		-55.982,99
Per 31 Dec 2022		44.017,01

Simons Foundation IDM 2022		
Per 1 Jan 2022		0,00
Inflow for IDM 2022		14.247,72
Per 31 Dec 2022		14.247,72

Graduate Assistantships in Developing Countries Program		
Per 1 Jan 2022		46.139,02
Contribution CIMPA		5.540,00
Per 31 Dec 2022		51.679,02

IMU Reserve Fund		
Per 1 Jan 2022		0,00
Inflow DMV		9.000,00
Inflow American MS (USD 10.000)		10.317,29
Inflow Australian AMS (2.500 AUD)		1.552,50
Inflow CNFM France		10.000,00
Inflow Simons Foundation (USD 30.000)		28.912,88
Allocation for pending IMU-Member contributions		-2.860,00
Per 31 Dec 2022		56.922,67

		215.132,91

The funds shown under **Special Development Fund (SDF)** are for the support of mathematicians from developing countries for travel to International Congresses of Mathematicians (ICM). An international committee decides on the grant applications.

The funds provided by the Simons Foundation are designated as a Travel Fellowship for research stays of mathematicians from developing countries. The **Simons Foundation Africa Fund** is especially reserved for mathematicians from Africa.

The funds received from the **Klaus Tschira Stiftung** (KTS) are designated for financing a commemorative publication on occasion of the 100th anniversary of the founding of the International Mathematical Union. During the reporting year, funds were allocated for the completion of the commemorative publication in the form of the book 'Framing Global Mathematics'.

The **Simons Foundation** will provide TUSD 15 annually for the International Das of Mathematicians (IDM) for the period from 2022 to 2026.

The **Graduate Assistantships in Developing Countries Program** (GRAID) supports newly developing research groups in developing countries. With the support of GRAID, research groups can finance the studies (Masters or PhD) of their most gifted students. GRAID is financed by donations of mathematicians and mathematical associations from all over the world.

The **IMU Reserve Fund** was established in the reporting year, to support member organisations that fall behind with their member contributions due to temporary extreme and adverse circumstances. The funding will be provided through dedicated contributions. Applications for assistance will be reviewed by the IMU Executive Committee and decided on a case-by-case basis. The Executive Committee will report on this principle at IMU´s next General Assembly.

In the amount of k€ 41 annually, IMU's Commission CDC contains the **Special Support CDC** on the basis of an agreement with the Det Norske Videnskaps-Akademi (initially until 2025), for the support of programmes in developing countries, above all for conferences (Conference Support Program) and guest lectures from international lecturers (Volunteer Lecturer Program). Additional special donations provide support for general CDC activities and programmes (conferences, research stipends, etc.).

Other liabilities largely involve the bank balance held for the International Commission for History in Mathematics (ICHM) in the amount of k€ 44 as well as the managed bank balances for the Standing Committee for Gender Equality in Science (SCGES) in the amount of k€ 13 and funds to be further transferred in conjunction with the Project Gender Gap in Mathematical and Natural Sciences in the amount of k€ 5.

III. Financial position

The IMU was at all times in a position to meet its payment obligations in a full and timely manner. The cash flow from current activities amounts to k€ -174 and corresponds to the change in cash between 1 January 2022 (k€ 2.449) and 31 December 2022 (k€ 2.274).

E. ATTESTATION OF THE ANNUAL FINANCIAL STATEMENTS

We issue the annual financial statements of the International Mathematical Union, Berlin as at 31 December 2022, in the version enclosed in this report as Appendices 1 to 2, the following unqualified attestation:

Attestation of the Auditor

International Mathematical Union, Berlin

We have audited the annual financial statements of the International Mathematical Union, Berlin, - consisting of the statement of assets and liabilities and the statement of income and expenditures – together with the bookkeeping system, for the financial year from 1 January 2022 to 31 December 2022. The maintenance of the books and records and the preparation of the annual financial statements in accordance with statutory provisions as well as with the supplementary provisions of the Association's Statutes are the responsibility of the legal representatives of the Association. Our responsibility is to express an opinion of the annual financial statements on the basis of the bookkeeping, based on our audit.

We conducted our audit in compliance with the audit standards promulgated by the Institut der Wirtschaftsprüfer in Deutschland (IDW)*: Audit of Associations* (IDW PS 750). Those standards require that we plan and perform the audit such that misrepresentations due to fraudulent acts of errors materially affecting the presentation of the annual financial statements are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Association and expectations of possible misstatements are taken into account. The effectiveness of the accounting-related internal control system and the evidence supporting the disclosures in the books and records and in the annual financial statements are examined primarily on a test basis with the framework of the audit. The audit includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall presentation of the annual financial statements. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, based on our audit, the books and records along with the statement of assets and liabilities and the statement of income and expenditures of the Association comply with the principles of proper accounting and the legal requirements of an association.

F. FINAL REMARKS

Publication or reproduction of the annual financial statements of the International Mathematical Union, Berlin, for the financial year from 1 January 2022 to 31 December 2022 in a form different from the certified form, which is attached as an Appendix to this report, again requires our consent if our attestation is quoted or if reference is made to our audit. We herein refer to § 328 HGB.

Berlin, 20 July 2023

Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

In the original German version signed by:

Ralf Bierent   Jacqueline Kotynski
Wirtschaftsprüfer   Wirtschaftsprüfer

STATEMENT OF ASSETS AND LIABILITIES as at 31 December 2022

ASSETS	per 31 Dec 2022 €	per 31 Dec 2022 €	Prior year €
A. Current Assets			
I. Receivables and other assets			
1. Receivables from member contributions	91,466.91		70,776.50
2. Other assets	0.00		40,000.00
		91,466.91	110,776.50
II. Cash-in-hand, bank balances*		2,274,429.42	2,448,768.00
B. Prepaid Expenses		1,014.00	1,014.00
Total Assets		2,366,910.33	2,560,558.50

LIABILITIES	per 31 Dec 2022 €	per 31 Dec 2022 €	Prior year €	Prior year €
A. Net Assets				
I. Association net assets	307,465.98		307,465.98	
II. Reserves	1,660,300.66		1,825,403.08	
		1,967,766.64		2,132,869.06
B. Provisions		72,256.07		36,782.00
C. Liabilities				
1. Liabilities from restricted donations	256,819.78		322,413.42	
2. Other liabilities	64,227.84		46,594.61	
		321,047.62		369,008.03
D. Deferred Income		5,840.00		21,899.41
Total Liabilities		2,366,910.33		2,560,558.50

* contained therein ICMI € 226.788,42 and CDC € 197.645,65

International Mathematical Union, Berlin

STATEMENT OF INCOME AND EXPENDITURES for 2022

				Prior year
	€	€	€	€
Revenues			820,317.05	**575,738.58**
Member contributions	439,367.46			431,502.52
Donations - international	331,345.60			105,888.86
Other income	49,603.99			38,347.20
Expenses for Scientific Promotion and Scientific Activities		-918,453.43		**-246,552.43**
Promotion of scientific activities	-430,543.96			-228,935.08
Expenditures ICM and GA	-368,439.88			-12.16
Travel expenses	-74,371.71			0.00
Award ceremonies	-25,740.64			0.00
Other	-19,357.24			-17,605.19
Administrative expenses		-67,058.96		**-63,248.67**
Reimbursement personnel expenses	-25,255.09			-23,024.59
Travel expenses	-16,924.40			-76.90
Consulting expenses	-833.00			-1,491.80
Audit fees	-10,115.00			-9,602.00
Member contributions	-4,305.00			-8,577.19
Postage	-438.20			-404.20
Bank fees	-4,385.66			-5,096.39
Other	-4,802.61			-14,975.60
Other Expenditures			-985,512.39	**-309,801.10**
Interest and Similar Income			92.92	**93.14**
Interim Result			-165,102.42	266,030.62
Other Taxes			0.00	0.00
Annual Surplus			-165,102.42	266,030.62
Withdrawals from Reserves			186,375.40	0.00
Allocation to Reserves			-21,272.98	-266,030.62
Unallocated Cash Balance			0.00	0.00

International Mathematical Union, Berlin

Schedule of Member Contributions 2022

Country	Amount EUR
Algeria	1,430.00
Argentina	5,720.00
Armenia	1,430.00
Australia	11,440.00
Austria	2,860.00
Belgium	5,720.00
Belarus	1,430.00
Bosnia & Herzegovina	1,430.00
Brazil	17,160.00
Bulgaria	1,430.00
Cameroon	1,430.00
Canada	17,160.00
Chile	5,720.00
China, CMS Beijing	10,296.00
China, TMS Taipei	6,864.00
Colombia	1,430.00
Croatia	1,430.00
Cuba	1,430.00
Cyprus	1,430.00
Czech Republic	5,720.00
Denmark	5,720.00
Ecuador	1,430.00
Egypt	2,860.00
Estonia	1,430.00
Finland	5,720.00
France	17,160.00
Georgia	1,430.00
Germany	17,160.00
Greece	1,430.00
Hong Kong	1,430.00
Hungary	5,720.00
Iceland	1,430.00
India	11,440.00
Indonesia	2,860.00
Iran	11,440.00
Ireland	2,860.00
Israel	17,160.00
Italy	17,160.00
Ivory Coast	1,430.00
Japan	17,160.00
Kazakhstan	1,430.00

International Mathematical Union, Berlin

Schedule of Member Contributions 2022

Country	Amount EUR
Kenya	1,430.00
Korea, Republic of	16,683.30
Kyrgyzstan	1,430.00
Latvia	1,430.00
Lithuania	1,430.00
Luxembourg	1,430.00
Malaysia	1,430.00
Mexico	5,720.00
Montenegro	1,430.00
Morocco	1,430.00
Netherlands	11,440.00
New Zealand	1,430.00
Nigeria	1,430.00
Norway	5,720.00
Oman	1,430.00
Pakistan	1,430.00
Peru	1,430.00
Philippines	1,430.00
Poland	11,440.00
Portugal	5,720.00
Romania	1,430.00
Russia	17,160.00
Saudi Arabia	1,430.00
Senegal	1,430.00
Serbia	1,430.00
Singapore	1,430.00
Slovakia	2,860.00
Slovenia	1,430.00
South Africa	2,860.00
Spain	11,440.00
Sweden	11,440.00
Switzerland	11,440.00
Thailand	1,430.00
Tunisia	1,430.00
Turkey	2,860.00
Ukraine	2,860.00
United Kingdom	17,160.00
Uruguay	1,430.00
USA	17,160.00
Venezuela	1,430.00
Vietnam	1,430.00
Uzbekistan	834.46
Total	**439,367.76**

INTERNATIONAL MATHEMATICAL UNION

Budget Comparison 2022

	% of General Income	Budget 2022 EUR General	Special	Sum	Actual 2022 EUR General	Special	Sum
INCOME							
I. General							
I.a Membership Dues		417,560			439,367		
Sum General Income		417,560			439,367		
II. Special							
II.a Special Development Fund			14,000			59,783	
II.b Donations			80,000			256,787	
II.c Grants						99,205	
Sum Special Income from Third Parties			94,000			415,775	
II.d Income from IMU bank accounts			100			93	
II.e Other Income			35,500			56,104	
Sum Special Income from Other Sources			35,600			56,197	
TOTAL INCOME		417,560	129,600	547,160	439,367	471,972	911,339
EXPENDITURE							
1. Commissions & Committees (C&C)	45.00%						
1.1 CDC	20.00%	83,512	44,000	127,512	205,889	22,733	228,622
1.2 ICMI	15.00%	62,634			72,515		
1.3 CWM	5.00%	20,878	10,000	30,878	20,878	1,605	22,483
1.4 CEIC	4.00%	16,702	4,176	20,878	0	0	
1.5 ICHM	0.00%	0	5,500	5,500	0	0	
1.6 Ad hoc committees	1.00%	4,176	4,176	8,352	0	0	
1.7 Special support	0.00%	0	26,000	26,000	0	106,924	
C&C Expenditure		187,902	93,852	281,754	299,282	131,262	430,544
2. ICM	22%						
2.1 Site Committee	1%	4,176			839		
2.2 Program Committee	2%	8,351			0		
2.3 Prize Committees	2%	8,351			0		
2.4 Congress Subvention	5%	20,878			0		
2.5 Travel Grants (Young & Senior)	7%	29,229	14,000	43,229	60,372	14,000	74,372
2.6 ICM related admin., outreach	5%	20,878			320,944	0	
ICM Expenditure		91,863	14,000	105,863	382,155	14,000	396,155
3. Union Administration	20%						
3.1 General Assembly	1%	4,176			72,397		
3.2 President & Secretary	12%	50,107			31,427		
3.3 Executive Committee	6%	25,054			8,593		
3.4 Other	1%	4,176			0		
Union Administration Expenditure		83,512	0	83,512	112,417	0	112,417
4. Outreach	6%						
4.1 ICSU Union Member Contribution	2%	8,351			4,305		
4.2 Awards	1%	4,176			0		
4.3 Website Support, Media Relations	2%	8,351	4,176	12,527	8,351	11,006	19,357
4.4 Bulletin	0%	0			0		
4.5 Other	1%	4,176	5,600	9,776	0		
4.6 Scientific activity support	0%	0	6,972	6,972	0		
Outreach Expenditure		25,054	16,748	41,802	12,656	11,006	23,662

5. Overhead	7%						
5.1 Office Expenses	1%	4,176	1,600	5,776	4,176	1,982	6,158
5.2 Bank Charges	1%	4,176	1,000	5,176	4,176	210	4,386
5.3 Legal Advice, Audit Fees	2%	8,351	1,600	9,951	8,351	2,597	10,948
5.4 Other	3%	12,527	800	13,327	1,242	0	
Overhead Expenditure		29,229	5,000	34,229	17,945	4,789	22,734
TOTAL EXPENDITURE				547,160			985,512
Transfer to liabilities from donations not yet spent							
Interim Result				0			-165,102
Draw from Reserves				0			186,375
Return to Reserves				0			-21,273
Result				0		EUR	0

Legal and Tax Position

1.   Legal Position

Association, Legal Domicile

International Mathematical Union, Berlin/Germany

The IMU is an international association. According to German law, the IMU is an "ideal association" (§ 21 German Civil Code (BGB)) since it pursues ideal purposes rather than financial purposes. The Association does not have legal capacity in Germany because it is not registered with the German Register of Associations.

The legal domicile of the IMU was located in Princeton/USA, until 31 December 2006. According to article 29 of the IMU Statutes, as amended in 2010, the legal domicile of the Union shall be located at the offices of the Union.

Since 1 January 2011 the permanent Secretariat of the Union is located in Berlin/Germany.

Place of Management

IMU Secretariat, Hausvogteiplatz 11A, 10117 Berlin/Germany

The IMU Secretariat transacts the entire routine operative business of the IMU. This includes the administrative support of the International Commission on Mathematical Instruction (ICMI) and the Commission for Developing Countries (CDC). In addition, the IMU Secretariat is also responsible for bookkeeping and monetary transactions; it prepares the annual financial statements and operates the IMU archives.

Statutes

The Statutes were last amended in July 2022 by a resolution of the 19th General assembly in Helsinki/Finland. The changes included, among other things, the introduction of a new Article 3 (General Principle of the International Science Council) and the consequent shifting of all other articles in the numeration by one digit. A certified German translation is on file.

Objectives of the Association

According to Article 1 of the Statutes:

"(a) to promote international cooperation in mathematics;

 (b) to support and assist the International Congress of Mathematicians and other international scientific meetings or conferences;

 (c) to encourage and support other international mathematical activities considered likely to contribute to the development of mathematical science in any of its aspects, pure, applied, or educational."

Association net assets, Members

The Statutes make no provision for association net assets. Association net assets amounted to k€ 307 on 1 January 2007, the time when the legal domicile was transferred from Princeton/USA to Berlin/Germany.

According to article 4 (according to the new numeration), a country adheres to the Association through an adhering organization. This may be the principal academy, a mathematical society, its research council or some other institution or association of institutions, or an appropriate agency of its government. At the end of 2022, the IMU had 82 regular members (voting), four associate members (non-voting) and five affiliate members (non-contributory and non-voting).

Executive Committee, Representatives

As of 1 January 2019, the members of the Executive Committee were the following persons:

– Carlos E. Kenig, USA (President)

– Helge Holden, Norway (Secretary General)

– Nalini Joshi, Australia (Vice-President)

– Loyiso G. Nongxa, South Africa (Vice-President)

– Luigi Ambrosio, Italy (Member-at-Large)

– Andrei Okounkov, Russia (Member-at-Large)

– Paolo Piccione, Brazil (Member-at-Large)

– R. T. Ramadas, India (Member-at-Large)

- Gang Tian, China (Member-at-Large)

- Günter M. Ziegler, Germany (Member-at-Large)

- Shigefumi Mori, Japan (Member of the Executive Committee ex-officio because he was the President of the IMU in the preceding term of office)

As of 1 January 2023, the members of the Executive Committee are the following persons:

- Hiraku Nakajima, Japan (President)

- Christoph Sorger, France (Secretary General)

- Ulrike Tillmann, UK (Vice-President)

- Tatiana Toro, USA/Colombia (Vice-President)

- Mouhamed Moustapha Fall, Senegal (Member-at-Large)

- Nalini Joshi, Australia (Member-at-Large)

- JongHae Keum, Korea/Republic of (Member-at-Large)

- Paolo Piccione, Brazil (Member-at-Large)

- Günter M. Ziegler, Germany (Member-at-Large)

- Tamar Ziegler, Israel (Member-at-Large)

- Carlos E. Kenig, USA (Member of the Executive Committee ex-officio because he was the President of the IMU in the preceding term of office)

Reporting Year

The reporting year corresponds to the calendar year.

The Bulletins are made available to members via the homepage www.mathunion.org. All members are informed about each new publication via e-mail. A printed version of the Bulletin will be produced and sent upon individual request.

General Assembly

The following was resolved during the last General Assembly in Helsinki/Finland in July 2022:

- Adoption of the annual financial statements of 2018 to 2021 and development of financial reserves from the annual surpluses, corresponding to the respective Statement of Income and Expenditures.

– Release from liability of the IMU Executive Committee and IMU Treasurer for the years from 2018 to 2021.

– Budget for the time between 2023 and 2026.

– Increase in member contributions between 2023 and 2026 to € 1.460,00 per unit (unit contribution).

– Establishment of a reserve fund to support member organisations that fall behind with the member contributions due to temporary extreme and adverse circumstances. The funding will be provided through dedicated contributions. Applications for assistance will be reviewed by the IMU Executive Committee and decided on a case-by-case basis.

– The next General Assembly will take place in 2026 in New York City/USA.

2. Tax Information

The Association is registered with the Finanzamt für Körperschaften (tax office for corporations) I, Berlin, under the tax number 27/640/57572.

At the time of the audit, no tax assessment notifications had been issued for the Association, which has had its legal domicile in Germany since 2007.

The Association is non-profit. After common inquiries on 16 April 2007 at the Finanzamt für Körperschaften I, Berlin, the formal requirements for the recognition as a non-profit organization were fulfilled. The final certification of the non-profit status will be made after actual fulfilment of the requirements.

The Finanzamt für Körperschaften I, Berlin, issued a preliminary certification to the IMU on 4 May 2007. This was done upon the instruction of the Senatsverwaltung für Finanzen, Berlin, before it issued a notice of exemption for 2007 and 2008 on 9 June 2009.

The Finanzamt für Körperschaften I issued its last notice of exemption for 2018 to 2020, in which the current income of the IMU is exempt from corporate and trade tax. In addition, revenue from capital of the IMU is not subject to withholding tax on capital up to 31 December 2025. The IMU is entitled to issue donation confirmations.

Special Engagement Terms for audits and audit-related services
of
Mazars GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft

As of June 1, 2019

Preamble

These Special Engagement Terms of Mazars GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft ("*Mazars KG*") complement and clarify the General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften [German Public Auditors and Public Audit Firms] issued by the Institut der Wirtschaftsprüfer e. V. [Institute of German Public Auditors, Incorporated Association] in the version enclosed to the engagement letter/proposal and have priority over the General Engagement Terms issued by the Institut der Wirtschaftsprüfer e. V. The Special Engagement Terms apply in a subordinate manner to the engagement letter/proposal. The engagement letter/proposal along with all enclosures form the "*Entire Engagement Terms*".

A. Supplementary terms for audits of annual financial statements pursuant to § [Article] 317 HGB [German Commercial Code: Handelsgesetzbuch] and comparable audits according to national and international auditing standards

Mazars KG shall perform the audit pursuant to § 317 HGB and with due respect to the German Generally Accepted Auditing Standards ("*GAAS*") [Grundsätze ordnungsgemäßer Abschlussprüfung] as promulgated by the Institut der Wirtschaftsprüfer e. V. According to these, Mazars KG shall plan and perform the audit in compliance with the German Principles of Proper Professional Conduct [Grundsätze ordnungsgemäßer Berufsausübung] such that misstatements and violations materially affecting the subject of the audit defined by the engagement letter are identified with reasonable assurance.

Mazars KG shall perform all audit procedures which it considers necessary in the circumstances for a proper assessment and examine in which form the audit opinion provided for in § 322 HGB resp. the GAAS can be issued. Mazars KG shall report on the audit of the subject matter to the extent customary in the profession. In order to determine the nature, time and scope of the individual audit procedures in an appropriate manner, Mazars KG shall, where deemed necessary, audit and assess the accounting-related internal control system, in particular as far as it serves to ensure proper accounting. As is customary for the profession, Mazars KG shall perform the audit procedures on the basis of selected samples, so that there remains an unavoidable risk that even material misstatements may not be identified even though the audit has been carried out in accordance with professional standards. Therefore, e.g. acts of misappropriation and other irregularities will not necessarily be identified by the audit. Mazars KG points out that the objective of the audit is not to detect misappropriations or other irregularities that do not affect the compliance of the subject of the audit with the applicable accounting principles. Should Mazars KG, however, identify such facts during the audit, the Engaging Party ("*Engaging Party*") of Mazars KG shall be informed immediately.

All aforementioned engagement terms regarding objectives and methods of the audit apply to other audits according to national and international auditing standards in analogous manner.

It is the responsibility of the Engaging Party's management to correct material errors in the subject of the audit and to confirm to us in a letter of representation that the impact of any uncorrected errors identified by us during the current engagement are immaterial to the subject of the audit both individually and in the aggregate.

