



CIMPA

Centre International
de Mathématiques Pures et Appliquées



2023 ANNUAL REPORT

www.cimpa.info



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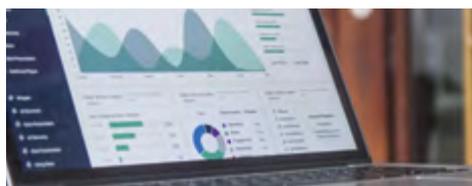
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FOREWORD

“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 association 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

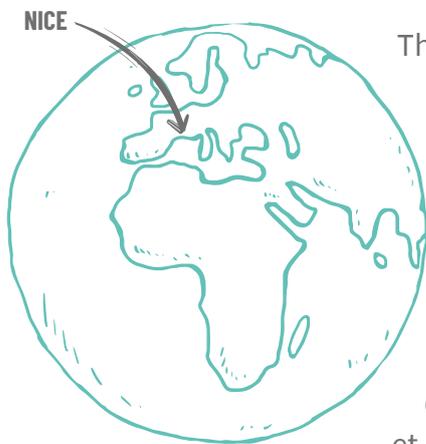


“One of the assets of our association is that we are often present in the field, in particular during the schools where CIMPA is represented by our Scientific Officers. Their work allows CIMPA to have a direct understanding of the local situations and to prepare for future collaborations and events. 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



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 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 SCHOOLS



CIMPA COURSES



CIMPA FELLOWSHIPS



RESEARCH
IN PAIRS PROGRAMME

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 **NICE** FRANCE



ADMINISTRATION

13

MEMBERS OF THE EXECUTIVE TEAM

14

A GOVERNING BOARD OF 7 INDIVIDUAL MEMBERS AND 7 INSTITUTIONAL MEMBERS

12

MEMBERS OF THE SCIENTIFIC COUNCIL

37

A STEERING COUNCIL OF 18 INDIVIDUAL MEMBERS AND 19 INSTITUTIONAL MEMBERS

2

ADMINISTRATIVE AND COMMUNICATION SUPPORT

186

CIMPA MEMBERS

A WORLDWIDE PARTNER NETWORK OF ORGANISATIONS AND ACADEMIC INSTITUTIONS



ACTIVITIES

EACH YEAR, MORE THAN **1000** PARTICIPANTS ATTEND CIMPA SCHOOLS

ACTIVITIES IN MORE THAN **100** COUNTRIES IN THE WORLD



COMMUNICATION

PRESENT ON 4 SOCIAL NETWORKS



A YOUTUBE CHANNEL **CIMPA MATH**



A WEBSITE **WWW.CIMPA.INFO**



BUDGET ABOUT **€800k** 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 Damlamian 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.



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

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.

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

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.

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

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

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

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.

