

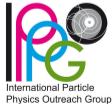
International Masterclasses: Moderators' training

Communicating with students and technical info

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There will be usually 2 moderators:

- you should talk about equal amounts, e.g. answer QA alternately
- if you feel you talked too much, hand over to your co-moderators
"That sounds like a great question for XY because she works on Higgs analysis"
- new moderators: consider to meet your co-moderator in person or on zoom to get comfortable or ask question
- you can join another session before yours (write to Uta to ask for link)
- for technical problems, contact Uta by email or ask on Mattermost channel
<https://mattermost.web.cern.ch/imc>

Most of the students are not native English speakers:

- speak slowly and clearly
- avoid using complicated and long sentences
- use simple vocabulary
- answer questions concisely, long monologues tend to disconnect people
- don't use acronyms, abbreviations, physics/academia slang "CERNish"
(most people don't know who is postdoc or DG)
- test and try to improve your audio quality
 - audio is much more important than video, especially for non-native speakers









































Think about few messages you want to convey to students:

- CERN/physics/technology are fun, internationality, collaboration, ...
- no need to be genius to study HEP/STEM
- possibilities for students to engage with CERN and HEP/STEM:
 - CERN programmes - visits, Science Gateway labs, virtual visits
<http://visit.cern>, CERN/experiments social media
 - BeamLine for Schools 2024 - competition for teams to do experiment with beam, deadline April 10
cern.ch/bl4s
 - CERN-Solvay Education Programme - online videos and 1 week at CERN
<https://solvay-education-programme.web.cern.ch/>
 - research done in their city/country, they can contact the local organizers

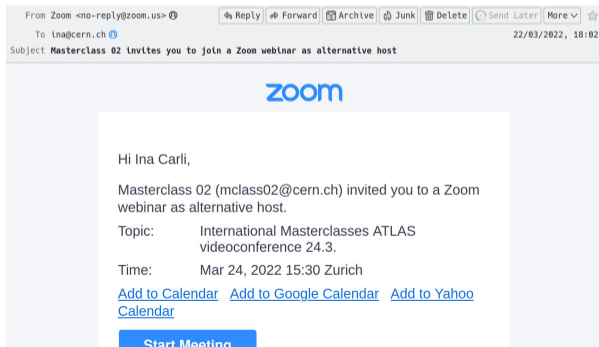
Typically the most difficult part is to encourage students to ask questions

Technicalities, sound and video setup

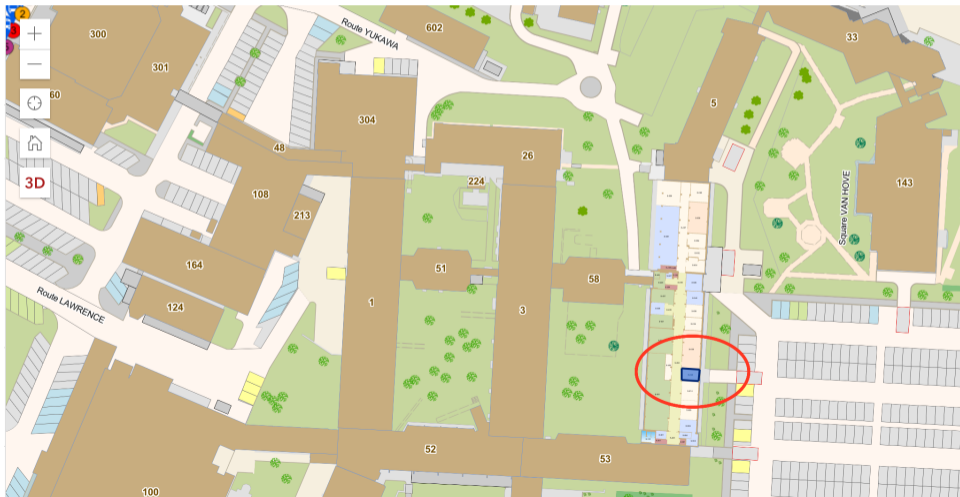
- there will be usually 2 conferences in parallel, VC1 and VC2
- check the agenda which one you should join

