

Centre International de Mathématiques Pures et Appliquées



2023 PROVISIONAL ANNUAL REPORT

www.cimpa.info

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"2023 was a full and exciting year for CIMPA and it is a pleasure to recall the many areas of work, and the contributions of those involved. The newsletters of the past year give a complete picture and the main features are presented in this annual report, including an overview of the research schools and schools in partnership in developing countries, as well as activities in Europe, such as the fellowships and research in pairs programmes. It was encouraging to relook at the newsletters, and I recommend them to members for an appreciation of the extensive work and contribution by CIMPA.



Our Steering Council, Governing Board and General Assembly meetings were all held in hybrid onsite-online format this year. For those who could travel it was a pleasure to meet in person again, first for the Steering Council meeting in Oslo, kindly arranged by Guila di Nunno, the President of our Scientific Council. This was an excellent occasion to strengthen our collaborative effort and later to follow up with an online meeting with the Norwegian Ministry for Education and Research on new activities and support.

Our Governing Board and General Assembly meetings were held at the University of Paris Cité, kindly arranged by Annie Raoult. At these meetings it was a pleasure to report that Germany has decided to continue as a member country of CIMPA, after the trial period of two years ends in December 2023. There was enthusiastic approval by the Governing Board and General Assembly and appreciation to Eckart Lilienthal, who has led the effort in BMBF's assocation with CIMPA.

Christophe Ritzenthaler has directed the work and activities of CIMPA outstandingly, committing himself fully and energetically to its programmes. At our Executive Committee meetings we have all appreciated his open approach, with new ideas and discussion of opportunities for CIMPA. It is a pleasure to report that his appointment as Executive Director of CIMPA has been renewed for a second term, which will begin in September 2024. Finally, I would like to thank the scientific council, the scientific officers and the dedicated administrative and communications team, who have all contributed to the success of CIMPA this year."

BARRY GREEN - PRESIDENT



"One of the assets of our association is that we are often present in the field, in particular during the schools where CIMPA is represented by our Scientific Officers. Their work allows CIMPA to have a direct understanding of the local situations and to prepare for future collaborations and events. I inherited most of the Scientific Officers from Ludovic Rifford's time and I've been fortunate to find helpful, available, cheerful colleagues from

whom I have learnt a lot. As the Governing Board honors me with a second mandate starting next year, I thought it was the right time to gather a new team for the years to come. Meanwhile, in this foreword, I'd like to thank once again the present Scientific Officers and I hope they will always be closely involved in our association in one way or another."

CHRISTOPHE RITZENTHALER - EXECUTIVE DIRECTOR

WHO WE ARE

ABOUT US

NICE

The Centre international de mathématiques pures et appliquées (CIMPA), founded in France in 1978, is a non-profit organisation that promotes international research in mathematics and its interactions in cooperation with developing countries and contributes to the training of mathematicians in developing countries.

It is situated in Nice, is a **UNESCO Category 2** Centre and is part of the Centre d'accueil et de rencontres mathématiques internationales (CARMIN laboratory of excellence).

It benefits from the financial support of France, Germany, Norway, Spain and Switzerland.



CIMPA SCHOOLS



CIMPA COURSES



CIMPA FELLOWSHIPS



IN PAIRS PROGRAMME

CIMPA co-organises and sponsors numerous activities in **developing countries on all continents.** Each activity is funded through a process of calls for proposals in one of the following categories:

CIMPA also strongly supports activities developed in close collaboration with continental mathematical unions, such as Schools in Partnership, the purpose of which is to introduce undergraduate and master's students to research in mathematics.

CIMPA, **SINCE ITS CREATION**

FOUNDED IN 1978

LOCATED IN N C F FRANCE



ADMINISTRATION

OF THE EXECUTIVE TEAM

A GOVERNING BOARD OF **7 INDIVIDUAL MEMBERS** AND 7 INSTITUTIONAL **MEMBERS**

MEMBERS OF THE SCIENTIFIC COUNCIL

A STEERING COUNCIL OF **18 INDIVIDUAL MEMBERS AND 19 INSTITUTIONAL MEMBERS**

ADMINISTRATIVE AND COMMUNICATION SUPPORT

CIMPA MEMBERS

A WORLDWIDE PARTNER

NETWORK OF ORGANISATIONS AND ACADEMIC INSTITUTIONS



EACH YEAR, MORE THAN PARTICIPANTS ATTEND CIMPA SCHOOLS

ACTIVITIES IN MORE THAN COUNTRIES IN THE WORLD



COMMUNICATION

PRESENT ON 4 SOCIAL NETWORKS









A YOUTUBE CHANNEL **CIMPA MATH**



A WEBSITE WWW.CIMPA.INFO



BUDGET ABOUT PER YEAR

AN INTERVIEW WITH BARRY GREEN, PRESIDENT OF CIMPA

HOW AND WHEN DID YOU START WITH CIMPA?

In the early 2000s, I attended two CIMPA-supported mathematics workshops, one in Cotonou, Benin, and the other in Saint Louis, Senegal. It was impressive to see the impact of CIMPA's involvement, with expert lecturers and teachers present as well as the very positive interaction with young mathematicians from many parts of Africa.

After I joined the African Institute for Mathematical Sciences (AIMS) in Cape Town as Director, closer association with CIMPA was a special way to complement our activities, through the hosting of Research Schools at AIMS centres. So in 2011 we signed a memorandum of understanding for joint activities and I remember the important occasion when then vice-President Alain Damlanian visited the AIMS centre for the signing. For me this was a beginning of a very special association and the opportunity to become more involved with CIMPA actions, which has been very rewarding.



WHAT ASPECTS OF THE ROLE OF PRESIDENT OF CIMPA APPEAL TO YOU MOST AND HOW IMPORTANT ARE THEY TO YOU?

What is most attractive to me is working together with a strong and dedicated group of colleagues, focused on growth and interaction in places where there are enthusiastic and talented young scientists but fewer opportunities.

Doing so as a member of CIMPA and its Governing Board has been most satisfying, because of the opportunities this makes possible. CIMPA is a very well established association, with support from country members, institutions, learned societies, and many dedicated mathematicians, and so the strength this provides means the impact is very impressive. Creating and promoting opportunities for young mathematicians and contributing to bring mathematicians together, particularly those from the developing world with researchers from CIMPA member countries, gives further meaning to our work.

