

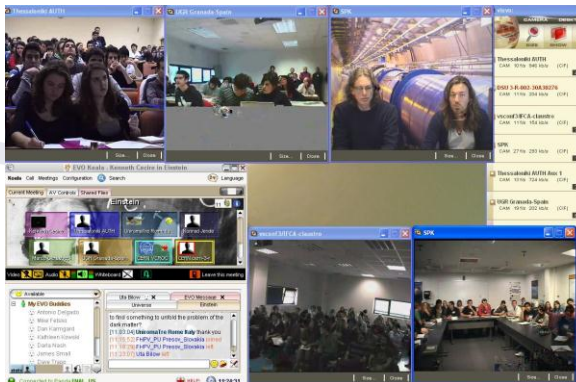
INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

CERN Moderators' orientation
21.02.2012 Uta Bilow, TU Dresden



Concept

- Students are „researchers for one day“
- Get invited to a research institute
- Introductory talks (standard model, detectors, accelerators)
- Lunch with tutors and lecturers
- Measurements with data from ALICE, ATLAS, or CMS
- International video conference (2 – 5 institutes + CERN)

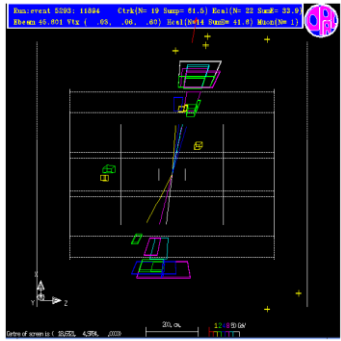


Why Masterclass?

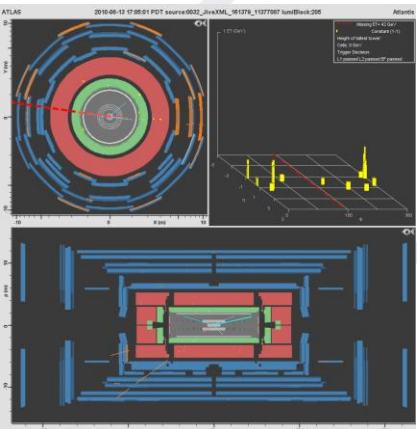
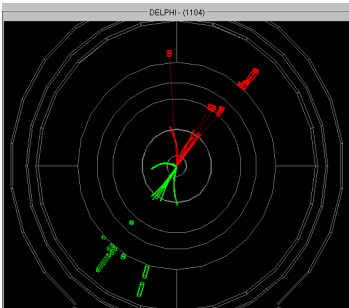
- As in a masterclass in the arts, students work with an expert
- Expert = particle physicist
- Instead of, say, a violin, the subject is particle physics data analysis
- Students work elbow-to-elbow with physicists in an authentic environment



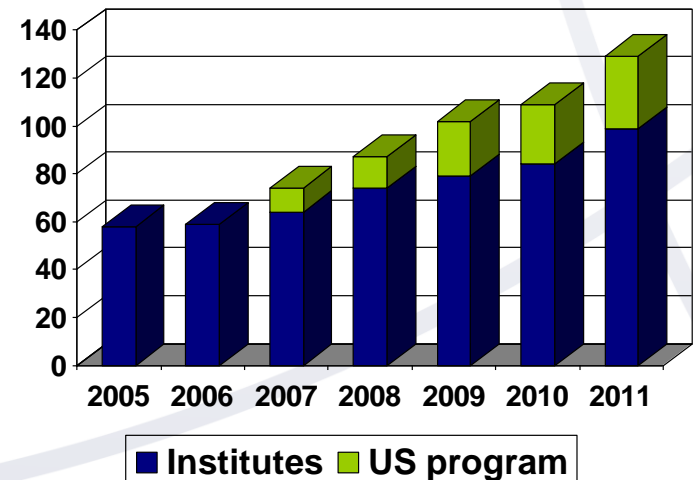
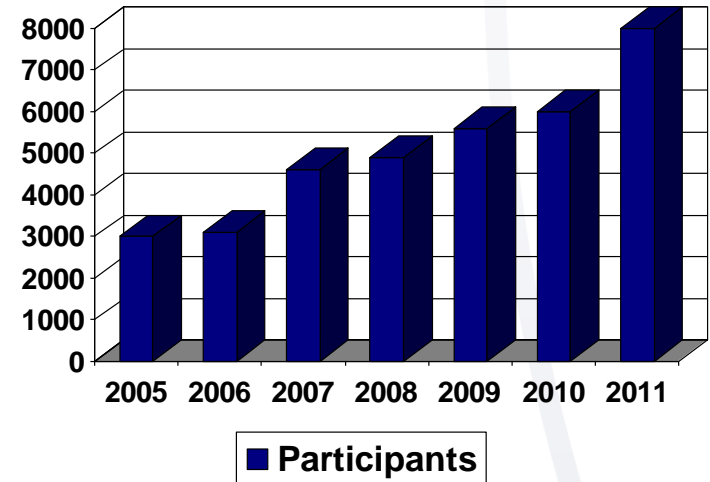
Brief History



