

2025 INTERNATIONAL WORKSHOP ON CONTEMPORARY PROBLEMS IN MATHEMATICAL PHYSICS

(2025 COPROMAPH)

November 1st - November 7th, 2025

and

2025 COPROMAPH INTERNATIONAL SCHOOL

October 27th - October 31st, 2025

on

***Recent Developments on
Quantum Theory and Artificial
Intelligence***

Cotonou, Republic of Benin

organized by

**the International Chair in
Mathematical Physics and Applications
(ICMPA-UNESCO Chair)**

**COPROMAPH Topics include, but are not
limited to:**

- Mathematical foundation of quantum theory
- Integrable systems
- Artificial intelligence
- Quantum machine learning
- Quantum computer
- Quantization techniques
- Operator theory
- Difference/Differential equations

- Noncommutative geometry and physics
- Methods in nonlinear mathematics
- Differential Geometry
- Functional Analysis
- **Optimal control and applications**
- etc.

Building on the growing success of its previous editions, one of the main objectives of this eighth COPROMAPH Workshop is to contribute to the development of a critical mass of researchers in Africa in as dynamic and varied an area as is mathematical physics. The Workshop brings together specialists in Mathematics, Theoretical and Mathematical Physics. It offers the international scientific community an arena for interactions and presentations of scientific research results on contemporary problems in these fields, especially for research pursued within Africa.

The Workshop also provides young African researchers an opportunity to know each other and initiate scientific collaboration. The Workshop thereby contributes in strengthening the research capacity and revitalizing activities in mathematics and mathematical physics in African universities. Given that perspective, the Workshop is preceded by the 9th International COPROMAPH School dedicated to lay the ground-work in preparation for the Workshop, through two series of graduate level lectures, accompanying tutorials, and student seminars.

The Workshop is organized every second year, and the School every year, in the Republic of Benin, under the auspices of the Executive Secretariat of the International Chair in Mathematical Physics and Applications (ICMPA – UNESCO Chair).

This edition is devoted to the. Celebration of the International Year of Quantum Sciences and Technology. It includes a thematic lecture series (40 or 50 mn), invited review talks (40 mn) and contributed communications (20 mn). The invited review talks will be presented in plenary sessions whereas the specialized contributed papers will be presented in appropriate parallel working groups if necessary.

The 2025 COPROMAPH International School concerns **Optimal control and applications**.

Publications

The booklet of abstracts will be posted at the ICMPA website: www.cipma.net

The Proceedings of the first four COPROMAPH Workshops are available from World Scientific Publishing (WSPC, Singapore) in the series "*International Workshop on Contemporary Problems in Mathematical Physics*". The Proceedings of the following COPROMAPH Workshop have been edited by the ICMPA – UNESCO Chair and are available on the website www.uac.bj/cipma. Proceedings will be published following guidelines as strict as in the past for the paper editions of the Proceedings and will be made available on the same website.

Only participants giving an oral presentation are entitled to have a contribution submitted to the Proceedings, to be accepted after a strict refereeing process. Contributions must all be written in good English.

Contributions for short communications and posters are restricted without exception to a maximum of 7 pages. Those for invited conferences and lectures to a strict maximum of 15 and 100 pages, respectively.

Official languages: English and French. English is the preferred choice, though, given the international attendance.

Scientific Advisory Committee: A. Afouda (Benin), M. Amharref (Morocco), J.-P. Antoine (Belgium), C. Atindogbé (Benin), R. Avohou (Benin), E. Baloitcha (Benin), J. Ben Geloun (France), A. S. Bernoussi (Morocco), K. Bota (USA), G. Ciccotti (Italy), M. Englis (Czech Republic), G. Edah (Benin), S. J. Gates, Jr (USA), J.-P. Gazeau (France), G. A. Goldin (USA), J. Govaerts (Belgium), F. Guédjé (Benin), M. N. Hounkonnou (Benin), A. Kanfon (Benin), R. Kerner (France), W. Koepf (Germany), A. Makhoute (Morocco), M. Mitrovic (Serbia), A. Z. Msezane (USA), S. Mtingwa (USA), D. Ousmane Samary (Benin), B. Torrèsani (France), N. T. Zung (France).

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Deadline for applications: September 30th, 2025

Registration and abstracts have to be received before August 31st. Invited speakers are also requested to send a one page abstract of their presentation.

