

ICTP

Research & Training Programmes

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The Abdus Salam
**International Centre
for Theoretical Physics**



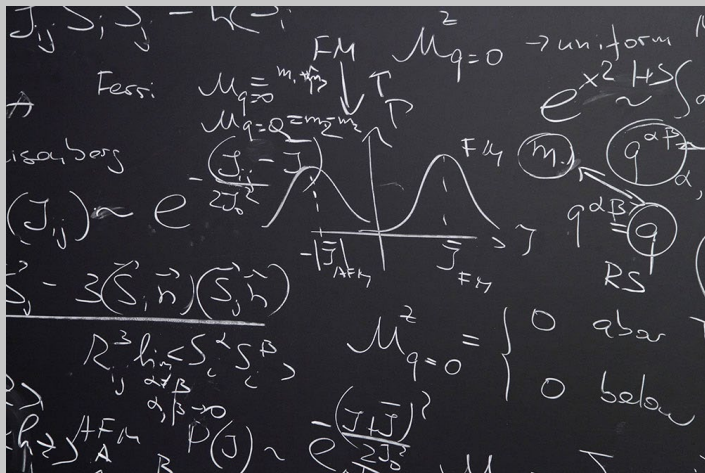
What is ICTP?

- Founded in 1964 by Nobel Laureate Abdus Salam to enhance international cooperation through science.
- Combines world class research with a unique global mission of building science capacity in the developing world.
- Governed by tripartite agreement between Italy UNESCO and IAEA.
- Run by scientists for scientists



What is ICTP?

