

CIMPA

Centre International  
de Mathématiques Pures et Appliquées

**2018 ANNUAL REPORT**  
[www.cimpa.info](http://www.cimpa.info)

# FOREWORD



It is a pleasure to present CIMPA to you together with Ludovic Rifford, the Director, in this brochure. We are proud of CIMPA's history of contributing to the interest and growth of mathematics in the developing world. Our CIMPA Schools, the main area of work, as well as other activities are illustrated here, and have had a significant impact. There are many mathematicians supporting CIMPA, from Europe, from the developing countries as well as others who serve as co-organizers and lecturers, or on our Scientific Council. We are grateful to them for the strong and expert support we receive. It is also a pleasure to acknowledge the support and leading contribution by the French Government and Scientific Community, as well as from Spain, from Norway and from Switzerland.

The recognition of CIMPA's achievements, and enthusiasm to contribute to its success, has led to the consideration other countries in Europe joining the organization, which is a positive strategic goal we are following. It is my pleasure to serve as President of CIMPA and to contribute with the Governing Board, Ludovic and others to its excellent work.

**Barry GREEN**  
PRESIDENT

A handwritten signature in blue ink that reads "Barry Green".



This brochure, which serves as an annual report, presents the activities that were financed and co-financed by CIMPA in 2018. These were made possible by the continued funding and involvement of CIMPA's four member countries (France, Spain, Norway and Switzerland) and UNESCO, as well as by the links established by CIMPA over the years with continental mathematical societies and many partners throughout the world. In 2018, CIMPA undertook four types of activity in 41 countries: the CIMPA Schools – CIMPA's traditional activity - CIMPA Courses, which makes it possible to provide funding for a series of one-off courses in the field in a very flexible manner, partnership schools organised in association with mathematical societies in Africa, South America, Southeast Asia and West Asia, and the CIMPA Fellowships, which finance termly participation at the Institut Henri-Poincaré in Paris and which will soon be extended to the Recerca Matemàtica Centre in Barcelona. All these activities owe a great deal to the work and energy of the members of the Board of Directors, the Scientific Council and the Steering Committee, the Scientific Managers and our invaluable administrative and technical team, whom I should like to thank very warmly. I hope you enjoy reading this brochure.

**Ludovic RIFFORD**  
EXECUTIVE DIRECTOR

A handwritten signature in black ink that reads "Ludovic Rifford".

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# ABOUT US



The **Centre International de Mathématiques Pures et Appliquées (CIMPA)**, founded in France in 1978, is a non-profit organisation that promotes research in Mathematics in developing countries. Located in Nice, it is a UNESCO Category 2 centre and is part of the **Centre d'Accueil et de Rencontres Mathématiques Internationales** (Laboratoire d'Excellence CARMIN). It benefits from the financial support of France, Norway, Spain and Switzerland.

**CIMPA** co-organises and sponsors numerous activities in developing countries, in 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

**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 students to research in Mathematics. For most of its activities, **CIMPA** works in partnership with other organisations with similar objectives, such as the **International Mathematical Union (IMU)**, the **European Mathematical Society (EMS)** and the **International Centre for Theoretical Physics (ICTP)**.



CIMPA School in Ankara (Turkey) - 2018

# CIMPA, SINCE ITS CREATION



Founded  
in 1978



Based  
in Nice - France



Budget  
About 500,000€ per year



Each year, more than 1,000 participants attend  
one of CIMPA Schools



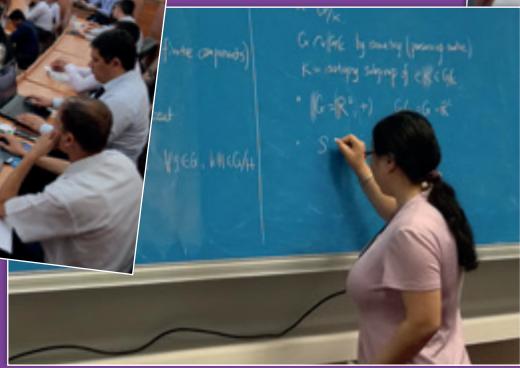
Activities in more  
than 100 countries in the world



A Worldwide partner network of  
organisations and academic institutions



CIMPA School in Tashkent  
(Uzbekistan) - 2018



CIMPA School in Merida (Mexico) - 2018

CIMPA School in Kinshasa (Congo) - 2018





# ACTIVITIES

# CIMPA SCHOOLS



Historically, **CIMPA**'s activity concerns the organisation of **CIMPA Schools** in developing countries. It focuses on areas where there is real enthusiasm and where there is a scope for a research project. The purpose of a **CIMPA School** is to provide an introduction to recent research in pure and applied Mathematics, as well as related subjects such as Computer Sciences and Theoretical Physics. **CIMPA Schools** are aimed at students and research teaching staff from developing countries. **CIMPA** provides the schools with financial support to cover the travel and living expenses of participants from neighbouring countries. Calls for proposals are launched every year, with a view to organising twenty or so **CIMPA Schools** the following year. In 2018, the **CIMPA** financed 21 **CIMPA Schools** in 17 countries, for a budget of €183,300.