Alain Damlamian (former vicepresident of CIMPA) and Barry Green at AIMS South Africa, 2011

WHAT MAY BE THE FUTURE CHALLENGES FACING CIMPA AND WHAT STRATEGIES WOULD YOU PUT IN PLACE TO MEET THEM?

CONTRIBUTING TO BRING MATHEMATICIANS TOGETHER, GIVES FURTHER MEANING TO OUR WORK.

Looking to the future I don't know what challenges CIMPA will face, just as we couldn't have predicted the challenge posed by the recent pandemic, but had to adapt as events unfolded.

It is clear that more organisations are involved in similar activities to those CIMPA is doing. So it will be a challenge to adapt our own programmes slightly to have a strong identifiable impact, as well as good interaction with partners with similar initiatives. CIMPA is periodically evaluated on its achievements. With its membership, both individual, country and as a UNESCO Category II association this will help it meet the challenges as they arise. The political environments are also changing and this may lead to new challenges. I think the breadth of involvement with CIMPA will be very helpful to find ways to adapt and continue to promote scientific growth in mathematics in less developed regions as well as interaction within the member countries with clear achievements.

WHAT ARE YOUR BEST MEMORIES?

My best memories are of the enthusiasm of those involved at the research schools I have attended, particularly at AIMS centres. The many wonderful people I have met, both teachers and young researchers, have been inspiring.

The interaction, discussions and decisions made during Executive Committee, Steering Council, General Assembly and Governing Board meetings are also a very good memories, because through them CIMPA has in most cases had the intended very positive impact.



CIMPA School in Cape Town, South Africa, November 2023

YOU WERE ALSO ACTIVE IN AIMS. CAN YOU TELL US MORE ABOUT THIS EXPERIENCE?

Being actively involved with the AIMS project has been the highlight of my career as a mathematician. What we call the 24/7 environment at an AIMS centre, with talented young Africans interested in the mathematical sciences and expert teachers and researchers from all over the world, creates an amazingly stimulating environment. It was a pleasure to be part of this. The achievements of the AIMS graduates, the majority still in Africa at universities, in industry or other initiatives,

I LOOK FORWARD TO CONTRIBUTING TO CREAT OPPORTUNITIES FOR YOUNG MATHEMATICAL SCIENTISTS [...], MOSTLY IN AFRICA.

but also those who are now outside Africa is very satisfying and broadly appreciated. It has been wonderful to be part of this project.

YOU HAVE RECENTLY RETIRED AND YOUR TERM OF OFFICE AS PRESIDENT OF CIMPA IS COMING TO AN END. WHAT ARE YOUR PLANS FOR THE FUTURE? WILL YOU CONTINUE TO BE INVOLVED IN THE DEVELOPMENT OF MATHEMATICS IN DEVELOPING COUNTRIES?

After my term as President of CIMPA I look forward to continuing as an individual member, and more broadly to contributing to create opportunities for young mathematical scientists, through CIMPA, AIMS and other initiatives. I imagine these will mostly be in Africa.



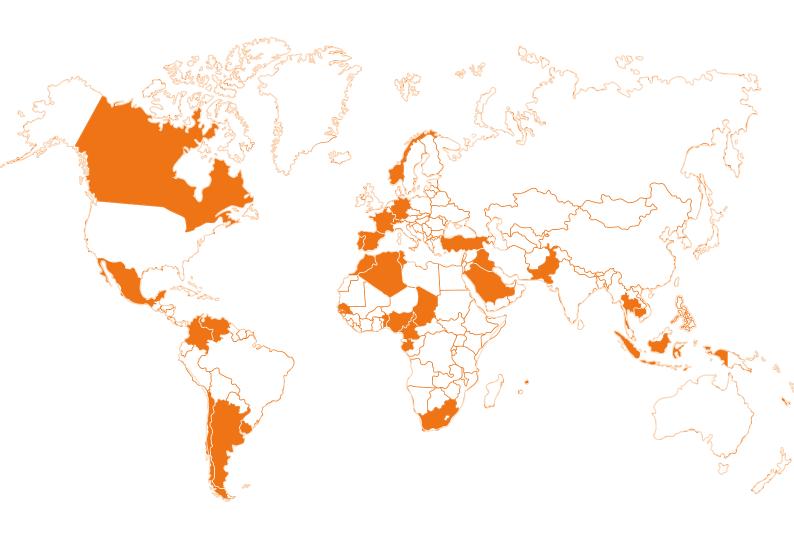


CIMPA School in Cape Town, South Africa, November 2023

&ADMINISTRATION

One of CIMPA's specificities lies in the **diversity of its members in all its bodies. They come from all over the world, and a significant proportion are from developing countries.** This diverse membership is a crucial asset for CIMPA in fulfilling its core mission of promoting mathematical research with developing countries.

The active involvement of these colleagues, with a broad spectrum of experience and knowledge, strengthens the impact of CIMPA's actions by bringing multiple perspectives that are adapted to and directly rooted in the specific circumstances of these regions.



GOVERNING BOARD



Barry GreenPRESIDENT
University of
Stellenbosch,
SOUTH AFRICA



Annie Raoult VICE-PRESIDENT Université Paris-Cité, FRANCE



Joachim Yameogo TREASURER Université Côte d'Azur, FRANCE



Viet Dung Nguyen
SECRETARY
Vietnam Academy
of Science and
Technology, VIETNAM



Fatima AboudUniversity of Diyala,
IRAQ



Servet MartinezUniversidad
de Chile, CHILE



RahimZaare-Nahandi University of Tehran, IRAN



INSTITUTIONAL MEMBERS

Bundesministerium für Bildung und Forschung (BMBF), GERMANY
Délégation aux affaires européennes et internationales (DAEI), FRANCE
Direction générale de la recherche et de l'innovation (DGRI), FRANCE
Ministerio de Ciencia, Innovación y Universidades, SPAIN
Norwegian Ministry of Education and Research, NORWAY
UNESCO
Université Côte d'Azur, FRANCE

SCIENTIFIC COUNCIL

The Scientific Council is comprised of 12 members. **It makes recommendations** on CIMPA's scientific activities.



