



The Abdus Salam  
International Centre  
for Theoretical Physics



# ICTP: World-class Research and a Successful Model of International Collaboration



# ICTP's history



**1964: IAEA DG Eklund speaks at ICTP opening**



**1979: Abdus Salam receives Nobel Prize for Physics**



**1995: Tripartite agreement between Italy, IAEA, and UNESCO**



**2014: ICTP turns 50**

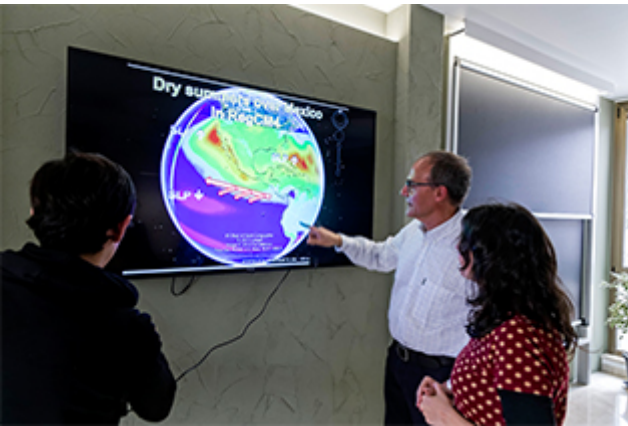


- Founded in 1964 by Nobel Laureate Abdus Salam to enhance international cooperation through science
- Governed by tripartite agreement between Italy, UNESCO and IAEA
- Combines world class research with a unique global mission of building science capacity in the developing world

# What is ICTP?



## Research



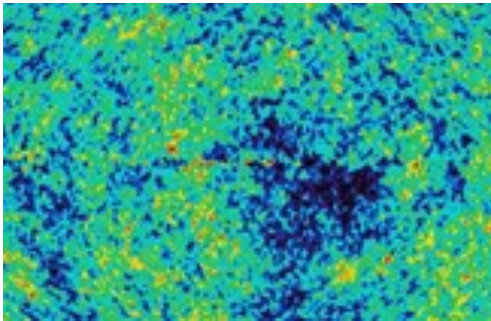
## Education



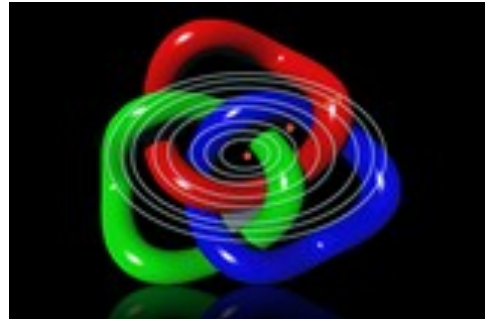
## Outreach



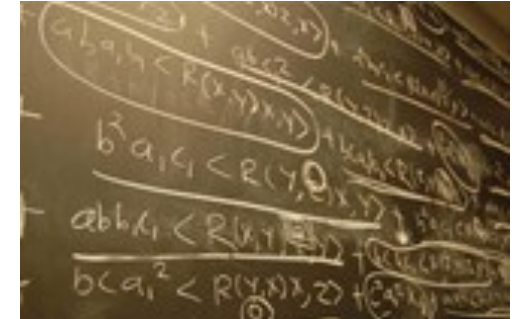
## High Energy Cosmology and Astroparticle Physics



## Condensed Matter and Statistical Physics



## Mathematics



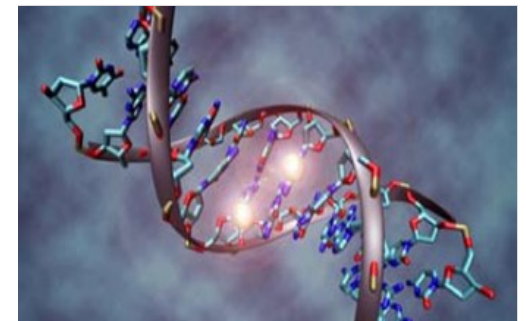
## Applied Physics



## Earth System Physics



## Quantitative Life Sciences



**Also: Renewable Energies, Biochemistry, Internet of Things, High Performance Computing, Artificial Intelligence, Quantum Computing**

# ICTP Researchers 2018

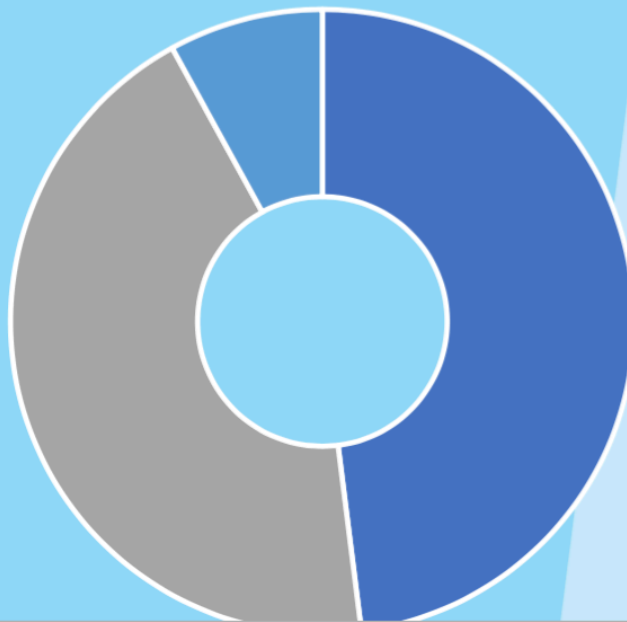
## 183

number of researchers

(staff, consultants, long-term visiting scientists, postdoctoral fellows)

## 54

number of countries  
represented



■ 48% Developed

■ 44% Developing

■ 8% LDC

- Fixed term:  
99 (29 scientific + 70 administrative)
- Project Appointments:  
50 (11 scientific + 39 administrative)
- Other contracts:  
204 (students, postdocs, visiting scientists, etc.)