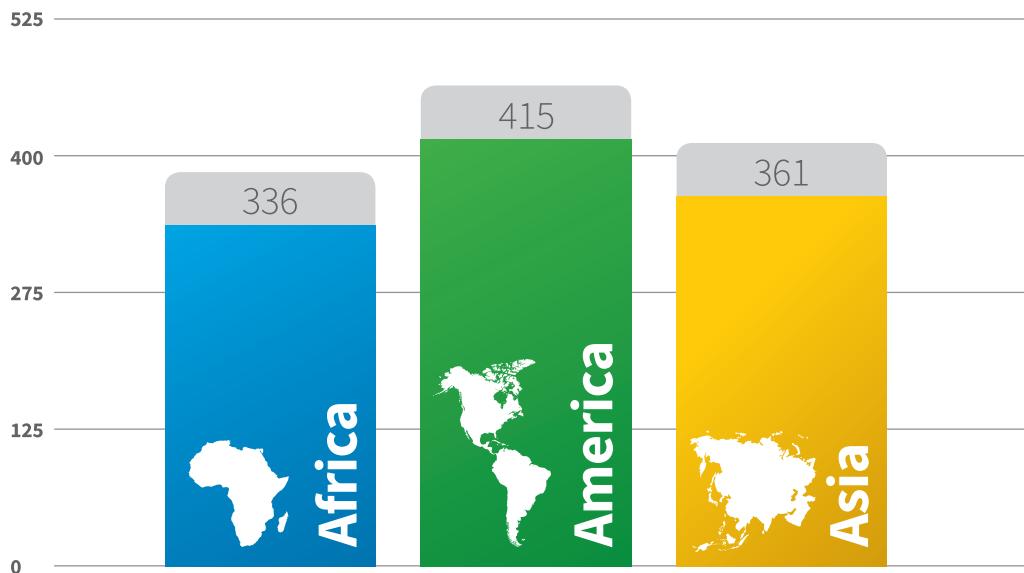
To date,  
**CIMPA** has organised  
**341** **CIMPA Schools**  
in **62** Countries.



CIMPA School in Tashkent (Uzbekistan) - 2018

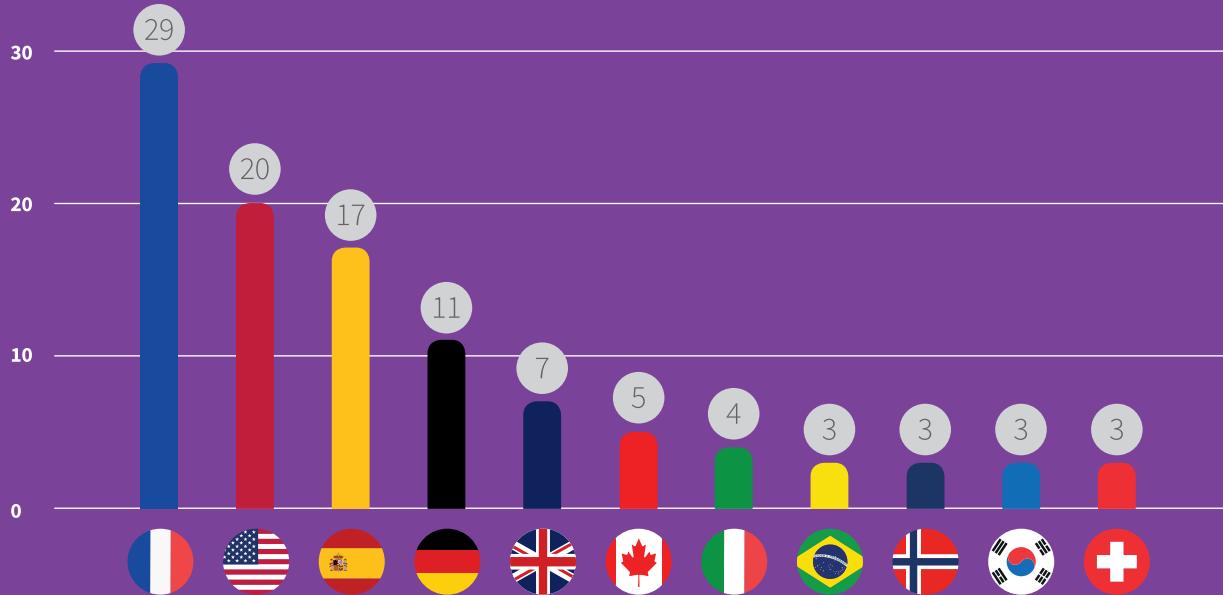
# STATISTICS 2018

## Continents of Participants



Each column indicates the number of participants from the continent

## Lecturers' Countries



Each column indicates the number affiliated in the corresponding country

2

from the following countries: Chile, China, Denmark, Morocco, South Africa, Tunisia, Turkey.

1

from the following countries: Argentina, Australia, Cameroon, Colombia, Congo Brazzaville, Hong Kong, Ivory Coast, Madagascar, Romania, Russia, Senegal, Singapore.