	Mon, Feb 19	Tue, Feb 20	Wed, Feb 21	Thu, Feb 22	Fri, Feb 23	Sat, Feb 24
topic	VC 1: ATLAS Z	VC 1: ATLAS W	VC 1: ATLAS Z	VC 1: ALICE S.P.	VC 1: ATLAS Z	VC 1: ATLAS Z
	Rome Sapienza 	Erlangen 	London QMUL 	Puebla 	Innsbruck 	São Tomé e P. 
	Marseille 	Colmar IPHC 	Bologna 	Cagliari 	Colmar IPHC 	Lisbon IST 
	Pisa 	Hamburg DESY 	Vila Real 		Prešov 	Lodz 
	Wuppertal 	Bonn 	Athens NTU 		Braga 	
	London QMUL 		Trenčín 			
topic	VC 2: CMS	VC 2: CMS	VC 2: ALICE S.P.	VC 2: CMS	VC 2: LHCb	
	Florence 	Tbilisi GTU 	Cagliari 	Virovitica 	Modena 	
	Istanbul, Ozyegin 	Trieste 	Marseille 	Florence 	Marseille 	
	Split 	Zagreb 		Osijek 	Cagliari 	
	Tehran 	Pavia 		Debrecen 	Bologna 	

- zoom room for each session will be created by Uta, moderators have co-host role
- you should receive zoom invitation with link few days in advance (if not please contact Uta)
- login to zoom when prompted or before clicking on the link
- after login you will be in zoom waiting room: check your setup, agree on who does what etc.
 - please open it for institutes as soon as possible



- if you are both at CERN and if you would like to be in meeting room, 4/S-020 is booked for most days
→ check with your co-moderator or Uta

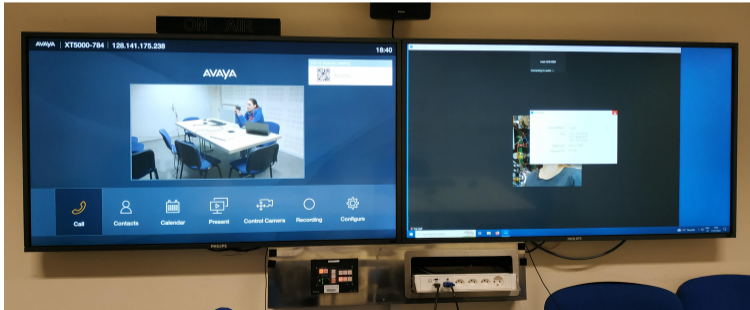


- unlock door with your badge - don't forget to validate it (reader eg. in the entrance of bat. 4)

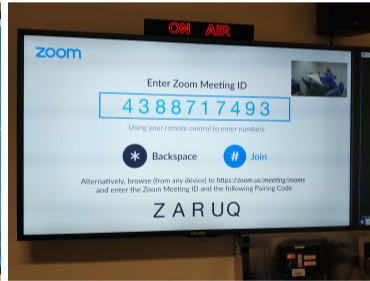


How to start video conference:

- on control panel press: DISPLAY ON - wakes up the right screen (room PC)
VIDEO CONF - video system and left screen
- connect room PC to zoom (ignore popup 'Join Audio', you'll not use this PC sound and video)



- on video system remote (RADVISION) pres Call, call zoom app
- you'll see zoom setup, press # and enter meeting number and press # again
- (or if asked) go to zoom.us/meeting/rooms and type there meeting number and pairing code



If you are connecting from your office/home:

- sound is more important than video quality
- if you have bad connection or unstable wifi, turn off your camera (add a profile photo to your zoom account in advance)
- check in advance your volume and background noise
- ideally use headphones/headset (avoids feedback and echo)
- consider disabling zoom's automatic volume control and set "Suppress background noise" to Medium or High (Settings → Audio → Microphone)
- turn off notifications from other apps on your laptop and phone

Some problems and solutions:

- too silent or too distorted when speaking louder → adjust mic gain
- people can hear you breathing → mic too close
- mic on headset making noise when touching clothes → move it
- bluetooth headset losing signal (clicking noise or no sound)
- echo, reverb or boomy-sounding voice → put mic closer to you and lower gain (pro tip: check room treatment tricks, usually few pillows/curtains help a lot)
- disturbing doorbell sound when somebody enters/leaves zoom
→ disable in zoom: in participant list - More (next to Mute all)

- check your image and background
- you can use zoom virtual background, LHC tunnel and IMC backgrounds can be downloaded from [moderator twiki](#)
- your face should be lit - add a soft light from front
- use ethernet cable instead of wifi if you can (it helps a lot!)