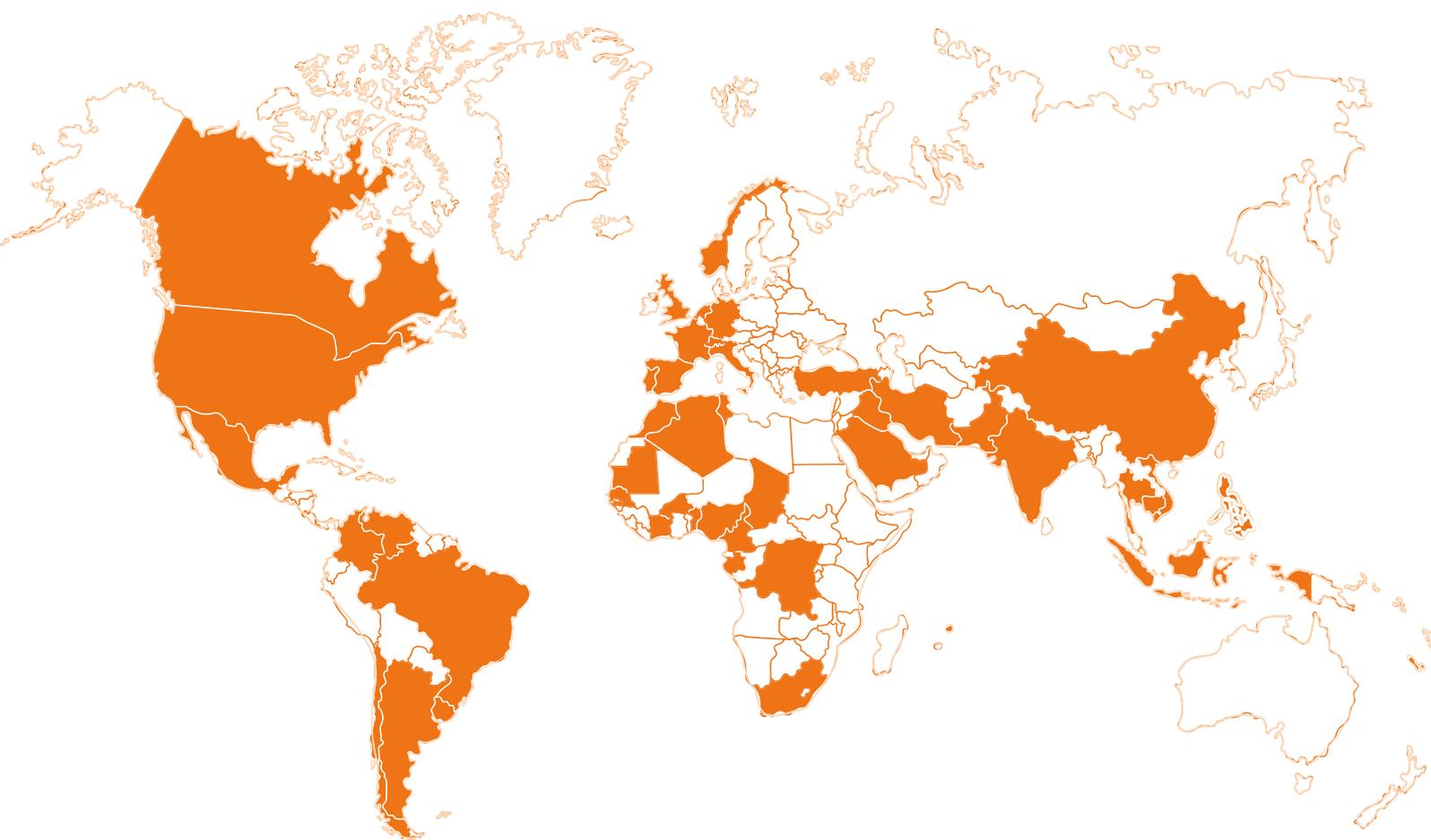


← CIMPA School in Cape Town, South Africa, November 2023

GOVERNANCE & 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 Green
PRESIDENT
University of
Stellenbosch,
SOUTH AFRICA



Annie Raoul
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 Aboud
University of Diyala,
IRAQ



Servet Martinez
Universidad
de Chile, CHILE



Rahim Zaare-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 Nunno
PRESIDENT
University of Oslo,
NORWAY



Volker Bach
Technische
Universität
Braunschweig,
GERMANY



Mohamed Boucetta
Université
Cadi-Ayad,
MOROCCO



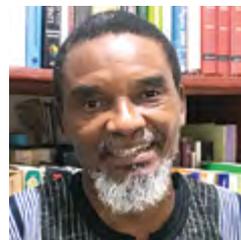
Tien-Cuong Dinh
National University
of Singapore,
SINGAPORE



Laura Geatti
Università di Roma
Tor Vergata,
ITALY



Henar Herrero Sanz
Universidad de
Castilla-La Mancha,
SPAIN



**Mahouton Norbert
Hounkonnou**
Université
d'Abomey-Calavi,
BENIN



**Yoshiharu
Kohayakawa**
Universidade de São
Paulo,
BRAZIL



Teresa Krick
Universidad de
Buenos Aires,
ARGENTINA



Gabriel Peyré
École normale
supérieure de Paris,
FRANCE



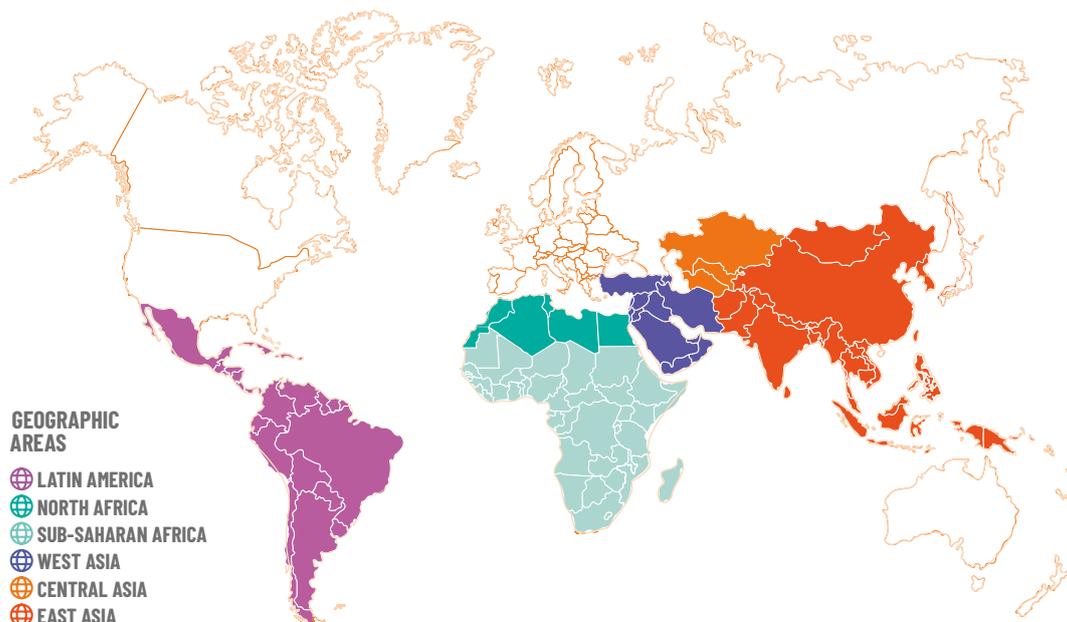
Mythily Ramaswamy
ICTS-TIFR,
INDIA



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



Christophe Ritzenthaler
EXECUTIVE DIRECTOR
Université Côte d'Azur, FRANCE



Alp Bassa
Boğaziçi üniversitesi,
TURKEY
 WEST AND CENTRAL ASIA



Yacine Chitour
Université Paris-Saclay, FRANCE
 NORTH AFRICA AND WEST ASIA



Sophie Dabo
Université de Lille, FRANCE
 AFRICA



Lidia Fernandez
Universidad de Granada, SPAIN
 ASIA



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 Lamiri
COMMUNICATION 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 Green
PRESIDENT
University of
Stellenbosch,
SOUTH AFRICA