**Barranquilla**  
**COLOMBIA** Jun 4-15

Combinatorics meets Algebra,  
Geometry and Optimization

**Medellín**  
**COLOMBIA** Jun 18-27

Geometric and Homological  
Methods in the Representation  
Theory of Associative Algebras  
and their Applications

**Zacatecas**  
**MEXICO** Jun 25-Jul 6

Commutative Algebra with  
Applications to Statistics and  
Coding Theory

**Córdoba**  
**ARGENTINA** Jul 9-20

Arithmetic, Groups and Analysis  
– with ICTP

**Buenos Aires**  
**ARGENTINA** Jul 16-27

Geometry and scaling of random  
structures

**Mérida**  
**MEXICO** Dec 3-15

Noncommutative Geometry  
and Index Theory

**Johannesburg**  
**SOUTH AFRICA** Jan 8-19

Explicit Number Theory

**Beyrouth**  
**LEBANON** Feb 26-Mar 7

Elliptic problems and applications  
in geometry

**Casablanca**  
**MOROCCO** Mar 6-16

Algèbres non associatives.  
Aspects analytique, géométrique  
et applications

**Yaoundé**  
**CAMEROON** Apr 7-20

Outils de topologie algébrique  
et d'algèbre homologique.  
Applications aux espaces  
de configuration et à l'algèbre  
de Lie-Rinehart.

**Hammamet**  
**TUNISIA** Apr 18-28

Contrôle, Problèmes Inverses  
et Géométrie

**Kinshasa**  
**DR CONGO** May 7-18

Arithmétique algorithmique  
et cryptographie

**Dangbo**  
**BENIN** Jul 1-14

Dynamical systems and  
applications: geometrical,  
topological, and numerical aspects

**Muizenberg**  
**SOUTH AFRICA** Jul 16-28

Topics in Ring Theory

**Lomé**  
**TOGO** Sep 3-15

Statistique des durées de vie  
et statistique spatiale :  
Applications aux essais  
thérapeutiques, à la fiabilité  
industrielle, à l'épidémiologie  
et au changement climatique

**Lahore**  
**PAKISTAN** Mar 5-14

Combinatorial Commutative  
Algebra

**Tashkent**  
**UZBEKISTAN** Sep 10-21

Nonassociative algebras and  
applications

**Kathmandu**  
**NEPAL** Oct 25-Nov 6

Dynamical systems

**Ha Noi**  
**Viet Nam** Mar 5-18

Recent developments in  
stochastic dynamics and  
stochastic analysis

**Daejeon**  
**SOUTH KOREA** Jun 10-24

Symplectic embedding, systolic  
inequalities and celestial  
mechanics

# Écoles de recherche Research Schools

**2018**  
<http://cimpa.info>



**CIMPA**

INTERNATIONAL CENTRE FOR PURE AND APPLIED MATHEMATICS (CIMPA) is an international organisation that promotes research and higher education in Mathematics in developing countries. CIMPA is sponsored by UNESCO and supported by Research Ministries from France, Spain and Norway, by University Nice Sophia-Antipolis (France) and by the Centre National de la Recherche Scientifique (France).

Le CENTRE INTERNATIONAL DE MATHÉMATIQUES PURES ET APPLIQUÉES (CIMPA) est une organisation internationale destinée à promouvoir la recherche et l'enseignement supérieur en mathématiques dans les pays en voie de développement. Le CIMPA est soutenu par l'UNESCO et subventionné par les ministères de la recherche de la France, de l'Espagne et de la Norvège, par l'Université Nice Sophia-Antipolis (UNS), et le Centre national de la recherche scientifique (CNRS).



**ICTP** International Centre for Theoretical Physics

**CARMIN** Centre de Recherche en Mathématiques Informatiques et Calcul Néurosciences

# CIMPA COURSES

**CIMPA** offers a programme of support for training in research for the most mathematically or economically disadvantaged areas. The **CIMPA Courses** consist of funding the organisation of research-level courses in Mathematics for a period of one to four weeks. The beneficiaries are Mathematics departments, students, lecturers and researchers from developing countries. In 2018, CIMPA funded 31 **CIMPA Courses** in 16 countries for an amount of €36,800.



CIMPA Courses in Ziguinchor (Senegal) - 2018

PLACE	INSTITUTION	TOPIC	TEACHER
<b>AFRICA</b>			
MAURITIUS	University of Mauritius	Multidisciplinary Optimization and Application and Industrial Applications	Laurent DUMAS (Université de Versailles Saint Quentin en Yvelines, France)
IVORY COAST	Université Félix Houphouët-Boigny	Mesures aléatoires de Poisson et processus de Lévy	Ahmadou BAMBA SOW (Université Gaston Berger, Senegal)
IVORY COAST	Université Félix Houphouët-Boigny	Modèles probabilistes des épidémies	Étienne PARDOUX (Université d'Aix-Marseille, France)
IVORY COAST	Université Félix Houphouët-Boigny	Utilisation de la statistique pour les épidémies	Catherine LAREDO (INRA, France)
IVORY COAST	Université Félix Houphouët-Boigny	Processus de branchement	Ibrahima DRAMÉ (Université d'Aix-Marseille, France)
BURKINA FASO	Université polytechnique de Bobo Dioulasso	Combinatoire des groupes libres	Thierry COULBOIS (Université d'Aix-Marseille, France)
MOZAMBIQUE	Universidade Pedagógica	Algebra Linear	Marco CASTRILLÓN LÓPEZ (Complutense University of Madrid, Spain)
TUNISIA	Faculté des Sciences Mathématiques, Physiques et Naturelles	Opérateurs entre Treillis de Banach et application en économie	Belmesnaoui AQZZOUZ (University of Mohammed V, Morocco)
ALGERIA	Université Mohamed Seddik Benyahia	La déformation continue d'une métrique riemannienne à une métrique courbure scalaire constante	Farid MADANI (University of Frankfurt, Germany)
ALGERIA	Université Mohamed Seddik Benyahia	Introduction à la géométrie spectrale	Pierre LISSY (Université Paris-Dauphine, France)
ALGERIA	Université Mohamed Seddik Benyahia	Théorie du contrôle et intégration convexe	Ludovic RIFFORD (Université Nice Sophia Antipolis & CIMPA, France)
BENIN	Université de Porto-Novo	Relativité Générale : espace-temps de type trou noir et gravitationnel	Jose Luis JARAMILLO (Institut de Mathématiques de Bourgogne (IMB), France)