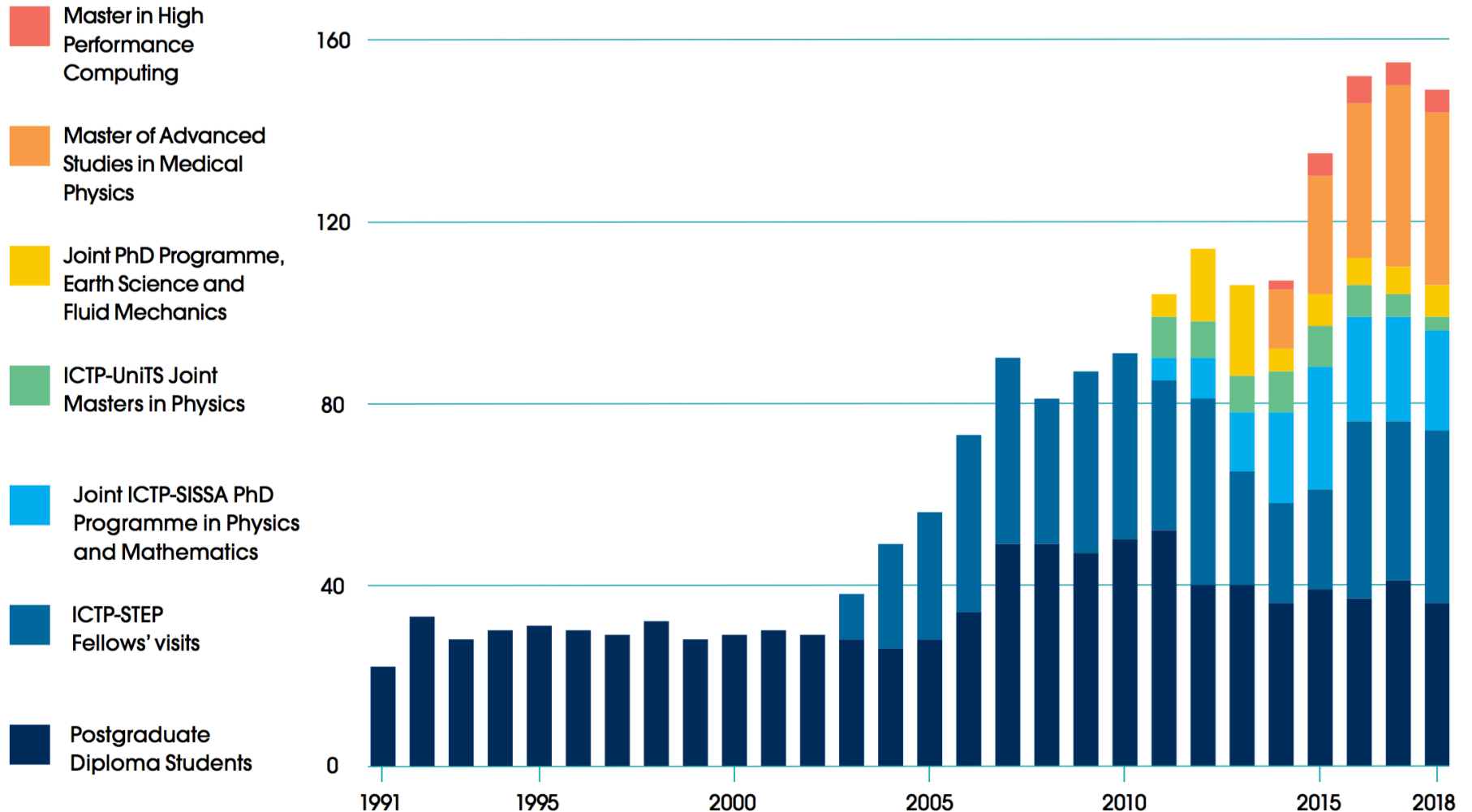
## ICTP's Postgraduate Diploma Programme: Preparing young scholars for PhD studies