Annie Raoul
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 Aboud
University of Diyala,
IRAQ

Servet Martinez
Universidad
de Chile, CHILE

**Rahim
Zaare-Nahandi**
University 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)
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

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 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 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 Poincaré (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 Forschungsinstitut 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 Matemático (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 NETHERLANDS

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



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.

www.nccr-swissmap.ch



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 Supérieure
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 Gayet
Institut Fourier, FRANCE



**Mahamat Saleh Daoussa
Haggar**
University of N'Djamena,
CHAD



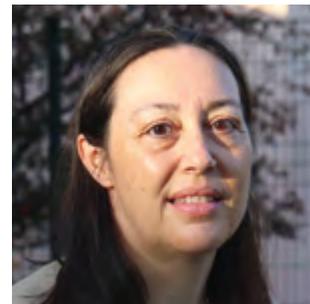
Youcef Mammeri
Université Jean Monnet,
FRANCE



Tim Römer
Osnabrück University,
GERMANY



Wil Schilders
Eindhoven University
of Technology,
THE NETHERLANDS



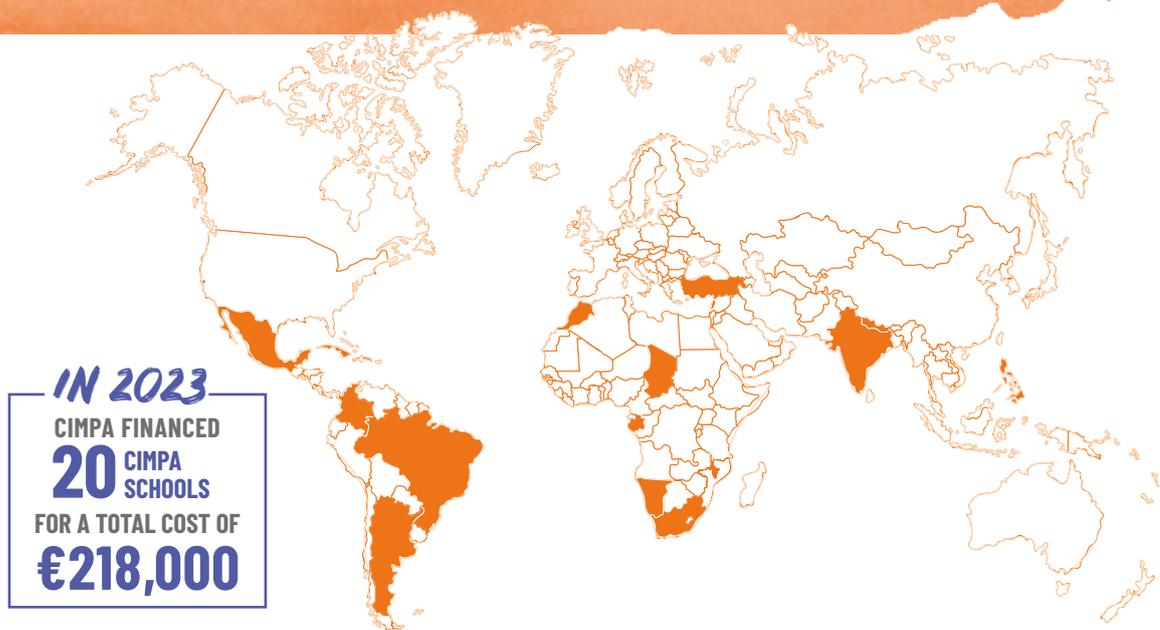
Suzanne Touzeau
National Research Institute
for Agriculture, Food and
Environment, FRANCE

2023 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 travel and 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, CUBA