PLACE	INSTITUTION	TOPIC	TEACHER
<b>BENIN</b>	Université de Porto-Novo	Singularités symplectiques et de contact en optique géométrique des caustiques et fronts d'onde en géométrie différentielle de courbes et de surfaces	Ricardo URIBE-VARGAS (Institut de Mathématiques de Bourgogne (IMB), France)
<b>CONGO</b>	Université Marien Ngouabi	Processus de croissance	Michel ZINSMEISTER (Université d'Orléans la Source, France)
<b>CONGO</b>	Université Marien Ngouabi	Dynamique des populations I	Jean Jules TEWA (Université de Yaoundé 1, Cameroon)
<b>CONGO</b>	Université Marien Ngouabi	Dynamique des populations II	Samuel BOWONG TSAKOU (Université de Douala, Cameroon)
<b>CONGO</b>	Université Marien Ngouabi	Croissance des villes	Dominique BADARIOTTI (Université de Strasbourg, France)
<b>MADAGASCAR</b>	Université d'Antananarivo	Graphes aléatoires et algorithmes randomisés	Vlady RAVELOMANANA (Université Paris 7, France)
<b>MADAGASCAR</b>	Université d'Antananarivo	Introduction à la combinatoire analytique et analyse d'algorithme	Frédérique BASSINO (Université Paris 13, France)
<b>MADAGASCAR</b>	Université d'Antananarivo	Logique et fondement de la programmation informatique	Christophe FOUQUERE (Université Paris 13, France)
<b>ALGERIA</b>	Université Dr Tahar Moulay	Inférence statistique et théorie de l'information pour des processus markoviens et semi-markoviens	Vlad Stefan BARBU (Université de Rouen, France)
<b>SENEGAL</b>	Université Assane Seck de Ziguinchor	Courbes algébriques pour une arithmétique efficace des corps finis	Tony Mack Robert EZOME MINTSA (Université des Sciences et Techniques de Masuku (USTM), Gabon)
<b>AMERICA</b>			
<b>ARGENTINA</b>	Universidad Nacional de San Luis	Resistance Distances on Finite Networks	Andrés MARCOS ENCINAS (Universitat Politècnica de Catalunya, Spain)
<b>EL SALVADOR</b>	Universidad de El Salvador	Curvas algebraicas	Jorge MOZO FERNANDEZ (Universidad de Valladolid, Spain)
<b>COLOMBIA</b>	Universidad of Los Andes	Toros complejos y variedades abelianas	Arnaud BEAUVILLE (Université Côte d'Azur, France)
<b>COLOMBIA</b>	Universidad de los Andes	Groups of Small Morley Rank	Adrien DELORO (Université Paris 6, France)
<b>ASIA</b>			
<b>LAOS</b>	National University of Laos	Theoretical and Numerical Analysis of Partial Differential Equations	Youcef MAMMERI University of Picardie, France)
<b>VIETNAM</b>	Université of Quy Nhon	Analyse convexe	Marc LASSONDE (Université des Antilles, France)
<b>MONGOLIA</b>	National University of Mongolia	Nonlinear Differential Equations	Emmanuel MILTON (Université Nice Sophia Antipolis, France)
<b>NEPAL</b>	Tribhuvan University	Third Module of Galois Theory Course	Michel WALDSCHMIDT (Université P. et M. Curie, France)
<b>NEPAL</b>	Tribhuvan University	Third Module of Galois Theory Course	Capi CORRALES RODRIGAÑEZ (Universidad Complutense, Spain)
<b>MONGOLIA</b>	University of Mongolia	Introduction to Splines Geometry and Applications	André GALLIGO (Université Nice Sophia Antipolis, France)

# CIMPA FELLOWSHIPS

**CIMPA** funds the participation of young mathematicians from scientifically developing countries in Short Thematic Programmes, providing the ideal environment to discuss ideas and methods related to specific research areas in Mathematics, through conferences, classes and seminars. In 2018, the CIMPA financed the participation of 10 young mathematicians from developing countries to IHP trimesters for an amount of €21,000.



In 2018, the CIMPA funded  
10 CIMPA Fellowships  
for participations in IHP Trimesters

## Institut Henri Poincaré Trimester

«Model Theory, Combinatorics and Valued Fields», from January 8 to April 6, 2018



**Ali VALIZADEH**  
Armirkabir University of Technology  
Iran



**Massoud POURMAHDIAN**  
Armirkabir University of Technology  
Iran



**Alireza MOFIDI**  
Armirkabir University of Technology  
Iran



**Ozlem BEYARSLAN**  
Bogaziçi University  
Turkey

## Institut Henri Poincaré Trimester

«Measurement and Control of Quantum Systems: Theory and Experiments», from April 16 to July 13, 2018



**Ahmed M. FAROUK**  
Al-Azhar University  
Egypt



**Maria Julia MARISTANY**  
Universidad Nacional de Cordoba  
Argentina



**Nicolas MIRKIN**  
University of Buenos Aires  
Argentina

## Institut Henri Poincaré Trimester

«Analytics, Inference and Computation in Cosmology», from September 3 to December 14, 2018



**Nassima KHALDI**  
Université des sciences et de la  
Technologie d'Oran Mohamed-Boudiaf  
Algeria



**Shabbir SHAIKH**  
Savitribai Phule Pune University  
India



**Nirban BOSE**  
Indian Institute  
of Technology Bombay  
India

# SCHOOLS IN PARTNERSHIP

**CIMPA** supports advanced mathematical schools in partnership with continental mathematical unions or societies. These schools are of Master's or final Bachelor Degree level, and may be seen as a preparatory step towards a future **CIMPA School**.