Giulia Di NunnoPRESIDENT
University of Oslo,
NORWAY



Volker Bach Technische Universität Braunschweig, GERMANY



Mohamed BoucettaUniversité
Cadi-Ayad,
MOROCCO



Tien-Cuong DinhNational University of Singapore,
SINGAPORE



Laura GeattiUniversità di Roma
Tor Vergata,



Henar Herrero Sanz Universidad de Castilla-La Mancha, SPAIN



Mahouton Norbert HounkonnouUniversité
d'Abomey-Calavi,
BENIN



Yoshiharu KohayakawaUniversidade de São
Paulo,
BRAZIL



Teresa Krick
Universidad de
Buenos Aires,
ARGENTINA



Gabriel Peyré École normale supérieure de Paris, FRANCE



Mythily Ramaswamy ICTS-TIFR, INDIA



Sara Van de Geer ETH Zurich, SWITZERLAND

EXECUTIVE TEAM

CIMPA's Executive Team consists of an Executive Director, a group of Scientific Officers and Administrative and Communication Staff. The Executive Director, who is responsible for the day-to-day running of CIMPA, benefits from the expertise of the Scientific Officers, who act as consultants for geographical areas and other important issues.





EXECUTIVE DIRECTOR & SCIENTIFIC OFFICERS





Alp Bassa
Boğaziçi üniversitesi,
TURKEY
WEST AND CENTRAL



Yacine Chitour
Université ParisSaclay, FRANCE
NORTH AFRICA
AND WEST ASIA

ASIA



Sophie Dabo Université de Lille, FRANCE ⊕AFRICA





Fabrice Gamboa
Université Paul
Sabatier, FRANCE
WEST ASIA AND LATIN
AMERICA



Joan-C. Lario
Universitat
Politècnica de
Catalunya

LATIN AMERICA
AND ASIA



Jorge Mozo
Fernandez
Universidad de
Valladolid, SPAIN
WEST ASIA
AND LATIN AMERICA



Stéphanie Nivoche
Université Côte
d'Azur, FRANCE
CENTRAL AND EAST ASIA



Vlady Ravelomanana Université Paris-Cité, FRANCE ⊕ AFRICA



Rosane Ushirobira
Inria, FRANCE

LATIN AMERICA

STAFF

Agnès Gomez Executive secretary

Héla LamiriCOMMUNICATION OFFICER

STEERING COUNCIL

The Steering Council draws up CIMPA's medium- and long-term scientific strategy. It offers policy guidance, suggests priorities and makes recommendations. Every year, it designs the programme for the CIMPA Schools and other activities, based on the recommendations of the Scientific Council.



INDIVIDUAL MEMBERS



Barry GreenPRESIDENT
University of
Stellenbosch,
SOUTH AFRICA

Annie Raoult
VICE-PRESIDENT
Université Paris-Cité,
FRANCE

Fatima AboudUniversity of Diyala,
IRAQ

Joachim Yameogo TREASURER Université Côte d'Azur, FRANCE

Servet Martinez
Universidad
de Chile, CHILE

Viet Dung Nguyen
SECRETARY
Vietnam Academy
of Science and
Technology, VIETNAM

Rahim Zaare-NahandiUniversity of Tehran,
IRAN



All the members of the Executive team



INSTITUTIONAL MEMBERS

Académie des sciences, FRANCE

Comisión Nacional Española de Cooperación con la UNESCO, SPAIN

Comité Español de Matemáticas (CEMAT), SPAIN

Commission nationale française pour l'UNESCO, FRANCE

Deutsche Mathematiker-Vereinigung (DMV), GERMANY

Deutsches Elektronen-Synchrotron (DESY), GERMANY

Gesellschaft für Angewandte Mathematik und Mechanik (GAMM), GERMANY

Institut national de recherches en sciences & technologies du numérique (INRIA), FRANCE

Institut national des sciences mathématiques et de leurs interactions

(INSMI-CNRS), FRANCE

Norwegian Mathematical Society, (two seats)

Real Sociedad Matemática Española (RSME),

Sociedad de Estadística e Investigación Operativa (SEIO), SPAIN

Sociedad Española de Matemática Aplicada (SEMA), SPAIN

Societat Catalana de Matemàtiques (SCM), SPAIN

Société de mathématiques appliquées et industrielles (SMAI), FRANCE

Société Française de Statistique (SFdS), FRANCE

Société mathématique de France (SMF), FRANCE

Swiss Mathematical Society (SMS), SWITZERLAND

Université de Neuchâtel, switzerland

LIST OF PARTNERS

The primary partners of CIMPA are the institutional members of the Steering Council, which develops the strategy and the scientific policy of CIMPA:

Académie des sciences, FRANCE

Comisión Española de Coopéración con la UNESCO, SPAIN

Comité Español de Matemáticas (CEMAT), SPAIN

Commission nationale française pour l'UNESCO, FRANCE

Deutsche Mathematiker-Vereinigung (DMV), GERMANY

Deutsches Elektronen-Synchrotron (DESY), GERMANY

Gesellschaft für Angewandte Mathematik und Mechanik (GAMM), GERMANY

Institut national de recherches en sciences et technologies du numérique (Inria), FRANCE

Institut national des sciences mathématiques et de leurs interactions (INSMI-CNRS), FRANCE

Norwegian Mathematical Society, NORWAY

Real Sociedad Matemática Española (RSME), SPAIN

Sociedad de Estadística e Investigación Operativa (SEIO), SPAIN

Sociedad Española de Matemática Aplicada (SEMA), SPAIN

Societat Catalana de Matemàtiques (SCM), SPAIN

Société de mathématiques appliquées et industrielles (SMAI), FRANCE

Société française de statistique (SFdS), FRANCE

Société mathématique de France (SMF), FRANCE

Swiss Mathematical Society (SMS), SWITZERLAND

Université de Neuchâtel, switzerland

Being part of the French laboratory of excellence CARMIN (Centre d'accueil et de rencontres mathématiques internationales), CIMPA works in close collaboration with the three other CARMIN members:

Centre international de rencontres mathématiques (CIRM), FRANCE Institut des hautes études scientifiques (IHES), FRANCE

Institut Henri Poincare (IHP), FRANCE

CIMPA has signed agreements of cooperation with several institutions:

Académie Hassan II des Sciences et Techniques, MOROCCO

Centre de Recerca Matemàtica, SPAIN

Forschungsinstitut für Mathematik, SWITZERLAND

Institut national de recherches en sciences et technologies du numérique (Inria), FRANCE