Since 1991, 980 Diploma graduates; more than 75% earned or working toward PhDs

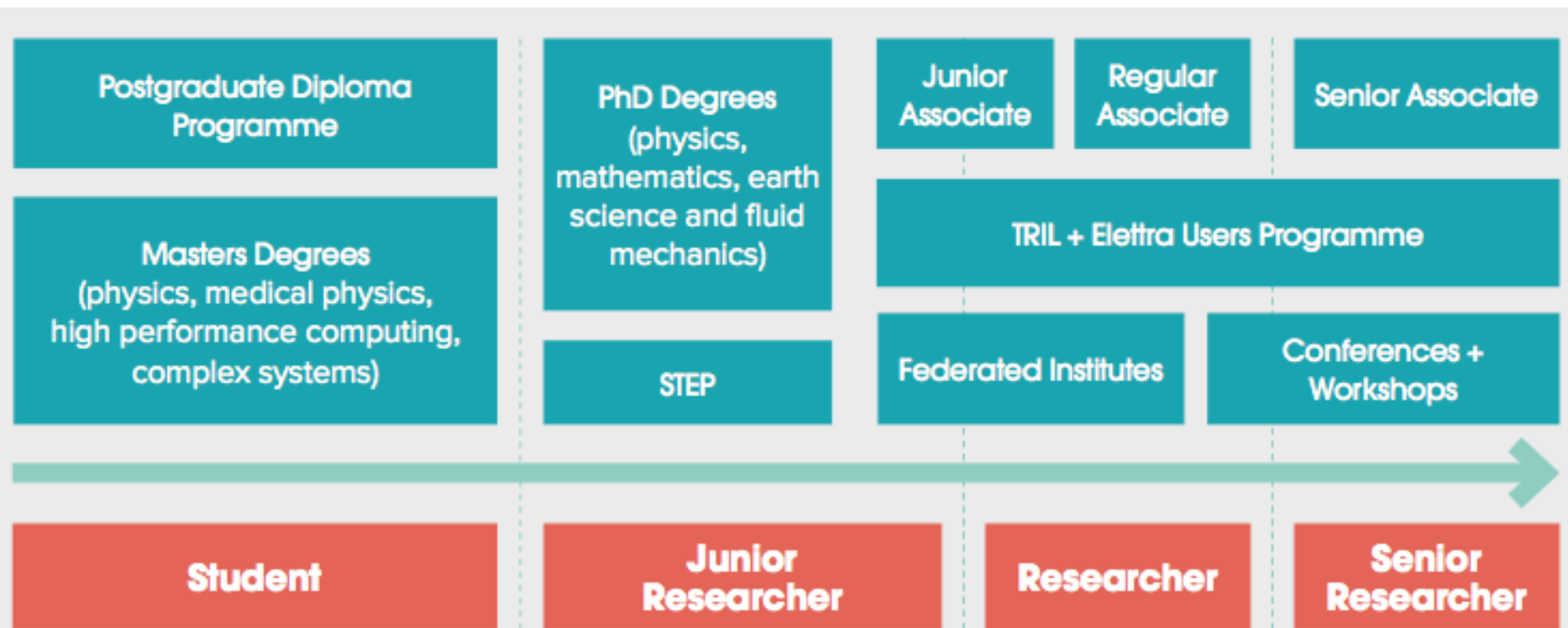




# ICTP Postgraduate Programmes



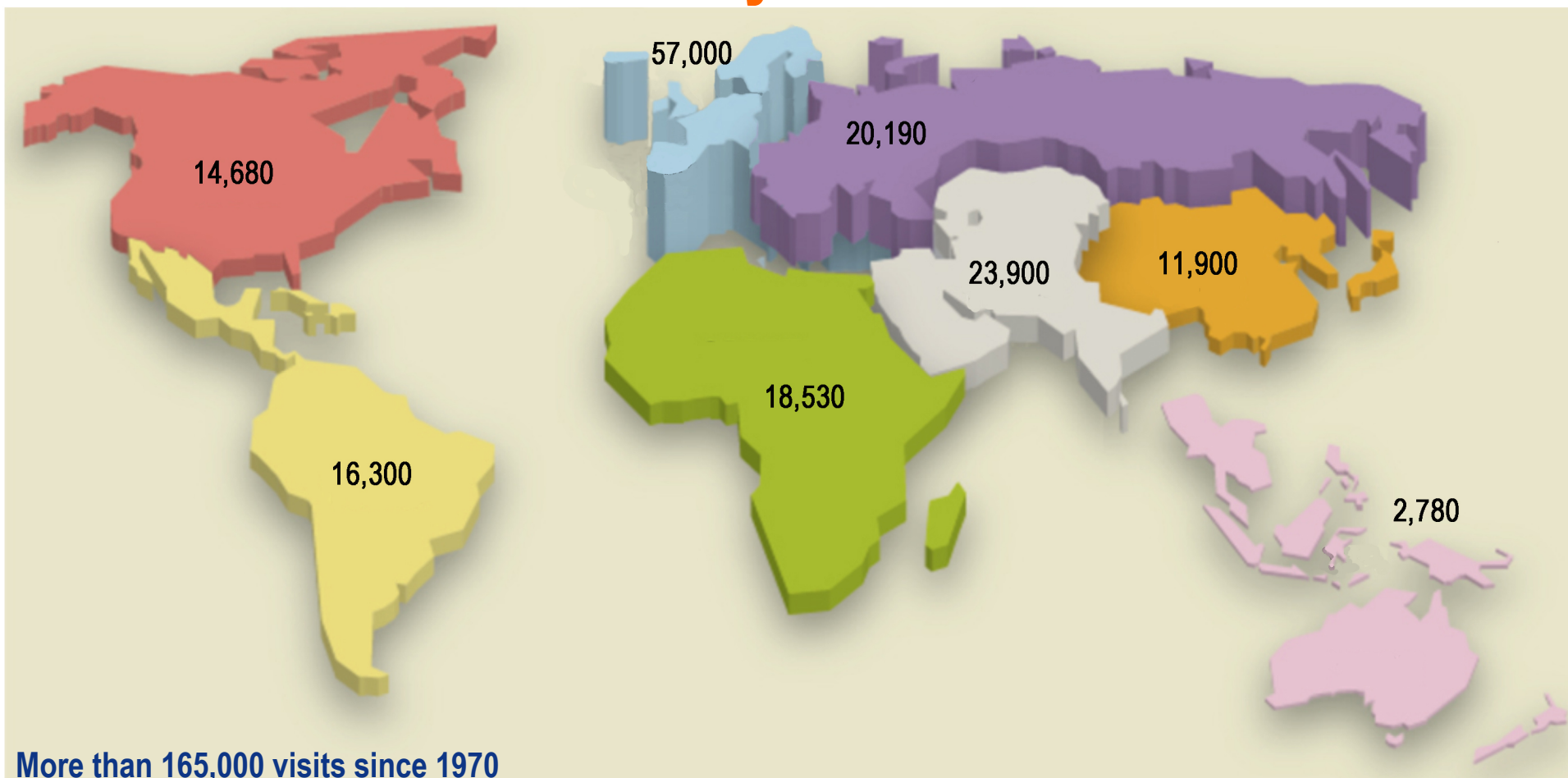
## ICTP training programmes: Supporting scientists in all stages of their careers