“Mathematical Modelling and Numerical Simulation in Medicine”
June 4-17

Beirut, LEBANON

“Complex Analysis and Geometry”
June 5-16

Oaxaca, MEXICO

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

CIMPA School,
La Habana,
Cuba,
June 2023



CIMPA School,
Sangareddy,
India,
November 2023



Popayan, COLOMBIA

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

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

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

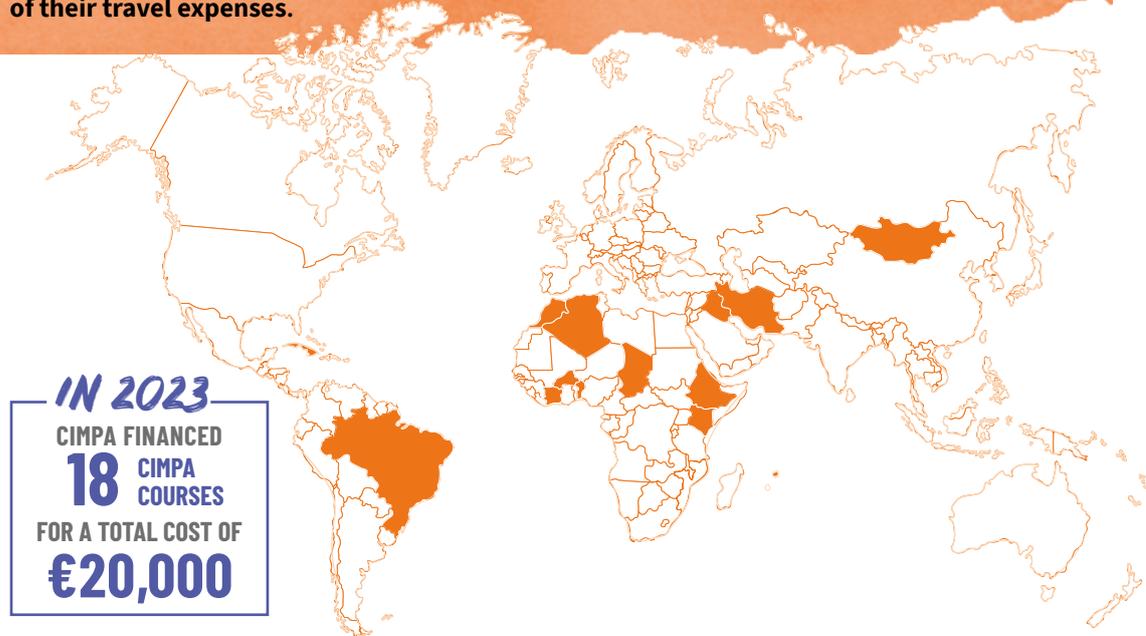
“Post-Quantum Cryptography”
December 11-21

CIMPA School,
Sirince, Turkey,
June 2023



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 Caucau
 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



Alain Togbe in Benin, December 2023 ↑

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

July 2-7

Mongolian National University of Education,

MONGOLIA

“Extremal Graph Theory”

BY Tomas Vetrík

UNIVERSITY OF THE FREE STATE, SOUTH AFRICA

June 3-11

Institute for Research in Fundamental Sciences, IRAN

“Monomorphism Categories and their Applications”

BY Rasool Hafezi Najafabadi

NANJING UNIVERSITY OF INFORMATION SCIENCE AND

TECHNOLOGY, CHINA

December 6-13

École Nationale des Sciences Appliquées d'Agadir, MOROCCO

“AI and Deep Learning in Image Processing- Focus on Medical Image Processing”

BY Mamode Khan Naushad

UNIVERSITY OF MAURITIUS, MAURITIUS

July 17-27

**Université de N'Djaména, CHAD**

“Modélisation des écoulements des fluides”

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

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, CAMEROON

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

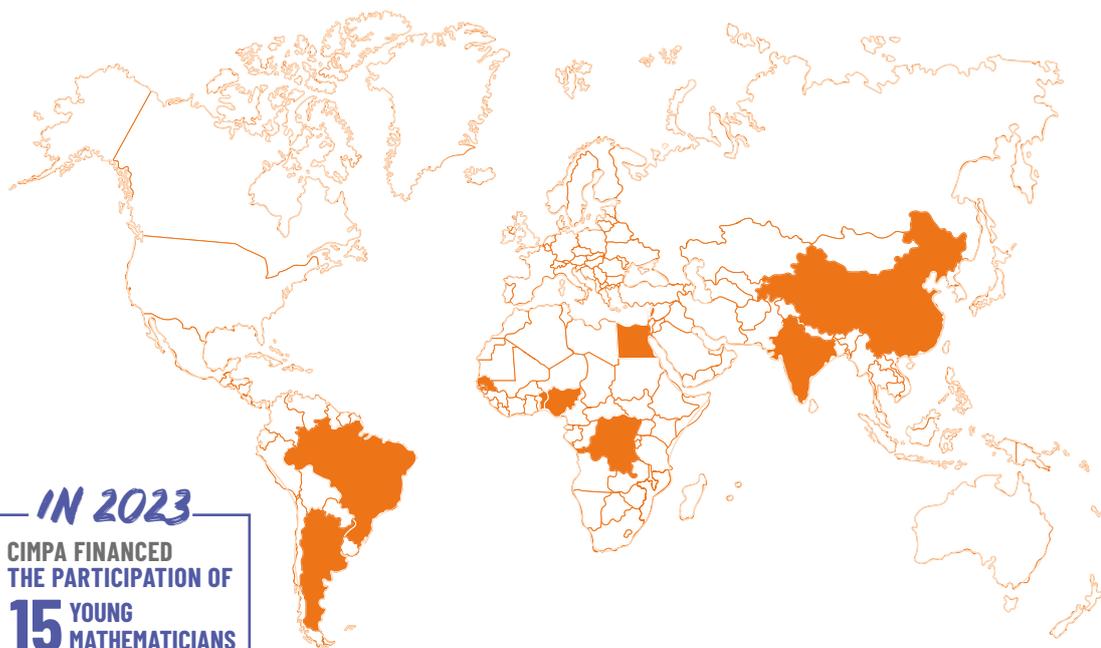
December 8-23

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.