Laboratoire de Modélisation, Mathématiques, Informatique, Applications

et Simulation (L2MIAS), CHAD

Mathematisches Forschunginstitut Oberwolfach, GERMANY

Nesin Mathematics Village, TURKEY

SwissMAP, SWITZERLAND

Université Côte d'Azur, FRANCE

Most of CIMPA's activities benefit from close ties established by CIMPA with the following international organisations:

Agence Universitaire de la Francophonie (AUF)

Commission for Developing Countries of the International Mathematical Union (IMU-CDC)
Committee for Developing Countries of the European Mathematical Society (EMS-CDC)
International Centre for Theoretical Physics (ICTP), ITALY

Close partners of CIMPA also include several continental mathematical unions and committees, for example through the funding of Schools in Partnership:

Asian and European Schools in Mathematics (AESIM)
African Mathematical Union (AMU)
South East Asian Mathematical Society (SEAMS)
Unión Matemática de América Latina y el Caribe (UMALCA)

Other CIMPA partners:

African Institute for Mathematical Sciences (AIMS)
Association pour la Promotion Scientifique de l'Afrique (APSA)
Centro de Modelamiento Matematico (CMM), CHILE
Colloque Africain sur la Recherche en Informatique
et Mathématiques Appliquées (CARI)
Comité National Français des Mathématiciens (CNFM), FRANCE
European Mathematical Society (EMS)

Institut de recherche pour le développement (IRD), FRANCE

International Mathematical Union (IMU)

International Council for Industrial and Applied Mathematics (ICIAM)

Koninklijk Wiskundig Genootschap (KWG), the Nederlands

Mathrice

Simons Foundation, USA

Soutien aux Activités de Recherche en Informatique et Mathématique

en Afrique (SARIMA)

UNESCO



Steering Council meeting held in Oslo, Norway, February 2023

HIGHLIGHTS

"CIMPA MATH" AND CARMIN.TV: TWO CHANNELS IN CONSTANT EVOLUTION



"CIMPA MATH" AND CARMIN.TV: TWO CHANNELS IN CONSTANT EVOLUTION

The CIMPA YouTube channel and carmin.tv stand as invaluable resources for mathematics enthusiasts and anyone eager to delve deeper into our organisation's activities. Constantly evolving, with 2,450 subscribers, 246 videos and 122,467 views since its creation in 2017, our Youtube channel features fascinating content: engaging online courses, recorded sessions from our events, and inspiring interviews with participants and laureates of our programmes. These videos provide an inside look into CIMPA's activities, shining a spotlight on all the contributors involved in CIMPA's endeavours: partners, school organisers, speakers, and more.

With a diverse array of topics covered, these two channels serve as an invaluable asset for those looking to explore the realm of mathematics through the lens of CIMPA's experience.



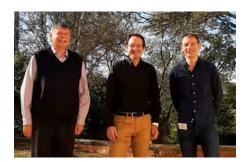
Haniya Azam at CIMPA, June, 2023



HIGHLIGHTS WITH OUR PARTNERS



CIMPA VISIBILITY



VISIT TO CIRM

CIMPA President Barry Green, accompanied by Executive Director Christophe Ritzenthaler, visited CIRM, where they met with Director Pascal Hubert. The meeting paved the way for potential new collaborations between the two centres, opening up promising prospects for partnerships.



UNESCO WEBINAR

CIMPA led the webinar organised by UNESCO to celebrate International Mathematics Day. This event highlighted the crucial importance of mathematics in industry and technology, bringing together more than 250 participants from 60 countries around the world.

CONFERENCE AT THE SIMONE AND CINO DEL DUCA FOUNDATION

Christophe Ritzenthaler and Annie Raoult took part in a conference at the Simone and Cino Del Duca Foundation, organised by the Académie des Sciences. This meeting was an opportunity to exchange ideas with the main research organisations operating in Africa, exploring the successes and challenge of scientific and technical collaboration.





MEETING ON RESEARCH DEVELOPMENT AT CIRM

CIMPA proposed and coordinated a meeting at CIRM to discuss the development of mathematics research with developing countries. The discussions with ISP, EMS-CDC, IMU-CDC, LMS and ICTP made it possible to identify the resources available, improve coordination between members and explore new opportunities to support communities in developing countries.

These interactions were key moments for CIMPA in 2023, demonstrating its continued commitment to the promotion of mathematics through a variety of fruitful partnerships.





NEW CIMPA FELLOWSHIP: RESEARCH PROGRAMME AT SWISSMAP



CIMPA and SwissMAP have joined forces to launch a new fellowship programme designed to support mathematics researchers based in a developing country by helping them to take part in a winter school at the SwissMAP research station in Les Diablerets (Switzerland), as well as a period of collaboration at a Swiss university.

The aim of this joint programme is to promote the exchange of knowledge and expertise and to encourage synergies between mathematics researchers, thereby strengthening the links between the mathematical communities in developing countries and those in the partner institutions in Switzerland.

HIGHLIGHTS FROM THE ADMINISTRATION SIDE



WELCOME TO NEW CIMPA MEMBERS!



Ilka Agricola Philipps Universität Marburg, GERMANY



Armel Andami Ovono École Normale Superieure de Libreville, GABON



Souad Ayadi Université Djilali Bounaama, ALGERIA







Paolo Bertozzini Thammasat University, THAILAND



Gaetan Borot Humboldt-Universität zu Berlin, GERMANY



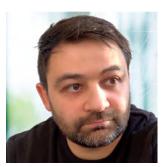
Joaquim Manuel Cunha Correia Universidade de Évora, PORTUGAL



Damien GayetInstitut Fourier, FRANCE



Mahamat Saleh Daoussa Haggar University of N'Djamena, CHAD



Youcef Mammeri Université Jean Monnet, FRANCE



Tim RömerOsnabrück University,
GERMANY



Wil SchildersEindhoven University
of Technology,
THE NETHERLANDS



Suzanne TouzeauNational Research Institute for Agriculture, Food and Environment, FRANCE

MAIN ACTIVITIES

CIMPA SCHOOLS

Historically, CIMPA's activity focuses on the organisation of CIMPA Schools in developing countries. Each CIMPA School offers during at least 9 days, a series of research-level courses taught by specialists in a field of mathematics.