Research



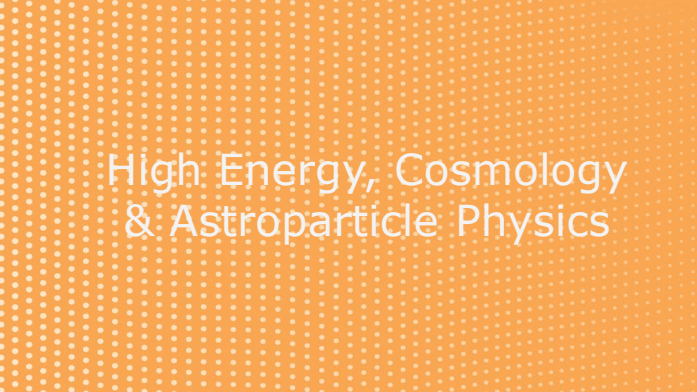
Education



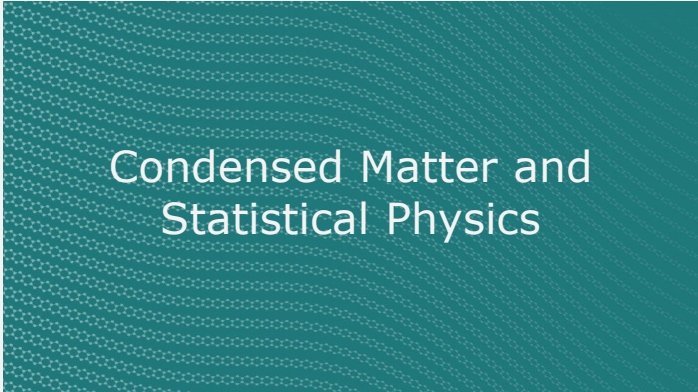
Cooperation



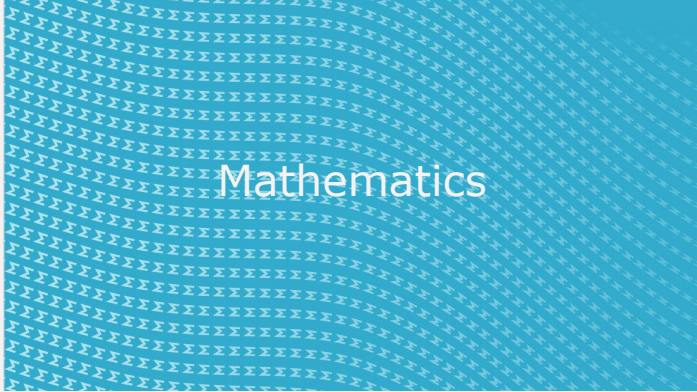
Research Sections



High Energy, Cosmology
& Astroparticle Physics



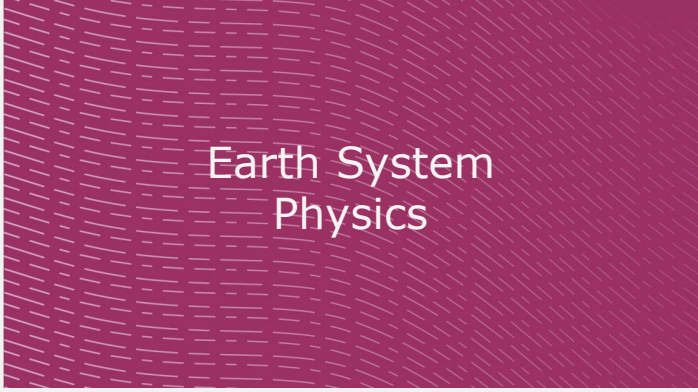
Condensed Matter and
Statistical Physics



Mathematics



Science, Technology and
Innovation



Earth System
Physics



Quantitative Life
Sciences

Also: Sustainable Energy, High Performance Computing, and Machine Learning

Multidisciplinary Laboratory (MLAB)

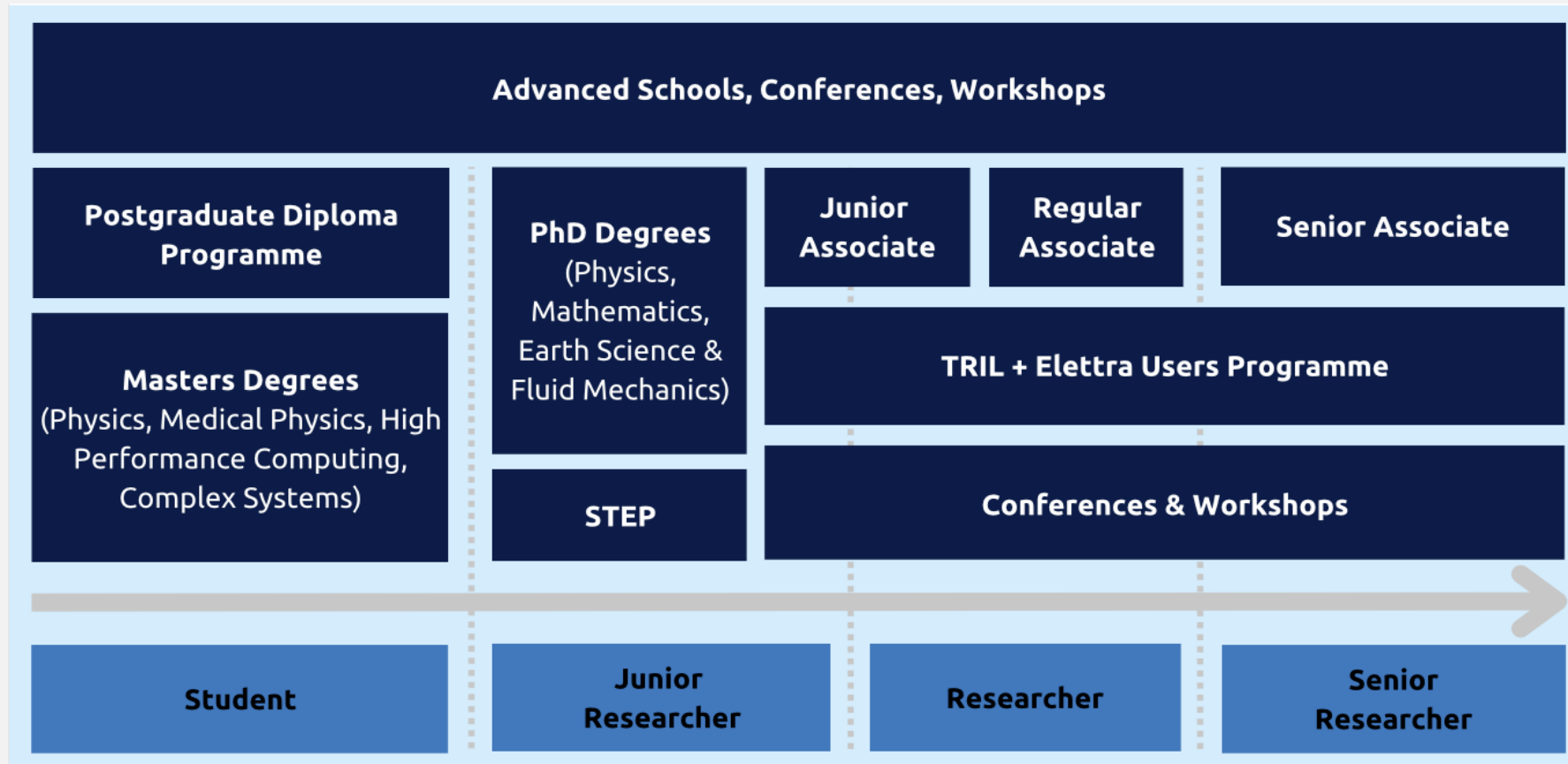
Research and Development of Advanced Scientific Instrumentation and Methods