B. Contractual relationship

Under certain circumstances, Mazars KG may be provided, in the context of the engagement and for safeguarding the Engaging Party's economic interests, with documents directly related to the client and having legal relevance. Mazars KG expressly states that it has neither an obligation to provide legal advice or legal review, nor that this engagement includes general legal advice; therefore, the Engaging Party is obliged to submit any sample formulations provided by Mazars KG in connection with the execution of the engagement to its responsible legal advisor for final legal review. The Engaging Party is responsible for all management decisions in connection with the services of Mazars KG as well as for the use of the results of the services and the decision as to whether the services of Mazars KG are suitable for the Engaging Party's own internal purposes.

C. Access to information

It is the responsibility of the Engaging Party's management to grant Mazars KG unlimited access to records, documents and other information required for the engagement. The same applies to the submission of additional information (e. g. annual reports, statements regarding the declaration of compliance pursuant to § 161 AktG [German Stock Corporation Act: Aktiengesetz]) which is published by the Engaging Party together with the financial statements and the associated management report, if any. The Engaging Party shall make this information available in due time before the audit opinion is issued or as soon as it is available. All information made available to Mazars KG by the Engaging Party or on behalf of the Engaging Party must be fully complete ("*Engaging Party's Information*").

D. Consultation of Mazars members and third parties

Mazars KG shall be entitled to subcontract parts of the services to other members of the worldwide Mazars network ("*Mazars members*") or to other service providers who may directly contact the Engaging Party. Irrespective of this, Mazars KG will exclusively be held liable for all results of the engagement, the provision of the services and the other obligations towards the Engaging Party resulting from the engagement letter.

The Engaging Party is therefore not entitled to assert contractual claims or initiate proceedings in connection with the services or on the basis of the engagement letter in general against another Mazars members or its subcontractors, members, shareholders, members of the management board, partners or members of staff ("*Mazars persons*") or Mazars persons of Mazars KG. Consequently, the Engaging Party shall be obliged to assert contractual claims or initiate proceedings exclusively against Mazars KG. Mazars members and Mazars personnel are entitled to refer to this provision.

In accordance with applicable law, Mazars KG shall be entitled for the purpose of

(a) the provision of the services of Mazars KG,

(b) compliance with professional standards as well as with regulatory requirements,

(c) the identification of potential conflicts of interest,

(d) risk management and quality assurance,

(e) internal accounting as well as the provision of other administrative or IT support services

(letters (a) – (e) hereinafter referred to as "*processing purposes*") to disclose the Engaging Party's Information to other Mazars members, Mazars persons and to external service providers of Mazars KG, ("*Service Providers*") who are allowed to collect, use, transmit, save or process data otherwise (hereinafter referred to as "*to process*") in the various jurisdictions in which they operate. An overview of the locations of all Mazars members is available at www.mazars.com.

Mazars KG shall be held liable towards the Engaging Party for assuring confidentiality of Engaging Party's Information, irrespective of who processes this information on behalf of Mazars KG.

E. Oral information

If the Engaging Party intends to make a decision or any other economic disposition on the basis of orally given information and/or advice by Mazars KG to the Engaging Party, the Engaging Party is obliged either (a) to inform Mazars KG in a timely manner prior to such a decision and to ask Mazars KG to confirm in writing the Engaging Party's understanding of such information and/or advice or (b) with regard to the above-mentioned risk of such orally given information and/or advice to make the decision at its own discretion and under its sole responsibility.

F. Draft versions of Mazars KG

The draft versions of the working results are only for internal purposes of Mazars KG and/or for the coordination with the Engaging Party and therefore represent only a preliminary stage of the working results and are neither final nor binding and require further review. Mazars KG is not obliged to update the final working result with regard to circumstances which have come to its knowledge or which occur after the time of completion of the work stated in the working result or in absence of such a deadline since the delivery of the working result.

This shall not apply if Mazars KG is obliged to do so due to the nature of the services.

G. Indemnity and liability

The Engaging Party is obliged to indemnify Mazars KG from all claims by third parties (including affiliated companies) as well as from any resulting obligations, damages, costs and expenses (in particular reasonable external lawyer's fees) resulting from the use of the working results by third parties, insofar the working results have been transferred directly or indirectly by the Engaging Party or at its instigation. This obligation does not exist to the extent Mazars KG has expressly agreed in writing that the third party may rely on the working result.

Regarding the liability for the underlying contractual relationship, number 9 of the General Engagement Terms as well as the statutory limitation of liability pursuant to § 323 Abs. 2 [paragraph 2] HGB shall apply. Should claims arise in connection with the contractual relationship from ancillary services relating to the statutory or voluntary audit or other audit services provided by us, our liability for such ancillary services is limited to € 4 million.

H. Electronic data transmission (e-mails)

The parties are allowed to use electronic media for the exchange and transmission of information and this form of communication as such does not constitute a breach of any confidentiality obligations. The parties are aware that the electronic transmission of information (especially via e-mail) involves risks (e.g. unauthorized access by third parties).

Any amendments to the documents transmitted via electronic media by Mazars KG as well as the disclosure of these documents to third parties via electronic media require the written consent of Mazars KG.

The transfer of personal data is subject to the data protection regulations of Mazars, which are available at www.eng.mazars.de/Data-protection. Mazars KG processes personal data in accordance with the applicable law und professional regulations, in particular in compliance with the German Federal Data Protection Act [Bundesdatenschutzgesetz (BDSG)] and the European data protection regulations. Mazars KG obliges data service providers who process personal data on behalf of Mazars KG to also abide by these regulations.

I. Letter of representation

The letter of representation requested by Mazars KG from the Engaging Party's management may also include the confirmation that the impact of uncorrected false information in the subject of the audit, summarized in an appendix to the representation letter, are immaterial both individually and in the aggregate.

J. Scope of application

The regulations contained in the Entire Engagement Terms, including the liability regulation, also apply to all future engagements placed by the Engaging Party accordingly, unless separate agreements have been made or defined in a framework agreement or unless national or foreign statutory or regulatory requirements which are binding for Mazars KG are opposed to individual regulations in favor of the Engaging Party.

For the services provided by Mazars KG the terms of the Entire Engagement Terms apply exclusively; other terms do not become terms of the agreement if the Engaging Party has not agreed these with Mazars KG in detail expressly in writing. General conditions of purchase, to which reference is made in the context of automated orders, shall not apply, even if Mazars KG does not expressly object to them or if Mazars KG starts to provide the services without reservation.

K. Applicable law / Place of jurisdiction

The professional standards developed and adopted by the relevant German professional organisations (Wirtschaftsprüfer-kammer [Chamber of Public Accountants], Institut der Wirtschaftsprüfer e. V., Steuerberaterkammer [Chamber of Tax Consultants]) are decisive for the performance of the engagement insofar as they are applicable to the engagement in the individual case.

This contractual relationship and all non-contractual issues or obligations resulting from this contractual relationship or from the provision of services agreed therein shall be governed by German law.

The exclusive place of jurisdiction for all legal disputes arising in connection with the engagement or services provided thereunder shall be the respective location of the contracting branch office or, at the discretion of Mazars KG, (i) the court at which the branch office of Mazars KG primarily responsible for providing the services has its registered office or (ii) the courts at the location at which the Engaging Party has its registered office.

L. Data Protection

For the processing purposes listed under letter D, Mazars KG and other Mazars persons or Service Providers are entitled to process the Engaging Party's Information that can be attributed to specific persons ("*personal data*") in the various jurisdictions in which they operate.

[Translator's notes are in square brackets]

General Engagement Terms

for

Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften
[German Public Auditors and Public Audit Firms]
as of January 1, 2017

1. Scope of application

(1) These engagement terms apply to contracts between German Public Auditors (*Wirtschaftsprüfer*) or German Public Audit Firms (*Wirtschaftsprüfungsgesellschaften*) – hereinafter collectively referred to as "German Public Auditors" – and their engaging parties for assurance services, tax advisory services, advice on business matters and other engagements except as otherwise agreed in writing or prescribed by a mandatory rule.

(2) Third parties may derive claims from contracts between German Public Auditors and engaging parties only when this is expressly agreed or results from mandatory rules prescribed by law. In relation to such claims, these engagement terms also apply to these third parties.

2. Scope and execution of the engagement

(1) Object of the engagement is the agreed service – not a particular economic result. The engagement will be performed in accordance with the German Principles of Proper Professional Conduct (*Grundsätze ordnungsmäßiger Berufsausübung*). The German Public Auditor does not assume any management functions in connection with his services. The German Public Auditor is not responsible for the use or implementation of the results of his services. The German Public Auditor is entitled to make use of competent persons to conduct the engagement.

(2) Except for assurance engagements (*betriebswirtschaftliche Prüfungen*), the consideration of foreign law requires an express written agreement.

(3) If circumstances or the legal situation change subsequent to the release of the final professional statement, the German Public Auditor is not obligated to refer the engaging party to changes or any consequences resulting therefrom.

3. The obligations of the engaging party to cooperate

(1) The engaging party shall ensure that all documents and further information necessary for the performance of the engagement are provided to the German Public Auditor on a timely basis, and that he is informed of all events and circumstances that may be of significance to the performance of the engagement. This also applies to those documents and further information, events and circumstances that first become known during the German Public Auditor's work. The engaging party will also designate suitable persons to provide information.

(2) Upon the request of the German Public Auditor, the engaging party shall confirm the completeness of the documents and further information provided as well as the explanations and statements, in a written statement drafted by the German Public Auditor.

4. Ensuring independence

(1) The engaging party shall refrain from anything that endangers the independence of the German Public Auditor's staff. This applies throughout the term of the engagement, and in particular to offers of employment or to assume an executive or non-executive role, and to offers to accept engagements on their own behalf.

(2) Were the performance of the engagement to impair the independence of the German Public Auditor, of related firms, firms within his network, or such firms associated with him, to which the independence requirements apply in the same way as to the German Public Auditor in other engagement relationships, the German Public Auditor is entitled to terminate the engagement for good cause.

5. Reporting and oral information

To the extent that the German Public Auditor is required to present results in writing as part of the work in executing the engagement, only that written work is authoritative. Drafts are non-binding. Except as otherwise agreed, oral statements and explanations by the German Public Auditor are binding only when they are confirmed in writing. Statements and information of the German Public Auditor outside of the engagement are always non-binding.

6. Distribution of a German Public Auditor's professional statement

(1) The distribution to a third party of professional statements of the German Public Auditor (results of work or extracts of the results of work whether in draft or in a final version) or information about the German Public Auditor acting for the engaging party requires the German Public Auditor's written consent, unless the engaging party is obligated to distribute or inform due to law or a regulatory requirement.

(2) The use by the engaging party for promotional purposes of the German Public Auditor's professional statements and of information about the German Public Auditor acting for the engaging party is prohibited.

7. Deficiency rectification

(1) In case there are any deficiencies, the engaging party is entitled to specific subsequent performance by the German Public Auditor. The engaging party may reduce the fees or cancel the contract for failure of such subsequent performance, for subsequent non-performance or unjustified refusal to perform subsequently, or for unconscionability or impossibility of subsequent performance. If the engagement was not commissioned by a consumer, the engaging party may only cancel the contract due to a deficiency if the service rendered is not relevant to him due to failure of subsequent performance, to subsequent non-performance, to unconscionability or impossibility of subsequent performance. No. 9 applies to the extent that further claims for damages exist.

(2) The engaging party must assert a claim for the rectification of deficiencies in writing (*Textform*) [Translators Note: The German term "*Textform*" means in written form, but without requiring a signature] without delay. Claims pursuant to paragraph 1 not arising from an intentional act expire after one year subsequent to the commencement of the time limit under the statute of limitations.

(3) Apparent deficiencies, such as clerical errors, arithmetical errors and deficiencies associated with technicalities contained in a German Public Auditor's professional statement (long-form reports, expert opinions etc.) may be corrected – also versus third parties – by the German Public Auditor at any time. Misstatements which may call into question the results contained in a German Public Auditor's professional statement entitle the German Public Auditor to withdraw such statement – also versus third parties. In such cases the German Public Auditor should first hear the engaging party, if practicable.

8. Confidentiality towards third parties, and data protection

(1) Pursuant to the law (§ [Article] 323 Abs 1 [paragraph 1] HGB [German Commercial Code: *Handelsgesetzbuch*], § 43 WPO [German Law regulating the Profession of Wirtschaftsprüfer: *Wirtschaftsprüferordnung*], § 203 StGB [German Criminal Code: *Strafgesetzbuch*]) the German Public Auditor is obligated to maintain confidentiality regarding facts and circumstances confided to him or of which he becomes aware in the course of his professional work, unless the engaging party releases him from this confidentiality obligation.

(2) When processing personal data, the German Public Auditor will observe national and European legal provisions on data protection.

9. Liability

(1) For legally required services by German Public Auditors, in particular audits, the respective legal limitations of liability, in particular the limitation of liability pursuant to § 323 Abs. 2 HGB, apply.

(2) Insofar neither a statutory limitation of liability is applicable, nor an individual contractual limitation of liability exists, the liability of the German Public Auditor for claims for damages of any other kind, except for damages resulting from injury to life, body or health as well as for damages that constitute a duty of replacement by a producer pursuant to § 1 ProdHaftG [German Product Liability Act: *Produkthaftungsgesetz*], for an individual case of damages caused by negligence is limited to € 4 million pursuant to § 54 a Abs. 1 Nr. 2 WPO.

(3) The German Public Auditor is entitled to invoke demurs and defenses based on the contractual relationship with the engaging party also towards third parties.

(4) When multiple claimants assert a claim for damages arising from an existing contractual relationship with the German Public Auditor due to the German Public Auditor's negligent breach of duty, the maximum amount stipulated in paragraph 2 applies to the respective claims of all claimants collectively.

(5) An individual case of damages within the meaning of paragraph 2 also exists in relation to a uniform damage arising from a number of breaches of duty. The individual case of damages encompasses all consequences from a breach of duty regardless of whether the damages occurred in one year or in a number of successive years. In this case, multiple acts or omissions based on the same source of error or on a source of error of an equivalent nature are deemed to be a single breach of duty if the matters in question are legally or economically connected to one another. In this event the claim against the German Public Auditor is limited to € 5 million. The limitation to the fivefold of the minimum amount insured does not apply to compulsory audits required by law.

(6) A claim for damages expires if a suit is not filed within six months subsequent to the written refusal of acceptance of the indemnity and the engaging party has been informed of this consequence. This does not apply to claims for damages resulting from scienter, a culpable injury to life, body or health as well as for damages that constitute a liability for replacement by a producer pursuant to § 1 ProdHaftG. The right to invoke a plea of the statute of limitations remains unaffected.

10. Supplementary provisions for audit engagements

(1) If the engaging party subsequently amends the financial statements or management report audited by a German Public Auditor and accompanied by an auditor's report, he may no longer use this auditor's report.

If the German Public Auditor has not issued an auditor's report, a reference to the audit conducted by the German Public Auditor in the management report or any other public reference is permitted only with the German Public Auditor's written consent and with a wording authorized by him.

(2) If the German Public Auditor revokes the auditor's report, it may no longer be used. If the engaging party has already made use of the auditor's report, then upon the request of the German Public Auditor he must give notification of the revocation.

(3) The engaging party has a right to five official copies of the report. Additional official copies will be charged separately.

11. Supplementary provisions for assistance in tax matters

(1) When advising on an individual tax issue as well as when providing ongoing tax advice, the German Public Auditor is entitled to use as a correct and complete basis the facts provided by the engaging party – especially numerical disclosures; this also applies to bookkeeping engagements. Nevertheless, he is obligated to indicate to the engaging party any errors he has identified.

(2) The tax advisory engagement does not encompass procedures required to observe deadlines, unless the German Public Auditor has explicitly accepted a corresponding engagement. In this case the engaging party must provide the German Public Auditor with all documents required to observe deadlines – in particular tax assessments – on such a timely basis that the German Public Auditor has an appropriate lead time.

(3) Except as agreed otherwise in writing, ongoing tax advice encompasses the following work during the contract period:

a) preparation of annual tax returns for income tax, corporate tax and business tax, as well as wealth tax returns, namely on the basis of the annual financial statements, and on other schedules and evidence documents required for the taxation, to be provided by the engaging party

b) examination of tax assessments in relation to the taxes referred to in (a)

c) negotiations with tax authorities in connection with the returns and assessments mentioned in (a) and (b)

d) support in tax audits and evaluation of the results of tax audits with respect to the taxes referred to in (a)

e) participation in petition or protest and appeal procedures with respect to the taxes mentioned in (a).

In the aforementioned tasks the German Public Auditor takes into account material published legal decisions and administrative interpretations.

(4) If the German Public auditor receives a fixed fee for ongoing tax advice, the work mentioned under paragraph 3 (d) and (e) is to be remunerated separately, except as agreed otherwise in writing.

(5) Insofar the German Public Auditor is also a German Tax Advisor and the German Tax Advice Remuneration Regulation (Steuerberatungsvergütungsverordnung) is to be applied to calculate the remuneration, a greater or lesser remuneration than the legal default remuneration can be agreed in writing (Textform).

(6) Work relating to special individual issues for income tax, corporate tax, business tax, valuation assessments for property units, wealth tax, as well as all issues in relation to sales tax, payroll tax, other taxes and dues requires a separate engagement. This also applies to:

a) work on non-recurring tax matters, e.g. in the field of estate tax, capital transactions tax, and real estate sales tax;

b) support and representation in proceedings before tax and administrative courts and in criminal tax matters;

c) advisory work and work related to expert opinions in connection with changes in legal form and other re-organizations, capital increases and reductions, insolvency related business reorganizations, admission and retirement of owners, sale of a business, liquidations and the like, and

d) support in complying with disclosure and documentation obligations.

(7) To the extent that the preparation of the annual sales tax return is undertaken as additional work, this includes neither the review of any special accounting prerequisites nor the issue as to whether all potential sales tax allowances have been identified. No guarantee is given for the complete compilation of documents to claim the input tax credit.

12. Electronic communication

Communication between the German Public Auditor and the engaging party may be via e-mail. In the event that the engaging party does not wish to communicate via e-mail or sets special security requirements, such as the encryption of e-mails, the engaging party will inform the German Public Auditor in writing (Textform) accordingly.

13. Remuneration

(1) In addition to his claims for fees, the German Public Auditor is entitled to claim reimbursement of his expenses; sales tax will be billed additionally. He may claim appropriate advances on remuneration and reimbursement of expenses and may make the delivery of his services dependent upon the complete satisfaction of his claims. Multiple engaging parties are jointly and severally liable.

(2) If the engaging party is not a consumer, then a set-off against the German Public Auditor's claims for remuneration and reimbursement of expenses is admissible only for undisputed claims or claims determined to be legally binding.

14. Dispute Settlement

The German Public Auditor is not prepared to participate in dispute settlement procedures before a consumer arbitration board (Verbraucherschlichtungsstelle) within the meaning of § 2 of the German Act on Consumer Dispute Settlements (Verbraucherstreitbeilegungsgesetz).

15. Applicable law

The contract, the performance of the services and all claims resulting therefrom are exclusively governed by German law.

2.4. IMU Special Development Fund

Contributions to the IMU Special Development Fund.

2022

London Mathematical Society, UK	4,494.14 EUR

2.5. Third-Party Donations (monetary contributions)

2022

American Mathematical Society, US – Reserve Fund	10,317.29 EUR
Australian Mathematical Society, Australia – Reserve Fund	1,552.50 EUR
CIMPA, France – GRAID	5,540.00 EUR
CNFM, France – Reserve Fund	10,000.00 EUR
German Mathematical Society, Germany – Reserve Fund	9,000.00 EUR
FIMU, US	79,417.29 EUR
FIMU, US – IMU GA/ICM 2022	38,203.30 EUR
Heidelberg Laureate Forum, Germany – ICM 2022	150,000.00 EUR
Mathematical Society of Japan, Japan – CDC	1,155.98 EUR
Mathematical Society of Japan, Japan – ICM 2022	14,041.94 EUR
Niels Henrik Abel Board, Norway	35,542.74 EUR
NTNU, Norway – ICM 2022 Proceedings	4,858.93 EUR
Simons Foundation, US – IDM Support	14,247.72 EUR
Simons Foundation, US – Reserve Fund	28,912.88 EUR

2.6. IMU Bank Accounts

International Mathematical Union, Hausvogteiplatz 11A, D-10117 Berlin, Germany

Deutsche Bank
Otto-Suhr-Allee 6-16, D-10585 Berlin, Germany

BIC (SWIFT) code: DEUTDEDB110

EUR transfer to account No.:	USD transfer to account No.:	CHF transfer to account No.:
IBAN code:	IBAN code:	IBAN code:
DE85100708480511391500	DE85100708480511391500	DE58100708480511391501

3. Commissions and Committees

3.1. International Commission on Mathematical Instruction (ICMI)

https://www.mathunion.org/icmi

ACTIVITY AND FINANCIAL REPORT 2022

A brief description of the 2022 ICMI activities

Administration and Governance

The ICMI **Executive Committee** (term in office 2021-2024) held its meetings online for two hours from 12h30-14h30 on January 12, March 16, March 30 and November 7 UTC), and one in-person meeting in the IMU Secretariat Berlin, Germany June 28–30, 2022. A face-to-face meeting is planned for February 12-14, 2023 in Bangkok, while 2h online meetings are still happening regularly.

A online meeting with the ICMI **Country Representatives** was held online on February 23, 2022.

ICME-14

ICME-14 was held in a hybrid mode (combining online with face-to-face activities) from July 11-18, 2021. In 2022 several participants from developing countries received reimbursement of their online registration fees.

ICME-15

The first meeting of the ICME-15 IPC was held in Sydney May 2-6, 2022.

The ICMI President, ICMI Secretary General and the ICMI administrative Manager met several times online with the Congress Convener Kim Beswick and the head of the Local Organizing Committee Will Morony to discuss the preparations of the congress and to sign the contract.

ICM 2022

ICMI community members participated in Section 19 on Mathematical Education and Popularization of Mathematics (2 base lecture slots + 3 panels).

IMU General Assembly

The ICMI President and the ICMI Secretary General participated in the IMU General Assembly held in Helsinki, Finland July 3-4, 2022. ICMI supported IMU with 10.000 Euro for the organization of the IMU General Assembly.

ICMI Studies

The ICMI Study 24 volume "Mathematics Curriculum Reforms Around the World" is now in its final editorial stage. The title of the volume is: "School Mathematics Curriculum Reforms". The manuscript was read by the language editor in September 2021. During 2022 the volume was finalized and most consent forms where signed and the book was handed to the publisher.