CIMPA Schools are aimed at doctoral students and teacher-researchers from developing countries. **CIMPA finances part of the cost of organising the School**, as well as the traveland living expenses or online participation of participants from neighbouring developing countries.



Johannesburg, south Africa

"Logic at the Intersection of Algebra, Categories, and Topology" January 2-13

N'Djamena, CHAD

"Mathematical and Statistical Modeling of Complex Systems" January 2-13

Manila, PHILIPPINES

"Introduction to Galois Representations and Modular Forms and their Computational Aspects" January 9-20

Windhoek, NAMIBIA

"Contemporary Geometry" January 16-27

Puerto Madryn, ARGENTINA

"Crossroads of Representation Theory, Geometry and Higher Structures" March 13-24

Kathmandu, NEPAL

"Data Visualization, Modeling, and Mathematical Tools" May 15-24

Libreville, GABON

"Mathématiques et développement durable" May 15-26

Sirince, TURKEY

"Graph Structure and Complex Network Analysis" June 4-16

La Habana, сива

"Mathematical Modelling and Numerical Simulation in Medicine"
June 4-17

Beirut, LEBANON

"Complex Analysis and Geometry" June 5-16

CIMPA School, La Habana, Cuba, June 2023

Oaxaca, MEXICO

"Algebraic and Tropical Methods for Solving Differential Equations" June 12-23



Popayan, colombia

"Isogenies of Elliptic Curves and their Application to Cryptography" July 24 - August 4

CIMPA School, Sangareddy, India, November 2023

Bogotá, colombia

"Geometric, Algebraic and Topological Methods in Quantum Field Theory" July 31 - August 9

Mzuzu, malawi

"Coding Theory and Its Applications" August 6-19

Santo Domingo, Dominican Republic

"Differential Galois Theory and Applications to Mechanics"
October 23 - November 3



Rabat, MOROCCO

"Aspects mathématiques de la cryptographie post-quantique" October 23 – November 4

CIMPA School, Sirince, Turkey, June 2023

Sangareddy, INDIA

"Finite Geometry and Coding Theory" November 20 - December 1

Cape Town, SOUTH AFRICA

"Blockchain in Theory and Real Applications" November 20 - December 1

Vitória, BRAZIL

"Non-Associative Algebras and Related Topics" December 4-15

Pondicherry, INDIA

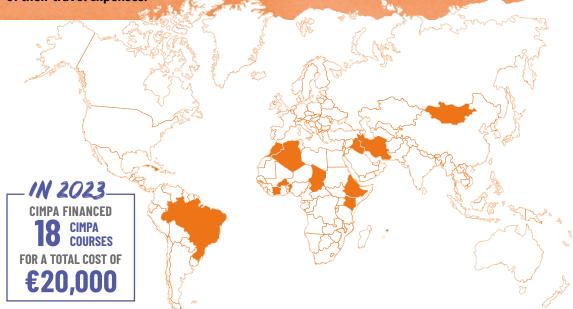
"Post-Quantum Cryptography" December 11-21



CIMPA COURSES

A CIMPA Course is a master's-level or research-level mathematics course given by visiting professors, with a duration of 1 to 4 weeks.

The courses take place in higher education and research institutions in developing countries. They are aimed at master's and doctoral students, postdoctoral researchers and young researchers. CIMPA finances the involvement of the professors by supporting a large part of their travel expenses.



Université de Maurice, MAURITIUS

"Multidisciplinary Optimization and Industrial Applications"

© BY Laurent Dumas UNIVERSITÉ DE VERSAILLES, FRANCE January 7-16

Addis Ababa Science and Technology University, ETHIOPIA

"Mathematical Modeling of Infectious Diseases"

© BY Patrick Tchepmo Djomegni NORTH-WEST UNIVERSITY, SOUTH AFRICA January 8-15

Université Nazi Boni, Burkina Faso

"Automaticity"

© BY Didier Jean Caucal UNIVERSITÉ GUSTAVE EIFFEL, FRANCE January 28 - February 13

Université Felix Houphouët Boigny, IVORY COAST

"Processus de branchement et applications"

© BY Ibrahima Drame
UNIVERSITÉ CHEIKH ANTA DIOP DE DAKAR, SENEGAL
January 29 - February 4

Universidade Federal de São Carlos, BRASIL

"Variedades polares desde Pascal e Poncelet ate agora"

© BY Jean-Paul Brasselet
UNIVERSITÉ D'AIX-MARSEILLE, FRANCE
January 28 - February 17

Université Felix Houphouët Boigny,

IVORY COAST

"Mesures aléatoires de Poisson"

By Etienne Pardoux PROFESSOR EMERITUS, AIX MARSEILLE UNIVERSITÉ, FRANCE February 6-11



Université de N'Djaména, CHAD

"Modélisation en épidémiologie"

By Patrick Tchepmo Djomegni NORTH-WEST UNIVERSITY, SOUTH AFRICA April 17-28

Universidad de La Habana, CUBA

"Multilevel Optimization: from Theory to Applications in Energy Management"

© By Didier Aussel Université de Perpignan, France May 3-16

Nairobi University, KENYA

"Algebraic Curves over Finite Fields"

BY Christophe Ritzenthaler

DIRECTOR OF CENTRE INTERNATIONAL

DE MATHÉMATIQUES PURES ET APPLIQUÉES

PROFESSOR OF MATHEMATICS,

UNIVERSITÉ CÔTE D'AZUR AND RENNES 1

Mongolian National University of Education,

MONGOLIA

July 2-7

"Extremal Graph Theory"

(2) By Tomas Vetrik

UNIVERSITY OF THE FREE STATE, SOUTH AFRICA
June 3-11

Institute for Research in Fundamental Sciences, IRAN

"Monomorphism Categories and their Applications"

Rasool Hafezi Najafabadi
NANJING UNIVERSITY OF INFORMATION SCIENCE AND
TECHNOLOGY, CHINA
December 6-13

École Nationale des Sciences Appliquées d'Agadir, morocco

"Al and Deep Learning in Image Processingfocus on Medical Image Processing"

© BY Mamode Khan Naushad UNIVERSITY OF MAURITIUS, MAURITIUS July 17-27





Université de N'Djaména, CHAD

"Modélisation des écoulements des fluids"