Calls for proposals, dealing with these proposals and work with the organisers of these schools to improve projects are the responsibility of ad-hoc committees of continental mathematical societies in which **CIMPA** can be represented.

EMA in Lubango (Angola) - 2018



EMA in Dar Es Salaam (Tanzania) - 2018

**CIMPA** covers the travel and living expenses of participants from neighbouring developing countries. **CIMPA**'s support is subject to the **CIMPA** Support Guidelines Conditions for Schools in Partnership.

- ▶ **African Mathematical Schools/ Écoles Mathématiques Africaines (EMA)**
- ▶ **Escuelas de Matemática de América Latina y del Caribe (EMALCA)**
- ▶ **SEAMS Schools of Mathematics** (South East Asian Mathematical Society)
- ▶ **West Asia Mathematical Schools (WAMS)**

In 2018, the **CIMPA** financed the organization of 22 schools in partnership in 21 countries for an amount of €94,400.

## African Mathematical Schools

PLACE	INSTITUTION	TOPIC
BENIN	Université d'Abomey-Calavi	Mathematical Modeling for Epidemiology, Ecology and Conservation
ANGOLA	University Mandume ya Ndemufayo	Algebra and Applications
GABON	Université des Sciences et Techniques de Masuku (USTM)	Mathématiques et leurs applications à la cryptographie et à la robotique
SENEGAL	Cheikh Anta Diop University	Insight from Mathematical Modeling into Problems in Conservation, Ecology, and Epidemiology
MOROCCO	Université Internationale de Rabat	Outils de topologie algébrique et géométrique
TANZANIA	University of dar es Salaam	Homological Methods in Algebra and Geometry
CAMEROON	Université de Yaoundé I	Cryptographie et théorie de Galois

## Escuelas de Matemática de América Latina y del Caribe

<p>EMALCA in Guatemala city (Guatemala) - 2018</p>   <p>EMALCA in Guatemala city (Guatemala) - 2018</p>
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PLACE	INSTITUTION
GUATEMALA	San Carlos de Guatemala University
ARGENTINA	Universidad Nacional del Comahue
EL SALVADOR	Universidad Gerardo Barrios
VENEZUELA	Universidad de Los Andes
CUBA	Universidad de La Habana
MEXICO	Universidad Autónoma de Nuevo León

<p>SEAMS in Nakhon Pathom (Thailand) - 2018</p> 	<p>SEAMS in Penang (Malaysia) - 2018</p> 
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## South East Asian Mathematical Society

PLACE	INSTITUTION	TOPIC
THAILAND	Silpakorn University	Partial Differential Equations for Image Processing: Theory and Numerics
VIETNAM	Vietnam Academy of Science and Technology	Hyperplane Arrangements
MALAYSIA	Universiti Sains Malaysia	Dynamical Systems and Bifurcation Analysis
MYANMAR	University of Mandalay	Partial Differential Equation and their Applications

WAMS in Istanbul (Turkey) - 2018



## West Asia Mathematical Schools

PLACE	INSTITUTION	TOPIC
ARMENIA	Yerevan State University	The Mathematics of Artin's Conjectures
TURKEY	Istanbul Center for Mathematical Sciences	Effective Geometry and Arithmetic of Curves
IRAN	Institute for Advanced Studies in Basic Sciences (IASBS)	Computational Commutative Algebra and Algebraic Geometry
TURKEY	Nesin Mathematics Village	Inverse Problems: Direct Method and Optimization
IRAQ	Salahaddin University	Control and Optimization with Industrial Applications

# FINANCES



# SUBSIDIES

CIMPA receives subsidies from the following European and international institutions:

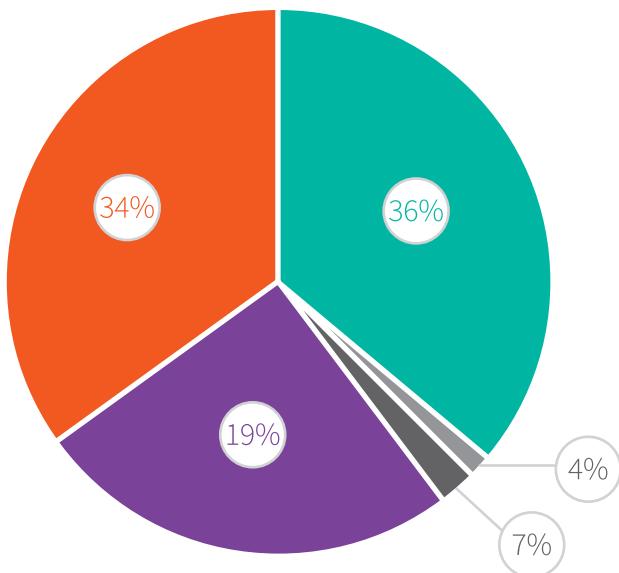
- ▶ Ministère de l'Enseignement Supérieur et de la Recherche (France)
- ▶ Université Nice Sophia Antipolis (France)
- ▶ Laboratoire d'Excellence CARMIN (France)
- ▶ Institut des Sciences Mathématiques et de leurs Interactions du CNRS (France)
- ▶ Ministère des Affaires Étrangères et Européennes (France)
- ▶ Ministerio de Economía, Industria y Competitividad (Spain)
- ▶ Ministry of Education and Research (Norway)
- ▶ Secrétariat d'État à la formation, à la recherche et à l'innovation (Switzerland)
- ▶ UNESCO