Usual problems:

- too dark or too light
- you are too small, we see only part of face and lot of ceiling
- disturbing flickering stripes from fluorescent lights - try changing lamp
- shaky camera as you move/type
- pop-ups when you share screen → disable in Zoom Settings - Share Screen - Block all other pop-ups while window sharing
- virtual background steals your arm/hair → check your the virtual background in advance, it depends a lot on lighting and your clothes

- if you have CERN zoom account, sign in before you want to connect to VC
- if you have problems with zoom account, submit a ticket to the zoom support as soon as you find out (being logged in with your CERN account) or contact CERN zoom support zoom-support@cern.ch or on <https://mattermost.web.cern.ch/it-dep/channels/zoom>

To test your setup:

- always test your mic and video in advance to have time to fix issues
- you can record yourself locally
- if you wish to get some help, contact Ina Carli (@ina on Mattermost) to setup a test call (I can help you with mic/camera/light setup, basic sound treatment of your room)

Typical problems:

- too many questions: tell students to ask their local organizers or offer to stay after 17:00 or to contact you privately (if you wish)
- too few or no questions: ask them what topics they would like to know about e.g. "Are you interested how is life at CERN? Or how to become a physicist?"
 - or one of moderators can ask the other, eg. when did they get interested in physics
 - ask if there are questions from each institute

Few resources for FAQ:

- CERN facts on guides pages [link](#)
- CERN LHC brochure [link](#)

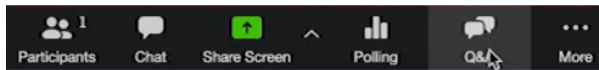
- How many people work at CERN? What nationalities?
 - about 3500 staff, 13000 users, 100 nationalities, many students
- How can I come to CERN?
 - visits, internships, do your thesis with local institute, technical/summer student
- What is the salary at CERN?
 - don't give precise answer, we don't get rich but it's good enough
- What is the cost of LHC?
 - LHC machine about 5 BCHF, experiments 2 BCHF
- What is the power consumption of the LHC?
 - CERN total (when running whole complex) about 180 MW = GE canton
- How much helium is in the LHC magnets? - about 120 tons keeping them at 1.9K

- Where are protons/ions in LHC from?
 - p from hydrogen bottle at Linac4 source, lead ions from 500C hot ion oven
- Nobel price 2013 - Peter Higgs, Francois Englert? What is the Higgs boson?
 - a concept to explain how elementary particles get their mass
- Is CERN or antimatter dangerous? Are the collisions like explosions?
 - No, it's very small amount of energy, all access to experiments is monitored
- Can the LHC create black holes that destroy earth?
 - No, cosmic rays hitting earth have 1000 higher energies
- What is going on at CERN now?
 - In 2024 LHC will run again from April until November, same for 2025, then 3 years long break to upgrade detectors
- Why does LHC continue running even after Higgs was discovered?
 - LHC will run until around 2040 so only few % of expected data is collected (160 out of 3000 fb⁻¹ = 5.3%) Many results need more data and we don't know what new we will find in the data.

Enjoy your sessions!

QA session - remote week

Students will connect individually so you can use zoom QA window



- start the QA session by saying what will happen next:
it's time for students to ask their questions
- they should ask in zoom's QA window
- students can upvote questions they like with thumbs up icon
- they can also rise hand in zoom and you unmute them to ask their question aloud (usually this works well with smaller groups)

- open the QA window:
- you can merge QA window with the main window by clicking on ... icon and selecting "Merge to meeting window", same for participant list
- for each question you can select "Answer live", "Type answer" or "Dismiss" to remove question
- after answering live, click on "Done" to move question to Answered
- this helps to keep the QA window tidy and you don't have to search for questions

Open (3) Answered Dismissed

John Peterson 03:14 PM

How do I upgrade my plan?

👍 2

Answer live Type answer

Lisa Robins 03:04 PM

Can I join a Zoom meeting by phone?

👍

Answer live Type answer

Lisa Robins 03:25 PM

What's the difference between meeting and webinar?

- go through questions, read them and answer
- keep the answers short and non-technical
- occasionally check also the chat window
- for ambiguous questions, try to answer at least part of them or ask for clarification
- ideally both moderators answer some questions, according to their background/interests
- for large groups it's easiest if each moderator picks one question, reads and answers it; then they move on to next question without lengthy discussion
- very technical/specific questions: give some hints/link where to find answer
 - or click on the question and use "Answer by Text"
 - or offer that the student can contact you by e-mail (if you wish)