IN 2023
 CIMPA FINANCED
 THE PARTICIPATION OF
15 YOUNG
 MATHEMATICIANS
 FOR A TOTAL COST OF
€35,000

IHP

"QUANTUM GRAVITY, RANDOM GEOMETRY AND HOLOGRAPHY"

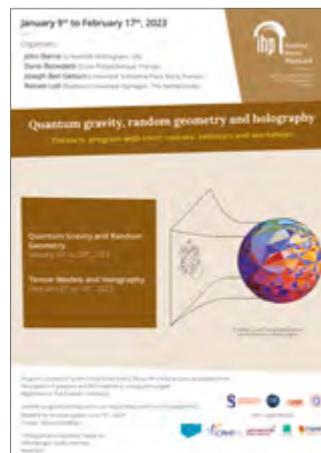
January 9 - February 17



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

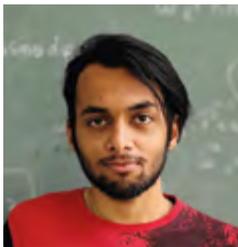


Bia Ramalho,
University of São Paulo, BRAZIL



"HIGHER STRUCTURES IN GEOMETRY AND MATHEMATICAL PHYSICS"

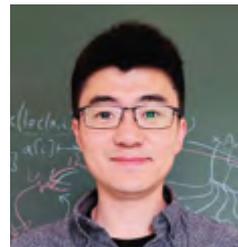
April 17 - July 14



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



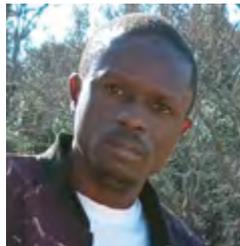
Youssef Abdelaziz,
The American University in Cairo, EGYPT



CIRM

"ARITHMETIC AND INFORMATION THEORY"

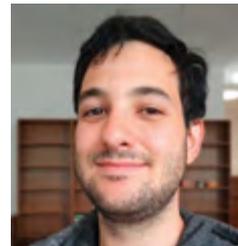
January 30 - March 3



**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

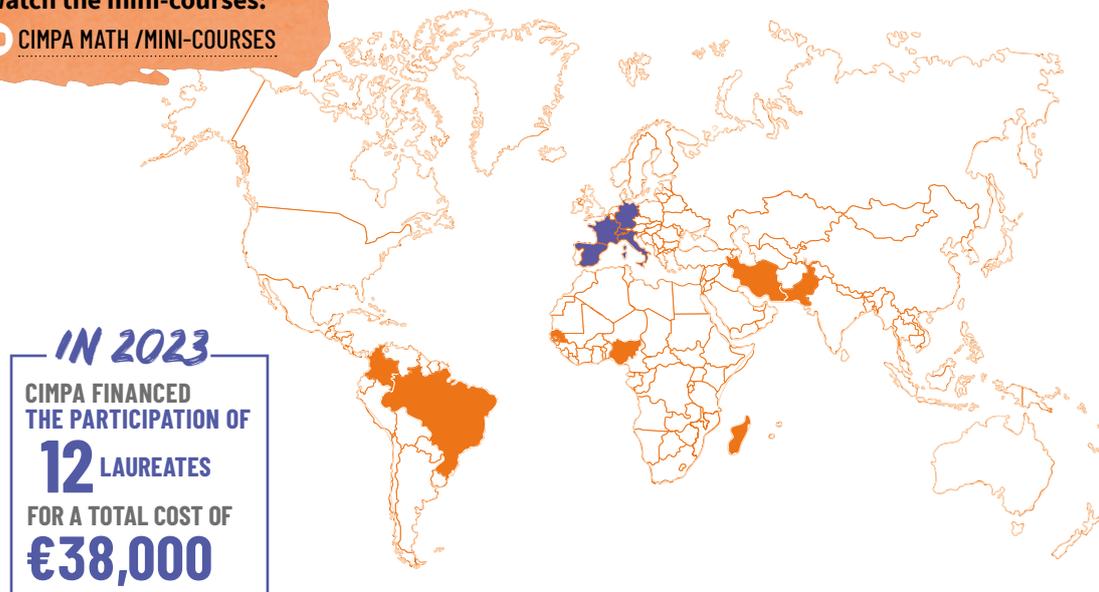


RESEARCH IN PAIRS PROGRAMME

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).

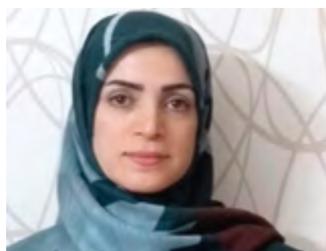
Watch the mini-courses:

 [CIMPA MATH / MINI-COURSES](#)



Salameh Sedaghat,
 Buein Zahra Technical
 University, IRAN

[↗](#) Universidad Carlos III de
 Madrid, SPAIN
 January 26 - July 22



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

[↗](#) University of Neuchatel,
 SWITZERLAND
 February 20 - April 1

2023 MAIN ACTIVITIES



Pani W. Fernando,
University of Sri
Jayawardenepura, SRI LANKA
[🔗](#) Bergische Universität
Wuppertal, GERMANY
February 27 - May 31