## ALLOCATION OF EXPENSES

Total budget (2018): 511,000€

ALLOCATION	BUDGET
CIMPA Schools	183K€
CIMPA Courses	37K€
CIMPA Fellowships	21K€
Schools in Partnership	94K€
Administration + Others	176K€



# PARTNERS



# PARTNERS LIST

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)
- ▶ Comité Español de Matemáticas (CEMAT) (Spain)
- ▶ Comisión Española de Cooperación con la UNESCO (Spain)
- ▶ Commission nationale française pour l'UNESCO (France)
- ▶ Institut de la Recherche en Informatique et Automatique (Inria) (France)
- ▶ Institut des Sciences Mathématiques et de leurs Interactions (INSMI-CNRS) (France)
- ▶ Norwegian Mathematical Society (Norway)
- ▶ Real Sociedad Matemática Española (RSME) (Spain)
- ▶ Société de Mathématiques Appliquées et Industrielles (SMAI) (France)
- ▶ Société Française de Statistique (SFdS) (France)
- ▶ Société Mathématique de France (SMF) (France)
- ▶ Sociedad de Estadística e Investigación Operativa (SEIO) (Spain)
- ▶ Sociedad Española de Matemática Aplicada (SEMA) (Spain)
- ▶ Societat Catalana de Matemàtiques (SCM) (Spain)
- ▶ Swiss Mathematical Society (SMS) (Switzerland)

Being part of the French Laboratoire d'Excellence **CARMIN (Centre d'Accueil et de Rencontres Mathématiques Internationales)**, **CIMPA** works in close collaboration with the three other **CARMIN's** members:

- ▶ Institut Henri Poincaré (IHP) (France)
- ▶ Institut des Hautes Études Scientifiques (IHES) (France)
- ▶ Centre International de Rencontres Mathématiques (CIRM) (France)

The **CIMPA** has signed agreements of cooperation with several institutions:

- ▶ Académie Hassan II des Sciences et Techniques (Morocco)
- ▶ African Institute of Mathematical Sciences (AIMS)
- ▶ Instituto Nacional de Matematica Pura e Aplicada (IMPA)
- ▶ Institut national de recherche en informatique et en automatique (Inria)
- ▶ Ministerio de Ciencia, Tecnología e Innovación Productiva de la República Argentina (MinCyT)
- ▶ Université Nice Sophia Antipolis (France)

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

- ▶ Commission for Developing Countries (CDC) of the International Mathematical Union (IMU)
- ▶ Committee for Developing Countries (CDC) of the European Mathematical Society (EMS)
- ▶ International Center for Theoretical Physics (ICTP)
- ▶ Agence Universitaire de la Francophonie (AUF)

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

- ▶ African Mathematical Union (AMU)
- ▶ Unión Matemática de América Latina y el Caribe (UMALCA)
- ▶ South East Asian Mathematical Society (SEAMS)
- ▶ Southern Africa Mathematical Sciences Association (SAMSA)

Other **CIMPA's** partners:

- ▶ Association pour la Promotion Scientifique de l'Afrique (APSA)
- ▶ Colloque Africain sur la Recherche en Informatique et Mathématiques Appliquées (CARI)
- ▶ Centro de Modelamiento Matematico (CMM)
- ▶ Comité National Français des Mathématiciens (CNFM)
- ▶ Deutsche Mathematiker Vereinigung (DMV)
- ▶ European Mathematical Society (EMS)
- ▶ Gesellschaft für Angewandte Mathematik und Mechanik (GAMM)
- ▶ International Mathematical Union (IMU)
- ▶ International Council for Industrial and Applied Mathematics (ICIAM)
- ▶ Institut de Recherche pour le Développement (IRD)
- ▶ Mathrice
- ▶ Soutien aux Activités de Recherche en Informatique et Mathématique en Afrique (SARIMA)
- ▶ UNESCO



# GOVERNANCE & ADMINISTRATION

# GOVERNING BOARD



PRESIDENT  
**Barry GREEN**  
University of Stellenbosch  
South Africa

The Governing Board is responsible for overseeing the administration of CIMPA. It approves the financial statements and monitors that they have been implemented in accordance with CIMPA's aims.