The writing of the ICMI Study 25 volume "Teachers of Mathematics Working and Learning in Collaborative Groups" is in progress and the handing in of the manuscript to Springer is expected to be in the first half of 2023.

ICMI Study 23 Whole Numbers in the Primary Grades is going to be published in Chinese (in 2023).

A new ICMI Study 26 on Geometry has been decided by ICMI EC. The co-chairs and the IPC have been designated and the first IPC meeting will happen in February 2023.

Outreach to Developing Countries

Representatives from all five CANPs will meet with the ICMI EC in February 2023 in Bangkok, Thailand to discuss implications of COVID and the continuation of their activities.

ICMI Awards

A Call for Nominations for the three Awards was distributed globally and the two committees have started working.

Klein Project

It was decided to move the Klein Blog to the IMU Server, implementation is ongoing.

AMOR (Awardees Multimedia Online Resources Project)

Development of the AMOR Project is ongoing. New sections have been added in 2022.

A detailed description of the 2022 ICMI activities

Administration and Governance

ICMI Executive Committee

The EC 2021- 2024 composition is as follows:

Position	Name	Country
President	*Frederick K. S. Leung*	Hong Kong, SAR, China
Secretary-General	Jean-Luc Dorier	Switzerland
Vice Presidents	Merrilyn Goos	Ireland
	Anjum Halai	Pakistan
Members-at-large	**Marta Civil**	**USA**
	Patricio Felmer	**Chile**
	Mercy Kazima	**Malawi**
	Núria Planas	**Spain**
	Susanne Prediger	**Germany**
Ex-officio members	Jill Adler, immediate past ICMI President	South Africa
President of IMU	Hiraku Nakajima Japan (2023-2024)	Japan
	Carlos Kenig, 2021- 2022	USA
Secretary of IMU	Christoph Sorger, France (2023-2024)	France
	Helge Holden, 2021- 2022	Norway
IMU Liaison Person	Paolo Piccione	Brazil

Due to the Covid-19 pandemic, the ICMI Executive Committee had met in 2020 and 2021 only online. In 2022 it was possible for the ICMI EC to meet again for 3 days in person. The meeting was held in Berlin at the IMU Secretariat from 28-30 June, 2022. Most EC members were able to participate. The committee heard reports, discussed issues, made decisions and established item actions (where needed) on the following: ICMI Studies, ICME-14, ICME-15, ICMI Study 26 and a possible ICMI Study 27, the ICMI newsletters, outreach to developing countries and in particular the support of ICME-14 participants from Developing Countries by paying the registration fees for them, the IMU report, the AMOR Project, the Database Project, and ICMI country representatives. The three-day EC meeting in Berlin was followed by a one-day workshop organized by Susanne Prediger and Bettina Rösken-Winter together with the German Centre for Mathematics Teacher Education (DZLM) https://dzlm.de/en/international-visitors.

Additionally, four ICMI EC meetings were held online on January 12, March 16 and 30, and November 7. They were arranged as 2-hour meetings, accommodating the different time zones in the home countries of the members.

ICMI Thematic Affiliate Organizations and Regional Affiliate Organizations

ICMI's organizational outreach includes eleven multi-national regional organizations and international study groups in mathematics education that have obtained affiliation with ICMI. These organizations are independent and self-financed. They collaborate with ICMI on specific activities, such as the [ICMI Studies](#) or CANP. The Affiliate Organizations present activity reports to the [General Assembly of ICMI](#).

The existing two groups of affiliate organizations (societies and international study groups), together with groups emerging from ICMI regional conferences and their respective labels can be confusing since they do not reflect clear distinctions between these, particularly as all the organizations are international (multi-national). Therefore, the EC 2017-2020 agreed in 2020 to rename and reallocate the organizations into two newly named groups: Thematic Affiliate Organizations (such as PME, ICTMA) and Regional Affiliate Organizations (such as EMF, EARCOME).

Awards

The new ICMI Award Committees are led by the following Chairs: Alan H. Schoenfeld (USA) chairs the I**CMI Felix Klein and Hans Freudenthal Awards Committee (2021-2024)** and Helen Forgasz (Australia) chairs the **ICMI Emma Castelnuovo Award Committee (2021-2024)**. Both **committees s**tarted working in 2021. The deadline to submit names was **30 November, 2022.** The awards will be presented during ICME-15 in Sydney. Each awardee is invited to present a lecture.

ICME-14 (2021)

Due to COVID-19, ICME-14, the 14th International Congress on Mathematical Education (ICME-14) originally scheduled for July 2020, was postponed for a year. The congress was held a hybrid mode at East China Normal University in Shanghai from July 11–18, 2021. It was the first time that an ICME was held in China since the first ICME in Lyon, France, in 1969. The hosts of this Congress were the Chinese Mathematical Society, East China Normal University, and the Shanghai Mathematical Society. In 2022 ICMI transferred the remaining reimbursements of the online registration fees to participants from developing countries and kept in contact with LOC regarding the publication of the proceedings.

ICME-15 (2024)

ICMI EC representatives and ICME-15 organizers held the first face-to-face IPC meeting in the first week of May 2022. The first stage agreement was signed in February 2022 and a second agreement was signed in October 2022, in which clauses allowing for required changes due to the pandemic were included.

ICME-16 (2028)

As a tradition and according to the ICMI calendar of pre-established activities, a call to bid for ICME-16 to be held in 2028 was published in the November 2022 issue of the ICMI Newsletter. Two full bids were submitted by the end of 2022.

ICMI Studies

The Study Volume of **ICMI Study 24 on "School Mathematics Curriculum Reforms: Challenges and Changes"** and **ICMI Study 25 on "Mathematics Teachers Working and Learning in Collaborative Groups"** are in the stage of writing towards production. Online publication of both volumes as open access is expected in 2023.

The ICMI EC decided in its November 2021 meeting to **launch ICMI Study 26 on Geometry.** The current working title is "The teaching and learning of Geometry". The aim of the study is to review the current landscape of Geometry education and how it has changed in the past decades, especially since the last ICMI Study (Study 9) on "Perspectives on the Teaching of Geometry for the 21st Century". The envisioned study should encompass different research paradigms (e.g., research on spatial reasoning in psychology and neurosciences). It is envisaged that Geometry curricula and teaching approaches at different school levels (including primary school level which was neglected in Study 9) and their variation in different cultural traditions and contexts around the world will be reviewed. The impact of digital technologies on mathematics learning and teaching (e.g., changing conceptions of proof) should be examined, but contexts in which there are no technology resources at all should not be omitted. Essentially, the study addresses the question of what Geometry is, and the role of Geometry in mathematics education for students in the current and future era.

In 2022 the co-chairs and the IPC of the Study have been selected by the ICMI EC. The co-chairs are Thomas Lowrie (Australia) and Angel Gutiérrez (Spain). The first IPC meeting will be held February 23-25, 2023 in Valencia (Spain).

The **launch of an ICMI Study** covering the topic of Socio-ecological perspectives on mathematics education was also discussed at length in 2022 and the discussion will continue in 2023. ICMI EC decided in 2022 that ICMI will host an online **ICMI Symposium on Mathematics Education and the Socio-Ecological** on March 20, 2023, to act as a gathering point for scholars working in what might be diverse areas, but whose concerns could be broadly grouped together as "socio-ecological".

In recent years ICMI Studies were published as **open access (ICMI Studies 19, 21 and 22)** and it was decided in 2021 to publish all (or as many as possible) past ICMI Studies as open access. The contract and legal issues to publish the NISS Studies (6-18 and 20) were discussed with Springer, and it is planned to finalize the discussion in 2023 and start making the past ICMI Studies available for open access. Since all authors of all ICMI Studies have to sign a consent form, the process is very time consuming.

The **Chinese translation of ICMI Study 23** on "Building the foundation: Whole numbers in Primary Grades" is going to be published in 2023. Due to the lockdown in China, the publication process had been delayed.

Outreach to Developing Countries

Capacity and Networking Project (CANP)

Since the pandemic the five CANP CEP (Continuation and Expansion Projects) have had disruptions to their proposed activities. In order to react to those challenges, the ICMI EC decided to invite 10 CANP leaders to a workshop in Bangkok in 2023. Past obstacles and future plans will be discussed.

The Klein Project

The activities of the Klein Project continued under the leadership of Hans-Georg Weigand (Germany). The Klein blog which was hosted for many years in the USA (by William McCallum) is currently been transferred to a blog server hosted by the IMU Secretariat. Due to some technical issue further maintenance will be necessary in 2023.

Outreach, Dissemination of Information, Archiving and Reporting

ICMI Newsletter

The Editors are Jean-Luc Dorier, Merrilyn Goos and Lena Koch. Since 2022 four newsletters a year (March 1, June 15, September 15 and December 15) are published.

ICMI Website

The ICMI website https://www.mathunion.org/icmi is hosted by the IMU Secretariat and edited by Lena Koch, supported by Vanessa Chung as well as the ICMI Secretary General Jean-Luc Dorier. Occasional "bugs" are being fixed as they emerge during the use of the site. The website receives technical support from the IMU technician Frank Klöppel. In 2022 several pages of the website were updated and ICME is now more prominent on the ICMI website.

ICMI Facebook

The ICMI Facebook page was established in 2011 and has more than 7000 followers. The editors are Jaime Carvalho e Silva (former ICMI Secretary General) and Lena Koch. See https://www.facebook.com/icmi.math.edu/

L'Enseignement Mathématique and the Newsletter of the EMS (European Mathematical Society) (now EMS Magazine)

Regular columns on ICMI News were published in the journal *L'Enseignement Mathématique* (historically connected to ICMI) and the Newsletter of the European Mathematical Society (EMS), which has now become the EMS Magazine. The 2021 editors were ICMI SG Jean-Luc Dorier for *L'Enseignement Mathématique* and Jason Cooper (Israel) for the EMS Newsletter/Magazine.

ICMI Archive

Preservation of ICMI historical documents is ongoing under the joint coordination of former ICMI Secretary General Bernard Hodgson and IMU archivist Birgit Seeliger. Bernard has a regular column in the ICMI Newsletter in which he publishes interesting vignettes related to the ICMI history.

Reports

Each year ICMI submits to the IMU EC an activity and financial report on the preceding calendar year (similar to the present one).

ICMI Digitization Program

ICMI aims at providing open access to all ICMI publications and thematic studies. Currently proceedings of the symposium organized in the year 2000 on the occasion of the centennial of L'Enseignement Mathématique[1], the first five ICMI Studies[2] (and the corresponding Discussion Documents), ICMI Bulletins, proceedings of various meetings and conferences, and other relevant documents are available for perusal and free download on the ICMI Website.

In 2021 ICMI Secretary-General Jean-Luc Dorier started to investigate how all (or as many as possible) past ICME proceedings and past ICMI Studies can be published on the ICMI website. In 2022 he succeeded with the ICME proceedings and all ICME proceedings are now published on the ICMI website.[3]

AMOR (Awardees Multimedia Online Resources Project)

This project, led by Jean-Luc Dorier, aims to compile a series of specially developed lectures of the ICMI awardees of the Felix Klein and Hans Freudenthal Medals. Since 2021 the project is supported by EC member at large **Núria Planas,** and new units and videos were added (e.g., the unit about Celia Hoyles). The website is accessible at: https://www.mathunion.org/icmi/awards/amor

Financial Summary

ICMI receives an annual grant from the International Mathematical Union (IMU). Another key source of financial support for ICMI activities comes from academic institutions all over the world that support their faculty members to attend ICMI meetings and organize ICMI activities (EC meetings, ICME and related costs, ICMI Studies IPC meetings and conferences, ICMI Regional Conferences, CANPs etc.).

ICMI Administrative Manager and ICMI Secretary General prepare the budget annually and submit it to the ICMI EC for comments and approval. The funds are transferred from the IMU Secretariat in Berlin.

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[1] https://www.unige.ch/math/EnsMath/EM-ICMI/welcome.html

[2] https://www.mathunion.org/icmi/digital-library/icmi-studies/icmi-study-volumes

[3] https://www.mathunion.org/icmi/conferences/icme/past-icmes

Due to Covid-19, ICME-14 (2020) had to be postponed and was held 2021 in a hybrid format. Usually, ICME years are the most expensive ones since it includes funding for all the extra costs involved with the congress: travel and accommodation for invited guests, hosting a VIP dinner, etc. In addition, an ICME year includes other travel expenses (e.g., the handover meeting). The unused funds to cover these expenses due to the hybrid format of ICME (only Chinese participants could participate in Shanghai) resulted in an accumulation of the savings rubric on the one hand, but on the other hand it allowed a reallocation of some of these funds to cover other underfunded ICMI activities or new ones for the future (e.g., external reviewer for ICMI Studies, Open Access of past ICMI Studies and more).

The detailed financial report can be found in the Appendix to this report.

Conclusion

The ICMI EC would like to thank IMU and the IMU EC, the IMU Secretariat staff members and its host institution WIAS in Berlin, Germany and all institutions who financially and administratively supported ICMI activities in 2022.

The ICMI EC would also like to highlight the work of all individuals who have been actively involved in ICMI activities. Without their support and involvement, ICMI activities and outreach events would not have been possible.

Frederick Leung, ICMI President

Jean-Luc Dorier, ICMI Secretary-General

Lena Koch, ICMI Administrative Manager

February 2022.

2022 Income and expenditure	Income in €	
INCOME		
CDC CANP Workshop support 2022	8.000,00	
Springer Nature B.V. Royalties 2021	103,45	
Springer Science + Business Media LLC Royalties 2021	136,61	
IMU/ICMI Budget 2022	62.634,00	
Total Income:	**70.874,06**	
EXPENDITURE	**Bank Transfers 2022**	**Accruals already approved grants/ expected invoices from 2022 (to be paid in 2023/2024)**
1. ICMI Administrative Costs		
1.1. EC Meeting 2022	16.304,84	
1.2. ICMI EC Meeting 2023	6.928,05	
1.3. Remaining Cost ICMI EC 2023 meeting (flights, hotel, lunches etc.) to be paid in 2023		10.000,00
1.4. President and Secretary Admin Cost	0,00	
1.5. Travel and other cost ICMI EC Members/ ICMI Officers to ICMI related activities (excluding EC meetings)	145,50	
1.6. Other Administrative Cost e.g. Shipment of ICMI Studies etc./ software	432,00	
Total Expenditure ICMI Administrative Cost:	**23.810,39**	**10.000,00**
2.Research and Publication		
2.1. IMU/ICMI - ICMI Studies Editing Study 24 David Pimm	2.000,00	
2.2. Open Access past ICMI Studies (up to)	0,00	60.000,00
2.3. Open Access ICMI Study 26	0,00	15.000,00
2.4. ICMI Study 26 IPC meeting support 1 participant	1.845,55 €	

2.5. ICMI Symposium Socioecological		1.200,00
Total Expenditure Research and Publication	**3.845,55 €**	**76.200,00**
3. ICME and ICMI General Assembly		
3.1. ICMI General Assembly	0,00	
3.2. Travel cost EC members (IPC meeting, Solidarity Grant Meeting etc.)	5.720,59	
3.3. Awardees and Chairs of Award Committees (travel/accommodation)	0,00	
3.4. Congress Subvention ICME-15 Sydney	10.000,00	
3.5. ICMI - ICME-15/loan to LOC	5.000,00	
3.6. ICME related admin and additional cost (IT etc.)	0,00	
3.7. ICMI Dinner	0,00	
3.8. Awards and Prizes (Medal/Certificate)	284,65	
3.9. Share ICME and GA cost 2021	0,00	25.000,00
3.10. Share ICME and GA cost 2022 (up to 25.000 Euro per ICME year)		15.000,00
Total Expenditure ICME and GA:	**21.005,24**	**35.000,00**
4. Developing Countries		
4.1. CANP Cambodia	0,00	
4.2. CANP Tanzania	0,00	
4.3. CANP Costa Rica	0,00	
4.4. CANP Peru	0,00	
4.5. CANP Mali	0,00	
4.6. Translation CANP MALI for publication	0,00	
4.7. CANP Publications (Springer) and Open Access	0,00	
4.8. CANP Consolidation Grants not yet requested/transferred	0,00	23.000,00
4.9. Flights to BKK CANP workshop 2023 CANP participants	18.588,54	
4.10. Remaining Cost workshop		10.000,00

4.11. Travel Grants / Developing Country Waiver online registration Fee ICME-14	2.439,98	
4.12. Reimbursement of the online registration fees for ICME-14 developing countries participants Chinese LOC (up to)	0,00	35.000,00
Total Expenditure Developing Countries:	**21.028,52 €**	**68.000,00**
5.Outreach		
5.1. Public Relations including flyer and poster	0,00	
5.2. Website, Media, Newsletter	0,00	
5.3. ICMI publications	0,00	
5.4. Archive/ Digitalization of ICMEs	201,35	
5.5. Shipment cost ICMI Studies/ICME Proceedings	241,70	
5.6. Amor	**0,00**	
Total Expenditure Outreach:	**443,05**	
6. Regional Conferences		
6.1. ICMI Grant to EMF 2022/First payment (80%)	4.000,00	
6.2. Remaining grant EMF 2022 (20%)		1.000,00
6.3. ICMI support ADiMA3 2022 Tunisia	5.000,00	
6.4. other regional conference e.g. CIAEM		5.000,00
Total Regional Conference	**9.000,00**	**6.000,00**
7. Further Costs		
7.1. Bank Charges	1.248,16 €	
7.2. Other unforeseen cost		
7.3. ICMI donation to support IMU/GA Helsinki 2022 (10.000 EUR)	10.000,00	
total further cost	**11.248,16**	
Total expenses transferred in 2022 and accruals	**90.380,91**	**195.200,00**

Overview Balances ICMI 2022	
Status of the Bank Account as of 1.1.2022 ICMI bank account from previous year (2021)	246.295,27
Income	70.874,06
Expenses transferred in 2022	90.380,91
Income vs Expenses	-19.506,85
Remaining funds including Accruals (Closing Balance Sheet)/ **Status of ICMI Bank account as of 31.12. 2022**	226.788,42
Accruals already approved grants/expected invoices from previous years	195.200,00
Remaining amount not yet dedicated	31.588,42

The 2022 funds on the ICMI bank account are still greater than expected due to the pandemic. But ICMI will have much higher costs in 2023-2024 as listed above under "accruals".

Further use of the savings will be discussed by the IMU EC in 2023.

3.2. Commission for Developing Countries (CDC)

Report on the Activities of the IMU Commission for Developing Countries (CDC) January 1, 2022 –December 31, 2022

The CDC members in the term 2019-2022 are:

- Dipendra Prasad (India) - CDC President
- Olga Gil Medrano (Spain) - CDC Secretary for Policy
- Alf Onshuus (Colombia) - CDC Secretary for Grant Selection
- Mama Foupouagnigni (Cameroon) - African Member
- Jose Maria P. Balmaceda (Philippines) - Asian Member
- Andrea Solotar (Argentina)- Latin American Member
- Galina Rusu (Moldova) - CDC member appointed by the IMU Executive Committee
- Michel Waldschmidt (France)- CDC member appointed by the IMU Executive Committee
- Anjum Halai (Pakistan)- CDC member appointed by the ICMI Executive Committee
- Carlos Kenig (USA) - IMU President (2019-2022) and Ex-officio CDC member,

Luigi Ambrosio (Italy) is the CDC liaison Executive Committee (EC) member.

The applications to the various CDC grant programs are evaluated and selected by CDC and additional committees including members external to CDC.

The CDC and all CDC related activities are supported by staff members from the IMU Secretariat in Berlin, Germany who manage most of the administration of the CDC in addition to the many volunteers who support CDC activities worldwide. The programs IMU Breakout Graduate Fellowships (BGF) and Graduate Research Assistantships in Developing Countries (GRAID) are mainly administrated outside the IMU Secretariat, but receive support by staff members of the IMU Secretariat.

CDC Programs

During 2022 the Commission for Developing Countries (CDC) has continued to use the funds it receives from the International Mathematical Union (IMU) and various donors to support mathematics research and advanced mathematical teaching in developing countries, guided by the basic principles incorporated into its original charge:

I.   Work with and support local mathematical leadership in developing countries,
II. Leverage resources through partnering and networking with other organizations with goals compatible with the CDC mandate,
III. Set clear norms of quality, transparency and accountability.

Guided by these principles, the CDC allocated its funds in 2022 for the following purposes:

Conferences and Projects

A) Conference Support Program (CSP)

The Conference Support Program gives partial support to conferences organized in developing and economically disadvantaged countries. The maximum amount that is awarded is 4,000 EUR. The Conference Support Plus program was started in 2021 to aid mathematicians around the world in reactivating activities after the pandemic. The CSP+ program will award up to 10,000 EUR, once a year, for a conference particularly important for bringing mathematicians back together and promoting international collaborations.

The funds are for academic use (travel or living expenses) only of invited speakers or participants coming from developing countries. In consideration of the Covid-19 pandemic, applications can include expenses for the acquisition of material or payment of services to conduct activities entirely or partially in online format. The CDC Grant Selection Committee (GSC) selects the grant recipients; it is an eight- member committee, chosen and supervised by the CDC and chaired by the CDC Secretary for Grants Selection. Five of its eight members are not CDC members.

B) Project Support Program (PSP)

Under the Project Support Program, the CDC supports capacity building projects and programs in mathematics and mathematics education, be they international, regional or local initiatives in developing countries. The CDC members evaluate and select the grant recipients.

Lecturing and Mentoring

C) Volunteer Lecturer Program (VLP) and Virtual Volunteer Lecturer Program (VVLP)

The goal of this program is to offer universities in the developing world lecturers for intensive 3-4 week courses in mathematics at the advanced undergraduate or master's level. The maximum amount that is awarded for each visit is EUR 4,400 (USD 5000). Since 2021 a "Complementary Funding" grant was added to the VLP program. This grant includes the possibility of buying and shipping books and/or buying "online kits". The VLP complement funding can fund a) up to EUR 1,000 per course and volunteer and or host institution for the preparation of course material (printing cost, text books, shipment cost) and b) up to EUR 2,000 to cover expenses for the acquisition of material or use of services to conduct lectures entirely or partially in the online format. Possible expenses are technical equipment like a camera, microphones, one-year license for virtual meeting platforms such as zoom, buying a projector and/or monitor. In 2022 a new virtual strand (VVLP) has been launched for lectures conducted entirely on line.

During 2022, the VLP program was partially supported by the Niels Henrik Abel Board (Norway). A six-member CDC sub-committee, chaired by the CDC Secretary for Policy, evaluates the program.