Abimbola Abolarinwa,
University of Lagos, NIGERIA
[🔗](#) Universidad de Granada,
SPAIN
April 1 - June 17



Maria Andrade,
Universidade Federal de
Sergipe, BRAZIL
[🔗](#) 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
[🔗](#) Università di Catania, ITALY
June 18 - July 30



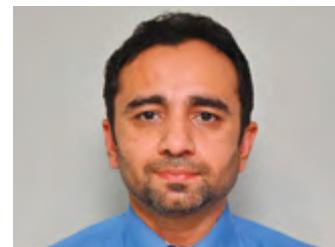
CANCELLED
Abbas Fakhari
Shahid Beheshti University,
IRAN
June 28 - September 3



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

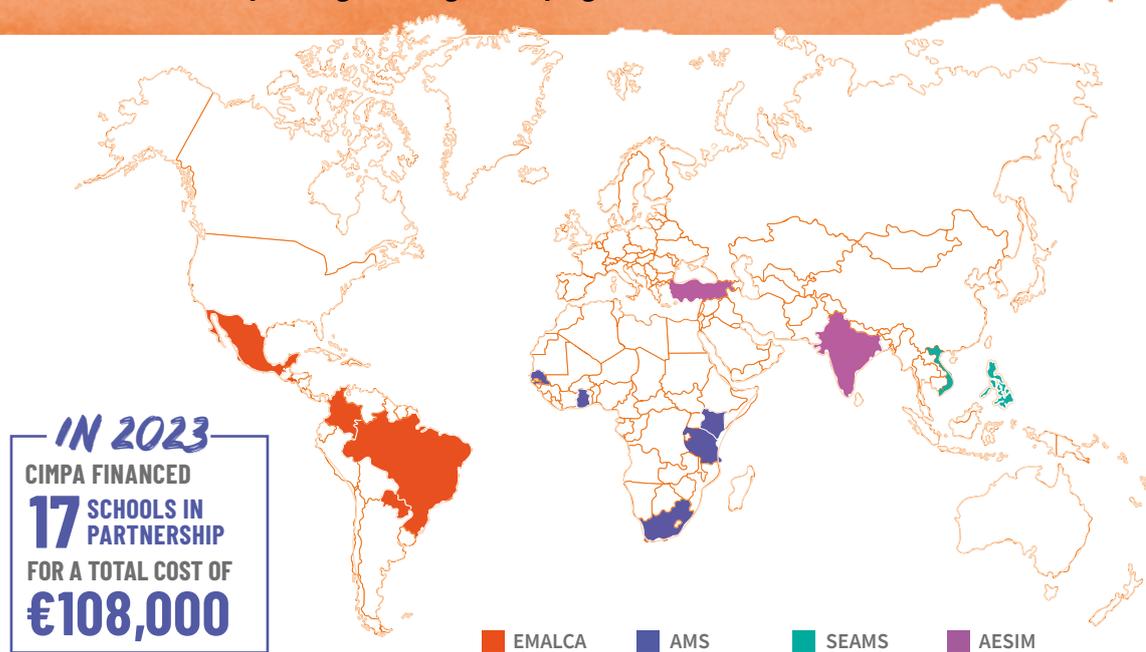
SCHOOLS IN PARTNERSHIP

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

Universidad Nacional de Itapúa,

ENCARNACIÓN, PARAGUAY
October 2-13

Universidad Industrial de Santander,

BUCARAMANGA, COLOMBIA
December 11-22

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



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

SEAMS at University of the Philippines Diliman, Philippines, November 2023 ↓

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





CIMPA

Centre International de Mathématiques Pures et Appliquées
PROMOTING RESEARCH IN MATH IN DEVELOPING COUNTRIES

CIMPA SCHOOLS 2024 ÉCOLES CIMPA

PHILIPPINES, Dumaguete City
Current Trends in Algebra
29.01.24 > 09.02.24

PAKISTAN, Lahore
Algebra and Algebraic Geometry
for Applications
26.02.24 > 08.03.24

THAILAND, Nakhon Pathom
Mathematics for Medicine
and Health Sciences
20.05.24 > 31.05.24

GHANA, Cape Coast
Analysis and Numerics of Partial
Differential Equations
02.06.24 > 15.06.24

LEBANON, Beirut
L-Functions and Modular Forms
in Number Theory
03.06.24 > 14.06.24

VIETNAM, Ho Chi Minh City
Applied Number Theory
03.06.24 > 14.06.24

TUNISIA, Tunis
Ordered Structures with Applications
in Finance and Machine Learning
16.06.24 > 28.06.24

COLOMBIA, Popayán
Bridges between Algebra
and Combinatorics
17.06.24 > 28.06.24

UZBEKISTAN, Urgench
Lattices, Heights and Diophantine
Approximation
24.06.24 > 05.07.24

EL SAVADOR, San Salvador
Teoría de Subvariedades
y Análisis Geométrico
08.07.24 > 19.07.24

CAMEROON, Douala
Algèbre, géométrie algébrique
et applications à la théorie
de l'information
15.07.24 > 26.07.24

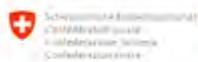
BURUNDI, Bujumbura
Équations aux dérivées partielles -
modélisation - simulations
05.08.24 > 16.08.24

