

INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

Moderators' orientation

Uta Bilow, TU Dresden
CERN, 12.02.2024



Inspiring the next generation

“

I did this masterclass in 2012 when in high school and that's why I decided to study physics so I would love to encourage people to join our community.

”

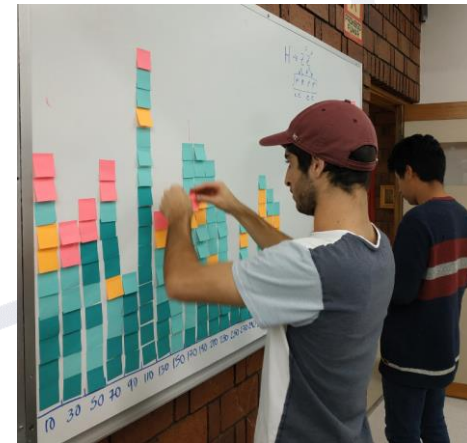


Moderator in 2021, 2022, 2024

The idea behind Masterclasses

High school students (16-19y)
at a university or research lab
Act as a „scientists for one day“

- Close to current research
- Hands-on activity
- Real scientific data
- Relevant methods and tools
- Nature of science
- Organisation of HEP research
- Meeting and discussion with scientists



Sample Agenda

8:30 - 9:00 *registration & welcome*

9:00 - 10:00 introduction to Particle Physics
(standard model, detectors,
accelerators)



10:30 - 11:30 second talk or tour

12:00 - 13:00 *lunch*

13:00 - 15:00 data analysis: measurement
with LHC data (ALICE, ATLAS,
CMS, LHCb)



15:00 - 16:00 local combination + discussion

16:00 - 17:00 video conference with CERN
(3-5 groups from different countries
= international collaboration)



You might be sitting here!

Key points of the video conference

Typical situation:

- 2 moderators
- groups of students (16-19 y)

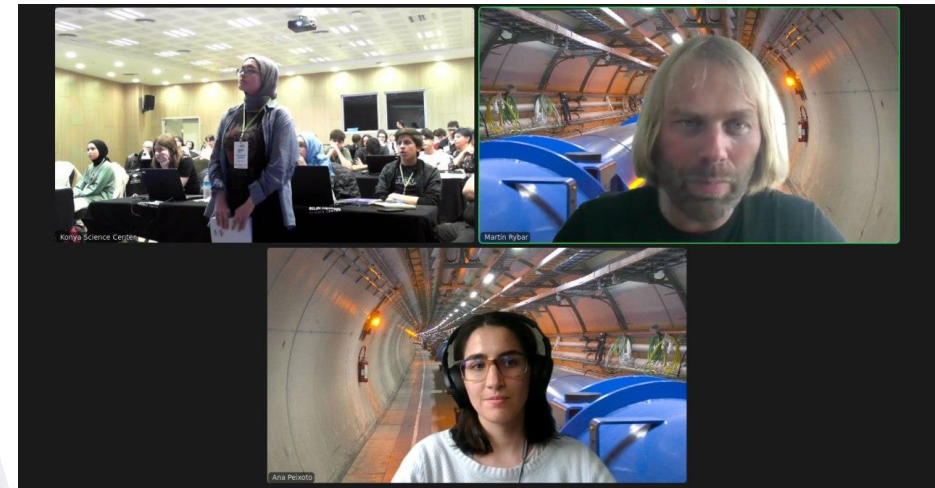
Connect
to CERN

Students are excited ...
and a bit exhausted ...

Long day

Challenges

- English not mother tongue
- shy to speak
- groups should predefine speakers, but...
- poor sound quality