**COPROMAPH8 and the COPROMAPH School
will be co-organized by**

- Prof. J. Govaerts,
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The activity is open to scientists from all countries. Travel and local (subsistence, accommodation) expenses should be covered by the home institution. Former students from the African Institute for Mathematical Sciences (AIMS) wishing to apply to these COPROMAPH School and Workshop are encouraged to also seek support from AIMS. Participants from French speaking African countries are encouraged to also apply for support from the Agence Universitaire de la Francophonie (<http://www.auf.org>). Mention of such applications should be made in the application form to the Workshop and School.

All participants benefiting from some financial support from the Workshop organizing committee (accommodation, local expenses, travel or other) will be requested to present a communication at the workshop.

Participants interested in presenting a paper are requested to send a camera-ready copy of

their abstract. To be accepted for publication in the Proceedings, the contribution must be written in the appropriate LaTeX style (contact the COPROMAPH Secretariat to get a sample) and must be accepted by the editorial board of COPROMAPH after a refereeing procedure. A notice of acceptance or the referee report should have been sent to authors by January 31st, 2026. The deadline for resubmission will be strictly February 20th, 2026.

Applications should be submitted to:

COPROMAPH SECRETARIAT
University of Abomey-Calavi
UNESCO Chair of Mathematical Physics and Applications (ICMPA-UNESCO chair),
072 B. P. 50, Cotonou, Republic of Benin
i) Tel.: +229-01 66 48 27 72

ii) E-mail: cipma_secretariat@icmpa.net

with copy to: copromaph@yahoo.fr

or online via the website <http://www.icmpa.net>

Accommodation

All participants will be staying in hotels in Cotonou, close to the Workshop site. Please indicate which kind of room you wish and if you accept to share your room with someone else. The accommodation will be paid directly to the hotel by the organizers if the full registration fee (see below) has been paid.

For convenience, each participant is requested to pay a total sum of either FCFA 450,000, Euros 650 or \$US 850, to cover **all the costs** for their stay (registration, hotel accommodation, meals, excursions, miscellanea). A receipt will be issued, which the participant must countersign. For those also attending in addition the COPROMAPH School these fees become FCFA 700 000, Euros 1,100 or \$US 1,500.

Those participants wishing to stay in a hotel different from the place of accommodation foreseen by the organizers may ask for the necessary information, but they should then arrange for their accommodation themselves, including the payment for the ensuing costs. However, in order to avoid problems, it is imperative to reserve a room well a month in advance before arrival in Cotonou. Moreover, the costs to be paid for the Workshop itself then amount to either FCFA 230,000, Euros 350 or \$US 450 to cover for the registration and local

meals on the site of the Workshop. In case of attendance of the school as well, these fees are FCFA 400 000, Euros 600 or \$US 800.

A local organization committee will be set-up to welcome you on your arrival at the international airport of Cotonou, and to take you to your place of accommodation. It is imperative that all participants do inform the organizing committee of the details of their travel arrangements through the above mentioned COPROMAPH SECRETARIAT addresses.

The city itself and its surroundings are special attractions. Beaches are close to the hotels which often possess their own swimming pool.

Benin society is rich in history and culture. If there is enough interest, tours could be organized to some places of historical and cultural interest. Benin is situated in West Africa, between Nigeria and Togo. The climate is tropical and the temperature is close to 28°C.

Hotel prices: cf. hotel website

Daily board can be estimated at about US\$ 30.00.

Official invitations: In special cases, the organizing committee is prepared to send a personal invitation letter for the Workshop. It should be understood that such an invitation is not a commitment on the part of the organizers to provide any financial support.

Important:

Payment of the total fee can be made at the arrival at the hotel or at the meeting place

Upon presentation at the registration desk, participants will receive their Workshop documents and a badge.

Official Sponsors (confirmed and solicited):

Agence Universitaire de la Francophonie, French Embassy in Benin, UNESCO International Basic Science Programme (IBSP), Government of Republic of Benin, Individual Sponsors, Torus for Life, International Association of Mathematical Physics (IAMP), ICMPA-UNESCO Chair.

For further information and Workshop announcements in Africa, please visit:

ICMPA – UNESCO Chair

<http://www.icmpa.net>

Application Form

*COPROMAPH International Workshop
(November 1st - November 7th, 2025)*

*COPROMAPH International School
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Online registration at :

<https://forms.gle/8c8nGrXS2myudxZP8>



ICMPA-UNESCO CHAIR