## ICTP's international conferences encourage “Brain Gain”

- Provide training and skills to scientists from developing countries
- Organise more than 60 conferences/workshops each year
- Welcome up to 5000 scientists from 145 nations each year
- Attract an additional 1000-2000 scientists/year through hosted activities

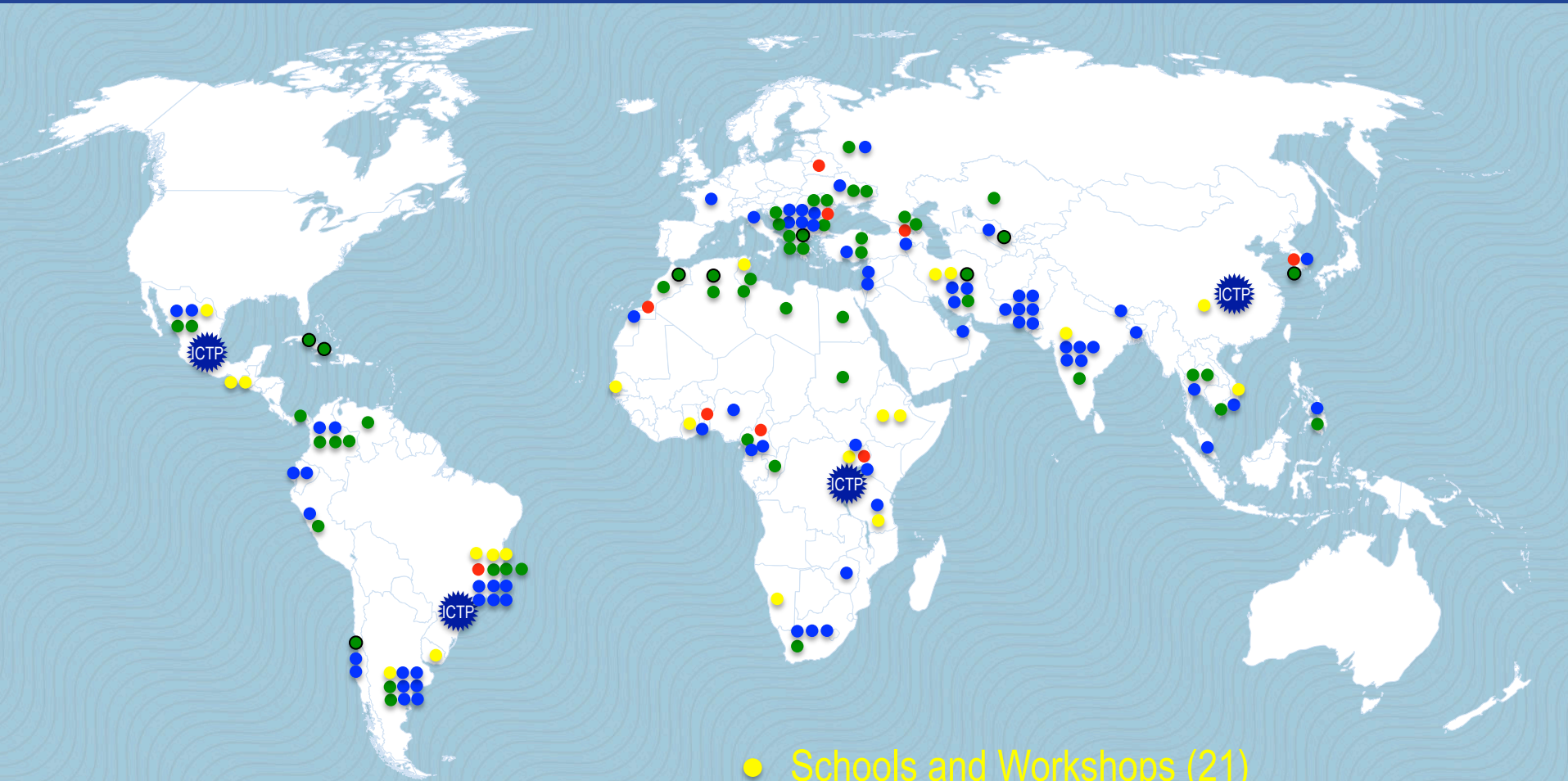
## ICTP visiting scientists: where do they come from?