- Particle Physics Experiments (INFN, CERN)
- Nuclear Applications (IAEA)
- Heterogeneous Computing (UniTS)
- Applied Machine Learning
- X-Ray for Cultural Heritage (IAEA, Elettra)
- Applied Optics and Lasers (SPIE)



ICTP Programmes:

Supporting Scientists in all Stages of their Careers



ICTP's Postgraduate Diploma Programme

Preparing Young Scholars for PhD Studies

Since 1991:

- **1000+** Diploma graduates
- More than **75%** earned or working toward PhDs



ICTP Degree Programmes

- Master in Medical Physics (with University of Trieste - UniTS)
- Master in High Performance Computing (with SISSA)
- Master of Complex Systems (consortium of European universities)
- *PhD in Physics (with UniTS)*
- PhD in Physics and Mathematics (with SISSA)
- PhD in Earth Science and Fluid Mechanics (with UniTS)
- *PhD in Engineering and Information Systems (with UniTS)*

ICTP/IAEA Sandwich Training Education Programme (STEP)

PhD Students

- Fellowships for students enrolled in a PhD in their home countries. PhD awarded at their home institutes
- Support to visit ICTP for a three- to six-month stay each year for up to three successive years
- Fellows work on their PhD theses with their advisors at their home institutes and co-advisors at the hosting institute
- The online application window is **15 November to 28 February** (MLAB research field: Advanced Scientific Instrumentation)

Training and Research in Italian Laboratories (TRIL)

- Hands-on experience in laboratories (including the ICTP Labs)
- Scientists having at least a university Master's Degree
- Fellowships range in length from a few months to one year (Maximum period: two years)
- Online application deadline is **31 December 2025** (MLAB research field: Advanced Scientific Instrumentation)

Associate Programme

Working Together at ICTP

ICTP Associates

- Junior: Scientists up to age 35
- Regular: Scientists from age 36 to 45
- Senior: Scientists from age 45 to 65
- 3-year appointment, during which associate visits ICTP for stays of between 30 and 60 days each
- Online application deadline is **28 February 2026**
(MLAB research field: Advanced Scientific Instrumentation)

RESEARCH AT ICTP

Associate Programme

Associateships for Sub-Saharan Africa

Call now open for visits starting in 2027



Postdoc and Short-term Visitors

Working Together at ICTP

Postdoc fellowships

- Check ICTP website for Postdoctoral opportunities (2-year appointment)

Short-term visits

- Up to 3 months
- Agreement with ICTP faculty member

ICTP: An International Hub for Scientific Networking

- Organises more than **60** conferences, schools & workshops each year (at ICTP and abroad)
- Welcomes up to more than **7,000** scientists from **145** nations each year
- Call for proposals: February/March each year
- **Scientific Calendar**
Please visit: <https://www.ictp.it/home/scientific-calendar>