Individual Research Visits

D) Abel Visiting Scholar Program (AVSP)

The Niels Henrik Abel Board gives an annual grant of USD 15,000 to support mathematicians professionally based in developing countries to visit an international research collaborator for a period of one month. The maximum amount that is awarded for each visit is USD 5,000 and the period is extendable for up to three months in the case of matching support from the host institution. The program is designed for postdoctoral mathematicians in the early stages of their professional careers; candidates must be under 35 years of age. It is designed to offer the opportunity for a 'research sabbatical,' a necessary complement to teaching and other academic duties for mathematicians desiring to also sustain a viable research program. The Abel Visiting Scholar Program Selection Committee selects the grant recipients. The committee consists of three members: the chair and one of the members are appointed by the IMU Executive Committee and one member is chosen by CDC.

E) IMU-Simons African Fellowship Program (SAFP)

The program supports research sabbaticals for mathematicians from African developing countries employed in Africa to travel to an internationally known mathematical center of excellence (worldwide) for collaborative research. The program financed by the Simons Foundation, NY (USA) with a total of 250,000 USD was initially expected to last five years (2017-2021) but the completion date has been extended until 2023. All travel and living expenses of the grantees are covered by the fellowship up to USD 5.000. The CDC Grant Selection Committee (GSC) described in A) selects the grant recipients.

F) Individual Travel Support Program (ITSP)

This program supports travel costs for research visits (minimum stay is four weeks) by mathematicians based in a developing country. Host institutions are generally responsible for covering the local living expenses. However, due to the current economic situation, requests for partial coverage of living expenses (such as accommodation and boarding) have also been considered during the evaluation in 2021 and 2022. Priority will be given to applicants that receive support from the host institution. The CDC Grant Selection Committee (GSC) selects the grant recipients.

Graduate Support

G) IMU Breakout Graduate Fellowship Program (BGFP)

In 2016 IMU has launched a new Program funded by the generous donations of all the winners of the Breakthrough Prizes in Mathematics. This fellowship program aims to support postgraduate studies, in a developing country, leading to a PhD degree in the mathematical sciences. The IMU Breakout Graduate Fellowships offer a limited number of grants for excellent students from developing countries. The program was developed with the assistance of the Friends of IMU (FIMU). The Breakout Selection Committee, that consists of five members and that is chaired by the CDC Secretary for Policy, evaluates the applications. The program is administered by the London Mathematical Society (LMS), supported by the IMU Secretariat.

H) Graduate Research Assistantships in Developing Countries (GRAID) Program

The Program was launched in 2017 and provides research assistantships to graduate – PhD and Master – students of emerging research groups working in a developing country listed in Priority 1 or 2 of the IMU CDC Definition of Developing Countries. It provides modest support for emerging research groups, making it possible for them to fund their most talented students as graduate research assistants (PhD or Master Students), thereby fostering the growth of a mathematics community. The GRAID Program is funded by voluntary donations from mathematicians or mathematical institutions worldwide. Applications are evaluated and recipients selected by the GRAID Selection Committee that consists of six members, three of them are not CDC members. The Committee is chaired by a CDC member and its Secretary is proposed by the American Mathematical Society (AMS). The program is administrated by the GRAID Selection Committee, supported by the AMS.

Other activities

Library Assistance Scheme

The IMU-CDC Library Assistance Scheme matches donors of mathematical materials with libraries in universities/research institutions in developing countries where there is a need for mathematical research literature. CDC offers limited financial support for shipment costs for individual scientists or institutions wishing to donate books in the mathematical sciences to libraries in developing countries. The shipments are organized by the donors of the mathematical materials.

CDC Website

The CDC website is hosted by WIAS Berlin and maintained by IMU Staff. All updates, programs and information about all CDC programs can be found on the CDC website: www.mathunion.org/cdc

Definition of Developing Countries

The CDC has been commissioned by the EC to make a proposal for the revision of the definition of Developing Countries to be used by IMU during the next 4-year period. The CDC proposal has been endorsed by the IMU Executive Committee in October 2019. The list consists of all the countries classified by the World Bank (WB) in the categories: *Low income* (<USD 1,025), *Lower middle income* (USD 1,026 – 3,995), and *Upper middle income* (USD 3,996 – 12,375) in accordance with the WB Database by July 2019. These are all countries with Gross National Income (GNI) per capita in USD, not exceeding USD 12,375, with the WB data of 2018.

See https://data.worldbank.org/indicator/NY.GNP.PCAP.CD

As in the previous term, the following subdivision in priority groups has been established:

Priority 1 (WB *Low income*) - GNI per capita in USD below 1,025

Priority 2 (WB *Lower middle income*) - GNI per capita in USD 1,026 – 3,995

Priority 3 (WB *Upper middle income*, A) - GNI per capita in USD 3,996 – 6,785

Priority 4 (WB *Upper middle income*, B) - GNI per capita in USD 6,786 – 9,575

Priority 5 (WB *Upper middle income*, C) - GNI per capita in USD 9,576 –12,375

At any moment, IMU member countries can ask the IMU to consider inclusion/exclusion as a Developing Country. The application should be motivated and, on the basis of the evidences presented by the country, CDC would make a recommendation to EC for a case-by-case decision. If a country's World Bank status as a Developing Country has changed between the data used to decide on developing countries and the time of the request, this information should be included as part of the evidence.

The list of Developing Countries, in alphabetical order can be found in: https://www.mathunion.org/cdc/about-cdc/definition-developing-countries

CDC Activities 2022 in Detail

Conferences and Projects

A) Conference Support Program

During 2022 a total of 29 conferences and research schools taking place in the following countries were selected by the Grant Selection Committee to receive a conference grant award.

Country	Conference	Amount
Senegal	CIMPA Mathematical Signal, Images and Data Analysis and Processing	€ 4.000,00
India	International Conference on Analysis, Inverse Problems and Applications	€ 1.650,00
India	Formal Power Series & Algebraic Combinatorics 2022 (FPSAC 2022)	€ 4.000,00
Lebanon	Graph Theory and Interactions	€ 4.000,00
Tunisia	CIMPA School "Data Science and Stochastic Optimization"	€ 3.500,00
India	CIMPA School on Geometric Structures on Surfaces, Moduli Spaces and Dynamics	€ 4.000,00
Philippines	CIMPA School Mathematical Modeling of Ecosystems	€ 2.000,00
Benin	School on Lie Algebra/Groups and Applications in Dynamical Systems	€ 3.000,00
Malawi	Coding Theory and its Applications	€ 4.000,00
Argentina	ICRA (International Conference on Representations of Algebras)	€ 7.000,00
Iran	Summer School on Group (Representation) Theory	€ 2.000,00
Chad	Mathematical and Statistical Modeling of Complex Systems	€ 3.500,00
Argentina	Geometric Structures and Moduli Spaces (GS&MS)	€ 3.000,00
Gabon	Arithmetic and Interactions with Algebra and Geometry	€ 1.500,00
Brazil	EMALCA Amazonas 2022	€ 3.000,00
South Africa	Waves in the Atmosphere and Oceans	€ 1.500,00

Benin	School of Number Theory and Applications	€ 3.000,00
Nigeria	International Conference on Fractional Calculus and Applications	€ 2.500,00
Pakistan	CIMPA School on Recent Advances in Combinatorics and its Applications	€ 3.500,00
Uganda	Some Topics in Algebra and Geometry	€ 3.000,00
India	Algebraic Geometry	€ 3.000,00
Brazil	Latin American Congress on Industrial and Applied Mathematics (LACIAM)	€ 3.000,00
Argentina	Crossroads of Geometry, Representation Theory and Higher Structures	€ 4.000,00
Vietnam	Summer School on Differential Geometry	€ 3.000,00
Cuba	Mathematical Modelling and Numerical Simulation in Medicine	€ 4.000,00
Mexico	Algebraic and Tropical Methods for Solving Differential Equations	€ 4.000,00
Lebanon	CIMPA Summer School on Complex Analysis and Geometry	€ 4.000,00
Brazil	11th Worshop on Geometric Analysis of PDE's and several Complex Variables	€ 3.000,00
Colombia	Geometric, Algebraic and Topological Methods in Quantum Field Theory	€ 4.000,00
	TOTAL	€ 95.650,00

B) Project Support Program (PSP)
The 17 projects selected in 2022 for a one-year support are:

- Project: Enhancing the skills of scientific researchers in advanced computing and modeling through the use of high-performance software, University of Burundi. Institute for Applied Pedagogy, Department of Mathematics. Euro 5000

- Project: Support of the Undergraduate Program in Mathematics through a one-semester thesis seminar on Algebraic Geometry.   University of El Salvador. Euro 6800

- Project: Mathematics Capacity Building Program, Adama Science and Technology University, Adama, Ethiopia. Euro 5000

- Project: ICTP Visiting Fellowships Program, ICTP, Italy. Euro 7500

- Project: Strengthening Statistical Skills among University students and Researchers in Western Kenya Universities. Euro 5000

- Project: Enhancing Quality and Internationalization of Mathematics Doctoral Supervision (Moi University, Kenya). Euro 6000

- Project: Non-associative Algebras and their Applications 2022, Madagascar/University of Antananarivo. Euro 7000

- Project: Promoting Women's Participation in Mathematics, Mozambique   University Eduardo Mondlane - Department of Mathematics and Informatics. Euro 5000

- Project: Promoting the participation of women in Science, Technology, Engineering and Mathematics (STEM) courses at UniRovuma, Mozambique, Universidade Rovuma. Euro 5000

- Project: Women in SAGE-Nigeria, Nigeria, University of Ibadan. Euro 8000

- Project: From theory to problem solving: Promoting mathematics in academic studies in North Macedonia, North Macedonia, Faculty of Electrical Engineering and Information Technologies. Euro 4400

- Project: Training Mathematicians in Computation in Turkey. Euro 7500

- Project: Fostering Mathematics Teacher's Digital Competencies in   Serbia / University of Novi Sad, Technical faculty „Mihajlo Pupin" Zrenjanin. Euro 4800

- Project: Mathematical Problem-Solving Course for teachers, Nelson Mandela Provincial Teacher Development Institute in Port Elizabeth, South Africa. Euro 5000

- Project: Using mathematical models to aid the screening and activity ranking of chemical compounds against SARS-CoV-2 (COVID-19), South Africa/University of Johannesburg. Euro 3000

- Project: Developing Final Year Pre-Service Teachers' Knowledge and Capacity to Use Online Media and Digital Technologies in the Teaching and Learning of Secondary School Mathematics in Uganda, Makerere University, Kampala, Uganda. EURO 5000

- Project: Graduate Support Program in Computational Fluid Dynamics and Teaching of Calculus Algebra, Kampala International University, Uganda. Euro 5000

Lecturing and Mentoring

C) Volunteer Lecturer Program (VLP and Virtual VLP) 2022

Volunteer Lecturer Courses awarded in 2022:

- University of Dschang, Cameroon

Professor Leonard Kwuida (Switzerland) will teach Formal Concept Analysis to Master and PhD students. Dates: January-February 2023.

- AIMS, Senegal

Professor Joseph Maher (USA) will teach Algebraic Geometry and Applications to Master students. Dates: March-April 2023.

Virtual Volunteer Lecturer Course awarded in 2022:

- Bejaia University. Algeria.

Professor Pierre Guillon (France) will teach Dynamical Systems to Master students.

Dates: February-June 2023.

Travel Programs to support Individual Research Visits

D) Abel Visiting Scholar Program

The funds for the Abel Visiting Scholar Program are not included in the general CDC budget, but kept as a separate budget. In 2022 the Abel Visiting Scholar Grant was awarded to four recipients.

Aytül **Gökçe** (b. 1987) is a research fellow/lecturer at Ordu University, Turkey. She was hosted by Professor Alan Rendall and Dr. Burcu Gürbüz of the Johannes Gutenberg University Mainz, Germany.

Ammar **Babikir** (b.1990) is a Lecturer at Alneelain University Khartoum, Sudan. He was hosted by Professor Iain Moffatt of the Royal Holloway, University of London, UK.

Mudasir **Younis** (b.1990) is a Postdoctoral Research Fellow at the Indian Institute of Technology Kanpur. He was hosted by Professor Russell Luke of the University of Göttingen, Germany.

Aygul **Babadjanova** (b. 1987) is a Senior Researcher at V.I. Romanovskiy Institute of Mathematics of Uzbekistan Academy of Sciences. She was hosted by Professor Thomas Kriecherbauer of the Universität Bayreuth, Germany.

E) IMU-Simons African Fellowship Program (duration 2017-2021, extended to 2023)

The funds for the IMU-Simons African Grants are not included in the general CDC budget, but kept as a separate budget. Fourteen fellowships were granted in 2022

Country	Awardee	Home Institution	Host	Host Institution	Host Country
Nigeria	Jewaidu Rilwan	Bayero University, Kano	Massimiliano Ferrarra	Mediterranean University of Reggio Calabria	Italy
Nigeria	Akindele Onifade	Mountain Top University, Ibafo, Ogun	Calistus N. Ngonghala U	University of Florida	USA
Nigeria	Abimbola Abolarinwa	University of Lagos	Michael Ruzhansky	Ghent Analysis & PDE Centre, Ghent University	Belgium
Cameroon	Celestin Lele	University of Dschang	Lutz Strungmann	University of Applied Sciences, Mannheim, Germany	Germany
Cameroon	Kolaye Gabriel Guilsou	University of Maroua	Aziz-Alaoui, M.A.	Université du Havre	France
Algeria	Rezki Chemlal	University of Béjaia	Alejandro Maas	Center for Mathematical Modeling	Chile
Egypt	Fatma Ebrahim	AL-Azhar University	Sergio Roberto López-Permouth	Ohio University	USA
Cameroon	Djoukwe Tapi Myriam Sonia	University of Douala	Tri Nguyen-Huu	Institut de Recherche pour le Développement (IRD)	France
Nigeria	Julius Ehigie	University of Lagos	Vu Thai Luan	Mississippi State University	USA
Morocco	Hassane Bouzahir	Ibn Zohr University, Agadir	Alessandro N. Vargas	Federal University of Technology - Parana	Brazil
Cameroon	Alexis Nangue	Higher Teachers' Training College of the University of Maroua	Alan D. Rendall	Johannes Gutenberg Universität Mainz	Germany
Cameroon	Plaire Tchinda Mouofo	University of Maroua	Ousmane Seydi	École polytechnique de Thiès	Senegal
Kenya	Adolphus Wagala	Bomet University College	Graciela González Farías	Centro de Investigacion en Matematicas, AC	Mexico
Uganda	Martins Onuorah	Kampala International University	Nandadulal Bairagi	Jadavpur University, Kolkata, India	India

F) Individual Travel Support Program

Seven grants were awarded in 2022:

Country	Awardee	Home Institution	Host	Host Institution	Host Country

India	Mahender Singh	Indian Institute of Science Education and Research (IISER) Mohali	Mohamed Elhamdadi	University of South Florida	USA
Iran	Amir Mafi	University of Kurdistan, Sanandaj	Gunnar Fløystad	University of Bergen	Norway
Uzbekistan	Utkir Rozikov	V.I.Romanovskiy institute of mathematics, Tashkent	Emmanuel Ullmo	The Institut des Hautes Études Scientifiques (IHES)	France
Colombia	Carolina Neira Jimenez	Universidad Nacional de Colombia, Sede Bogotá	Sylvie Paycha	University of Potsdam	Germany
Argentina	Viviana Alejandra Diaz	Universidad Nacional del Sur	David Martin de Diego	Instituto de Ciencias Matematicas (ICMAT)	Spain
Vietnam	Bac Nguyen Trong	Duy Tan University	Hi Q Dinh	Kent State University	USA
Iran	Mina Bigdeli	Institute for Research in Fundamental Sciences (IPM)	Sara Faridi	Dalhousie University and Banff International Research Station	Canada

Graduate Support Programs

G. IMU Breakout Graduate Fellowship Program

The funds for the IMU Breakout Fellowship Program are not included in the general CDC budget but in a FIMU account.

The five students awarded in 2022 are:

- **Ha** Tuan Dung is a Vietnamese PhD student at the Vietnam National University of Sciences.

- Pushpendra **Kumar** is an Indian PhD student at the National Institute of Technology at Puducherry in India.

- Zahra **Reshadat** is an Iranian PhD student at the Institute for Research in Fundamental Sciences (IPM) at Teheran (Iran).

- Victor Amarachi **Uzor** is a Nigerian PhD student at the University of Kwazulu-Natal, Durban in South Africa.

- Kavitha Williams **William Joseph Raj** is an Indian PhD student at Vellore Institute of Technology in India.

Updates from Awardees selected in previous years:

Students Do Thai Duong and María Alejandra Ramírez-Luna (2016 call) have obtained their PhD degree in March and April 2022, respectively. Student Phan Thang Hong (2019 call) has obtained her PhD degree in June 2022.

The awardees selected in previous calls have provided satisfactory reports during the year and their fellowship has been renewed.

Donation

Daniel Spielman (USA) received the 2023 Breakthrough Prize in Mathematics and as previous winners he has donated the amount of USD 100,000 to the IMU Breakout Graduate Fellowship Program.

H. Graduate Research Assistantships in Developing Countries (GRAID)

The GRAID funds are not included in the general CDC budget, but kept in the FIMU account and are transferred by the American Mathematical Society to the grantees.

The GRAID Committee has evaluated in 2022 the Round 6 of GRAID and selected for funding the following projects:

- Group from Madagascar with PI Benjamin Randrianirina and IP Francois Bergeron (Canada) supporting one student Baolahy Josaphat (PhD).

- Group from Ethiopia with PI Abdu Seid and IP Lassi Roininen (Finland) supporting one student Yassin Tesfaw Abebe (PhD).

- Group from India with PI Sumit Debnath and IP Pantelimon Stănică (USA) supporting one student Vikas Srivastava (PhD).

- Group from Cameroon with PI Gideon Ngwa and IP Miranda Teboh-Ewungkem (USA) supporting one additional student Nforba George- Didymus Yuhsinyu (PhD).

- Group from Pakistan with PI Sarfraz Ahmad and IP Volkmar Welker (Germany) supporting one additional student Muneeba Muhammad Mansha (PhD).

Some of the grants from previous years have been renewed.

Other activities

ICMI Capacity & Networking Project (CANP)

In February 2023 ICMI is planning a conference cum workshop for representatives of all the five CANPs. The total amount of 8.000 Euro approved in the 2022 CDC Budget for this purpose has been transferred to ICMI account in October 2022.

Library Assistance Scheme

No books were shipped in 2022.

CDC Panel at ICM2022

The Commission for Developing Countries (CDC) has organized special activities during the ICM since 2014. At the virtual ICM2022, the CDC once again conducted a special activity. This time it was an online panel session on the topic of "Online International Cooperation in Mathematics: Challenges and Opportunities for Developing Countries".

The CDC panel at the virtual ICM2022 was organized by the CDC, coordinated by CDC Secretary for Policy Olga Gil Medrano, together with the organizational and technical support of the IMU Project Assistant Vanessa Chung.

On July 12, 2022 from 2:15PM – 4:15PM (CET), the panel hosted a total of 8 speakers and was chaired by the IMU President. It was streamed live on YouTube via the IMU YouTube Channel

and received a total of 484 views, by the end of the ICM.

The presentations were pre-recorded and merged in a single video as follows: The IMU President opened the session with a welcome message, each panellist had 10 minutes to present the work of their organizations and to address the topic of the panel. The video ended with a closing speech from the IMU President.

Similar to all other ICM lectures, the live streaming for the panel took place via zoom. The panel was moderated by the CDC Secretary for Policy with the virtual presence of all the panellists. All speakers were able to interact with participants via the ICM discord channel. At the end of the video the panel engaged in a live discussion answering questions from the floor (submitted on discord), which were conveyed by the moderator. The session ended with the CDC expressing thanks to the panellist for their contribution as well as the audience for their interest and engagement. The complete activity is available at the IMU YouTube channel.

Speakers List

Chair:

Carlos E. Kenig, IMU President

Panellists and the represented organizations:

☐ Olga Gil Medrano, IMU Commission for Developing Countries (IMU-CDC)

☐ Anjum Halai, International Commission on Mathematical Instruction (ICMI)

☐ Marie Françoise Roy, IMU Committee for Women in Mathematics (IMU-CWM)

☐ Christophe Ritzenhaler, Centre International de Mathématiques Pures et Appliquées (CIMPA)

☐ Claudio Arezzo, International Centre for Theoretical Physics (ICTP)

☐ Mama Foupouagnigni, African Institute for Mathematical Sciences Global Network (AIMS)

☐ Guillermo Cortiñas, University of Buenos Aires, Argentina

☐ Edy Tri Baskoro, Institut Teknologi Bandung (ITB), Indonesia

Administrative Costs

Administrative costs are kept to less than 10% of the CDC operating budget. The administrative costs for CDC consisted primarily of bank transfer costs.

Most of the administrative work is managed by staff members from the IMU Secretariat. The salaries of the IMU Secretariat staff are covered from the grant the Secretariat receives annually from the City of Berlin and the German Ministry of Education and Research. The IMU Secretariat is hosted by the *Weierstrass Institute for Applied Analysis and Stochastics* (WIAS) in Berlin, Germany. The IMU staff members are employed at WIAS. The costs of the website and technical costs are mainly covered by the IMU Secretariat funds.

The IMU Secretariat has also received from the Simons Foundation USD 5,000 in 2022 to cover basic administrative costs of the IMU-Simons African Fellowship program. The GRAID program is administrated by the GRAID Selection Committee, supported by AMS and FIMU. The Breakout Fellowship Program is administered by LMS (London Mathematical Society), supported by IMU Secretariat. LMS has received in 2022 USD 6,150 from FIMU's support to cover administrative costs. The additional administration support needed from March 1, 2022 to July 31, 2022 in view of the CDC Special Activity amounted to 9,928 Euro.

CDC Income 2021

Many of the CDC programs are funded by the generous donations of individual mathematicians and organizations, as it has been described above. Apart from these donations, CDC's principal source of 'core' income is an annual grant from the International Mathematical Union (IMU). IMU in turn receives its financial support from IMU member countries. The Income part of the Financial Statement attached includes besides the IMU year grants to CDC, the support received during 2022 from Niels Henrik Abel Board (excluding Abel Travel Fund) and the donations from the Japanese Mathematical Society. Additionally 5.540,00 Euro from CIMPA (France) were received in the CDC account as donations to GRAID, to be transferred to FIMU.