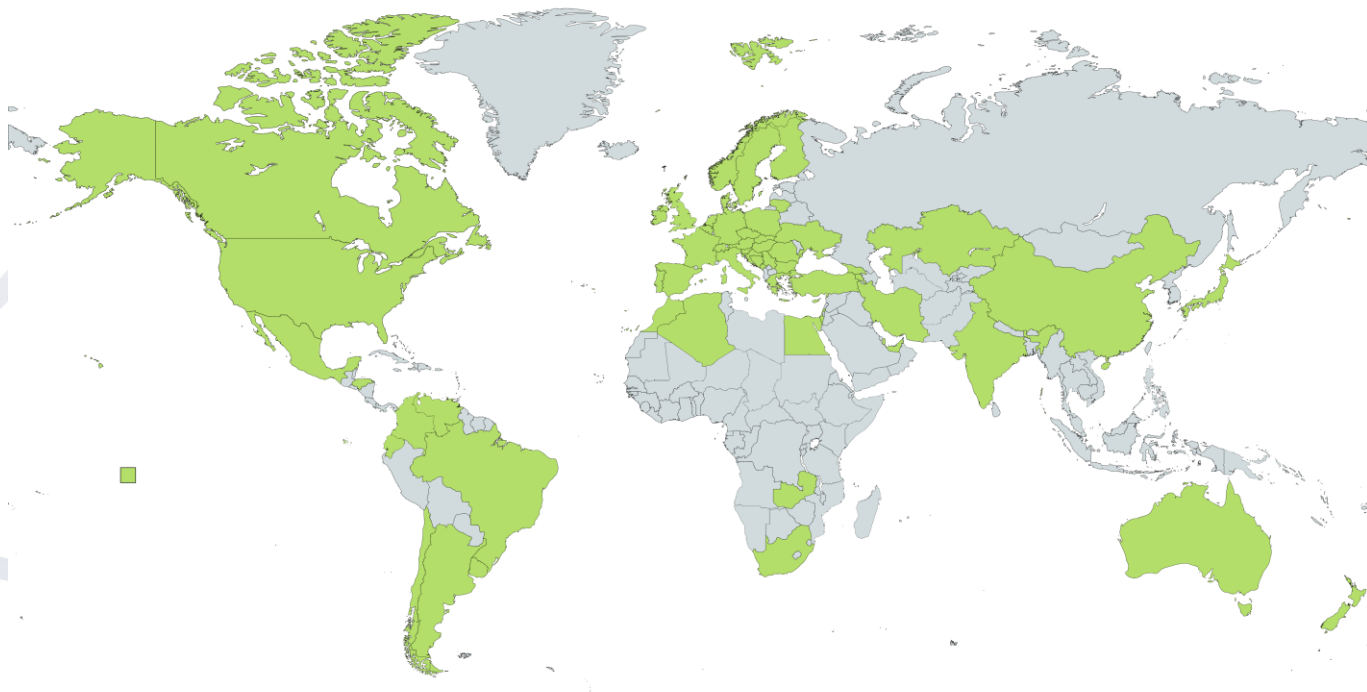


To meet the challenges

- this training
- strict agenda (script)
- rich documentation
- support by CERN IT
- moderators work in pairs

International Masterclasses

- key activity of IPPOG (International Particle Physics Outreach Group)
- Masterclasses: LHC, Belle II, Neutrinos experiments, Auger, Particle Therapy, ...
- Moderation centers: CERN, Fermilab, KEK, GSI, Malargue
- 63 countries, >220 institutes
- More at <https://ippog.org/imc-international-masterclasses>