## Individual Members



VICE-PRESIDENT  
**Annie RAOUT**  
Université Paris Descartes  
France



**Servet MARTINEZ**  
Universidad de Chile  
Chile



SECRETARY  
**Ivan AREA**  
Universidade de Vigo  
Spain



**Modeste N'ZI**  
Université Félix Houphouët Boigny  
Ivory Coast



TREASURER  
**Marc AUBRY**  
Université Nice Sophia Antipolis  
France



**Viet Dung NGUYEN**  
Vietnam Academy of Science and  
Technology - Vietnam

## Institutional Members

- ▶ UNESCO
- ▶ Direction générale de la recherche et de l'innovation(DGRI), France
- ▶ Université de Nice Sophia Antipolis (UNS), France
- ▶ Norwegian Ministry of Education and Research, Norway
- ▶ Ministerio de Economía y Competitividad (MINECO), Spain
- ▶ Institut des Sciences Mathématiques et de leurs Interactions (INSMI-CNRS), France

# SCIENTIFIC COUNCIL



PRESIDENT  
**Hans MUNTHE-KAAS**  
University of Bergen  
Norway

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



**Edy Tri BASKORO**  
Institut Teknologi Bandung  
Indonesia



**Mohamed BOUCETTA**  
Université Cadi-Ayad  
Morocco



**Carlos DI PRISCO**  
Universidad de Los Andes  
Colombia



**Laura GEATTI**  
Università di Roma Tor Vergata  
Italy



**Peter IMKELLER**  
Humboldt-Universität zu Berlin  
Germany



**Sujatha RAMDORAI**  
University of British Columbia  
Canada



**Henar HERRERO SANZ**  
Universidad de Castilla-La Mancha  
Spain



**Mahouton Norbert HOUNKONNOU**  
Université d'Abomey-Calavi  
Benin



**Bertrand MAURY**  
Université Paris-Sud  
France



**Helena NUSSENZVEIG LOPEZ**  
Universidade Federal de Rio de Janeiro  
Brazil



**Sara VAN DE GEER**  
ETH Zurich  
Switzerland

# EXECUTIVE TEAM



EXECUTIVE DIRECTOR  
**Ludovic RIFFORD**  
Université Nice Sophia Antipolis  
France

CIMPA's Executive Team consists of an Executive Director, a group of Scientific Officers and Administrative and Technical 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.

## Scientific Officers



**Didier AUSSEL**  
Université de Perpignan  
France



**Brigitte LUCQUIN**  
Université Pierre et Marie Curie  
France



**Yacine CHITOUR**  
Université Paris-Sud  
France



**Christian MAUDUIT**  
Université d'Aix Marseille  
France



**Giulia Di NUNNO**  
University of Oslo  
Norway



**Jorge MOZO FERNANDEZ**  
Universidad de Valladolid  
Spain



**Elisa GORLA**  
Université Neuchâtel  
Switzerland



**Stéphanie NIVOCHÉ**  
Université Nice Sophia Antipolis  
France



**Jorge JIMENEZ URROZ**  
Universitat Politécnica de Catalunya  
Spain



**Vlady RAVELOMANANA**  
Université Paris 7  
France



**Sophie DABO**  
Université de Lille  
France



**Rosane USHIROBIRA**  
Inria  
France



**Lidia FERNANDEZ**  
Universidad de Granada  
Spain



**Joan-C. LARIO**  
Universitat Politècnica de Catalunya  
Spain

## STAFF

**Agnès GOMEZ** Executive Secretary, **Hélène LAMIRI** Communication Officer, **Roland RUELLE** IT Responsible

# STEERING COMMITTEE



PRESIDENT  
**Barry GREEN**  
University of Stellenbosch  
South Africa

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 CIMPA Schools and other activities, based on the recommendations of the Scientific Council.

## Individual Members

**Ivan AREA** Universidade de Vigo, Spain

**Marc AUBRY** Université Nice Sophia Antipolis, France

**Servet MARTINEZ** Universidad de Chile, Chile

**Modeste N'ZI** Université Félix Houphouët Boigny, Ivory Coast

**Viet Dung NGUYEN** Vietnam Academy of Science and Technology, Vietnam

**Annie RAOULT** Université Paris Descartes, France

## 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
- ▶ **Institut de la Recherche en Informatique et en Automatique (INRIA)**, France
- ▶ **Institut 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**, France
- ▶ **Société Mathématique de France (SMF)**, France
- ▶ **Swiss Mathematical Society (SMS)**, Switzerland



# Écoles de Recherche 2019 Research Schools

**Montevideo, Uruguay** [Feb. 11 > 22]  
Elliptic Curves: Arithmetic and Computation

**Saida, Algeria** [Mar. 1 > 9]  
Analyse stochastique et applications

**Hanoi, Vietnam** [Mar. 11 > 22]  
Hyperplane Arrangements: Recent Advances and Open Problems

**Petion-Ville, Haiti** [Mar. 11 > 23]  
Cryptography, Theoretical and Computational Aspects of Algebraic Number Theory and Algebra

**Isfahan, Iran** [Apr. 7 > 19]  
Isfahan School and Conference on Representations of Algebra

**Dhaka, Bangladesh** [Jun. 10 > 21]  
Dynamical Systems and Applications to Biology

**Havana, Cuba** [Jun. 11 > 22]  
Mathematical Models in Biology and Related Applications of Partial Differential Equations

**Tabriz, Iran** [Jun. 15 > 22]  
Graphs, Algorithms and Randomness

**Kathmandu, Nepal** [Jun. 17 > 26]  
Summer School in Mathematical Biology

**Bogota, Colombia** [Jun. 24 > Jul. 5]  
Research School on Quantum Symmetries

**Tunis, Tunisia** [Jun. 25 > Jul. 5]  
Science des données pour l'ingénierie et la technologie

**Tehran, Iran** [Jun. 29 > Jul. 11]  
Control and Information Theory

**Limbe, Cameroon** [Jul. 2 > 13]  
Algebraic Geometry, Number Theory and Applications in Cryptography and Robot Kinematics