- 1996: Started 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



Participation












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



Video Conference

	Mon, March 5	Tue, March 6	Wed, March 7	Thu, March 8	Fri, March 9	Sat, March 10
topic		VC 1: ATLAS W	VC 1: ATLAS Z	VC 1: ATLAS Z	VC 1: ATLAS Z	VC 1: ATLAS W
		Orsay 	Grenoble 	Roma Tre 	Belgrade 	Covilhã 
		Valencia 	Berlin/DESY, Zeuthen 	Barcelona 	Rio de Janeiro 	Aveiro 
		DESY, Hamburg 	Tübingen 	Vienna Univ. 	Prague/Letohrad 	Braga 
			Poznan 	Thessaloniki 	Brookhaven Nat. Lab. 	Lisboa IST 
				Brookhaven Nat. Lab. 	Oslo 	São Tomé 
topic		VC 2: ALICE	VC 2: ALICE	VC 2: CMS	VC 2: CMS	VC 2: CMS
		Oslo 	Prague CTU 	Palaiseau 	Santander 	Antwerpen 
		Bergen 	Copenhagen 	Notre Dame 	Perugia 	Warsaw 
		Frankfurt 	Heidelberg 	Cincinnati 	Vienna HEPHY 	Gent 
		Heidelberg 	Nantes 	Zagreb 		
		Darmstadt 				

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



Moderators Schedule

- Will be included at:

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

- Preliminary version at:

https://twiki.cern.ch/twiki/pub/Main/InternationalMasterclassesModeratorManual/schedule_2012_02_21.pdf

Mon 5.3.	Tue 6.3.	Wed 7.3.	Thu 8.3.	Fri 9.3.	Sat 10.3.
	VC 1	VC 1	VC 1	VC 1	VC 1
	ATLAS W	ATLAS Z	ATLAS Z	ATLAS Z	ATLAS W
	Kate, Philipp	Christian, Philipp	Ruth, Michael	Katharine, Boris	André, Guilherme
	Orsay	Grenoble	Roma Tre	Belgrade	Covilha
	Valencia	Zeuthen/Berlin	Barcelona	Rio de Janeiro	Aveiro
	Hamburg	Tübingen	Vienna, Uni	Prague/Letohrad	Braga
		Poznan	Thessaloniki	Brookhaven	Lisboa IST
			Brookhaven	Oslo	São Tomé
		3	4	5	5
	Tue 6.3.	Wed 7.3.	Thu 8.3.	Fri 9.3.	Sat 10.3.
	VC 2	VC 2	VC 2	VC 2	VC 2
	ALICE	ALICE	CMS	CMS	CMS
	Leticia, Peter	Leticia, Constantin	Paul, 	Sarah, Sho	Ulrike, Sho
	Oslo	Prague CTU	Palaiseau	Santander	Antwerpen
	Bergen	Copenhagen	Zagreb	Perugia	Warsaw
	Frankfurt	Heidelberg	Notre Dame, U.S.	Vienna, HEPHY	Gent
	Heidelberg	Nantes	Cincinnati, U.S.		
	Darmstadt, GSI				
		5	4	4	3

- few gaps (red)

