

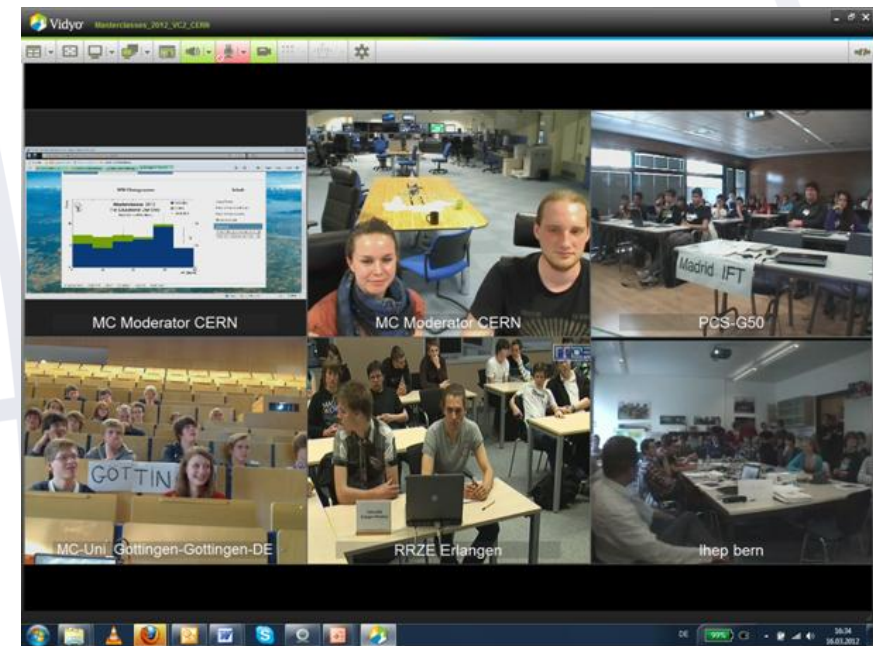
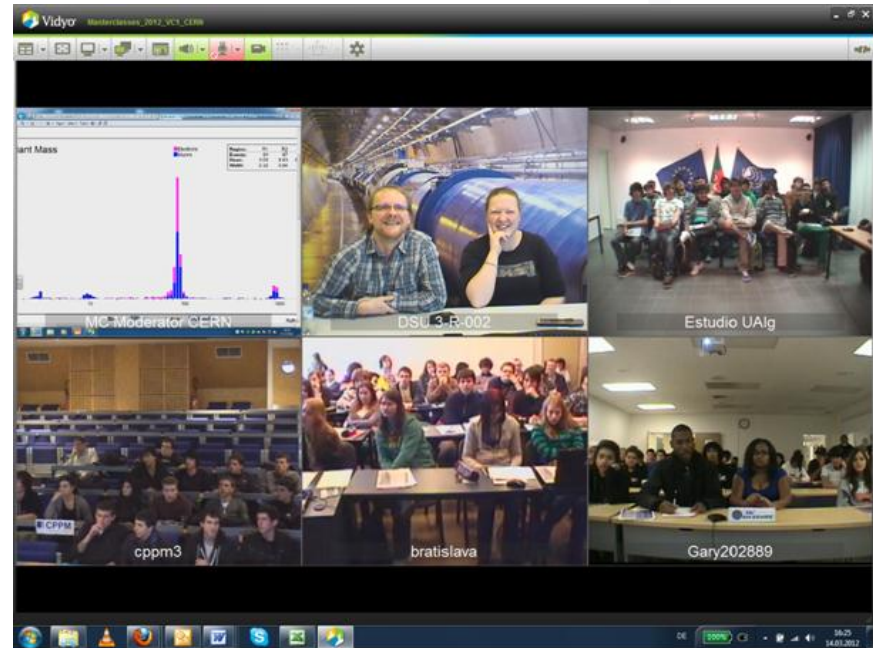
# INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