More than 165,000 visits since 1970

188 countries represented

In 2018, 25% of ICTP visiting scientists were women



- Collaborating Centres (9)
- Network hubs (9)
- Scientific Meetings (70)

● Schools and Workshops (21)

ICTP “Partner Institutes” (4) in:  
 Brazil, Mexico, Rwanda, China  
2 recognized cat.2 UNESCO inst.  
2 others currently under evaluation



**Freddy Cachazo,**  
Postgraduate Diploma  
Graduate (1996-97)

- Recipient, 2014 New Horizons Prize
- Gribov Medallist 2009
- Dyson Chair, Perimeter Institute



**Zohra Ben Lakhdar,**  
ICTP Associate

- 2005 L'Oreal-UNESCO Award for Women in Science recipient
- founding member, Tunisian Physics Society and Tunisian Astronomy Society
- Professor of physics, Tunis El Manar University, Tunisia



**Narayan Adhikari,**  
Postgraduate  
Diploma Graduate  
(1997-98)

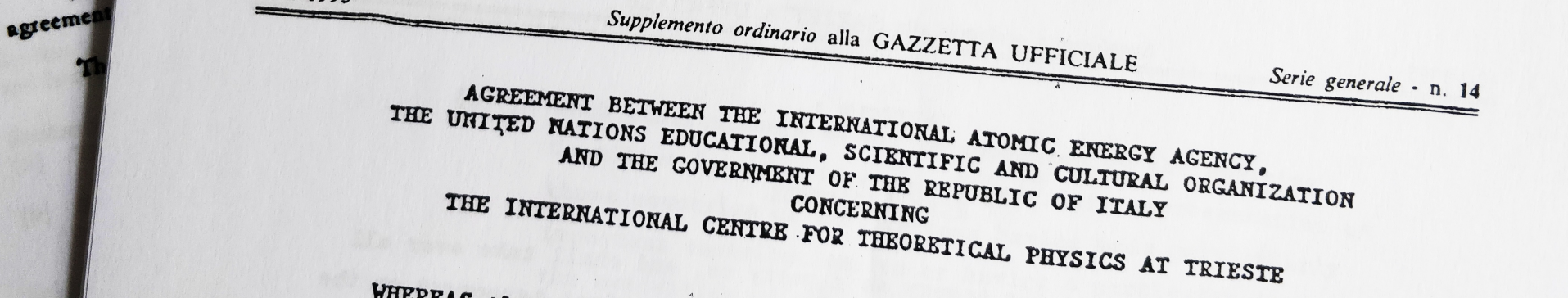
- ICTP Regular Associate 2008-15
- Senior Associate 2018-23
- Research group leader, Tribhuvan University, Nepal

**Stephen Hawking, University of Cambridge:**

“Over the years, ICTP has left a deep legacy in performing and promoting outstanding fundamental scientific research. In particular, it has had a major impact supporting science in developing countries.”



# ICTP: the Tripartite Agreement



- ✓ ICTP operates under a **tripartite agreement** among the Italian Government, the International Atomic Energy Agency (IAEA), and UNESCO.
- ✓ The agreement was ratified by an act of the Italian Parliament in January 1995. ICTP has a “seat” agreement with Italy.
- ✓ Each party is represented in the Centre's **Steering Committee**, which includes the ICTP Director and sets general guidelines for the Centre's activities, determines budget levels, considers proposals from the Director for the programme, work plans, financial plans and budget allocation, and takes decisions thereon.
- ✓ Since 1996, UNESCO has been responsible for the administrative management of the Centre, prior to which ICTP was administered by the IAEA.
- ✓ ICTP is a UNESCO Category 1 Institute, contributes to C/5 and reports in SISTER.



## Steering Committee

The ICTP Steering Committee meets twice a year, in May/June and October/November



United Nations  
Educational, Scientific and  
Cultural Organization



**IAEA**  
International Atomic Energy Agency



S. Nair-Bedouelle  
ADG/SC UNESCO



F. Zwirner  
Prof. of Theoretical  
Physics,  
Univ. of Padova  
Italy



N. Mokhtar  
DDG,  
Dept Nuclear Sciences  
& Applications  
IAEA



F. Quevedo  
ICTP Director

**In addition the four voting members usually bring experts as observers/advisors**

# ICTP Governance: The Scientific Council

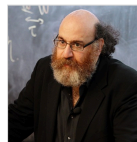


The ICTP Scientific Council comprises distinguished specialists in disciplines relevant to the Centre's activities who represent a broad geographical range. The Council advises ICTP on its programmes of activities, taking into consideration major academic, scientific, educational and cultural trends relevant to the Centre's objectives.