The overview below excludes the income and payments of the following CDC Programs: IMU Simons African Fellowship Program, GRAID, Abel Visiting Scholar Program and Breakout Graduate Fellowships Program.

The Commission for Developing Countries would like to express its profound thanks to all institutions and individuals supporting CDC and its activities. Furthermore CDC would like to extend its gratitude to all volunteers. We are truly appreciative of those individuals who dedicate their time to support all CDC activities: as members of evaluation committees, as Volunteer Lecturers, as donors of mathematical materials and as organizers of CDC activities and who help current and future generations both at home and within the mathematical community abroad. CDC is looking forward to future collaboration with all its supporters, cooperation partners and volunteers.

More information about CDC and its activities can be found on the website: http://www.mathunion.org/CDC

Olga Gil Medrano,

CDC Secretary for Policy 2016-2022

Annex: Balances CDC 2022

INCOME		Received in 2022	
IMU Budget (general budget)		83.512,00 €	
Abel Grant (excluding Abel Travel Fund)		21.576,54 €	
CIMPA Donation to GRAID		5.540,00 €	
Japanese Mathematical Society Donation		1.150,48 €	
Total Income		**111.779,02 €**	

Expenditure by Category	Details	Payments in 2022	Accruals: funds allocated in previous years to be paid in 2023
Administration	Bank Cost	883,18 €	
	Assistance for special CDC Activity during ICM 2022	9.928,00 €	
CDC Members participating in meetings	Travel expenses for 2023 CDC Meeting	5.056,75 €	
Conference Support		102.733,87 €	
Individual Travel Fellowship	Grants approved 2019-21	18.242,07 €	
Library Assistance Scheme		- €	
ADMP	Final payment lecturer		878,88 €
	ADMP Evaluation		2.559,00 €
Volunteer Lecturer Program		17.205,64 €	
GRAID	Donations to be transferred to FIMU		39.580,00€
CANP (ICMI)		8.000,00 €	
Project Support	Project Support 2022	76.500,00 €	16.280,00 €
CDC Support to IMU GA		10.000,00 €	
Total Expenditure and Accruals		**248.549,51 €**	**59.297,88 €**

Funds on CDC Bank Account as of 1.1. 2022		334.416,05 €	
Funds on CDC Bank Account as of 31.12.2022		197.645,56 €	
Savings/ Funds not dedicated (Funds on the bank account as of 31.12.2022 minus accruals)			**138.347,88 €[4]**

Olga Gil Medrano, CDC Secretary for Policy

Lena Koch, CDC Administrative Manager, IMU Secretariat

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[4] Nota bene (updated as of 5.5.2023) from the savings (138.347,88€) the amount of 61.169,31€ has to be deducted for grants already granted by CDC in 2022. Therefore, the savings (funds not dedicated) are 77.178,57€. It has to be noted as well that it is possible that some grants approved in 2022 will not be fully used and therefore the savings could be slightly higher.

3.3. International Commission on the History of Mathematics (ICHM)

Report of the ICHM to the IMU 2022
June Barrow-Green (Chair)

1. Commission organisation

a. List of officers and members of governing body, and governance procedures

The Executive Committee of the ICHM consists of the following members:

Chair
June Barrow-Green (School of Mathematics & Statistics, Faculty of STEM, Open University, Milton Keynes, UK) June.Barrow-Green@open.ac.uk

Vice-chair
Clemency Montelle (University of Canterbury, New Zealand) clemency.montelle@canterbury.ac.nz

Secretary
Sloan Despeaux (Western Carolina University, USA) despeaux@email.wcu.edu

Treasurer
Martina Schneider (University of Mainz, Germany) mschneider@mathematik.uni-mainz.de

Members-at-Large
Michela Malpangotto (France) michela.malpangotto@obspm.fr
S. Mohammad Mozaffari (Iran/China) mozaffari@ustc.edu.cn
Volker Remmert (Germany) remmert@uni-wuppertal.de
Adrian Rice (USA) arice4@rmc.edu
Clara H. Sánchez (Colombia) chsanchezb@unal.edu.co
GUO Shirong (China) guoshirong1959@163.com, gsr@imnu.edu.cn
Galina Sinkevich (Russia) galina.sinkevich@gmail.com

IMU Representatives:
Isobel Falconer (School of Mathematics and Statistics, University of St Andrews, Scotland) ijf3@st-andrews.ac.uk
Catherine Goldstein (Institut de mathématiques de Jussieu-Paris Rive gauche, Paris, France) catherine.goldstein@imj-prg.fr (resigned 14 May 2022)

Ex-Officio
Craig Fraser (University of Toronto, Canada) craig.fraser@utoronto.ca (immediate past chair)
Antoni Malet (Universitat Pompeu Fabra, Spain) antoni.malet@upf.edu (editor *Historia*

Mathematica)
Nathan Sidoli (Waseda University, Japan) sidoli@waseda.jp (editor *Historia Mathematica*)

In 2022, the Executive Committee of the ICHM had two 'listening' members: Snezana Lawrence (International Study Group on the Relations between the History and Pedagogy of Mathematics (HPM), an affiliate of the ICMI) and Gang Tian (IMU liaison).

In 2022, the Executive Committee of the ICHM had four business e-meetings together with related email discussions.

b. Sub-committees and their functions, with brief details of activities

 None constituted at present.

c. Details of membership of the Commission

There are 44 National Members of the ICHM: Algeria, Austria, Belgium, Belorussia, Brazil, Canada, China, Costa Rica, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Guatemala, Iceland, Iran, Israel, Italy, Japan, Kazakhstan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Saudi Arabia, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Syria, Taiwan, Tunisia, Turkey, United Kingdom, USA.
Individuals are listed at https://www.mathunion.org/ichm/about-us/members

d. URL of Commission website

https://www.mathunion.org/ichm. It is updated whenever necessary, e.g. to include changes in membership, reports of meetings, etc.

2. Activities

a. Activities undertaken or sponsored by the Commission in the last year

Early career scholars
Travel grants totalling 328.55€ were awarded to early career scholars

Workshops and Symposia:
Co-sponsorship of the Special Sessions on the History of Mathematics at the Joint Mathematics Meeting, 6-9 April 2022. Meeting held online due to Covid.

Co-sponsorship of the XVth Austrian Symposium on the History of Mathematics, 12-18 June, 2022, Miesenbach, Austria.

b. Publications arising from the work of the Commission in the last year.

Historia Mathematica is the official journal of the ICHM. It appears four times annually and publishes roughly 525 pages of original research in the history of mathematics from all times and cultures. The journal is currently edited by Nathan Sidoli (Waseda University, Tokyo) and Antoni Malet (Universitat Pompeu Fabra, Spain). It is published by Elsevier Science and is available electronically to subscribers of ScienceDirect.

c. Activities supported in the last year

Early Career Scholar Support.
Due to Covid-19, many early career scholars have been denied the opportunity to participate in face-to-face conferences, and helping with funding their attendance at such conferences is usually the main way in which the ICHM offers them support. In October 2020, the ICHM instituted a grant scheme for early career scholars to fund individual research-related activities with an international dimension. Such activities could include registration fees for online conferences, childcare grants for attendance at online conferences, cost of scans from overseas archives, etc. In 2022 it was agreed to continue this source of funding for early career scholars for the foreseeable future.
https://www.mathunion.org/ichm/grants-sponsorships/ichm-grants

d. Changes to the governance or organisation structure of the Commission

None

3. Future plans

Activities planned for 2023

ICHM Co-Sponsored *AMS-MAA Special Sessions on History of Mathematics* (Boston, January 4-7, 2023). No financial aid was requested.

We have awarded a grant to an early career scholar in Germany to attend a conference in Britain in February 2023.

We will be progressing plans for the support of early career scholars in the Global South.

We are organising a proposal for an ICHM history panel to be submitted to the programme committee of the 2024 European Congress of Mathematics.

Funds will be available to support the Novembertagung 2023 which is due to be held in Belgrade in early summer 2023. We will also make funds available to support Novembertagung satellite meetings for scholars for whom travel is not viable.

[The Novembertagung, which is organised by early career scholars for early career scholars, is held every year in a different country. We consider this to be one of the most important

meetings supported by the ICHM as it enables early career scholars to make contact with one another at an international level as well as having the opportunity to present their work in a supportive environment.]

4. Financial report

Expenditure for 2022

Earl-Career Scholar Grants and Conference
- Travel grant for Laura Turner to participate in an AMS-SMF conference in Grenoble, June 2022. 192€ awarded.
- Registration fee for Jose Antonio Perez Escobar for participation in *Measurement at the Crossroads* Conference, Milan, June-July 2022. 100€ awarded.

International Conference
- XVth Austrian Symposium on the History of Mathematics, 12-18 June, 2022, Miesenbach, Austria, organized by Christa Binder.   1000€ awarded (payment pending, awaiting final receipts).

Conference organizers submit reports on their conferences and these reports are published on the ICHM website here. The financial assistance is offered to the conference organizer in the form of a grant.

Income for 2022

Elsevier Honoraria US$5000.

DHST Grant 1500€.

Note: In awarding the grant for 2022, the DHST commended the ICHM as "a fine example of an inter-union commission."

The financial position of the ICHM is currently good.

CEIC Report 2022
May 15, 2022

What follows is a summary of the Committee on Electronic Information and Communication's principal activities since the last IMU General Assembly, namely best practices documents and the Global Digital Mathematical Library. For minor topics (such as assisting the ICM Structure Committee), see the CEIC yearly reports.

1. Best practices documents

One task with which we started this cycle of CEIC was revising the existing CEIC recommendations. We prioritized this over writing new recommendations, since some of the existing documents were very much out of date. We moved some documents to a historical section, on the grounds that revisions are not needed (for example, Call to All Mathematicians to Make Publications Electronically Available was an important message in 2001, but that battle has been won). The two documents we identified as being most in need of revisions were *Best Current Practices for Journals* (from 2010) and *Copyright Recommendations* (from 2001).

We revised *Best Current Practices for Journals* to bring it up to date and posted it to the CEIC website, while moving all outdated documents to a historical section.

After considerable discussion of alternatives, we decided not to revise *Copyright Recommendations*. The document itself was excellent for its time period, but by now it is more than twenty years out of date. During that time, the publishing landscape changed dramatically. The original document never mentioned the arXiv, Creative Commons licenses, or open access; instead, it focused on print publishing, while acknowledging electronic distribution or publishing as an emerging area. Much of the discussion, while not technically wrong, is of limited importance today.

Because of the evolving landscape, it was not feasible to update *Copyright Recommendations* through modest edits or additions. Instead, an up to date document would have to be written from scratch, and the key question was what would be most useful to convey. Basic information about copyright and its relevance to scholarly publishing is much more easily accessible today than it was twenty years ago. Instead, what's really needed is concrete recommendations for what mathematicians publishing papers, journal editors, and publishers should do.

However, the committee found it difficult to reach consensus on these issues. There are many uncontroversial issues; for example, every mathematician publishing a paper should retain the right to post it to the arXiv. However, this battle seems to have been won already, and we are not aware of any mathematical publishers that object to use of the arXiv. What remains are much more subtle issues, such as:

- What are the minimal professional expectations of mathematicians publishing papers? For example, if someone chooses to publish in a closed-access journal, are they exercising their freedom to disseminate their work as they see fit, or are they harming the mathematical community? What if someone chooses not to make a preprint freely available, because they prefer for attention to go to the definitive, published version of record? Is there anything we can state every mathematician should do? If we don't, are we implicitly saying there is no professional obligation to

do anything at all about access to the mathematical literature? If we do suggest a minimum, are we also indicating it's enough?

- What about editors? To what extent should they take responsibility for ensuring that the publisher's policies and business model serve the research community well? Or is this simply above their pay grade?

- Are certain business models unethical? For example, consider open access publishing based on article processing charges. Is this a perfectly reasonable approach, provided that editorial decisions are independent of the ability to pay and subsidies are available for those who cannot pay? Or is it an intrinsically flawed model? And, if so, is it better or worse than a model in which publishing is free but reading is expensive? What about the risk of predatory publishers that use low standards to collect as many fees as possible? Is this a disaster or merely an unfortunate side effect?

- Do we really understand which models are scalable and sustainable? For example, are diamond open access journals (no fees for anyone to publish or read) based on volunteer labor an altogether superior solution, or is skilled volunteer labor itself too limited a resource? Will article processing charges distort how publishing works? What about "subscribe to open" models? Will they save learned society journals, or eventually collapse?

It's valuable for CEIC to discuss and debate these issues, but for many of them it seems to be too early to reach a conclusion. Recommendations from CEIC are most useful when they reflect a strong consensus among a representative group of those with expertise in this area. That's the case with Best Current Practices for Journals, but there was considerable disagreement about what sorts of copyright recommendations are necessary or desirable. There are a number of overviews and proposals from other groups available on the web, and adding to them did not seem likely to help settle these issues. Instead, they will require further discussion and experience over time.

1.1. Other potential topics for best practices documents

Another topic in a somewhat similar state is citation statistics. We can all agree that many applications of citation statistics to judging research productivity are bad, and some are truly terrible. The IMU has produced a report that highlights and explains some of these issues. One natural follow-up question is whether the IMU can give further guidance and help draw distinctions between better and worse uses of citation statistics, without seeming to endorse practices that, even in their best form, still cause serious concern. For example, can we communicate the message that unnormalized metrics are worse than normalized metrics, without seeming to endorse the use of normalized metrics? CEIC has not yet reached consensus on this topic. Important issues include openness of tools and data, legibility of algorithms, and the fact that behavior can adapt to evaluation methods and thereby ruin the quality of the evaluation.

Open access funding models is also a contentious issue that has not yet reached the point where a specific IMU recommendation is desirable. Funding models include article processing charges and read/publish agreements, as well as more traditional approaches such as subscriptions (or subsidization in other ways). It would not make sense for the CEIC to make specific recommendations for funding models before the community gets more experience with how these approaches play out in practice, since their financial viability and scholarly side effects are not yet fully clear.

2. The Global Digital Mathematical Library

2.1. Introduction and Background

In 2006, the International Mathematical Union (IMU) General Assembly [endorsed](#) [the idea](#) of a Global Digital Mathematics Library (GDML), which would provide seamless access to the mathematical literature and make as much of it as possible freely available. This project is clearly important for mathematics and for society more broadly, but it is an ambitious undertaking, and there has been little progress in creating such a library.

The biggest step so far has been the creation of the [International Mathematical](#) [Knowledge Trust](#) (IMKT) in 2015, which resulted from an initiative of the IMU's GDML working group. Currently, the IMKT has important projects in several areas, such as special functions, formalization of mathematics, and document analysis. However, most of these projects are focused on adjacent issues, rather than short-term progress towards a GDML exposing the subject's literature to wider view. This is because it was possible to encourage community interest in these issues.

In 2014, a committee of the Board on Mathematical Sciences and their Applications issued a report on the GDML, called [Developing a 21st Century](#) [Global Library for Mathematics](#) [Research](#). This 143-page book does an excellent job of laying out the justification for a GDML and its potential benefits, as well as the issues and challenges that must be confronted, and it concludes with a strategic plan. Unfortunately, nobody has been found to take a leadership role in funding and implementing the plan, and there seems to be little momentum in that direction.

From our perspective, part of the reason why this project has stalled could be seen as prioritizing ambitious goals over taking seemingly obvious initial steps. One explanation is that funding agencies continue to be more likely to fund smaller research projects with aspirations over efforts that can be seen as development and deployment of known methods, particularly if the resulting public good is going to have to be maintained over the long run. Many of the people in this area are excited by questions about how to store and present mathematics online, how to integrate it with mathematical software and formal proof systems, how to search for mathematics and return useful results despite differences in terminology or notation, how to assist users in navigating the literature, etc. These are deep and fundamental questions, which will occupy mathematicians, librarians, and data scientists for generations to come. If we try to solve them definitively before creating a GDML, then we shall not see one in our lifetimes.

Instead, we're in favor of a pragmatic approach, starting with whatever would create the greatest short-term benefits while building momentum towards a full GDML. We should avoid controversy, difficulties, and waiting for further research, while focusing on low-hanging fruit.

2.2. GDML$_0$

As explained in more detail in the document *zbMATH as GDML$_0$* (by Patrick D. F. Ion and Mila Runnwerth), CEIC proposes looking at the GDML as a combination of several contributions:

- We need an initial interface and index, which one might call GDML$_0$.

- We need as many papers as possible to be freely available.

- We need to build tools and interfaces on top of GDML$_0$. For example, how should search work? Can it handle formulas and changes of notation or terminology? These sorts of questions are far more subtle and complex, but solutions can evolve over time once the foundation is in place.

2.2.1. zbMath Open

The best currently existing foundation for $GDML_0$ is zbMATH Open, which is the online version of Zentralblatt and is now freely available worldwide. Its transition to an open access database was explicitly motivated by the IMU's GDML vision, as acknowledged on their website:

> "After a concerted effort by zbMATH stakeholders, the Joint Science Conference (Gemeinsame Wissenschaftskonferenz) agreed in the first week of December 2019 that the Federal and State Governments of Germany would support FIZ Karlsruhe to transform zbMATH into an open platform. As a result zbMATH Open has become a freely accessible research tool for the mathematical community worldwide since January 2021.

> This step was inspired by the International Mathematical Union's 2014 vision of a Global Digital Mathematics Library: 'to provide a coherent and sustainable open platform in which all mathematics- relevant information and data can be brought together, comprehensively accessed and used free of charge under a uniform interface'."

Currently, zbMATH Open contains approximately 4.2 million database entries for mathematical papers and books. All of the data compiled or created by zbMATH itself is available under a Creative Commons BY-SA license (an open access license allowing reuse with attribution, provided that the results are also made available under the same terms), while some bibliographic data supplied by publishers is more restrictively licensed.

Among freely available databases,[1] zbMATH Open has by far the best and most accurate coverage of mathematics, and it would be an ideal portal to the GDML. Many mathematicians access the literature through tools such as Google Scholar. These tools are useful, but they suffer from several disadvantages: they produce automated results of mixed quality, and they are under the control of for-profit companies (whose interests may not always align with the mathematical community's interests in the future). Now that zbMATH Open is freely available, we expect that it will become an increasingly important tool for mathematicians, as well as the foundation for the GDML.

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[1]Its primary competitor, MathSciNet, is not freely available.

2.2.2. Open Alex

OpenAlex (named after the Library of Alexandria) is an intriguing database that was founded in 2021 to replace Microsoft Academic Graph (Microsoft's competitor to Google Scholar), which was discontinued at the end of 2021. It remains to be seen how important OpenAlex will be for mathematics, but it is well funded and ambitious, and it has the potential to be of considerable use, particularly for the interface between mathematics and its applications. This is an area that both zbMATH Open and MathSciNet struggle with, since identifying and indexing mathematics across a huge range of journals in adjacent fields is even more challenging than dealing with mathematics journals per se. In the long run, the GDML may end up combining a core database such as zbMATH Open with supplementary data and references from broader indexes such as OpenAlex.

2.2.3. The Sophize Project

The Sophize Foundation, founded by Abhishek Chugh, is another noteworthy attempt to address this issue. Sophize is a software development effort aimed at creating something like a GDML. Specifically, Chugh proposes the following as the goals of the Sophize Project:

> "Develop an open state-of-the-art academic platform with the following capability to:
>
> - Aggregate knowledge from Mathematics resources including encyclopedias, research papers, mathematical reference books, mathematical databases, and formal systems to make it easier to search and explore Mathematical content.
>
> - Formalize the largely unexplored network of information that connects mathematical objects to create rich research experiences. These deep connections will also be used to connect other significant efforts such as FABstracts, DLMF, Lean, MMT, Flexiformal Mathematics etc.
>
> - Allow researchers to easily run Mathematics-related computations online in languages like Python (Sage), Java, R, Mathematica.
>
> - Facilitate knowledge-based group discussions and academic collaborations."

This is an ambitious and well-informed software development effort, which we hope will contribute to a future GDML.

The IMU had $3,689.45 left over from a Sloan Foundation grant aimed at GDML-related activities. We gave this money to the Sophize Foundation to fund the creation of a prototype Online Structured Content Extraction Tool, which is now available as the Structured Data Extractor. Both the code and a project report are available online. While this tool is only a small part of a full GDML, it's a valuable step forwards.

2.2.4. Other digital libraries

There are also a number of other digital libraries with nontrivial coverage of mathematics, including:

1. EuDML, https://eudml.org/
2. Réseau National des Bibliothèques de Mathématiques, https://www.rnbm. org/
3. HathiTrust, https://www.hathitrust.org/
4. Göttinger Digitalisierungszentrum, https://gdz.sub.uni-goettingen. de/
5. ISTEX, https://www.istex.fr/
6. SciELO, http://www.scielo.br/
7. Digital Mathematics Registry, https://mathscinet.ams.org/dmr/
8. Dissemin, https://dissem.in/
9. Sci-Hub (which of course has legal issues with its approach)

While most of these are not intended to be as broad in scope as the GDML, they represent important experience dealing with the same issues.

2.3. Access to back issues

The most challenging aspect of the GDML is ensuring access to mathematics papers. One key step would be access to back issues via a moving wall, in which all papers published in mathematics journals are eventually made freely and publicly available under a suitable license.

This license should enable not just access from the publisher's website, but ideally also third-party hosting and distribution, for example as part of the GDML.

The American Mathematical Society (AMS) and Elsevier both make papers from their mathematics journals available for free after at most five years,[2] although neither one currently uses a license as permissive as we'd like. The fact that free access to back issues is compatible with the business models of both the AMS and Elsevier is a very encouraging sign: anything these two very different publishers can agree on should be broadly acceptable within the mathematics publishing industry. A five-year window seems like an uncontroversial choice, which would not overly constrain publishing or funding models.

We hope this idea achieves critical mass and spreads universally among mathematics publishers. At CEIC's recommendation, the IMU Executive Committee has established a Committee on Permissions to study this idea, discuss it with publishers, and offer concrete recommendations. We hope this will be an important step forward.

Of course we don't see this proposal as an ideal long-term solution. We hope the research community eventually ends up with immediate open access to all research papers, and we believe the world is generally headed in that direction. However, it's a difficult issue. For example, immediate open access is not compatible with a subscription model for journal funding, and it's not clear how to replace subscriptions with a funding model that would be well suited for mathematics. It isn't clear what consequences different funding models will have for scientific publishing. Instead of trying to resolve this issue, we should focus at once on the much less controversial topic of back issues.