CERN Moderators' orientation  
18.02.2013 Uta Bilow, TU Dresden



# Concept of IMC

- High school students (15 – 19) are „researchers for one day“
- Get invited to a research institute
- Introductory talks (standard model, detectors, accelerators)
- 2 h measurement (ALICE, ATLAS, or CMS)
- International video conference ( 2 – 5 inst. + CERN)



# Running in 37 Countries



## New countries:

- Romania (Bukarest)
- Turkey (Ankara, METU)
- Cyprus (Nicosia)
- Palestine (Birzeit)
- Egypt (Alexandria)

## Rejoiner:

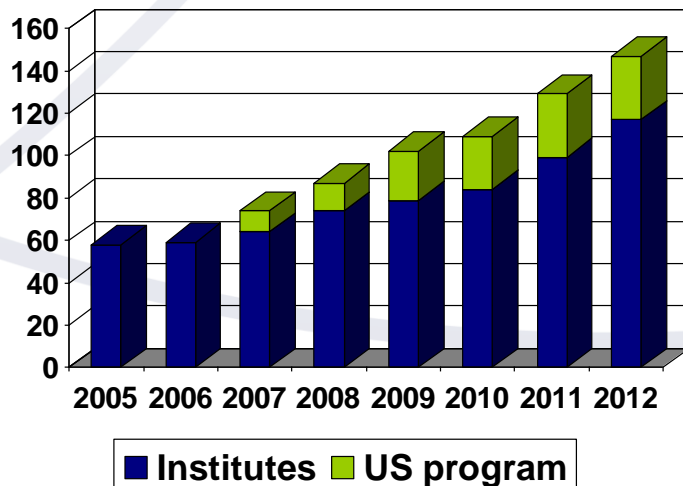
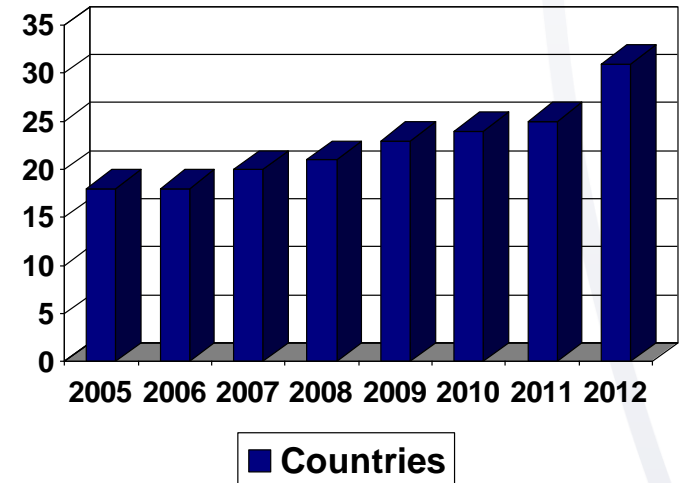
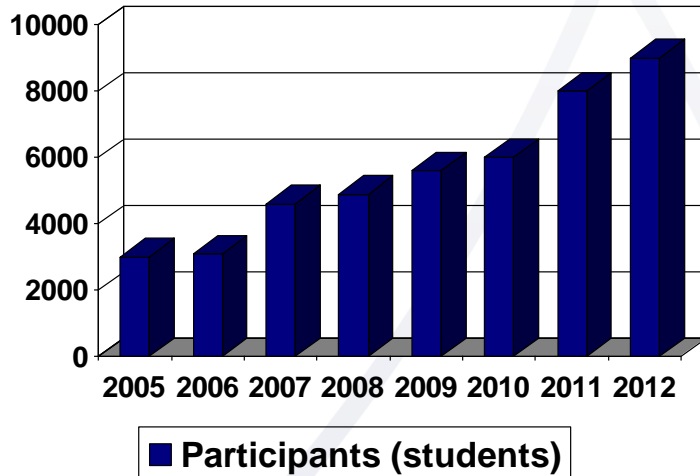
- South Africa (Durban, Cape Town)