**Professor Carlos Alberto Aragão de Carvalho**

INSTITUTE OF PHYSICS, THE FEDERAL UNIVERSITY OF RIO DE JANEIRO, BRAZIL



**Professor William Bialek**

DEPARTMENT OF PHYSICS, PRINCETON UNIVERSITY, PRINCETON, NEW JERSEY



**Professor Martin Rees**

INSTITUTE OF ASTRONOMY, UNIVERSITY OF CAMBRIDGE, UK



**Professor Valeri A. Rubakov**

RUSSIAN ACADEMY OF SCIENCES INSTITUTE FOR NUCLEAR RESEARCH, MOSCOW, RUSSIAN FEDERATION



**Professor Edouard Brézin**

LABORATOIRE DE PHYSIQUE THÉORIQUE DE L'ENS PARIS, FRANCE



**Professor Ingrid Daubechies**

DEPARTMENT OF MATHEMATICS, DUKE UNIVERSITY, DURHAM, NORTH CAROLINA



**Professor Subir Sachdev**

DEPARTMENT OF PHYSICS, HARVARD UNIVERSITY, CAMBRIDGE, MASSACHUSETTS



**Professor Ashoke Sen**

HARISH-CHANDRA RESEARCH INSTITUTE, ALLAHABAD, INDIA



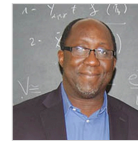
**Professor Elfatih A. B. Eltahir**

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASSACHUSETTS



**Professor Renata Kallos**

DEPARTMENT OF PHYSICS STANFORD UNIVERSITY, STANFORD, CALIFORNIA



**Professor Winston Wole Soboyejo**

MECHANICAL ENGINEERING DEPARTMENT, WORCESTER POLYTECHNIC INSTITUTE, WORCESTER, MASSACHUSETTS



**Professor Gang Tian**

PEKING UNIVERSITY, BEIJING INTERNATIONAL CENTER FOR MATHEMATICAL RESEARCH, CHINA



**Professor Luciano Maiani**

UNIVERSITY OF ROME "LA SAPIENZA", CHAIRMAN, SCIENTIFIC COUNCIL



**Professor Juan M. Maldacena**

INSTITUTE FOR ADVANCED STUDY PRINCETON, NEW JERSEY



**Professor Cumrun Vafa**

CENTER FOR THE FUNDAMENTAL LAWS OF NATURE HARVARD UNIVERSITY DEPARTMENT OF PHYSICS, CAMBRIDGE, MASSACHUSETTS



**Professor M.S. Narasimhan**

CENTRE FOR APPLICABLE MATHEMATICS BANGALORE, INDIA



**Professor Michele Parrinello**

COMPUTATIONAL SCIENCE LABORATORY DEPARTMENT OF CHEMISTRY & APPLIED BIOSCIENCES ETH ZURICH LUGANO, SWITZERLAND

## Income for 2018 (in Euros)

### Government

Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR), Italy (Statutory contribution)	20,592,448.00
Ministry of Science and Technology, Pakistan	64,097.81
Department of Science and Technology, India	12,957.69
<b>Total government contributions</b>	<b>20,669,503.50</b>

### UN Agencies

IAEA (Statutory contribution)	2,179,067.18
IAEA (other)	654,024.07
UNESCO (Statutory contribution)	356,029.30
The World Academy of Sciences (TWAS)	43,949.86
International Telecommunication Union (ITU)	12,722.49
<b>Total UN Agency Contributions</b>	<b>3,245,792.90</b>
<b>Contributions from other Donors</b>	<b>2,045,245.94</b>
<b>Total Income</b>	<b>25,960,542.34</b>

## **Mandate and alignment with C/5**

*ICTP works closely with UNESCO HQ for the preparation of C/5. In line with its mandate to foster scientific research and education especially in the developing world, ICTP contributes to SDG4 through its scientific training programs, to SDG7 through its research and training activities in renewable energy, and to SDG13 through its research and training activities in climate modelling and disaster risk. Two informative meetings were held in the last 5 years for Member States at HQ.*

## **Governance structure and procedures**

*Set to a large extent by the Tripartite Agreement*

## **Language**

*Gender neutrality implemented. The main working language of ICTP is English, as per practice in scientific research institutes. Some of the classes are translated in French and Spanish.*

**116a. ICTP submit a regular report to the General Conference, highlighting impact of its work and connections to UNESCO's Natural Science programme and 2030 Agenda.**

*The report to the 40<sup>th</sup> GC is available as 40 C/REP/13 (2 Sept 2019)*

**116b. Follow-up of the External Auditor's recommendations**

*We understand that the recommendation does not refer to the recommendations of the "External auditors" but to the 13 recommendations of the 2016 IOS audit (IOS/AUD/2016/02). Twelve out of 13 recommendations are now closed. The last one (on scientific contractual agreements) is in the process of being closed.*

- ✓ ICTP is governed within a Tripartite Agreement, with two more stake holders besides the UNESCO, defining programmes, plans and budget. Functional autonomy is crucial for implementing them effectively, taking the ICTP specificities into account.
- ✓ ICTP funding arrangement is essentially extra-budgetary from the point of view of UNESCO. The increased scope for ICTP activities would call for an increase in budget. Room for more extra-budgetary contributions? Room for an increase in the UNESCO statutory contribution? Recent positive news: ICTP now is eligible Host Institution for Horizon Europe.
- ✓ ICTP has a very large number of international visitors and scientific programs. Consequently, it is of primary importance for ICTP to retain agility and flexibility (especially related to visitor and visit management, budget management, contribution and donor reporting management and some HR aspects such as the career prospects of the scientific staff).