MADAGASCAR, Antsiranana
Blockchain: the Mathematical Theory
and its Applications
05.08.24 > 17.08.24

BRAZIL, Cabo Frio
V Latin American School of Algebraic
Geometry (V ELGA)
12.08.24 > 23.08.24

CHAD, N'Djamena
Modélisation d'écoulements
des fluides et environnement
21.10.24 > 01.11.24

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2023 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)



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



UNIVERSITÉ
CÔTE D'AZUR

UNIVERSITÉ CÔTE D'AZUR
(FRANCE)



NORWEGIAN MINISTRY
OF EDUCATION AND RESEARCH

MINISTRY OF EDUCATION
AND RESEARCH
(NORWAY)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

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



UNIVERSITÉ
DE NEUCHÂTEL
(SWITZERLAND)



MINISTERIO
DE CIENCIA
E INNOVACIÓN

MINISTERIO DE CIENCIA
E INNOVACION (SPAIN)



MINISTERIO
DE UNIVERSIDADES

MINISTERIO DE
UNIVERSIDADES (SPAIN)



Bundesministerium
für Bildung
und Forschung

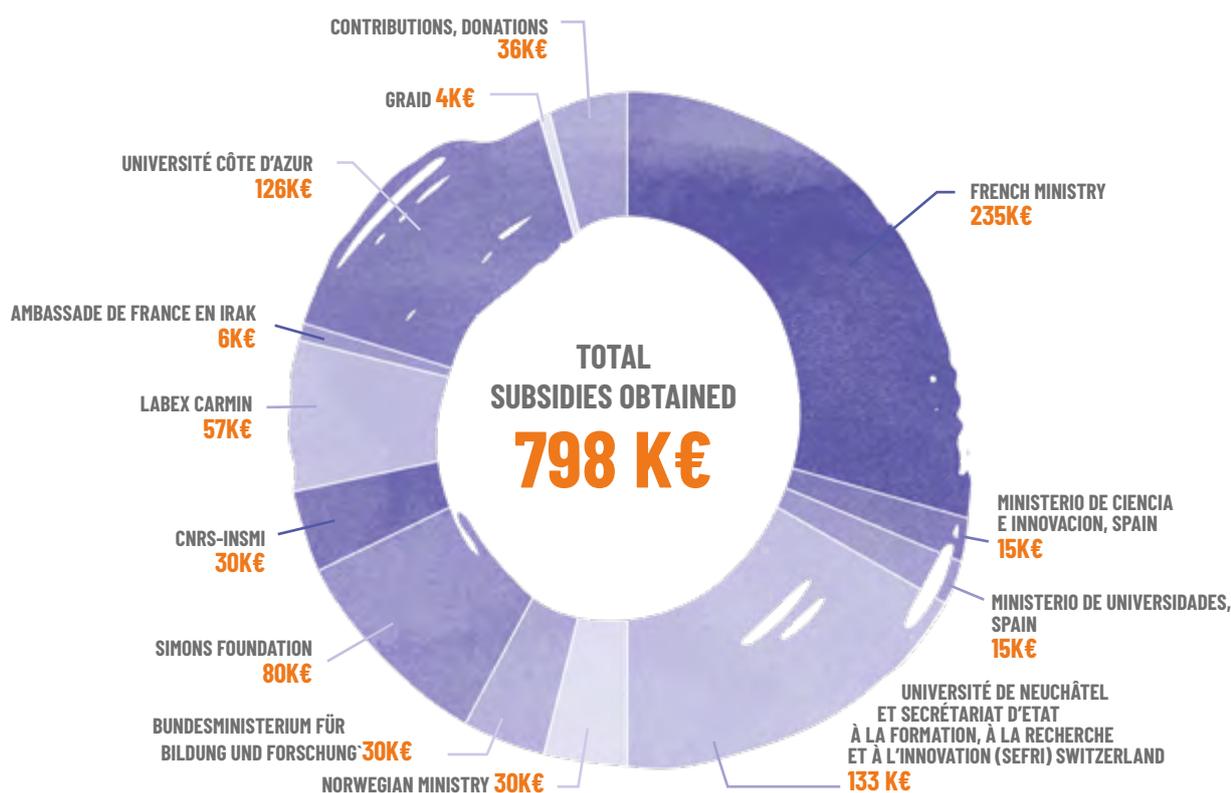
BUNDEMINISTERIUM
FÜR BILDUNG UND
FORSCHUNG (GERMANY)



SIMONS FOUNDATION
(UNITED STATES)