International Schools and Workshops

Search

Search in Conferences:

Overview

Programme

Speakers

Apply here

Practical info

Support

✉ smr4210@ictp.it

School on Applied AI for Sustainable Development | (smr 4210)

🕒

Starts 23 Mar 2026
Ends 27 Mar 2026
Central European Time

📍

ICTP
Kastler Lecture Hall (AGH)
Strada Costiera, 11
I - 34151 Trieste (Italy)

An ICTP meeting

The call for applications is open. Please click on 'Apply here' (on the left) to submit your application.

The School covers key aspects of Applied AI, focusing on designing, developing, and deploying practical solutions to real-world problems. It aims to equip scientists, primarily from developing countries, to tackle local challenges and contribute to global sustainability goals.

Embedded devices running ML models are becoming increasingly powerful, evolving from Cloud-based AI to EdgeAI. This shift enables the creation of more complex, sustainable, and real-time AI solutions for applications such as environmental monitoring, particle detection and classification, radiation monitoring, smart agriculture, waste management, and beyond.

Organizers

Paolo Calciati (PDM, Portugal),
Luis Miguel Serra Da Costa Campos (PDM, Portugal), Marco Zennaro (ICTP, Italy), Local
Organiser: Maria Liz Crespo (ICTP)

Co-sponsors



International Schools and Workshops

Search

Search in Conferences:

Overview

Programme

Speakers

Apply here

Support

✉ smr4200@ictp.it

School and Conference on FPGA-Driven Scientific Instrumentation and Embedded Machine Learning: Bridging Reconfigurable Computing and Edge Intelligence | (smr 4200)

🕒 Starts 15 Sep 2026
Ends 26 Sep 2026
Asia/Kuala_Lumpur

📍 Arau, Perlis - Malaysia

The call for application will be open soon

Organizers

Sawal Hamid Bin Md Ali -
(Universiti Kebangsaan
Malaysia), Razaidi Bin Hussin
- (Universiti Malaysia Perlis),
Ahmad Ashrif Bin A Bakar -
(Universiti Kebangsaan
Malaysia), Reaz Md Mamun
Bin Ibne (Independent
University), ICTP Scientific
Contact: Maria Liz Crespo
(ICTP)

International Schools and Workshops

Search

Search in Conferences:



Overview

Programme

Speakers

Apply here

Practical info

Hands-On Research in Complex Systems School | (smr 4230)

 Starts 3 Aug 2026
Ends 14 Aug 2026
Central European Time

 **ICTP**
Kastler Lecture Hall (AGH)
Adriatico Guest House Riva Massimiliano e
Carlotta, Grignano I - 34151 Trieste (Italy)

The call for applications will be open soon

Grants: A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Organizers

Shattuck Mark David (The City College of New York), Kostelich Eric (Arizona State University), Schatz Michael Francis (Georgia Institute of Technology), Liz Crespo Maria (ICTP), Cicuta Pietro (University of Cambridge), Pilizota Teuta (University of Edinburgh), Local Organiser: Maria Liz Crespo (ICTP)

Secretariat:

✉ smr4230@ictp.it

Scientific Capacity Building in Developing Countries

External Activities Unit

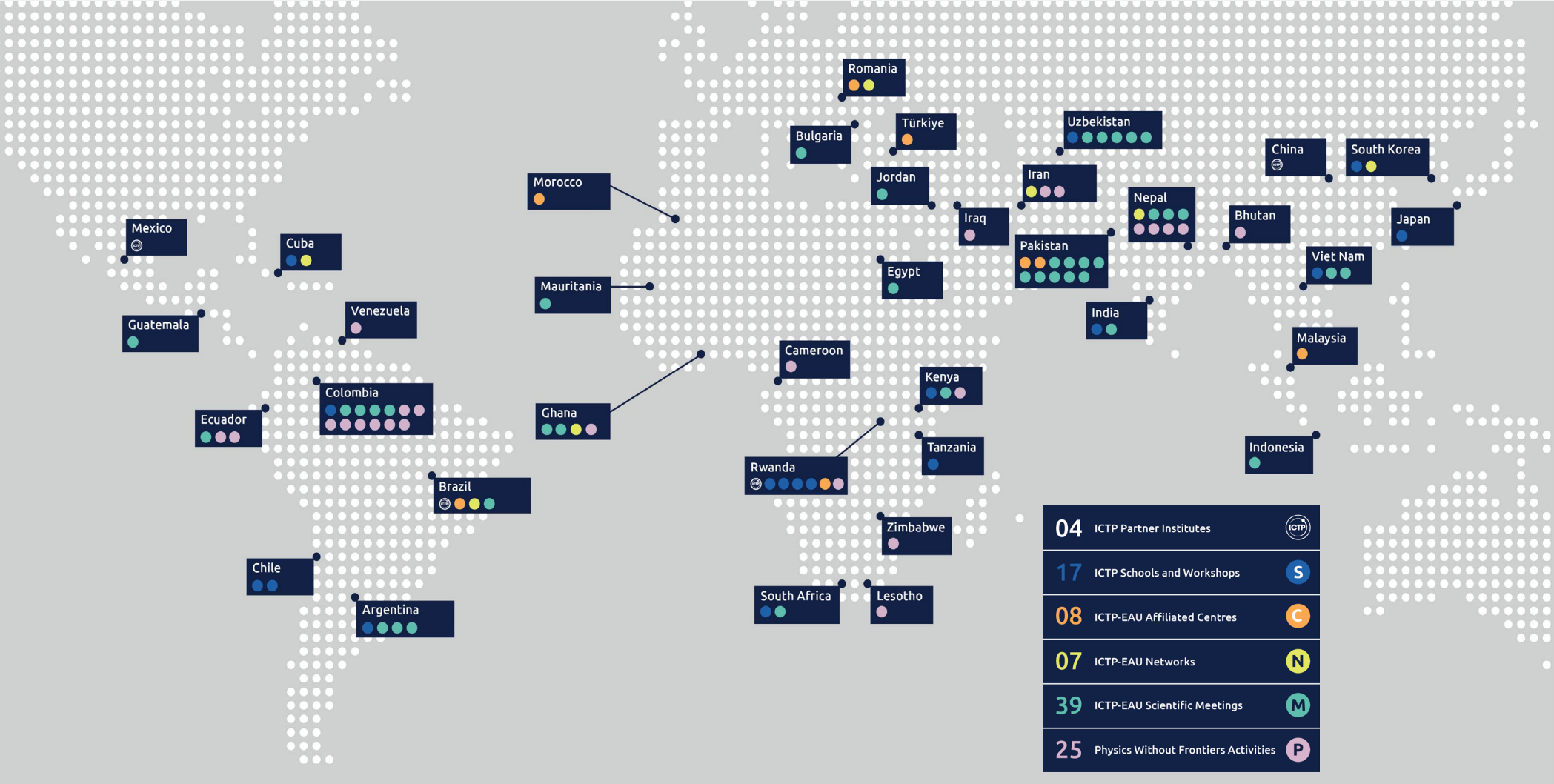
ICTP Affiliated Centres

- Institutes or university departments in developing countries with which ICTP has established a formal collaboration.
- Collaboration may focus on research, training, or a combination of both.
- Make use of ICTP programmes in order to have maximum impact in research or training in the region.

Scientific Meetings and Research Networks

- *Regional scientific meetings* in developing countries by offering financial assistance to the organisers of conferences, workshops, and schools.
- *Scientific network projects* proposed by institutes or individuals with common scientific interests who agree upon a well defined joint project that emphasises collaboration and the sharing of expertise and facilities.

ICTP Impact





The Abdus Salam
International Centre
for Theoretical Physics



Joint ICTP-IAEA School on Detector Signal Processing and Machine Learning for Scientific Instrumentation and Reconfigurable Computing





Thank you!