**Kenitra, Morocco** [Jul. 3 > 13]  
Modélisation, analyse mathématique et calcul scientifique dans la gestion des déchets ménagers

**Ibarra, Ecuador** [Jul. 15 > 26]  
The Geometry of Mechanics

**Antananarivo, Madagascar** [Jul. 16 > 25]  
Approches algorithmiques et statistiques de l'apprentissage

**Cordoba, Argentina** [Jul. 29 > Aug. 9]  
Hopf Algebras and Tensor Categories

**Buenos Aires, Argentina** [Oct. 28 > Nov. 8]  
Algebraic and Geometrical Methods in String Theory

**Joao Pessoa, Brazil** [Nov. 4 > 13]  
Szyggiennes, from Theory to Applications

**Talca, Chile** [Dec. 2 > 13]  
Fourth Latin American School on Algebraic Geometry and its Applications

**Varanasi, India** [Dec. 5 > 15]  
Finsler Geometry and Applications

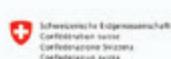


# CIMPA

[www.cimpa.info](http://www.cimpa.info)

Centre International  
de Mathématiques  
Pures et Appliquées

Promoting Research in Math in Developing Countries



# FINANCIAL STATEMENT 2018

## Incomes

	€
MENESR/DGRI	230 920,00
Ministerio de Ciencia e Innovacion (Spain)/FECYT	30 000,00
Université de Neuchâtel et EPFL (110 000 CHF)	94 262,82
Ministry of Education and Research (Norway)	30 000,00
CNRS-INSMI	7 000,00
Labex CARMIN	57 639,00
MAEE-Iraq	6 000,00
ALGANT support CIMPA School Johannesburg	2 000,00
Université Paris 7 support CIMPA School Congo	1 500,00
Université Nice Sophia-Antipolis	11 826,63
Membership fees, Donations, registration fees	9 757,93

**TOTAL INCOMES      480 906,38**

# Expenses

<b>ACTIVITIES</b>	<b>€</b>
<b>CIMPA SCHOOLS</b>	
Johannesburg, southAfrica	11 999,93
Beirur, Lebanon	9 977,00
Lahore, Pakistan	9 471,10
Hanoi, Vietnam	11 448,00
Casablanca, Morocco	10 662,00
Yaoundé, Cameroon	8 607,34
Hammamet, Tunisia	9 902,81
Kinshasa, Congo	9 444,91
Baranquilla, Colombia	7 069,60
Daejeon, South Korea	7 494,00
Medellin, Colombia	7 916,00
Zacatecas, Mexico	8 027,00
Dangbo, Benin	11 999,66
Cordoba, Argentina	7 204,00
Buenos Aires, Argentina	8 000,00
Muizenberg, South Africa	7 831,00
Lomé, Togo	9 470,00
Tashkent, Uzbekistan	7 175,10
Kathmandu, Nepal	8 852,27
Merida, Mexico	5 063,00
Ankara, Turkey	5 955,14
<b>TOTAL CIMPA SCHOOLS</b>	<b>183 569,86</b>

<b>ADMINISTRATIVE EXPENSES</b>	<b>€</b>
Rent, Equipment, Office Supplies	9 661,33
Website, Communication Supports	10 666,13
Bank Fees, taxes, Membership fees	14 843,14
Salaries, Payroll Taxes	95 881,50
<b>TOTAL ADMINISTRATIVE EXPENSES</b>	<b>131 052,10</b>

<b>SCHOOLS IN PARTNERSHIP</b>	
EMA (with 2 deferrals of 2017)	52 500,00
EMALCA	12 367,00
SEAMS	14 937,96
WAMS (with 1 deferrals of 2017)	19 752,18
<b>TOTAL SCHOOLS IN PARTNERSHIP</b>	<b>99 557,14</b>

<b>CIMPA FELLOWSHIPS</b>	
CIMPA-CARMIN PROGRAM	
IHP Trimester T1 "Model Theory, Combinatorics and Valued Fields"	6 511,23
IHP Trimester T2 "Measurement and Control of Quantum Systems: Theory and Experiments"	7 842,50
IHP Trimester T3 "Analytics, Inference, and Computation in Cosmology"	6 725,38
<b>TOTAL CIMPA FELLOWSHIPS</b>	<b>21 079,11</b>

<b>CIMPA COURSES</b>	
Semester 1 (with the balance of the semester 2 of 2017)	33 268,93
Semester 2	4 107,02
<b>TOTAL CIMPA COURSES</b>	<b>37 375,95</b>

<b>OTHER EXPENSES</b>	
Support to workshops in Iraq through the French Embassy	681,00
Support Ibni Price (2 winners)	888,52
Travel expenses of members of the Executive Team and the Governing Board	34 027,12
Expenses for General Assembly/Governing Board/Scientific Council/Steering Committee meetings	13 954,00
<b>TOTAL OTHER EXPENSES</b>	<b>49 550,64</b>
<b>TOTAL ACTIVITIES</b>	<b>391 132,70</b>

<b>TOTAL EXPENSES</b>	<b>522 184,80</b>
<b>SURPLUS</b>	<b>-41 278,42</b>
<b>TOTAL GENERAL</b>	<b>480 906,38</b>



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