Another tricky topic is books, for two reasons: the way books are sold is even less compatible with open access than journals (publishers are more reliant on a long tail for sales of popular books), and authors generally receive royalties. This does not amount to much money for the vast majority of authors of mathematics books, but it does for a few, and even those not making much in royalties might be legitimately unhappy to lose this income. In the long run, the GDML will have to deal somehow with the issue of books. However, that is best postponed until easier and more important issues have been settled, and it can be approached separately; there are possibilities for digital forms of older books to be included in the GDML0 presently envisaged.

Another issue is where to draw the lines between mathematics journals and those in computer science, physics, statistics, data science, or other fields. There is no principled answer to this question, and the best we can do right now is to work with publishers to draw the lines somewhere. Ultimately, all of academia needs to address this problem, but mathematicians are in an excellent position to take the first steps.

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[2]Four years in the case of Elsevier.

2.4.   Benefits of focusing on mathematics

Mathematics is an ideal test case for opening up back issues, for two reasons. One is that mathematics papers remain relevant to current research for an exceptionally long time, far longer than in most other disciplines, so mathematicians care more about back issues than just about anyone else. The other is that mathematicians are particularly knowledgeable and enthusiastic about open access. We're in the same league as physicists, and far ahead of most of the sciences and humanities. This makes it quite a bit easier to convince the community to work for the sort of changes we're discussing.

The flip side of this is that publishers won't be giving up anything of great value in their overall scheme of things. We believe that's why Elsevier has been willing to open its archives:

mathematicians consider this access valuable, but it's not worth a lot of money in other fields, so there's no risk of financial disaster if the idea spreads beyond mathematics.

3. What remains

Thanks to initiatives such as Plan S, many mathematicians have been thinking about open access and the future of publishing. A window-based compromise that could enable the GDML without causing unnecessary disruption. From this perspective, there are three aspects that will engage the Permissions Committee, CEIC, and the broader community:

1. Reaching consensus that mathematics papers should not be locked behind paywalls for the entire term of copyright (typically the life of the author plus 50–70 years), but should instead be available to all readers within some reasonable span of time. This is an ethical issue on which we anticipate strong support from mathematicians and little opposition from publishers.

2. Agreeing on what a reasonable span of time might be. Individual opinions might range from zero (for open access advocates) to decades, but based on the examples of the AMS and Elsevier, we hope four to five years could be a widely accepted compromise. Of course it would only establish a baseline, and some papers could be available much earlier.

3. Discussing legal technicalities involving licenses specifying what users can or cannot do with the papers. Standard options include Creative Commons licenses, with a proliferation of nonstandard licenses as well (e.g., Elsevier's). Users often don't think about licenses or terms of service (such as zbMATH's), but services such as the GDML must comply with them. One advantage of standardization and predictability is that they make it easier and less risky for users to neglect these issues. (Nobody becomes a mathematician because they want to think about copyright licenses, and we aim for a world in which mathematicians do not have to think about this issue individually if they don't want to.)

One might ask whether this issue matters, given that many papers are freely available on the arXiv and many more are illegally available via Sci-Hub. One issue is that the Global Digital Mathematical Library cannot primarily rely on sites that are illegal and move periodically to avoid disruption, or sites that are incomplete and contains copies that may be out of date. More generally, mathematics papers are not fungible: access to 70–80% of the papers you need, or even 95–99%, does you little good if you can't get your hands on a key reference. From that perspective, every increase in accessibility is a victory, even if many papers are already available. In addition, it's a matter of equity: all mathematicians should be treated as first class citizens in the mathematical community, rather than relegated to partial or illegal access. A compromise based on time since publication would not fully solve the equity issue, but it would be a significant step forward.

3.5. Committee for Women in Mathematics (CWM)

Report of the International Mathematical Union
Committee for Women in Mathematics in 2022

Committee Members

The composition of CWM 2019-2022 was as follows

- Marie-Françoise Roy (MFR), Université de Rennes 1, France, Chair
- Carolina Araujo (CA), IMPA, Rio de Janeiro, Brazil, Vice Chair
- Alejandro Adem (AA), University of British Columbia, Canada
- Petra Bonfert-Taylor, (PBT) Dartmouth College, USA
- Tony Ezome (TE), USTM, Franceville, Gabon
- Josephine Kagunda Wairimu (JK), University of Nairobi, Kenya
- Neela Nataraj (NN), IIT Bombay, India (grant management)
- Mokoto Kotani (MK), Tohoku University, Japan
- Ekin Ozman (EO), Bogazici University, Turkey (CWM Newsletter management)
- Cheryl Praeger (CP), University of Western Australia, Australia (reports management)

The liaison person between CWM and IMU EC was IMU president Carlos Kenig (CK), University of Chicago, USA

  CWM had moreover three special contacts:
- Betul Tanbay (BT), Bogazici University, Turkey (link to International Day of Mathematics (IDM)).
- Julia Pevtsova (JP), University of Washington (link with ICM 2022 local organizing committee)
- Sandra Kingan (SK), Brooklyn College (CWM twitter account)

(WM)² World Meeting for Women in Mathematics in 2022

The second (WM)² (https://2022.worldwomeninmaths.org/) was originally planned to take place in St Petersburg on July 5, 2022, the day between the IMU General Assembly and the opening of the ICM. The (WM)² 2022 was approved as an official satellite conference by the ICM Local Organizing Committee. It was granted significant funding (lodging, food, local expenses), together with meeting rooms (at the Expoforum where ICM was planned), and technical and logistical assistance. Funding was also available for the exhibition space, printing, and setting up of the exhibition *"МАТЕМАТИКА, through a land of mathematics",* which was to remain open during the ICM 2022. Chebyshev and Kovalevskaya awardees were informed that, after approved by the (WM)² organisation, they would receive an extra night of accommodation to attend (WM)².

Following IMU's decisions about the ICM 2022, the second (WM)² became a mostly virtual event taking place on July 1-2 2022, with a special joint session with the Probability and Mathematical Physics ICM satellite event, on July 2nd 2022 in Helsinki. The date changed to

accommodate the Ceremony for the IMU Prizes (Fields Medal, Abacus Medal, Carl Friedrich Gauss Prize, Chern Medal Award and Leelavati Prize) on July 5 2022.

The Scientific Committee of (WM)² 2022 is composed of:
- Igor Krichiver (Columbia University, USA and Skoltech Center for Advanced Studies, Russia)
- Ari Laptev (Imperial College London, UK)
- Ragni Piene (University of Oslo, Norway)
- Cheryl Praeger - chair (University of Western Australia, Australia)
- Senjo Shimizu (Kyoto University, Japan)

The Organizing Committee of the (WM)² 2022 was initially composed of:
- Carolina Araujo (IMPA, Brazil, vice-chair of CWM)
- Alisa Knizel (Columbia University, USA)
- Neela Nataraj (IIT Bombay, India, member of CWM)
- Marie Françoise Ouedraogo (University of Ouagadougou, Burkina Faso)
- Ekin Ozman (Bogazici University, Turkey, member of CWM)
- Olga Paris-Romaskevich (Lyon, France, CNRS)
- Julia Pevtsova - contact person (University of Washington, USA)
- Marie-Françoise Roy (Université de Rennes, France, chair of CWM)
- Natalya Smorodina (St. Petersburg Department of Steklov Mathematical Institute and St. Petersburg State University, Russia)
- Tatiana Suslina (St. Petersburg State University, Russia)
- Andrea Vera-Gajardo (Universidad de Valparaíso, Chile)
- Dongmei Xiao (Shanghai Jiao Tong University, China)
-

Natalya Smorodina and Tatiana Suslina resigned on March 17 2022. Kaie Kubjas and Kirsi Peltonen (Altoo University, Finland) joined the (WM)² OC.

A bilingual English-Russian website had been created for (WM)² 2022. When the event became virtual, the Russian version of the 2022 website was removed.

The first session of (WM)² 2022 was entirely virtual and took place on July 1st 2022. The program features four plenary online lectures by distinguished female mathematicians from the region where (WM)² 2022 was originally planned to take place: Mina Aganagic, Eugenia Malinnikova, Natalia Vladimirovna Maslova, and Maryna Sergiivna Viazovska. It also includes a panel discussion entitled *"Girls and Mathematics: reflections and initiatives",* devoted to the memory of Yulia Zdanovska. The panel was moderated by Ekin Ozman and Olga Paris-Romaskevich. It started by six short presentations by Luba Konova Sofia University, Bulgaria, Geetha Venkataraman Dr. B. R. Ambedkar University Delhi ,India, Fadipe-Joseph Olubunmi Abidemi University of Ilorin, Nigeria, Kenneth Fan Girls' Angle, USA, Makiko Sasada The University of Tokyo, Japan, Laura Gomez Universidad Sergio Arboleda, Colombia and continued with a lively discussion.

To celebrate the 100th birthday of Olga Alexandrovna Ladyzhenskaya, a joint session has been organised by (WM)² and the Probability and Mathematical Physics ICM satellite event on July 2nd 2022 in Helsinki: the *"OAL Celebration"*. The program included a premiere of a film about Olga Alexandrovna Ladyzhenskayaby Ekaterina Eremenki and the awarding the OAL Prize, with the presentation of the prize by Ingrid Daubechies, the announcement of the Prize Winner Svetlana Jitomirskaya, Laudatio by Artur Avila and Lecture of the prize winner.

The remaining activities originally planned for (WM)² 2022, namely the exhibition *"МАТЕМАТИКА, through a land of mathematics",* the poster session and the group discussions, have been canceled.

More than 1100 people from more than 100 countries registered to v(WM)².

The scheme of CWM Ambassadors

CWM has established a list of special correspondents worldwide, called CWM Ambassadors, with the job of disseminating information received from CWM, as well as keeping CWM informed about activities and initiatives in their countries. The original list included 85 names from 55 countries in 2016. There are now 175 CWM ambassadors from 101 countries. The list is posted on the CWM website.

Virtual meetings of CWM Ambassadors by continent had been organised in 2021. In Europe, it was organised jointly with EWM (European Women in Mathematics); in Africa, jointly with AWMA (African Women in Mathematics Association); in Asia, in combination with the creation of the Asian and Oceanian Women in Mathematics platform; in Latin American, jointly with CGD-UMALCA (Commission for Gender and Diversity); and the Pan-American meeting had participation from AWM (Association for Women in Mathematics) and GCD-UMALCA. A global gathering of CWM Ambassadors took place on February 11, 2022.

For the current list of CWM Ambassadors, see Annex A.

CWM call

Activities supported by CWM in 2022

The CWM 2022 call received 31 applications, of which 10 were selected to receive financial support. The list includes the creation of the website of the AOWM (Asian and Oceanian Women in Mathematics) platform, and the update of the website of AWMA (African Women in Mathematics Association), as well as 3 regional meetings: the third Central Asian Women in Mathematics in Tajikistan, the second Women in Sage in Africa workshop in Nigeria, and the Latin American and Caribbean Workshop on Mathematics and Gender at BIRS Oaxaca, in Mexico. The 5 other supported proposals are national events to create networks in Gabon, Ghana, and Oman, the Indian Women in Mathematics activities, and the II Brazilian Meeting for Women in Mathematics.

More information can be found here:

https://www.mathunion.org/cwm/events/cwm-sponsored-events/2022

CWM call in 2023

The CWM 2023 call invited applications aimed at either:
a) Establishing or supporting networks for women in mathematics, preferably at the continental or regional level, and with priority given to networks in developing or emerging countries.
b) Organizing research workshops geared towards establishing research networks for women by fostering research collaborations during the event.

c) Other ideas for researching and/or addressing issues encountered by women in mathematics.

The CWM call was opened till December 23 2022 and received 48 applications. The list of funded activities will be decided in 2023 by the new CWM 2023-2026.

Interdisciplinary activities

Continuation of the Gender Gap in Science Project

All union and organization representatives in the GGSP wished the project results and its associated tools to remain available well beyond the end of the 2017-2019 period during which it received funding from ISC. From 2020 to 2022, data suppression techniques were employed, allowing access to the data collected through the Global Survey of Scientists to participating unions and partners of the project, as well as other research groups (upon approval by an ad-hoc mechanism), while protecting the privacy of the respondents to the survey. In 2021, an internship project on the gender gap in math/applied math and the gender gap in science in Africa took place, funded by IMU and ICIAM. The preparation of the publication of the results is in progress.. Similar studies have been launched for chemistry, physics, astronomy, and in the Latin America geographical zone. There have also been efforts to improve the long-term availability and maintenance of the tools of the project for the analysis of Publication Patterns and the Database of Good Practices. The Database of Good practices is currently hosted by IMU, and its final presentation is being finalized (https://www.mathunion.org/cwm/gender-gap-in-science-database).

Dissemination and implementation of the recommendations of the GGSP, inside IMU.
The recommendations in the report were kept short and direct on purpose. They have been distributed to the Adhering Organizations of IMU for their information.
The following questions remain: Is there a mechanism for the recommendations concerning international unions to be discussed inside IMU and (hopefully) transformed into official recommendations of IMU? And, more generally, what can be done by IMU to help implement also the first two parts of the recommendations (for parents and educators, and for scientific organizations)?

Standing Committee for Gender Equality in Science (SCGES)
The SCGES was created in 2020 with 9 founding members, including IMU, who approved a MoU. The IMU representatives in SCGES are MFR and CA. At the end of 2022, SCGES had 20 member organizations.

Starting in 2022, SCGES has coordinated the SCGES Webinar Series. This event is promoted by its member organizations with the aim of creating exchanges and interactions related to issues around Gender Equality in Science among various scientific communities. The first session took place on February 16 2022, organized jointly by IMU and ICIAM on the topic of Gender Equality in Mathematics. Six SCGES Webinars have been organized in 2022.

SCGES website: https://gender-equality-in-science.org/

SCGES Webinar Series: https://gender-equality-in-science.org/scges-webinar-series/

The two first annual reports of SCGES are available here
https://gender-equality-in-science.org/2021/09/25/first-scges-annual-report/
https://gender-equality-in-science.org/2022/10/

Remember Maryam Mirzakhani

As a tribute to Maryam Mirzakhani, CWM created the *Remember Maryam Mirzakhani Memorial Exhibition* with 18 original A0 posters portraying Maryam Mirzakhani. The exhibition was created by Thaís Jordão (curator) and Rafael Meireles Barroso (designer). It was inaugurated at the (WM)² 2018 in Rio de Janeiro and remained open during the ICM 2018.
Rules for further displays of the exhibition have been agreed (see https://www.mathunion.org/fileadmin/CWM/Initiatives/HostingRememberMaryamMirzakhani.pdf)
A poster and flyer describing the exhibition are available in English and other languages (French, Persian and Turkish).

In 2022, CWM approved the Maryam's Museum request to host Remember Maryam Mirzakhani Exhibition permanently. Maryam Mirzakhani's family and the Foundation of Maryam Mirzakhani - a charity organization supporting talented girls continuing their study - have prepared a place in Taleghan, Maryam's mother's hometown, for a museum named *Maryam's Museum,* intended to show some of Maryam's belongings. It also made agreements to show the exhibition

- live at "V Simpósio Nacional da Formação do Professor de Matemática - ANPMat" at the Federal University of Santa Maria (UFSM), Brazil from 4 November to 6 November, and at campus Canoas of the Federal Institut of Rio Grande do Sul (IFRS) for the event XI Feira das Cidades e V Festival Literário do IFRS Canoas from 21 November to 25 November.
- on line at the Mathematics University of the University of Rosaro, Argentina's virtual event on May 12, with the exhibition, the screening of the film Secrets of the Surface and a roundtable,
- the "Tutam Tutam Mathematics" festival May 14-15, aimed at increasing interest in mathematics and bring mathematics lovers together at Galatasaray University. More than two thousand high school and university students attended the festival.

May 12, Celebrating Women in Mathematics in 2021

The idea of celebrating women in mathematics on Maryam Mirzakhani's birthday, May 12, was proposed by the Women's Committee of the Iranian Mathematical Society at the World Meeting for Women in Mathematics (WM)² in 2018, and approved by the participants. The "May 12 Initiative", rose to a global and inclusive call to action, uniting several national and continental women-in-mathematics organizations worldwide (European Women in Mathematics, Association for Women in Mathematics, African Women in Mathematics Association, CGD-UMALCA, Women's Committee of the Iranian Mathematics Society, Indian Women in Mathematics).

The fourth May 12 campaign in 2022, recommended the free screening of the award-winning film "Women in science in Africa, A SILENT REVOLUTION" available (in English or in French) online here: womeninscienceinafrica.com/film. There were more than 150 events registered on the May 12 website in 2022 (see https://may12.womeninmaths.org/2022-list for the complete list).

MFR was an active member in the coordination group for the May 12 initiative serving as individual rather than as CWM representative.

CWM tools

CWM Newsletter

The CWM Newsletter is sent electronically to CWM ambassadors who distribute it through their mailing lists, posted on the CWM website and advertised in IMU-Net. Moreover, it is sent to various mathematical centers (MSRI, MFO, CIRM, etc.) which are encouraged to make it available. A new page on the CWM website makes it possible to subscribe to the CWM Newsletter and the publication process of the CWM Newsletter has been fully integrated into the IMU website.

The CWM Newsletter is issued every six months and started in May 2019.

- Seventh issue on May 2022: Article about the program of (WM)²; interview with EO; article about Olga Alexandrovna Ladyzhenskaya by Panagionta Daskalopoulos.
- Eight issue on December 2022: Article by MFR on interdisciplinary activities for reducing the gender gap in science; presentation of CWM members for 2023-2026; article "*Towards mathematical outreach in phase with society*" by Olga Romaskevich.

CWM website and publicity

The CWM website http://www.mathunion.org/cwm/ is updated on a regular basis, with input from CWM members and ambassadors. In particular, information about relevant organizations and events are posted. It is worth noting the increasing number of countries which now have some form of organization for women in mathematics, see www.mathunion.org/organizations/by-country/. CWM is the only organization gathering such information internationally.

Given the workload required by the CWM website, and the little time that MFR and other CWM members had available for this, Birgit Seidel, the IMU archivist, has worked for CWM website for approximately six hours a week starting in January 2021. CWM is very grateful for Birgit's assistance and it has led to great improvement for the CWM website and for CWM in general.

MFR and Caroline Series contributed with an article about CWM in the Fifty Years of Women in Mathematics book.

Roy, MF., Series, C. (2022). International Initiatives for Women Mathematicians. In: Beery, J.L., Greenwald, S.J., Kessel, C. (eds) Fifty Years of Women in Mathematics. Association for Women in Mathematics Series, vol 28. Springer, Cham. https://doi.org/10.1007/978-3-030-82658-1_92

CWM meeting

A virtual meeting of CWM took place on January 11-12 2022, in order to make a collective decision about the activities to be funded in the 2022 call.

Finally a meeting between CWM 2019-2022 and CWM 2023-2026 took place on December 20 222 in order to ensure a smooth transition between the two committees.

CWM operation mode and Liaison with EC

Most of CWM's work has been done by email. Skype and phone calls have also been used. The liaison with the IMU Executive Committee through CK has been regular and very positive. We would like to thank the members of the IMU office staff who have consistently been very helpful.

CWM in IMU activities

ICM panels

During the virtual ICM 2022, the panel *"Best Practices Towards a More Diverse and Inclusive Mathematical Community"* was jointly organised by IMU's CoD (Committee of Diversity) and CWM:

https://www.mathunion.org/cwm/cwm-initiatives/best-practices-towards-more-diverse-and-inclusive-mathematical-community.
The panel was chaired MK (CWM) and Edray Herber Goins (CoD), with panelists CA (Brazil), Edy Tri Baskoro (Indonesia), Nira Chamberlain (UK), Anjum Halai (Pakistan), EO (Turkey) and MFR (France).

Moreover MFR was invited to participate in the CDC ICM panel in 2022 "Online International Cooperation in Mathematics: Challenges and Opportunities for Developing Countries".

International Day of Mathematics (IDM)

CWM has been active in promoting the project of IDM even before its approval. This is reflected in the list of international and regional organisations supporting IDM, which includes the Organisation for Women in Science for the Developing World (OWSD), the African Women in Mathematics Association (AWMA), and the European Women in Mathematics (EWM). BT has been nominated by CWM and is a member of the IDM Governing Board (IDMGB).

It is worth noting that there is a very good visibility of girls and women within IDM activities. In particular, the choice of the special guest speakers for the online annual celebration, featuring sessions in English, Spanish, Arabic, Portuguese and French is very well gender balanced.

IMU News

CWM has a section in each issue of the IMU News.

CWM Expenditure 2022

Remains from 20201	**4 599,37 €**	
Budget 2022 from IMU	**20 878,00 €**	
Poster Maryam Mirzakhani in Farsi		106,55 €
CWM call 2022 Oman		1 036,55 €

CWM call 2022 Mexico	1 036,55 €
CWM call 2022 Tajikistan	3 036,55 €
CWM call 2022 Gabon	1 036,55 €
CWM call 2022 Ghana	1 036,55 €
CWM call 2022 Brazil	1 036,55 €
CWM call 2022 India	1 036,55 €
CWM call 2022 Nigeria	3 036,55 €
v(WM)² expenses for website	5 205,00 €
v(WM)² Helsinki expenses for M-F Roy and C Araujo	1 674,93 €
v(WM)² technical support	186,55 €
OAL celebration expenses for E Eremenko	390,34 €
OAL celebration diploma	511,55 €
OAL celebration photos	500,00 €
OAL celebration booklet	493,51 €
CWM call 2023 India (advance payment)	1 036,55 €
Total expenses 2022	**22 397,38 €**
Remains at the end of 2022	3 079,99 €

Annexes

A List of CWM ambassadors
B CWM Call 2023

Report by Marie-Françoise Roy and Carolina Araujo, Chair and Vice Chair of CWM

4. Circular Letters of the IMU Secretary General to the Adhering Organizations

IMU AO Circular Letter 1/2022

International Mathematical Union
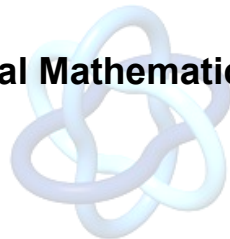
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Updated Contact Information

Dear colleagues,

I will shortly send out individual emails to all IMU members regarding your country's contact information for the IMU.

The most recent contact information regarding the IMU members can be found here.
We will send you the email addresses that we use when we contact your country.
Please take time to check if you want us to update them.

Please reply to me with Cc to manager@mathunion.org
– Confirming that the information above is correct, or
– Sending corrected/updated information.