# Thank you!

More details at [www.ictp.it](http://www.ictp.it)

**WORKING GROUP ON THE GOVERNANCE, PROCEDURES,  
AND WORKING METHODS OF THE GOVERNING BODIES OF UNESCO**

**RECOMMENDATIONS**

**PART 2. STRUCTURE, COMPOSITION AND METHODS OF WORK OF UNESCO'S INTERNATIONAL AND INTERGOVERNMENTAL BODIES (IIBS)**

**A. Vision and Principles**

N°	Recommendation	Remarks by ICTP
54	Sub-Group 2 recommends endorsing the vision of a more integrated, harmonized, coherent, and adapted system of International and Intergovernmental Bodies (IIBs) working closely with Member States, relevant partners, and each other in support of the Organization's objectives, medium-term strategy (C/4), and programme and budget (C/5), taking into account the specificities and requirements of individual mandates.	ICTP works closely with UNESCO HQ for the preparation of C/4 and C/5. <b>[Implemented]</b>
55	While recognizing the immense value of experts to the work of UNESCO, the intergovernmental nature of the IIBs needs to be reinforced. Thus, transparency and awareness-raising measures should be strengthened across the board. The work of IIBs must be as inclusive as possible and seek to involve Member States for greater impact and visibility.	The intergovernmental nature of ICTP is guaranteed by the presence of UNESCO, IAEA, and Italy in its governing board. <b>[Implemented]</b>

**B. GENERAL RECOMMENDATIONS FOR ALL INTERNATIONAL AND INTERGOVERNMENTAL BODIES (IIBs)  
Efficiency (mandate, composition, structure, rules of procedure, methods of work)**

N°	Recommendation	Remarks by ICTP
56	IIBs are invited to update their mandates, as appropriate, including their objectives and programs to be more coherent with approved C/5 priorities and responsive to current global developments, such as the 2030 Sustainable Development Agenda and the Paris Agreement on Climate Change.	ICTP works closely with UNESCO HQ for the preparation of C/5. In line with its mandate to foster scientific research and education especially in the developing world, ICTP contributes to SDG4 through its scientific training programs, to SDG7 through its research and training activities in renewable energy, and to SDG13 through its research and training activities in climate modelling and disaster risk



		reduction. <b>[Implemented]</b>
57	To promote diversity and inclusivity, voluntary term-limits of two consecutive mandates are recommended for IIBs which currently do not have term limitations for membership.	Membership is determined by international agreement between UNESCO, IAEA, and Italy. <b>[Not applicable]</b>
58	As a general rule, term-limits of two consecutive mandates for membership in all Bureaus are recommended.	ICTP does not have any Bureau. <b>[Not applicable]</b>
59	For cost-saving, coherence and harmonization, it is recommended that IIBs and the General Conference consider “right-sizing” the composition of the IIBs.	Membership is determined by international agreement between UNESCO, IAEA, and Italy. <b>[Not applicable]</b>
60	There is a need to reduce and manage politicization of nominations and decisions.	Membership is determined by international agreement between UNESCO, IAEA, and Italy. <b>[Not applicable]</b>
61	To enhance visibility and the effectiveness of the work of the IIBs, more effective information-dissemination is recommended through updating and enhancement of websites and outreach to all involved actors, including Member States and their National Commissions.	ICTP has held two information sessions for Member States at UNESCO HQ in the last few years. All information about ICTP activities and programmes is available on the ICTP website. ICTP plans to videorecord and broadcast all its scientific events, by 2020. <b>[Ongoing]</b>
62	Earlier preparation and dissemination of draft agendas and preliminary timetables, mainly by using the same template containing hyper-links to documents to be adopted/discussed in sessions.	Documents relevant for the ICTP Steering Committee meetings are posted online in a shared repository. <b>[Implemented]</b>
63	The Secretariat is invited to promote a harmonized virtual working environment for all IIBs and to revisit UNESCO’s “Strategy on Knowledge Management and Information & Communication Technology”. Simple, more user-friendly documentation (i.e. less fragmented reporting and easier document tracking; annotated agenda with hyper-links to reports and draft decisions).	Further improvements of the virtual working environment for the ICTP board members will be considered at the next meeting of the Steering Committee (October 2019). <b>[Ongoing]</b>
64	Open-ended informal consultations on draft decisions to promote inclusive and effective decision-making.	The ICTP Steering Committee will consider how the recommendation can be implemented within the terms of reference of the Committee, which are set by an international agreement between UNESCO, IAEA, and Italy.