2023 SUBSIDIES (€)

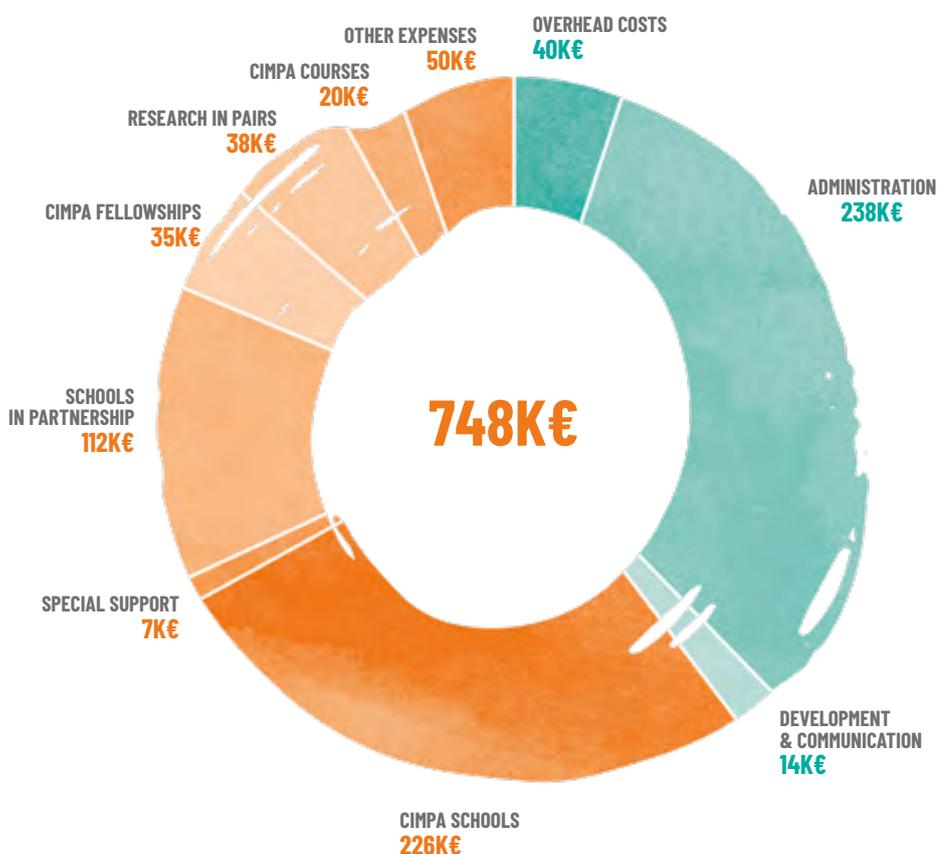
Ministère de l'Enseignement supérieur et de la Recherche/Direction générale de la recherche et de l'innovation	235 000.00
Ministerio de Ciencia e Innovacion y Universidades (Spain)	15 000.00
Ministerio de Universidades (Spain)	15 000.00
Université de Neuchâtel et EPFL (Switzerland)	133 314.00
Ministry 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	35 685.72
TOTAL INCOME	797 682.30



2023 FINANCIAL STATEMENT

2023 EXPENSES (€)

OVERHEAD COSTS		ADMINISTRATIVE COSTS	
Bank charges + online payment fees	2893.66	Fees: accountant, auditor	13082.40
Office supplies	661.63	Salaries (including the director's salary), social security contributions, occupational health care, share of prof. training	225 287.20
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 meetings/missions	26 303.70		
SUBTOTAL OVERHEAD COSTS	39611.60	SUBTOTAL ADMINISTRATIVE COSTS	238 369.60
		DEVELOPMENT & COMMUNICATION	
		Computer hardware, software and video room equipment	1 855.98
		Communication	5 638.47
		LMS platform + website redesign	6 950.26
		SUBTOTAL DEVELOPMENT & COMMUNICATION	14 444.71



ACTIVITIES	
2022 CIMPA SCHOOL POSTPONED TO 2023	
Philippines (Manila)	7 013.41
S/TOTAL 1	7 013.41
2023 CIMPA SCHOOLS	
South Africa (Johannesburg)	4 433.05
Chad	10 795.91
Namibia	11 795.00
Argentina	11 298.70
Nepal	13 524.00
Gabon	12 866.00
Turkey	12 139.97
Cuba	14 745.00
Lebanon	11 355.48
Mexico	9 574.91
Colombia (Villa de Leyva)	9 971.11
Colombia (Popayan)	10 451.00
Malawi	14 000.00
Dominican Republic	13 462.10
Morocco	12 651.16
India (Sangareddy)	14 197.00
South Africa (Cape Town)	6 575.45
Brazil	9 424.43
India (Pondicherry)	15 764.84
S/TOTAL 2	219 025.11
SUBTOTAL SCHOOLS (1+2)	226 038.52
SPECIAL SUPPORT FOR STUDENTS	7014.00
SCHOOLS IN PARTNERSHIP	
EMA	44 733.45
EMALCA	31 398.00
SEAMS	19 000.00
AESIM	16 978.67
SUBTOTAL SCHOOLS IN PARTNERSHIP	112 110.12

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	34 700.67
RESEARCH IN PAIRS (12 LAUREATES)	38 125.67
CIMPA COURSES	
In person	19 797.14
SUBTOTAL CIMPA COURSES	19 797.14
OTHER EXPENSES	
Ad hoc support for research training activities	18 947.60
Support to GRAID (Graduate Research Assistantships in Developing Countries)	4040.00
Supervisors of Schools	26 928.62
SUBTOTAL OTHER EXPENSES	49 916.22
SUBTOTAL ACTIVITES	487 702.34
TOTAL EXPENSES	780 128.25
SURPLUS/ EQUITY CONTRIBUTION	17 554.05
TOTAL GENERAL	797 682.30



CIMPA

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Campus Valrose, Bâtiment Dieudonné II

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www.cimpa.info