Advice re email addresses

In order to establish and maintain reliable and sustainable connections with the IMU, the following steps are recommended:

• Create generic addresses like "president@mathsociety.country", which will remain unchanged. Emails to a generic address can be forwarded to the person(s) holding the office.

• Emails sent from the IMU should be received by at least two different recipients. I frequently receive automatic replies saying "I am away from my email", often covering long time periods of absence.

• Give us at least two different email addresses, preferably using different mail servers. If we have only one email address for a country, and that address ceases to work, we will

be unable to discover that you did not receive our email, and, thus, we will lose contact with your country.

• Please try to maintain the email addresses you give us and send us updates if necessary. We reserve the right to remove addresses that constantly bounce.

• Please create a stable URL for your Adhering Organization.

Fraud alerts

The IMU is regularly exposed to attempted frauds, usually in the form of emails requesting immediate transfer of money due to some emergency. The emails appear to be sent in the name of the IMU President or other IMU representatives. The perpetrators reveal some knowledge of the IMU and their emails can appear somewhat authentic, but closer scrutiny of the email reveals that the IMU is not the sender. I would like to take this opportunity to reiterate that the IMU never requests money on an individual basis. Please do not respond to these emails and beware of sending money. Please report all such communications to me.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 2/2022

International Mathematical Union
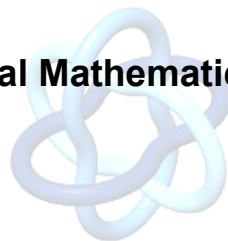
January 7, 2022
IMU AO Circular Letter 2/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Information about the IMU General Assembly

Dear colleagues,

The next General Assembly (GA) meeting of the IMU is scheduled to take place in St Petersburg, Russia, on 3–4 July 2022. The role of the GA is described in the IMU Statutes, in particular, in Articles 18–24, and 41.

Under normal circumstances, we would already have sent out information about accommodation and travel arrangements, but due to the current Covid-19 pandemic, conditions are unpredictable.

Whatever the circumstances, we will be able to organize the GA on the scheduled dates. However, as of now, it is impossible for us to say if the meeting of the GA will be an in-person traditional GA, a hybrid meeting, or a fully virtual event.

If the meeting will take place in person, the IMU EC has decided to offer travel and accommodation support along the same lines as we did for the 2018 GA. Details will be forthcoming in due course.

It is very important to the IMU that as many of our members as possible participate with full delegations at this meeting, as the GA is the highest body of the IMU, and all important decisions are taken there.

In any case, we need to follow the IMU Statutes that make the following specifications:

If an Adhering Organization wants to propose changes in the Statutes (Article 35), or wants to propose business to be transacted at the GA (Article 38), such a proposal must be received by me at least 4 months prior to the GA.

Thus proposals for changes in the Statutes or items to be discussed at the GA, must be received by me by
      2 March 2022
at secretary@mathunion.org.

Regards

Helge Holden

Secretary General of the International Mathematical Union

IMU AO Circular Letter 3/2022

International Mathematical Union

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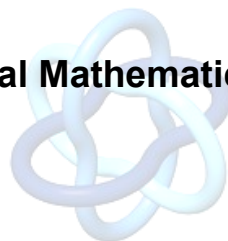
February 1, 2022
IMU AO Circular Letter 3/2022

</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Result on application from the Republic of Korea

Dear colleagues,

I am happy to report about the outcome of the member ballot on the application from the Republic of Korea for a change of group of adherence from Group IV to Group V, see IMU AO Circular Letter 22/2021.

The vote on the Republic of Korea's application yielded a positive result. As of February 2022, the Republic of Korea is a Member in Group V of the IMU.

Thank you for your contribution.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 4/2022

International Mathematical Union
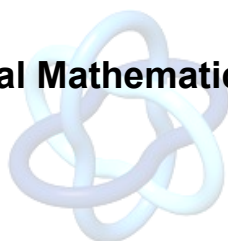
February 24, 2022
IMU AO Circular Letter 4/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Regarding the ICM 2022 and IMU General Assembly

Dear colleagues,

The IMU is deeply concerned about recent developments in Russia and Ukraine, two countries adhering to the IMU. As you will be aware, ICM 2022 and the IMU General Assembly are scheduled to take place in St Petersburg in July this year.

The IMU has been approached by several societies and individuals who raise serious and understandable concerns about the consequences of the conflict for the ICM and the General Assembly.

The Executive Committee of the IMU is now assessing the situation, and will make a decision as soon as possible regarding how to proceed. We will communicate this decision to our members once it has been made without delay.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 5/2022

International Mathematical Union
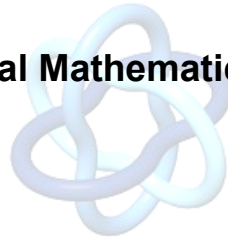
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

A statement from the IMU regarding the ICM 2022 and IMU General Assembly

Dear colleagues,

The IMU Executive Committee met on 24–26 February 2022, discussing the tragic events in Ukraine and their consequences for the ICM 2022 and IMU General Assembly.

Attached you will find an official statement detailing the deliberations and decision of the IMU Executive Committee in regard to these matters.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 6/2022

International Mathematical Union
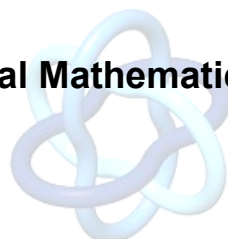
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

A further statement from the IMU regarding the ICM 2022 and IMU General Assembly

Dear colleagues,

We have received a few questions regarding our statement communicated to the Adhering Organizations in CL 5/2022.

The Executive Committee of the IMU wants to state the following:

1. The IMU General Assembly and the ICM will be conducted without any financial contribution from the Russian Government.
2. No official or representative of the Russian Government will be part of the organization or activities of the ICM.
3. All mathematicians are welcome to participate in the activities of the ICM.
4. ICM satellite conferences are and have always been outside the purview of the IMU.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 7/2022

International Mathematical Union

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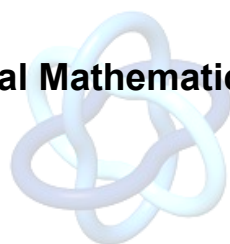
March 1, 2022
IMU AO Circular Letter 7/2022

</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Member ballot on application from Uzbekistan

Dear colleagues,

IMU Associate Member Uzbekistan has now applied for full membership (Group I). The Executive Committee of the IMU unanimously recommends this change. Enclosed is the application from Uzbekistan.

Important note on procedure: In addition to postal or fax ballots, we will also accept ballots returned by email to office@mathunion.org under the following conditions. For an email ballot to be valid, it has to be sent from an address associated with your AO. If you are in doubt, please check the email I sent in January of 2022 to each AO. If you are still in doubt, please contact me. If we receive conflicting votes from the same AO, we will notify you. If the issue cannot be resolved, the ballot will be deemed invalid. Postal ballots take preference.

A ballot form is attached to this email, and it will not be sent out by regular mail. Please vote on the application from Uzbekistan using the attached ballot, and return it by mail, email or fax by

15 May 2022

to the address indicated on the ballot form.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 8/2022

International Mathematical Union
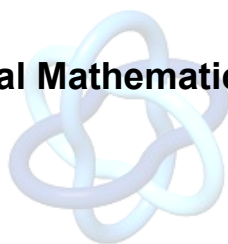
March 9, 2022
IMU AO Circular Letter 8/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

The IMU signs the Declaration on Research Assessment (DORA)

Dear colleagues,

I write to inform you that the IMU recently signed the Declaration on Research Assessment (DORA), following a recommendation from the IMU Committee on Electronic Information and Communication. You can find the full declaration here.

DORA recognizes the need to improve the ways in which the outputs of scholarly research are evaluated. Its vision is to advance practical and robust approaches to research assessment globally and across all scholarly disciplines.

We encourage all our members to sign this declaration.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 9/2022

International Mathematical Union

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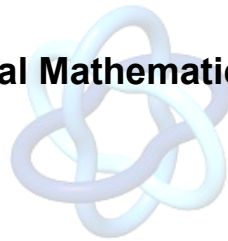
March 11, 2022
IMU AO Circular Letter 9/2022

</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

The ICM 2022 and the General Assembly

Dear colleagues,

We refer to CLs 5/2022 and 6/2022 regarding recent changes for the ICM 2022 and the General Assembly (GA). We write to you now with an update regarding the details of these events.

19th IMU General Assembly, 3–4 July 2022 (Helsinki, Finland)

After our official statements regarding the GA, the IMU received several generous offers to host the event, for which we are very grateful. After careful assessment, the IMU decided to accept the offer from Finland with Helsinki as the venue.

We plan for a traditional two-day GA. As for the 2018 GA, the IMU will offer partial travel support for one delegate from each member, and full hotel accommodation in Helsinki during the GA.   Only delegates will be admitted to the GA. We will return with further details in due course.

IMU Award Ceremony, 5 July 2022 (Helsinki, Finland)

All IMU awards will be presented at an in-person event in Helsinki, Finland, on the day following the GA. Admission will be free of charge but advance registration is required. Further details will follow shortly.

ICM 2022, 6–14 July 2022

The ICM will be a fully virtual event with free participation. We all realize that a virtual meeting cannot replace the traditional in-person ICM, but in the current situation, we think this is the best way forward. The speakers have been contacted, and we are in the process of setting up the program. Each speaker will be given the option of giving a live or a prerecorded talk. We intend to follow a program that runs 9:00–18:00 CEST every day.
We are also aware of efforts within the mathematical community to organize in person and online events to complement the virtual ICM 2022. As satellite events, the IMU cannot provide financial or organizational support to these activities, but we wholly commend the organizers for their efforts and are grateful for their engagement. A. Borodin, M. Hairer, and T. Tao are moderators of the Satellite Coordination Group, which is coordinating these efforts.

ICM Proceedings

The ICM Proceedings will be produced by EMS Press, the publishing house of the European Mathematical Society. The editors will be S. Smirnov (Geneva) and D. Beliaev (Oxford).

We will return with further information when available.
We ask for your patience and understanding in the meantime.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 10/2022

International Mathematical Union
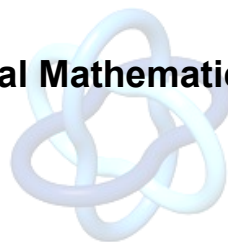
March 25, 2022
IMU AO Circular Letter 10/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

IMU General Assembly meeting in Helsinki

Dear colleagues,

This is the third announcement about the next IMU General Assembly (GA) meeting, see also CL 2/2022 and 9/2022.

1. Time and Location

The next GA meeting of the IMU will take place on 3–4 July 2022 in Helsinki, Finland. Delegates are expected to arrive on 2 July. The GA meeting ends in the evening of 4 July. We hope that the current pandemic will not necessitate any changes to these plans.

2. The General Assembly (basic information)

The role of the GA is described in the IMU Statutes, in particular, in Articles 18–24, and 41.

3. Delegations

For the GA meeting, each IMU Member Adhering Organization (AO) shall appoint and certify to the Secretary General a delegation, which shall have the number of votes corresponding to the Group to which it adheres, see Statutes Article 19 and IMU Member Countries for information about the Groups.

I would like to ask all AOs to start selecting their Delegates for the IMU GA meeting in Helsinki and to nominate the delegations in an email to me at <secretary@mathunion.org>. This request applies to
− all IMU Members,
− all IMU Associate Members, and
− all IMU Affiliate Members.
Please note, however, that only the Delegates of IMU Members have voting rights at the GA. Affiliate and Associate Members have the right to participate in the GA via a representative without voting rights.

In my capacity as Secretary General, I will maintain the list of Delegates (together with the nomination letters) so that there is proof of which persons have the right to vote at the GA. A web registration procedure for the GA participants will be set up, see below for more information.

In case it turns out that a formally nominated Delegate is unable to participate in the GA and the AO wishes to nominate a substitute, you are asked to notify me by email without delay. We will try to handle the replacement as smoothly as possible. The deadline for submitting the delegation is 1 May 2022, and a nomination has to include the full name and email address of each delegate. The email address will be used during the voting procedure, which will be fully electronic. All delegates are asked to bring a laptop, tablet or smartphone for the voting procedure. Ultimately, we require one email address per vote (e.g., Group 5 members will need to provide 5 unique addresses, Group 4 members will need to provide 4 unique addresses, etc.). Please bear this in mind when compiling your delegation and include the requisite number of email addresses for your group of adherence.

Gender distribution at the GA
I would like to recall that it was noted at previous GA meetings that the gender distribution was not well-balanced. I urge the AOs to consider gender distribution as one criterion when they choose the Delegates for the GA meeting in Helsinki.

4. Other GA participants

The IMU Executive Committee (EC) will invite further persons to the GA meeting. Among these are
− IMU Officers (this group includes the IMU EC members, and Chairs/Presidents of IMU Commissions and Committees who will provide reports about their activities for IMU)
− Observers (this group includes possible representatives of countries that will apply for IMU (Associate) Membership and, moreover, representatives of ISC, ICIAM, and possibly other IMU related organizations)
− Members of the local GA organization in Helsinki.
No person in any of the categories mentioned here has a voting right at the GA. Note that no person will be allowed to participate in the GA without a formal approval or invitation from me.

5. The IMU Award Ceremony

As announced in CL 9/2022, the IMU Award Ceremony will take place as an in-person event in Helsinki on 5 July 2022, the day following the GA. All participants at the GA are cordially invited to attend this grand event. Participants can register for the Ceremony when registering for the GA. Registration is free of charge. More details will follow shortly.

PRACTICAL INFORMATION

6. Accommodation and travel reimbursement

All registered GA Participants at the GA meeting will get their hotel accommodation in Helsinki covered for the period 2–5 July (three nights, single room rate). For participants wishing to attend the IMU Award Ceremony, we will also cover the night 5–6 July. The hotel rooms will be prepaid. Meals during the GA will be provided. Any additional expenses must be paid individually. This offer does not extend to other people, e.g., accompanying persons.

In addition, one Delegate or Representative from each IMU Member, i.e., full IMU Member, Associate Member and Affiliate Member, can receive travel support in order to attend the GA meeting in Helsinki. The conditions for the GA travel support are as follows:

− One (-1-) GA travel grant can be given per member of the IMU.

− In very special cases, an AO may request travel support for more than one delegate. Well-documented applications have to be sent to <secretary@mathunion.org> by 1 May 2022.

− It is the responsibility of the IMU Member (AO) to nominate to the IMU Secretary General who will be the recipient of the GA travel grant (name of the person selected).

− GA travel grant implies that IMU will reimburse travel expenses up to a maximum amount per grant, which depends on the geographical region of the member country. The maximum amounts per region and country are specified below.

− Only round trips from the country of the Delegate or Representative (country–Helsinki– country) are eligible for reimbursement.

− Eligible travel expenses are: basic economy class airfare, reasonable expenses to travel from home to the airport and back.

− Reimbursement for travel expenses is subject to the presentation of the following documents/receipts upon on-site registration in Helsinki:
> − Copy of passport;
> − Summary of the travel expenses which are claimed to be reimbursed (note that there is a maximum amount), including travel support received from any other source, if applicable;
> − Ticket, originals of boarding pass and any other receipts for travel expenses;
> − Estimate of travel expenses to travel home;
> − Travel insurance (if no coverage from other sources and only for the travel to the GA meeting);
> − Bank information (printed), if not provided online at the time of registration. A form will be available during the online registration.

Travel reimbursement will only take place when the required documents have been presented by the grant recipient in Helsinki and will only be by bank transfer. In exceptional cases, for instance, if a bank transfer to the country is not possible, reimbursement can be made in cash (in EUR only). This requires a request in advance to the IMU Secretary General and his approval.

If you are eligible for the GA travel grant you will be able to provide your bank information during the online registration process. A form will be offered where you can fill in your data. The form will be stored at a secure server. After the GA meeting the forms will be deleted. It is recommended to provide the information electronically, as this will help facilitate the bank transfer.

If a Delegate or Representative selected for the GA travel grant gets travel support from any other source, this will be deducted from the amount available from the GA travel grant.

If a Delegate or Representative, who has been selected for the GA travel grant and has a valid ticket, but is unable to attend the GA meeting because of disease or an act of force majeure, travel expenses (or part thereof) may be reimbursed if the disease or the act of force majeure is duly certified and the travel expenses (or part thereof) are not refundable from other sources.

Of course, we appreciate IMU Members covering the travel expenses of all of their Delegates or Representatives to the GA meeting from their own sources wherever possible.

Maximum amounts of GA travel grants per region and country of the AO (see Member Countries by Continent):

Region A: Africa
Maximum amount granted for reimbursement of travel expenses: 1,150 EUR

Algeria, Cameroon, Egypt, Gabon, Ivory Coast, Kenya, Morocco, Nigeria, Senegal, South Africa, Tunisia, AMU.

Region B: America
Maximum amount granted for reimbursement of travel expenses: 950 EUR

Argentina, Brazil, Canada, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, United States of America, Uruguay, Venezuela, MCofA, UMALCA.

Region C: Asia & Oceania
Maximum amount granted for reimbursement of travel expenses: 1,400 EUR

Armenia, Australia, Bangladesh, China, Georgia, Hong Kong SAR, India, Indonesia, Iran, Israel, Japan, Kazakhstan, Korea/Republic of, Kyrgyzstan, Malaysia, Mongolia, New Zealand, Oman, Pakistan, Papua New Guinea, Philippines, Saudi Arabia, Singapore, Thailand, Uzbekistan, Vietnam, SEAMS.

Region D: Europe
Maximum amount granted for reimbursement of travel expenses: 500 EUR

Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, EMS.

In addition, **Delegates from Priority groups 1&2** (Bangladesh, Cameroon, Egypt, India, Indonesia, Kenya, Kyrgyzstan, Mongolia, Morocco, Nigeria, Pakistan, Papua New Guinea, Philippines, Senegal, Tunisia, Ukraine, Uzbekistan, Vietnam) each receive an extra 200 EUR.

7. The online registration process for the IMU GA in Helsinki

After the nomination of the delegations by the AOs in a letter to me, the approved persons will receive a direct link from the IMU Secretariat to a webform for registration.
The GA Participants are requested to submit their registration by 22 May 2022.

8. Letter of invitation and visa issues

If you need a letter of invitation to attend the GA meeting, you can request this when completing the GA registration webform.

The deadline for sending the names and email addresses of your delegation is 1 May 2022, and should be sent to me at <secretary@mathunion.org>.

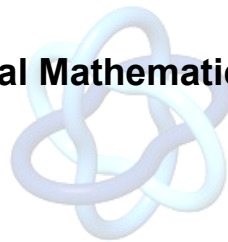I look forward to seeing you all in Helsinki!

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union

March 29, 2022
IMU AO Circular Letter 11/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

"Mathematics for Action: Supporting Science-Based Decision-Making"

Dear colleagues,

We would like to advertise the newly published document "Mathematics for Action: Supporting Science-Based Decision-Making" which consists of a collection of lively two-page briefs promoting mathematically-grounded solutions to global challenges and highlighting the role of mathematics in addressing the Sustainable Development Goals of the UN 2030 Agenda. It is edited by J.-S. Dhersin, H. Kaper, W. Ndifon, F. Roberts, C. Rousseau, G. M. Ziegler, and published by UNESCO. The document is Open Access, and was mentioned in IMU News 111b.

Please help distribute this interesting document in your community.

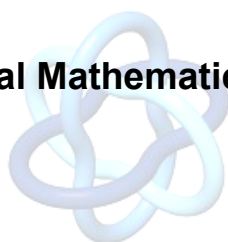Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union
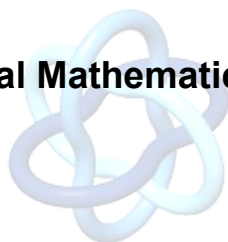
March 30, 2022
IMU AO Circular Letter 12/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

IMU General Assembly Agenda

Dear colleagues,

This letter provides information about the meeting of the IMU General Assembly (GA) on 3–4 July 2022 in Helsinki, Finland. It covers the following topics:
1. GA Agenda
2. Papers for the GA meeting
3. Slates for the IMU offices
4. Nominated IMU President and Secretary General
5. GA registration, etc.

We strongly encourage all Delegates to attend the GA in person. We have all experienced that participating remotely in events cannot fully replace in-person participation and so hope that Delegates will travel to the GA in Helsinki if at all possible. However, we will also provide the possibility of remote participation for those unable to travel to the GA.

1. GA Agenda
According to Article 39 of the By-Laws of the IMU Statutes, the agenda for the meeting of the GA has to be dispatched to the Adhering Organizations (AOs) at least three months before the meeting.
The AOs were asked in Circular Letter 2/2022 to propose by 2 March items for the agenda. No proposals were received. The attached GA agenda was decided by the Executive Committee (EC) at its meeting in February 2022. The EC proposes two changes in the IMU Statutes. These changes are attached.
Article 39 of the By-Laws says that "a question which has not been put on the agenda may be discussed, but shall not be put to the vote unless a proposal to that effect be approved by the majority of the total number of votes assigned to the members." Thus, any further issue that an AO wants to put to a vote, needs special treatment at the GA meeting.
We will have a very tight schedule, so there is not much room for "ad-hoc topics" proposed at the GA meeting itself. Please keep this in mind.
The GA will decide on the host for the ICM in 2026, see item 8 of the agenda. The IMU will give countries interested in organizing the ICM in 2030 the possibility to pre-announce at this GA their plans to bid, see item 17.1 of the agenda. Therefore, we ask countries that are contemplating making a bid, to send an email to the IMU Secretary General by 1 May. A country will still be able to make a formal bid when the official call is announced without having pre-announced it at this GA.

2. Papers for the GA meeting
The IMU Secretariat in Berlin will prepare all the papers for the GA meeting for easy download from a password protected website. Further information will follow in due time. No printed material will be distributed to the Delegates at the meeting in Helsinki.

3. Slates for IMU offices
Slates for all IMU offices are currently being prepared by the Nominating Committee chaired by Wendelin Werner. The slates will be distributed, according to our Procedures for Election, by 1 May.

4. Nominated IMU President and Secretary General
As communicated in Circular Letter 15/2021, the Nominating Committee has nominated IMU President 2023–2026: Hiraku Nakajima (Japan),

IMU Secretary General 2023–2026: Christoph Sorger (France).

5. GA registration, etc.
All IMU Adhering Organizations are strongly encouraged to nominate their Delegates at their earliest convenience.   Delegates must be nominated by 1 May and subsequently approved by the IMU Secretary General. Once approved, Delegates will need to complete the registration form by 22 May.

The IMU CL 10/2022 provides full information about the time and location, registration, etc.

I look forward to seeing you in Helsinki!