BY Patrick Tchepmo Djomegni

NORTH-WEST UNIVERSITY, SOUTH AFRICA

August 11-18



Mohamed Mbehou in Chad, September 2023

Université Salahaddin, IRAQ

"Topology and Big Data"

® By Michel Jambu

PROFESSOR EMERITUS, UNIVERSITÉ CÔTE D'AZUR,

FRANCE

and Georges Oppenheim PROFESSOR EMERITUS, UNIVERSITÉ DE SACLAY, FRANCE

September 9-17

Université Abderrahmane-Mira

de Béjaïa, algeria

A ONLINE COURSE

"Dynamique et combinatoire de l'ensemble des substitutions"

By Nicolas Bédaride
 AIX MARSEILLE UNIVERSITÉ, FRANCE
 September

Université de N'Djaména, CHAD

"Méthode des volumes finis"

By Mohamed Mbehou
 UNIVERSITÉ DE YAOUNDÉ I, CAMEROOUN
 September 5-20

Université de Saida Dr Moulay Tahar, ALGERIA

"Deep Learning Methods for Stochastic Dynamics"

© BY Omar Kebiri
BRANDENBURG UNIVERSITY OF TECHNOLOGY
COTTBUS-SENFTENBERG (BTU), GERMANY
October 26 - November 5

Université d'Abomey Calavi, BENIN

"Algebraic Number Theory"

By Alain Togbe

PURDUE UNIVERSITY NORTHWEST, USA
December 8-23

Didier Aussel

in Cuba,

May 2023

CIMPA FELLOWSHIPS

The CIMPA Fellowships offer funding to enable young researchers from developing countries to take part in short thematic programmes in partner research institutes in Europe, for 1 to 3 months. CIMPA, in association with its partners, covers all the participants' costs.



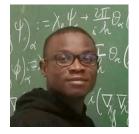
IHP

"QUANTUM GRAVITY, RANDOM GEOMETRY AND HOLOGRAPHY"

January 9 - February 17



Simran Arora, Institute of Technology & Science, INDIA



Mahougnon Justin Landalidji, University of Abomey-Calavi, BENIN



"RANDOM PROCESSES IN THE BRAIN: FROM EXPERIMENTAL DATA TO MATH AND BACK"

February 27 - April 4

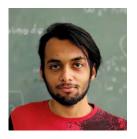


Bia Ramalho, University of São Paulo, BRAZIL



"HIGHER STRUCTURES IN GEOMETRY AND MATHEMATICAL PHYSICS"

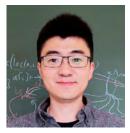
April 17 - July 14



Bhanu Kiran Sandepudi, International Centre for Theoretical Sciences, INDIA



Praphulla Koushik, Indian Institute of Science Education and Research, INDIA



Kai Wang, East China Normal University, CHINA



"RECENT TRENDS IN COMPUTER ALGEBRA"

September 18 - December 11



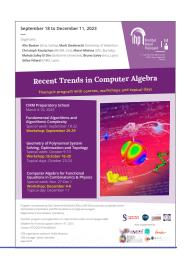
Zhihong Yang, Academy of Mathematics and Systems Science, CHINA



Yatma Diop, Université Cheikh-Anta-Diop, SENEGAL



Youssef Abdelaziz, The American University in Cairo, EGYPT



CIRM

"ARITHMETIC AND INFORMATION THEORY"

January 30 - March 3



Brice Miayoka Moussolo,
Université Marien
NGouabi,
REPUBLIC OF CONGO



Mohammad Hussein Hamdar, American University of Beirut, LEBANON



Francisco Galluccio, Universidad Nacional del Litoral, ARGENTINA



CEMRACS: "SCIENTIFIC MACHINE LEARNING"

July 17 - August 25



Victoria Laoye, University of Ibadan, NIGERIA



Sayan Saha, Indian Statistical Institute, INDIA



Joy Zialesi Atokple, Kwame Nkrumah University of Science and Technology Kumasi, GHANA



RESEARCH IN PAIRS PROGRAMME

The CIMPA-ICTP fellowships programme "Research in Pairs" gives mathematics researchers based in developing countries the opportunity to come to a European country to collaborate with a colleague on a well-substantiated research project and to give a short course. These courses are recorded and broadcast at ICTP, CIMPA, CRM or CIRM. During their stay, they can also spend a collaboration week at a partner research center: CIRM (Marseille), CRM (Barcelona), FIM (Zurich), ICTP (Trieste) or MFO (Oberwolfach).

Watch the mini-courses: □ CIMPA MATH /MINI-COURSES CIMPA FINANCED THE PARTICIPATION OF 12 LAUREATES FOR A TOTAL COST OF €38,000





Akram Yousofzadeh,
Islamic Azad University
Mobarakeh Branch, IRAN
Saarland University,
GERMANY
February 1 - June 10



Daniel Cabarcas Jaramillo
Universidad Nacional de
Colombia sede Medellin,
colombia
Colombia
University of Neuchatel,
SWITZERLAND
February 20 - April 1





Abimbola Abolarinwa, University of Lagos, NIGERIA ② Universidad de Granada, SPAIN April 1 - June 17



Maria Andrade,
Universidade Federal de
Sergipe, BRAZIL

② Universidad de Granada,
SPAIN
May 7 - June 24



Haniya Azam,
Lahore University of
Management Science,
PAKISTAN

✓ Institut de Mathematiques
de Jussieu, FRANCE
June 12 - July 17



Rodrigo Gondim Neves,
Universidade Federal Rural
de Pernambuco, BRAZIL

Universitá di Catania, ITALY
June 18 - July 30



CANCELLED **Abbas Fakhari**Shahid Beheshti University, IRAN
June 28 – September 3