		<b>[Ongoing]</b>
65	It is recommended that the Rules of Procedure of the IIBs be amended, when relevant, to advance the deadline for submission of candidatures to their subsidiary bodies from 48 hours to seven days before elections.	Rules and procedures for the membership of the ICTP governing board and other boards is determined by international agreement between UNESCO, IAEA, and Italy, and not by election. <b>[Not applicable]</b>

#### Harmonization (role of Bureaus, transparency)

<b>N°</b>	<b>Recommendation</b>	<b>Remarks by ICTP</b>
66	The role, composition and procedures of Bureaus and their members should be clarified and harmonized through codification in rules of procedure/ statutes or development of general guidelines for all IIBs, in close cooperation with the Secretariat.	ICTP does not have any Bureau. <b>[Not applicable]</b>
67	It is suggested that Bureaus' composition be set, as much as compatible with individual IIBs' mandates, at a maximum of six members (Chair, Rapporteur, and four Vice-Presidents from the six Electoral Groups).	ICTP does not have any Bureau. <b>[Not applicable]</b>
68	The intergovernmental nature of Bureaus should be reaffirmed while maintaining expert engagement. In this regard, the attached guidelines on responsibilities of Bureau members are recommended for dissemination to all Governing Bodies and IIBs (appendix 2).	ICTP does not have any Bureau. <b>[Not applicable]</b>
69	Documents related to Bureau meetings should appear online before meetings take place; outcomes, including reports of Bureau meetings, should be communicated to all members, and as appropriate, all Permanent Delegations, in a timely manner.	ICTP does not have any Bureau. <b>[Not applicable]</b>
70	Elections of Bureaus should be held, as much as possible, soon after elections for seats on the IIBs conducted at the General Conference, to avoid having Bureau members from Member States, which are no longer members of the IIBs concerned.	ICTP does not have any Bureau. <b>[Not applicable]</b>
71	As much as feasible, Bureau meetings should be open to observers and working methods made more transparent.	ICTP does not have any Bureau. <b>[Not applicable]</b>

72	Strengthen information-sharing, communication and collaboration between Bureaus, Intergovernmental Councils and Committees and Member States.	ICTP does not have any Bureau <b>[Not applicable]</b>
73	Gender-neutral language be adopted throughout all UNESCO documents.	Gender-neutral language is adopted at ICTP. <b>[Implemented]</b>

#### Alignment with overarching priorities of UNESCO

N°	Recommendation Text	Remarks by ICTP
74	All IIBs should have the opportunity to submit formal inputs to the mid-term strategy C/4 and the draft Programme and Budget C/5 documents of UNESCO.	ICTP works closely with HQ in the preparation of C/4 and C/5. <b>[Implemented]</b>
75	A feedback mechanism can be envisaged for substantive dialogue between Member States and IIBs, beyond the limited reporting to the General Conference. This could be through information meetings or briefings. Reporting to the General Conference should be enhanced through a new more strategic and results-oriented reporting format to be followed by debate and General Conference resolutions to provide feedback to IIBs.	ICTP has held two information meetings for Member States in the last few years. Moreover ICTP has submitted a formal report to the upcoming GC. <b>[Implemented]</b>
76	Orientation sessions for new members of all IIBs, especially for Chairpersons and Bureau members, should be institutionalized and include introduction to the C/4 and C/5 frameworks. To that end, a short user-friendly guidebook including good practices and acronyms could be produced to familiarize members with working methods and C/4 and C/5 mechanisms.	ICTP will ask the UNESCO representative in the Steering Committee (ADG/SC) to brief the other members about the C/4 and C/5 frameworks (October 2019). <b>[Ongoing]</b>

#### Coherence, coordination and synergies

N°	Recommendation	Remarks by ICTP
77	Balanced resource allocation is necessary to ensure the effectiveness of all IIBs.	UNESCO provides about 1.5% of the contributions to the budget of ICTP. The ICTP Steering Committee fully supports the need for a more balanced resource allocation among its governing members, and would welcome an increase in the UNESCO regular contribution, also in view of the broadening of the

		ICTP activities that has taken place over the years. [Not implemented]
78	Use of languages for inclusivity and effectiveness remains an important objective.	As per practice in all scientific research institutes, the main working language of ICTP is English. Some of the classes are translated in French and Spanish. [Implemented]
79	IBs and their Secretariats are requested to enhance coordination in scheduling of meetings to avoid overlap.	Schedules are checked with ADG/SC. [Implemented]

### Best practices

N°	Recommendation	Remarks by ICTP
80	Best practices should be shared and replicated or, if necessary, adjusted to reflect specificities with the aim to promote governance mechanisms that facilitate strategies and action plans anchored on the C/4 and C/5. Attached, in this regard, is a non-exhaustive list of best practices identified by the Working Group (Appendix 3).	The ICTP governing board will consider adopting some of the listed best practices at its next meeting (October 2019). [Ongoing]

## G. SPECIFIC RECOMMENDATIONS FOR THE CATEGORY 1 INSTITUTES

### Abdus Salam Centre for Theoretical Physics (ICTP)

N°	Recommendation	Remarks by ICTP
116	a. ICTP submit a regular report to the General Conference, highlighting impact of its work and connections to UNESCO's Natural Science programme and 2030 Agenda. b. Follow-up of the External Auditor's recommendations.	a. ICTP is providing a report to the 2019 General Conference, and plans to do so regularly in the future. [Ongoing] b. Based on clarifications received from the secretariat of the Working Group, we understand that the recommendation does not refer to the recommendations of the "External auditors" but to the 13 recommendations of the 2016 IOS audit

		<p>(IOS/AUD/2016/02).</p> <p>Twelve out of 13 recommendations are now closed. The last one (on scientific contractual agreements) is in the process of being closed.</p> <p><b>[Ongoing]</b></p>
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