## U.S. Program coordinated by QuarkNet

- VC at Fermilab



# Participation Statistics

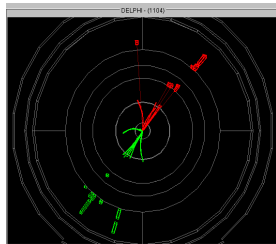
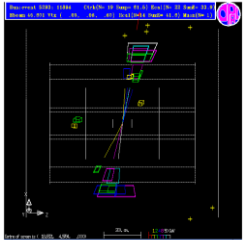


## In 2013:

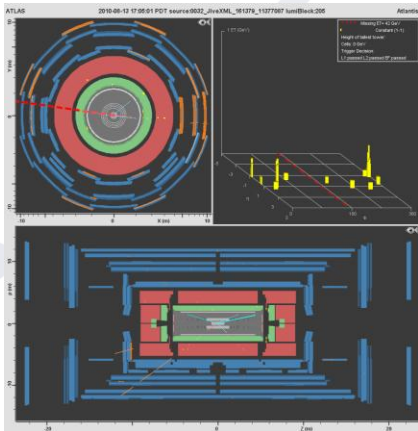
- 10.000 students
- 130 institutes + 30 in U.S. program
- 37 countries



# Brief History



- 1996: Invented in UK
- 2005: Adopted by EPPOG/IPPOG for all Europe
- IPPOG – International Particle Physics Outreach Group <http://eppog.web.cern.ch/>
- Use OPAL Identifying Particles and DELPHI Hands on CERN
- 2006: U.S. joined program (QuarkNet)
- 2011: LHC-based Masterclasses only



# Sample Agenda

LOCAL TIME:	ACTIVITY:
8:30 - 9:00	registration & welcome
9:00 - 10:00	introduction to Particle Physics
10:30 - 11:30	second talk or tour
12:00 - 13:00	lunch
13:00 - 15:00	data analysis, including introduction
15:00 - 16:00	local combination and discussion
16:00 - 17:00	video conference with CERN

  
Vidyo®



# Video Conference

	Mon, March 4	Tue, March 5	Wed, March 6	Thu, March 7	Fri, March 8	Sat, March 9
topic		VC 1: ATLAS Z	VC 1: ATLAS W	VC 1: ATLAS Z	VC 1: ATLAS W	VC 1: ATLAS Z
moderators		Andrée, Juan	Eva, Kilian	Predrag, Juan	Katharine, Duc Bao	Guilherme, N.N.
		Lecce	Valencia	Alexandria	Bucharest	Lisboa IST
		Birzeit	Tarnow	Barcelona	Katowice	Krakow
		Rehovot	Maynooth	Stockholm	Brookhaven	Quinhá
		Graz	Madrid IFT	Banska Bystrica	Marseille	
		Granada	London Queen Mary	Bergen	Curitiba	
topic	VC 2: CMS	VC 2: ATLAS W	VC 2: CMS		VC 2: CMS	
moderators	Sarah, Predrag	Katharine, Ricardo	Sarah, Chris	Sarah, Chris		
	Rio de Janeiro	Orsay	Nicosia	Athens, Demokritos		
	Santander	Lund	Zilina	Debrecen		
	Trieste	Marseille	Ponte Delgada	Vienna HEPHY		
	Helsinki	Durban	Perugia	Split		
				Cincinnati		

- VC 1 / VC 2 (same date, but different locations, physical and Vidyo!)
- Moderators work in pairs
- max. 5 institutes