El Hadji Diop,
University Iba Der Thiam,
SENEGAL

MINES Paristech, FRANCE

August 31 - October 13



Luciane Quoos,
Universidade Federal do Rio
de Janeiro, BRAZIL

Universitat Rovira i Virgili,

SPAIN September 30 - November 30



POSTPONED TO JANUARY 2024

Sarfraz Ahmad,

COMSATS University
Islamabad, PAKISTAN

Philipps-Universität

Marburg, GERMANY

January 4 - February 4

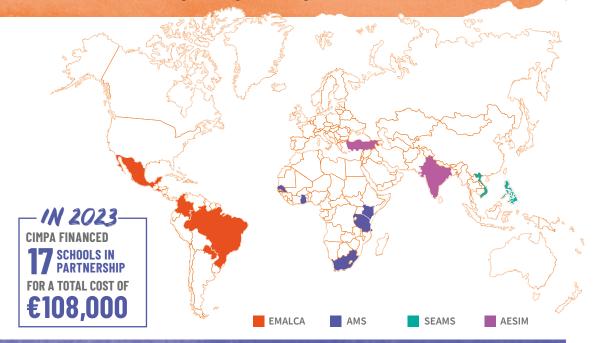
SCHOOLS IN PARTNERSHIP

CIMPA supports schools of mathematics at master's level or for students at the end of their undergraduate studies, in partnership with continental mathematical societies and committees:

- Escuela de Matemática de América Latina y del Caribe (EMALCA)
- Asian and European Schools in Mathematics (AESIM)
- African Mathematical Schools (AMS)
- SEAMS Schools of Mathematics (SEAMS)

The Schools in Partnership take place in higher education and research institutions in all developing countries and have a duration of 1 to 3 weeks.

CIMPA's financial support covers the travel and living expenses for participants affiliated with the host country or neighbouring developing countries.



ESCUELA DE MATEMÁTICA DE AMÉRICA LATINA Y DEL CARIBE (EMALCA)

Centro de Ciencias Matemáticas.

MORELIA, MÉXICO June 26-30

Universidad de El Salvador.

SAN SALVADOR, EL SALVADOR July 17-28

Universidade Federal de Mato Grosso do Sul and Centro de Convenções de Bonito,

BRAZIL September 11-22

> EMALCA at Universidad Nacional de Itapúa, Paraguay, October 2023

Universidad Nacional de Itapúa,

ENCARNACIÓN, PARAGUAY October 2-13

Universidad Industrial de Santander,

BUCARAMANGA, COLOMBIA December 11-22



AFRICAN MATHEMATICAL SCHOOLS (AMS)

North West University, SOUTH AFRICA

"Mathematical Modeling in Biology" March 20-28

INES-Ruhengeri-Institute of Applied Sciences, RWANDA

"Mathematics Decision Sciences and Artificial Intelligence in Digital Economy: Contributions of Women in Mathematics"

June 19-30

AMS at INES-Ruhengeri-Institute of Applied Sciences, Rwanda, June 2023



Arusha Technical College, TANZANIA

"Enumerative Combinatorics" July 10-28

University of Nairobi, KENYA

"Mathematical Modeling of Chemical Reaction Networks: Basic Tools, Applications, and Open Challenges"

July 17-28

University of Ghana, GHANA

"Mathematical Modeling: Where Ecology and Infectious Diseases Intersect" August 16-30

Université Alioune Diop de Bambey, SENEGAL

"Geometry, Analysis and Applications (G2A)"

October 23 - November 3

ASIAN AND EUROPEAN SCHOOLS IN MATHEMATICS (AESIM)



AESIM at Sabanci University, Turkey, August 2023

Sabanci University, ISTANBUL, TURKEY

"DRP Symposium" August 28 - September 1

Nesin Mathematics Village, TURKEY

"Mathematical Foundations of Explainable Artificial Intelligence" September 11-16

Birla Institute of Technology & Science Pilani, INDIA

"Mathematics for Health Sciences" December 28 - January 6, 2024

THE SCHOOLS OF THE SOUTHEAST ASIAN MATHEMATICAL SOCIETY (SEAMS)

Hue University of Education, VIETNAM

"Computational Commutative Algebra" March 19-25

The Industrial University of Ho Chi Minh City, VIETNAM

"Number Theory and Applications"
June 12-22

University of the Philippines Diliman,

PHILIPPINES

"Scientific Computing for Differential Equations and Applications"

November 22 - December 1



SEAMS at University of the Philippines

Diliman, Philippines, November



























FINANCIAL HIGHLIGHTS

CIMPA SUBSIDIES

CIMPA receives subsidies from various European and international institutions



INSTITUT NATIONAL
DES SCIENCES
MATHÉMATIQUES
ET DE LEURS
INTERACTIONS
(FRANCE)



LABORATOIRE D'EXCELLENCE CARMIN (FRANCE)



MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR, DE LA RECHERCHE ET DE L'INNOVATION (FRANCE)



Esberte Égalité Fraternits

MINISTÈRE DE L'EUROPE ET DES AFFAIRES ÉTRANGÈRES (FRANCE)



UNIVERSITÉ CÔTE D'AZUR (FRANCE)



MINISTRY OF EDUCATION AND RESEARCH (NORWAY)



SECRÉTARIAT D'ÉTAT À LA FORMATION, À LA RECHERCHE ET À L'INNOVATION (SWITZERLAND)



UNIVERSITÉ DE NEUCHÂTEL (SWITZERLAND)



MINISTERIO DE CIENCIA E INNOVACION (SPAIN)



MINISTERIO DE UNIVERSIDADES (SPAIN)



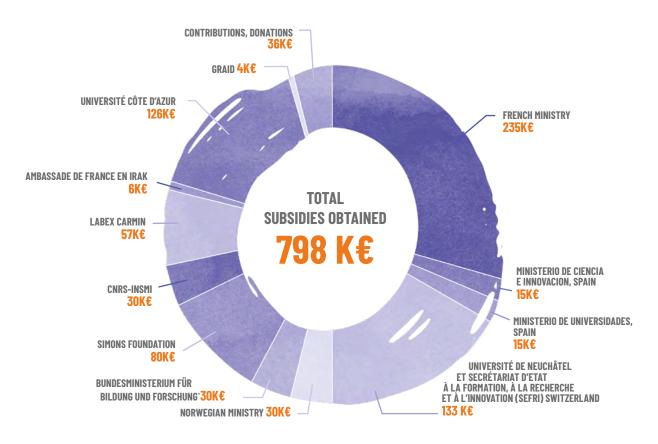
BUNDESMINISTERIUM FÜR BILDUNG UND FORSCHUNG (GERMANY)



SIMONS FOUNDATION (UNITED STATES)