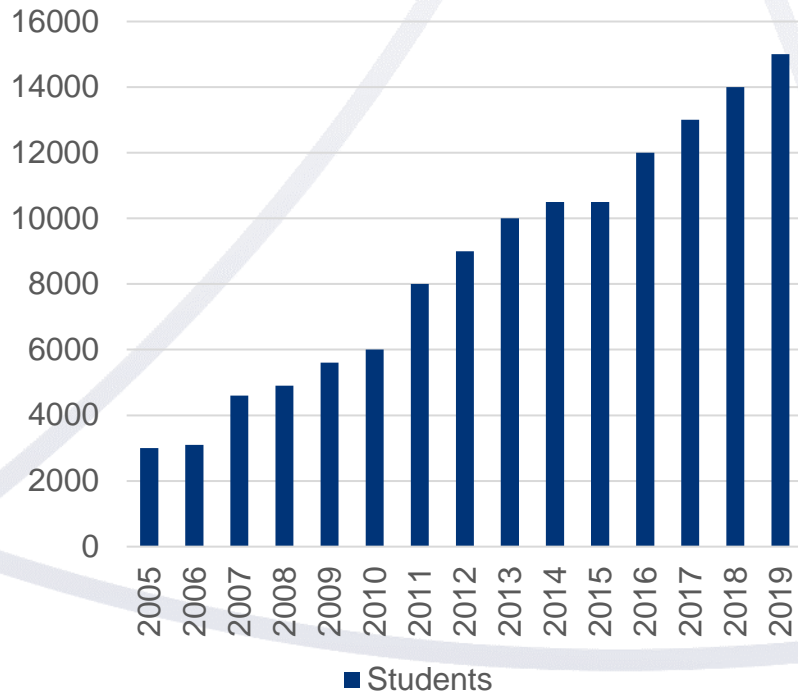


Created with mapchart.net

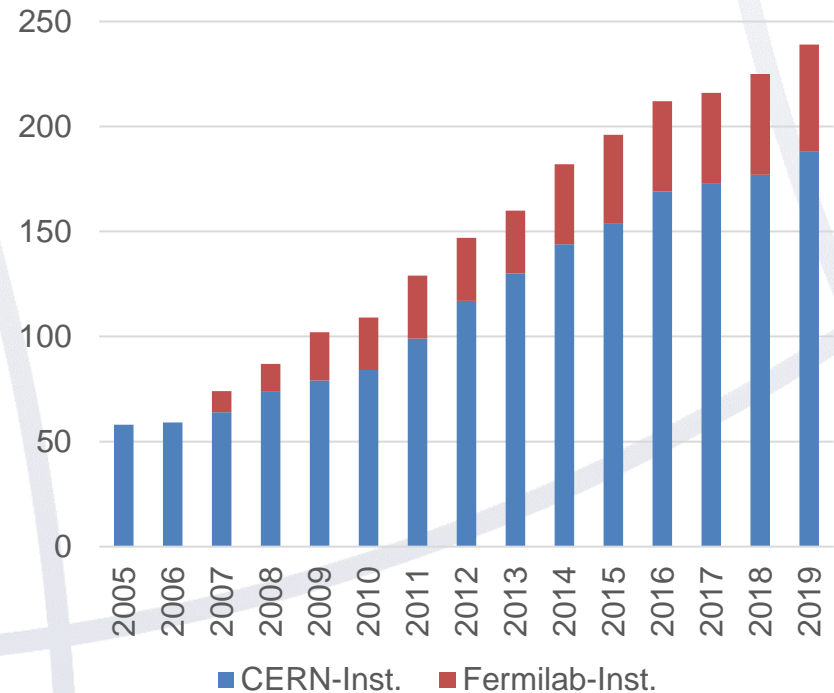
IMC: a growing program

2005: 18 countries → 2024: 63 countries

Students



Institutes



Schedule ...

and moderators

26.02. - 02.03.2024

	Mon, Feb 26	Tue, Feb 27	Wed, Feb 28	Thu, Feb 29	Fri, Mar 01	Sat, Mar 02
topic	VC 1: ATLAS Z	VC 1: ATLAS Z	VC 1: ATLAS Z	VC 1: ATLAS Z	VC 1: ATLAS W	VC 2: CMS
moderators						
moderators						
	Nairobi	Linz	Lund	Siegen	Krakow, AGH	Constantine
	Jerusalem, IASA		Banska Bystrica	Pavia	Madrid, IFT	Doha
			Orsay	Orsay	Tbilisi, GTU	Antwerp
			Rzeszow	Prague, Charles U.		
topic	VC 2: CMS	VC 2: LHCb	VC 2: ALICE	VC 2: CMS	VC 2: CMS	
moderators						
moderators						
	Bari	Orsay	Constantine	Palaiseau	Constantine	
	Hamburg	Milan, Bicocca	Salerno	Mainz	Catania	
	Svoje	Genoa	Cape Town, iThemba LABS	Aachen	Kharkiv	
	Hvar	Lausanne, EPFL		Perugia	Helsinki	
	Székesfehérvár			Split	Santiago de Compostela	

	Michael Pitt (CMS)		Alberto Plebani (ATLAS)		Aleksandra Poreba (ATLAS)		Karolos Potamianos (ATLAS)
	Jesus Puerta Pelayo (CMS)		Rahmat (CMS)		Federico Redi (LHCb)		Mark Smith (LHCb)
	Jennifer Roloff (ATLAS)		David Rouso (ATLAS)		Martin Rybar (ATLAS)		Ennio Salvioni (Theory)
	Pratixan Sarmah (Theory)		Alba Soto Ontonso (Theory)		Tobias Trezczoks (ATLAS)		Dimitra Tsiounou (CMS)

Team of ~ 60 moderators

www.physicsmasterclasses.org/index.php?cat=schedule#moderators



e-group: ippog-masterclass-moderators@cern.ch

https://physicsmasterclasses.org/index.php?cat=schedule&page=schedule_2024

Quotes from Masterclasses moderators:

“The best thing is actually answering the questions and seeing how excited and how happy they are, waving at the camera. They're really excited to be talking to physicists based at CERN!”

“It is very satisfying, because we do many video conferences and rarely do people cheer on the other side if you say something. Here they do!”



Thank you for being part of IMC24 – enjoy your sessions!