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 13/2022

International Mathematical Union

<div align="right">

March 31, 2022
IMU AO Circular Letter 13/2022

</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Schedule for the virtual ICM 2022

Dear colleagues,

We have now completed the schedule for the virtual ICM 2022. It can be found at the icm2022.org website.

The schedule as published provides a core overview of the virtual ICM. We are still in the process of setting up the official web-platform for the event, where we will provide more information, with full names, titles, as well as abstracts for all talks. The schedule will also be presented in a more user friendly and accessible manner.

Attendance at the virtual ICM 2022 will be free of charge but requires advance registration. Details on how to register will be available in due course.

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Call for themes for the International Day of Mathematics 2023

Dear colleagues,

The third International Day of Mathematics (IDM 2022) aroused worldwide enthusiasm with more than 9,600 celebrations announced in at least 90 countries. The Mathematics Unites Photo Challenge also attracted 3,200 entries, with several hundreds displayed in online galleries. The 48h live coverage of the IDM attracted more than 32,000 unique users on March 14, 2022. A [Global Virtual Live Celebration](#) on the theme *Mathematics Unites* took place on March 14 with sessions in Arabic, Portuguese, English, French and Spanish attracting 898, 2,374, 5,434, 454, and 708 views respectively.

It is now time to decide the theme of IDM 2023. A call for proposals for the theme of IDM 2023 is now open with a deadline of
31 May 2022.
Suggestions for a theme, together with a short justification, can be sent by email to idm@mathunion.org.

Let me remind you that the IDM 2020, 2021, and 2022 themes were *Mathematics is Everywhere*, *Mathematics for a Better World*, and *Mathematics Unites*. As added context, we also wish to inform you that IMU is one of the founding partners of the International Year of Basic Sciences for Sustainable Development 2022 ([IYBSSD 2022](#)), which was proclaimed by the General Assembly of the United Nations in December 2021. The launch of IYBSSD 2022 will take place on 8 July 2022. Hence a theme related to IYBSSD 2022 would be welcome.

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union
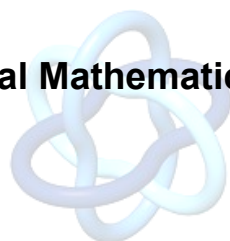
April 21, 2022
IMU AO Circular Letter 15/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

The IMU signs the Science in Exile Declaration

Dear colleagues,

The Science in Exile initiative has launched the declaration: 'Supporting at-risk, displaced and refugee scientists: A call to action' and the IMU has signed it. The initiative came from the International Science Council (ISC).

Specifically:
– The Science in Exile mission is to enhance the work and lives of at-risk, displaced, and refugee scientists globally.
– The Science in Exile vision is an active international movement which promotes the protection of scientists, leading to better science and contributions to humanity.

We encourage all our members to sign this declaration.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 16/2022

International Mathematical Union
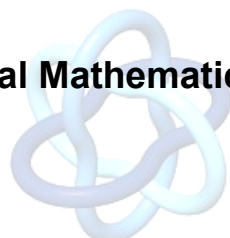
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

ICM Satellite Events

Dear colleagues,

Due to the war in Ukraine, the IMU was forced to move the ICM to a fully virtual format, see Circular Letter 9/2022. The schedule of ICM 2022 will follow the CEST time zone, and will, due to the very limited time and resources available, be kept to the bare essentials. Participation at the virtual ICM will be free of charge to everyone, and only require registration. We are in the process of setting up the platform for the virtual ICM. Talks will either be given live or prerecorded, and the possibility for feedback will unfortunately be limited. Further information will be made available on icm2022.org as and when there are updates.

The IMU has been encouraging grassroots efforts to supplement the core program with additional satellite activities taking place during the virtual ICM, in addition to the traditional satellite conferences taking place either before or after the ICM. These activities have been coordinated by the ICM Satellite Coordination Group, kindly chaired by A. Borodin, M. Hairer, and T. Tao. This has led to a number of initiatives, a list of which is being maintained at the website

https://www.hairer.org/ICMSCG

Three different kinds of event are listed:

Overlay satellite events
These are events allowing ICM speakers (sectional, special, or plenary) to give their talks in front of a live audience and to either upload the recorded lecture to the ICM platform or to stream it live to the platform.

Virtual events
These are additional events taking place online, but outside the IMU's official ICM platform. – A Discord server has been set up at https://discord.gg/T72dTkfSzF/ to discuss the ICM lectures as they are being given. We encourage all speakers to join this server to interact with the audience in a more direct and extensive way than what is possible through the official platform.
– The Short Communications Satellite aims to replace the usual short communications program of the ICM. This is an independent effort and is completely independent of the official ICM proceedings. Registration is now open at https://sites.google.com/view/scs-2022-call/.

Traditional satellite events
This section lists some further traditional satellite events.

Please help distribute this information in your community.
We are very grateful to all our colleagues who are helping to make the virtual ICM a success.
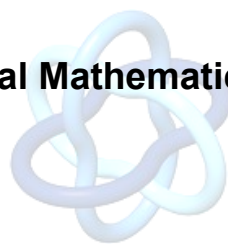
Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 17/2022

International Mathematical Union
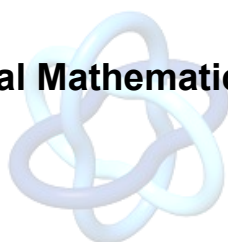
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

The 2022 IMU General Assembly Slates

Dear colleagues,

This letter concerns the 2022 IMU General Assembly (GA) slates. As per the IMU Statutes, the slates – listing the candidates for the various positions within the IMU Commissions and the Executive Committee to be elected at the next GA – are communicated to Adhering Organizations two months in advance of the GA meeting. With this letter, I am sending you the slates with complete information about the persons running for the various IMU offices.

As outlined in the Procedures for Election, the IMU Nominating Committee has the task of selecting the slates to be considered at the GA meeting. The Nominating Committee selects candidates from nominations received but also makes use of its right to search for potential candidates on its own, taking into account regional distribution, adequate representation of mathematical fields, etc. The Nominating Committee selects slates for
– the IMU Executive Committee (EC)
– the Commission for Developing Countries (CDC) and
– the International Commission on the History of Mathematics (ICHM)
following the rules defined in the Procedures for Election (see Circular Letters (CLs) 1/2021, 9/2021, 15/2021, and 16/2021).

The 2022 Nominating Committee (see CLs 22/2020 and 26/2020) consists of:
– Wendelin Werner (Switzerland, chair)
– Astrid an Huef (New Zealand)
– Nam-Gyu Kang (Korea/Republic of)
– Carlos E. Kenig (US, IMU President)

– Dusa McDuff (US)
– Caroline Series (UK)
– Vasudevan Srinivas (India)

As per Item 5.a. of the Procedures for Election, the chair of the Election Committee (who will be elected on the first day of the GA meeting) will present the slates at the GA in Helsinki on 3 July 2022.

The 2022 Nominating Committee has now completed its selection of the slates. You will find the lists of candidates on the IMU GA 2022 Cloud (password to follow separately). The IMU GA 2022 Cloud will be used for all further GA papers to be distributed to IMU Adhering Organizations and GA participants by 1 June.

Persons who were nominated but who have not been chosen by the Nominating Committee are listed in a separate document. The non-selected persons can, if the GA wishes, be added to the slates at the GA according to Item 5.c. of the Procedures for Election. All candidates have declared their willingness to serve on the body for which they were nominated, and have provided a CV. The CVs are available via the IMU GA 2022 Cloud.

We urge all Delegates of the GA to make themselves familiar with the candidates and their CVs. Please try to make your mind up about the candidates before the GA. Considering the large number of candidates, the time available at the GA will not allow for much discussion of individual qualifications at the meeting. Please also be aware that not all candidates will actually be present at the GA for direct discussion with them. If you feel you need additional information you are, of course, free to contact the candidates directly.

Important information regarding the GA

The GA will take place at the Scandic Grand Marina & Marina Congress Center in Helsinki, Finland, on 3–4 July 2022. See CLs 9/2022, 10/2022, 12/2022.

The deadline for nomination as a Delegate is 1 May, so if you want to participate at the GA and vote, you need to be nominated by 1 May. See CL 10/2022.

I hope to see you in Helsinki at the GA!

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 18/2022

International Mathematical Union
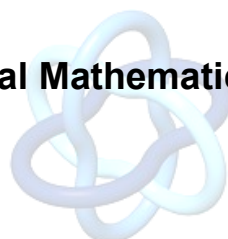
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Result on application from Uzbekistan

Dear colleagues,

I am happy to report about the outcome of the member ballot on the application from Uzbekistan to become a member in Group I, see IMU AO Circular Letter 7/2022.

The vote on Uzbekistan's application yielded a positive result. As of June 2022, Uzbekistan is a Member in Group I of the IMU.

Thank you for your contribution.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 19/2022

International Mathematical Union

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Papers for the IMU General Assembly

Dear colleagues,

Further to CL 17/2022, I am writing to inform you that the papers for the General Assembly are now available. The papers can be accessed via the IMU GA 2022 Cloud (the password

will follow shortly in a separate email). If you think that any paper is missing or wrong, please let me know at your very earliest convenience.

The General Assembly will take place at
Scandic Grand Marina Hotel & Marina Congress Center
Katajanokanlaituri 6-7, 00160 Helsinki, Finland

on 3–4 July 2022.

The arrival and departure dates that you provided on your registration form have now been communicated to the Scandic Grand Marina Hotel. If you require a confirmation of your reservation or have any subsequent changes regarding your accommodation requirements, please contact the hotel directly via sales.marinacongress@scandichotels.com.

Please note that all attendees will need to register their arrival before the start of the General Assembly. Registration will be open between 15:30–19:30 on 2 July 2022 and will take place in the 1st floor foyer (Europaea foyer) of the Marina Congress Center. If you cannot attend the General Assembly for any reason, please let me know at the earliest possible opportunity.

For further general information on the General Assembly, please also refer to CL 12/2022, and for reimbursement information please see CL 10/2022.

Finally, I refer to Article 20 in the IMU Statutes, which states:

Any Adhering Organization of an IMU Member not represented at a meeting of the General Assembly may forward its votes by registered mail to the Secretary General of the Union; and such votes shall be valid, if received two weeks prior to the beginning of the General Assembly, and if the original question has not been modified by substantial amendments. Voting by correspondence shall be in such a way that each Member of the Union casts its votes as a unit, counted as many times as the group indicates.

We look forward to seeing you in Helsinki for an exciting General Assembly meeting!

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 20/2022

International Mathematical Union
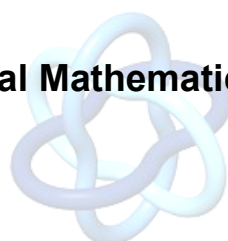
June 1, 2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

IMU Bulletin No. 73 (2021)

Dear colleagues,

The IMU Bulletin No. 73, reporting about the IMU activities in 2021, is available on the IMU [Web server](). We do not intend to send out printed versions.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 21/2022

International Mathematical Union

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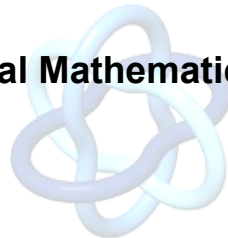
June 2, 2022
IMU AO Circular Letter 21/2022
</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Registration for the virtual ICM 2022 is open!

Dear colleagues,

Registration for the virtual ICM 2022 is now open! The link for registration is given below. Participation is free of charge and open to all, but does require prior registration.

As you will recall, the ICM 2022 will take place as a fully virtual congress between 6–14 July 2022. The program will essentially run 9:00–18:00 CEST every day. All speakers have been given the option of either giving a live or prerecorded talk. As of now, about 2/3 of the talks will be given live. At the opening day, the plenary talks of the Fields Medalists and the IMU Abacus Medalist will be given in front of a live audience in Helsinki, Finland.

We are under severe time constraints, and the fully functional platform for the ICM is scheduled to be ready only one week before the opening of the ICM. Once you register, you will get a confirmation that you have registered, and the program will soon be available on the platform. In the meantime, you can continue to visit icm2022.org for an overview of the schedule.

You can register for the virtual ICM 2022 via this link.

Both registration and participation are free of charge, but there is a limit on the number of attendees, so early registration is recommended.

I would also like to remind you that the IMU Award Ceremony 2022 will take place live in Helsinki on 5 July, and it will be streamed on the IMU website. No registration is needed here.

Please distribute this information in your community.
We look forward to "seeing" you at the virtual ICM 2022!

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 22/2022

International Mathematical Union
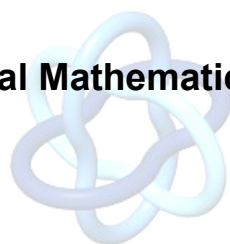
<div align="right">
August 10, 2022
IMU AO Circular Letter 22/2022
</div>

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

New book on the history of the IMU!

Dear colleagues,

It is with great pleasure that I announce the publication of the book "*Framing Global Mathematics: The International Mathematical Union between Theorems and Politics*" by Norbert Schappacher (Springer, Cham, 2022).

Schappacher's book provides the most comprehensive and exciting take on the history of the IMU since Olli Lehto's "*Mathematics without borders, a history of the International Mathematical Union*", and more broadly analyzes the historical context of today's mathematics and its place in world culture. It is available in open access and can be freely downloaded from here.

The origins of this project date back to 2019, when – following a call made to all AOs (see AO CL 10/2019) – the IMU solicited the writing of a book to mark the occasion of the centennial of the founding of the IMU in 1920. The project is generously sponsored by the Klaus Tschira Foundation.

Please help promote this book in the mathematics community of your country.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 23/2022

International Mathematical Union
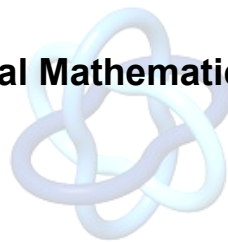
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Call for nominations for the ICMI EC Nominating Committee

Dear colleagues

Please see the attached letter from Frederick K. S. Leung, President of the International Commission on Mathematical Instruction (ICMI), regarding the process for proposing candidates to serve on the Nominating Committee for the next ICMI Executive Committee term (2025–2028). This is a very important issue for ICMI and the IMU, and we look forward to your active involvement in the process.

For further questions, please contact Frederick K. S. Leung icmi.president@mathunion.org or the ICMI Secretary General Jean-Luc Dorier icmi.secretary.general@mathunion.org.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 24/2022

International Mathematical Union
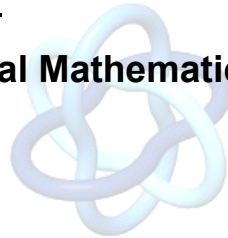
To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

The IMU Reserve Fund

Dear colleagues

At the recent IMU General Assembly, held over 3–4 July 2022, the following resolution was passed:

The IMU will set up a "reserve fund" to help Adhering Organizations whose dues are in arrears, due to temporary extreme, adverse circumstances. The "reserve fund" will be funded by earmarked contributions. The requests for help will be considered by the IMU Executive Committee, who will decide on them on a case-by-case basis. The IMU Executive Committee will report to the next IMU General Assembly on the working of this program.

The Executive Committee has now developed regulations for the IMU Reserve Fund, see attachment.

If your Adhering Organization wants to contribute to the fund, please contact the IMU Accountant Mariusz Szmerlo accountant@mathunion.org, and he will provide the necessary bank information.

If your Adhering Organization wants to apply for support from the IMU Reserve Fund for the membership dues for 2022, we need to receive the application by 31 December 2022

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union
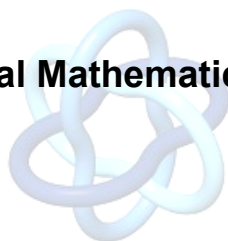
November 18, 2022
IMU AO Circular Letter 25/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Elections for the ICMI Executive Committee

Dear colleagues

Please see the attached letter from Jean-Luc Dorier, Secretary General of the International Commission on Mathematical Instruction (ICMI), regarding the election for the ICMI Executive Committee for the term 2025–2028. This is a very important issue both for ICMI and the IMU, and we look forward to your active involvement in the process.

I also refer to CL 23/2022 regarding the call for nominations for the ICMI EC Nominating Committee.

For further questions, please contact Jean-Luc Dorier
icmi.secretary.general@mathunion.org.

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union
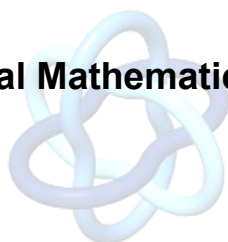
November 18, 2022
IMU AO Circular Letter 26/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Heidelberg Laureate Forum 2023

Dear colleagues

The 10th Heidelberg Laureate Forum ([HLF](#)) will take place in Heidelberg, Germany between 24–29 September 2023.

At the HLF, all winners of the Fields Medal, the Abel Prize, the ACM A.M. Turing Award, the Nevanlinna Prize/IMU Abacus Medal, and the ACM Prize in Computing are invited to attend. In addition, young and talented computer scientists and mathematicians are invited to apply for participation. The previous HLFs have been an exceptional success. The HLF serves as a great platform for interaction between the masters in the fields of mathematics and computer science and young talents.

Over the course of the week-long conference, young researchers will be given the exclusive possibility to profoundly connect with their scientific role models and find out how the laureates made it to the top of their fields. As described by a young researcher, "Meeting the humans behind some of the most formidable inventions and discoveries of our time was phenomenal. What was unexpected, perhaps, was how warm and approachable these individuals turned out to be. I am grateful to have been given this opportunity, and to have shared it with peers who I hope to soon call colleagues, collaborators and friends."

Applications for participation at the 10th HLF are open in three categories: Undergraduate/Pre-Master, Graduate PhD, and PostDocs. The application period for the 10th HLF runs from 11 November 2022 until 11 February 2023.

Young researchers at all phases of their careers (Undergraduate/Pre-Master, Graduate PhD, or PostDocs) are encouraged to complete and submit their applications by 11 February (midnight CET).

The IMU Adhering Organizations and national mathematical societies can also nominate young researchers. Nominated persons get "priority treatment", but, since there may be too many nominations, they have no acceptance guarantee. You may use the code XXXXX when registering.

See the webpage https://application.heidelberg-laureate-forum.org for the online application and nomination forms.
  The deadline for application is 11 February 2023.

For questions regarding requirements and the application process, please contact Young Researchers Relations at: yr@heidelberg-laureate-forum.org.

All applications that are completed and submitted by the deadline are meticulously reviewed by an international committee of experts to ensure that only the most qualified candidates are invited. There are 100 spaces available for each discipline of mathematics and computer science. All applicants will be notified by the end of April 2023 whether or not they are invited.

For more information, please visit: www.heidelberg-laureate-forum.org

IMU asks its Adhering Organizations to distribute this information among their national mathematical communities, if possible, through the newsletters of the national mathematical societies.

Regards

Helge Holden
Secretary General of the International Mathematical Union

IMU AO Circular Letter 27/2022

International Mathematical Union

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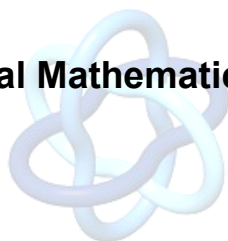
November 28, 2022
IMU AO Circular Letter 27/2022

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To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Minutes from the 19th IMU General Assembly

Dear colleagues

The minutes from the 19th IMU General Assembly, held over 3–4 July 2022, in Helsinki, Finland have now been uploaded to the GA webpage.

The minutes have been approved by the IMU Executive Committee and the GA Delegates.

Regards

Helge Holden
Secretary General of the International Mathematical Union

International Mathematical Union
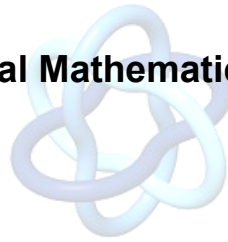
December 12, 2022
IMU AO Circular Letter 28/2022

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary General

Member ballot on application from Mongolia

Dear colleagues

IMU Associate Member Mongolia has now applied for full membership (Group I). The Executive Committee of the IMU unanimously recommends this change. Enclosed is the application from Mongolia.

Important note on procedure: In addition to postal or fax ballots, we will also accept ballots returned by email to office@mathunion.org under the following conditions. For an email ballot to be valid, it has to be sent from an address associated with your AO. If you are in doubt, please check the email I sent in January of 2022 to each AO. If you are still in doubt, please contact me. If we receive conflicting votes from the same AO, we will notify you. If the issue cannot be resolved, the ballot will be deemed invalid. Postal ballots take preference.

A ballot form is attached to this email, and it will not be sent out by regular mail. Please vote on the application from Mongolia using the attached ballot, and return it by mail, email or fax by

28 February 2023

to the address indicated on the ballot form.

Regards

Helge Holden
Secretary General of the International Mathematical Union

5. The IMU Secretariat

The Secretariat of the International Mathematical Union has been permanently based in Berlin, Germany, at the Weierstrass Institute (https://www.wias-berlin.de/index.jsp?lang=1) since January 2011. Following a positive evaluation of the work of the IMU Secretariat between 2011-2018, an unlimited Cooperation Agreement with WIAS was signed in 2018 (as approved at the 18th IMU General Assembly).

Under the supervision of the IMU Executive Committee, the Secretariat runs IMU's day-to-day business and provides support for many IMU operations, including administrative assistance for the International Commission on Mathematical Instruction (ICMI) and the Commission for Developing Countries (CDC), as well as mainly technical assistance for the Committee on Electronic Information and Communication (CEIC) and the Committee for Women in Mathematics (CWM).

The IMU Secretariat also hosts the IMU Archive.

IMU Secretariat staff:

Dietmar Hömberg: Head of the Secretariat and IMU Treasurer (✉ treasurer@mathunion.org)

Scott Jung: Manager of the Secretariat (✉ manager@mathunion.org)

Lena Koch: ICMI/CDC Administration (✉ icmi.cdc.administrator@mathunion.org)

Mariusz Szmerlo: IMU Accountant (✉ accountant@mathunion.org)

Birgit Seeliger: IMU Archivist (✉ archivist@mathunion.org)

Frank Klöppel: IT and Technical Support (✉ technician@mathunion.org)

Vanessa Chung: Project Assistant (✉ assistant@mathunion.org)

IMU Secretary General:

Helge Holden (✉ secretary@mathunion.org)

Address of the IMU Secretariat:

International Mathematical Union
Secretariat
Hausvogteiplatz 11a
10117 Berlin, Germany
Phone: +49 30 20372-430
Fax: +49 30 20372-439
E-mail: office@mathunion.org

6. Impressum

International Mathematical Union

Secretariat

Hausvogteiplatz 11a

D 10117 Berlin, Germany

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