2023 SUBSIDIES (€)

Ministère de l'Enseignement supérieur et de la Recherche/Direction générale de la recherche et de l'innovation	235 000.00
Ministerio de Ciencia e Innovacion y Universidades (Spain)	15 000.00
Ministerio de Universidades (Spain)	15 000.00
Université de Neuchâtel et EPFL (Switzerland)	133 314.00
Ministry of Education and Research (Norway)	30 000.00
German Federal Ministry of Education and Research	30 000.00
SIMONS Foundation (88400 USD)	80 354.14
CNRS-INSMI	30 000.00
Labex CARMIN	57 409.00
Ambassade de France en Irak	6 000.00
Université Côte d'Azur (including the director's salary)	125 879.44
Donations to GRAID (Graduate Research Assistantships in Developing Countries)	4 040.00
Contributions, donations	35 655.72
TOTAL INCOME	797 652.30

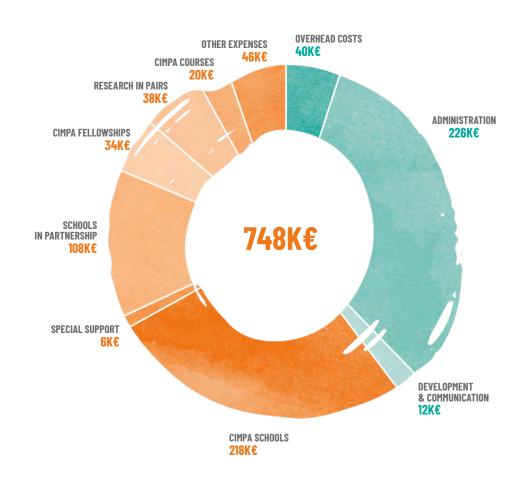


2023 FINANCIAL STATEMENT

2023 EXPENSES (€)

OVERHEAD COSTS	
Bank charges + online payment fees	2893.66
Office supplies	661.63
UCA occupancy costs	2 460.00
Insurance	445.61
Membership fees	1 260.00
Corporate tax	5587.00
Expenses for General Assembly/ Governing Board/Scientific Council/ Steering Committee	26 303.70
meetings/missions SUBTOTAL OVERHEAD COSTS	
SUBIDIAL OVERHEAD COSTS	39611.60

ADMINISTRATIVE COSTS	
Fees: accountant, auditor	13082.40
Salaries (including the director's salary), social security contributions, occupational health care, share of prof. training	212 467.32
SUBTOTAL ADMINISTRATIVE COSTS	225 549.72
DEVELOPMENT & COMMUNICATION	ON
DEVELOPMENT & COMMUNICATION Computer hardware, software and	DN
	1 855.98
Computer hardware, software and	
Computer hardware, software and video room equipment	1 855.98



2022 CIMPA SCHOOL POSTPONED TO 2023	
Philippines (Manila)	7 013.4
S/TOTAL 1	
2023 CIMPA SCHOOLS	
South Africa (Johannesburg)	4 433.0
Chad	10 795.9
Namibia	11 795.0
Argentina	11 298.7
Nepal	13 524.0
Gabon	12 866.0
Turkey	12 139.9
Cuba	14 745.0
Lebanon	11 355.4
Mexico	9 574.9
Colombia (Villa de Leyva)	9 971.1
Colombia (Popayan)	10 451.0
Malawi	14 000.0
Dominican Republic	13 462.1
Morocco	12 651.1
India (Sangareddy)	14 197.0
South Africa (Cape Town)	3 791.9
Brazil	8 824.4
India (Pondicherry)	10 902.8
S/TOTAL 2	2 210 779.6
SUBTOTAL SCHOOLS (1+2)) 217 793.0
SPECIAL SUPPORT FOR STUDENTS	6014.0
SCHOOLS IN PARTNERSHIP	
EMA	44 733.4
EMALCA	27 898.0
SEAMS	19 000.0
AESIM	15 978.6

CIMPA FELLOWSHIPS	
IHP Trimester T1a "Quantum Gravity, Random Geometry and Holography" (2 laureates)	4 703.00
IHP Trimester T1b "Random processes in the brain: From experimental data to Math and back" (1 laureate)	1 539.00
IHP Trimester T2 "Higher Structures in Geometry and Mathematical Physics" (3 laureates)	10 630.90
IHP Trimester T3 "Recent Trends in Computer Algebra" (3 laureates)	10 422.90
CIRM-SMAI Program - CEMRACS SUMMER SCHOOL (3 laureates)	3 945.00
CIRM Thematic Month "Arithmetic and Information theory" (3 laureates)	3 459.87
SUBTOTAL CIMPA FELLOWSHIPS	34 701.67
,	
RESEARCH IN PAIRS (12 LAUREATES)	38 125.67
RESEARCH IN PAIRS (12 LAUREATES) CIMPA COURSES	38 125.67
	38 125.67 19 797.14
CIMPA COURSES	
CIMPA COURSES In person	19 797.14
CIMPA COURSES In person SUBTOTAL CIMPA COURSES	19 797.14
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in	19 797.14 19 797.14 14 947.60
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries)	19 797.14 19 797.14
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in	19 797.14 19 797.14 14 947.60 4040.00
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries) Supervisors of Schools	19 797.14 19 797.14 14 947.60 4040.00 26 928.62
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries) Supervisors of Schools SUBTOTAL OTHER EXPENSES	19 797.14 19 797.14 14 947.60 4040.00 26 928.62 45 916.22
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries) Supervisors of Schools SUBTOTAL OTHER EXPENSES SUBTOTAL ACTIVITES	19 797.14 19 797.14 14 947.60 4040.00 26 928.62 45 916.22 469 956.86
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries) Supervisors of Schools SUBTOTAL OTHER EXPENSES SUBTOTAL ACTIVITES	19 797.14 19 797.14 14 947.60 4040.00 26 928.62 45 916.22 469 956.86
CIMPA COURSES In person SUBTOTAL CIMPA COURSES OTHER EXPENSES Ad hoc support for research training activities Support to GRAID (Graduate Research Assistantships in Developing Countries) Supervisors of Schools SUBTOTAL OTHER EXPENSES SUBTOTAL ACTIVITES TOTAL EXPENSES SURPLUS/	19 797.14 19 797.14 14 947.60 4040.00 26 928.62 45 916.22 469 956.86 747 802.89

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