<http://physicsmasterclasses.org/index.php?cat=schedule>



# Moderators Schedule

date	Mon 11.3.	Tue 12.3.	Wed 13.3.	Thu 14.3.	Fri 15.3.	Sat 16.3.
measurement	VC 1	VC 1	VC 1	VC 1	VC 1	VC 1
moderator	ATLAS Z	ATLAS Z	ATLAS Z	ATLAS W	ATLAS Z	ATLAS W
participants	Eva Felix Bain Dresden Uppsala Wuppertal Wurzburg	Kate Muhammad Udine Riverside Siegen Marseille Orsay	Kate Juan Athens, NTUA Vila Real Bologna Barcelona Ferrara	Kate Ulrike Bragança Roma Tre Bonn Strasbourg Marseille	Felix Ulrike Oslo Amsterdam Berlin + Zeuthen Grenoble	Ruth Christian Aveiro Porto Cape Town Crete
	5		5	5	5	4 4

date	Mon 11.3.	Tue 12.3.	Wed 13.3.	Thu 14.3.	Fri 15.3.	Sat 16.3.
measurement	VC 2	VC 2	VC 2	VC 2	VC 2	VC 2
moderator	ATLAS Z	CMS	ALICE R_AA	CMS	ATLAS W	CMS
participants	Michael Geneva, CERN Poznan Geneva Univ. Annecy Nijmegen	Sarah Chris Geneva, CERN Szekesfehervar Lyon Zagreb	Jason Michael, David Frankfurt Santiago Darmstadt GSI	Anna Piotr Lodz Lyon Jerusalem Madrid CIEMAT	Ruth Kilian Copenhagen Strasbourg Thessaloniki	Guilherme Andre David Sao Paulo Warsaw Belgrade Aachen
	5	4	3	4	3	4

































date	Mon 18.3.	Tue 19.3.	Wed 20.3.	Thu 21.3.	Fri 22.3.
measurement	VC 1	VC 1	VC 1	VC 1	VC 1
moderator	ATLAS Z	ATLAS W	ATLAS Z	ATLAS W	ATLAS Z
participants	Andrée Ulrike Grenoble Ankara METU Marseille London UCL Paris	Andrée Felix Munich Kosice Grenoble Hamburg Clermont-Ferrand	Muhammad Ricardo Heidelberg Pisa Freiburg Faro	Ruth Christian Grenoble Marseille Orsay Dortmund Clermont-Ferrand	Christian Duc Bao Zaragoza Pisa Orsay Dortmund Clermont-Ferrand
	5	5	4	5	5

date	Mon 18.3.	Tue 19.3.	Wed 20.3.	Thu 21.3.
measurement	VC 2	VC 2	VC 2	VC with Fermilab
moderator	CMS	ALICE	CMS	CMS
participants	Anna Lyon Padova Torino Novi Sad Rehovot	Pasquale Nantes São Paulo Geneva, CERN	Michael Zagreb Budapest KFKI Padova Lyon	FERMILAB FERMILAB Palaiseau Notre Dame Geneva, CERN
	5	3	5	3

sum =

- few slots still open (yellow)

## Moderators 2013:

	Ulrike Schnoor (ATLAS)		Felix Socher (ATLAS)		Katharine Leney (ATLAS)
	André David (CMS)		Andrée Robichaud-Veronneau (ATLAS)		Eva Sicking (Linear Collider Physics & Detectors Group)
	Ricardo Goncalo (ATLAS)		Denis Oliveira (ATLAS)		Christian Jung (ATLAS)
	Piotr Traczyk (CMS)		Kate Shaw (ATLAS)		Michael Hauschild (ATLAS)
	Despina Hatzifotiadou (ALICE)		Yiota Foka (ALICE)		Juan Rojo (Theory Unit)
	Gian Giudice (Theory Unit)		Duc Bao Ta (ATLAS)		José Guilherme Milhano (Theory Unit)
	Predrag Milenovic (CMS)		Kilian Rosbach (ATLAS)		Gerfried Wiener (Administration and General Services)
	Sarah Boule (CMS)		Chris Neu (CMS)		Muhammad Alhroob (ATLAS)
	Ruth Pöttgen (ATLAS)		Pasquale di Nezza (ALICE)		Anna Woodard (CMS)
	Stefania Bufalino (ALICE)		Margaret Janik (ALICE)		Lukasz Graczykowski (ALICE)
	David Chinellato (ALICE)		Michael Weber (ALICE)		





# Enjoy your sessions!



## Thank you for being part of International Masterclasses 2013!

