

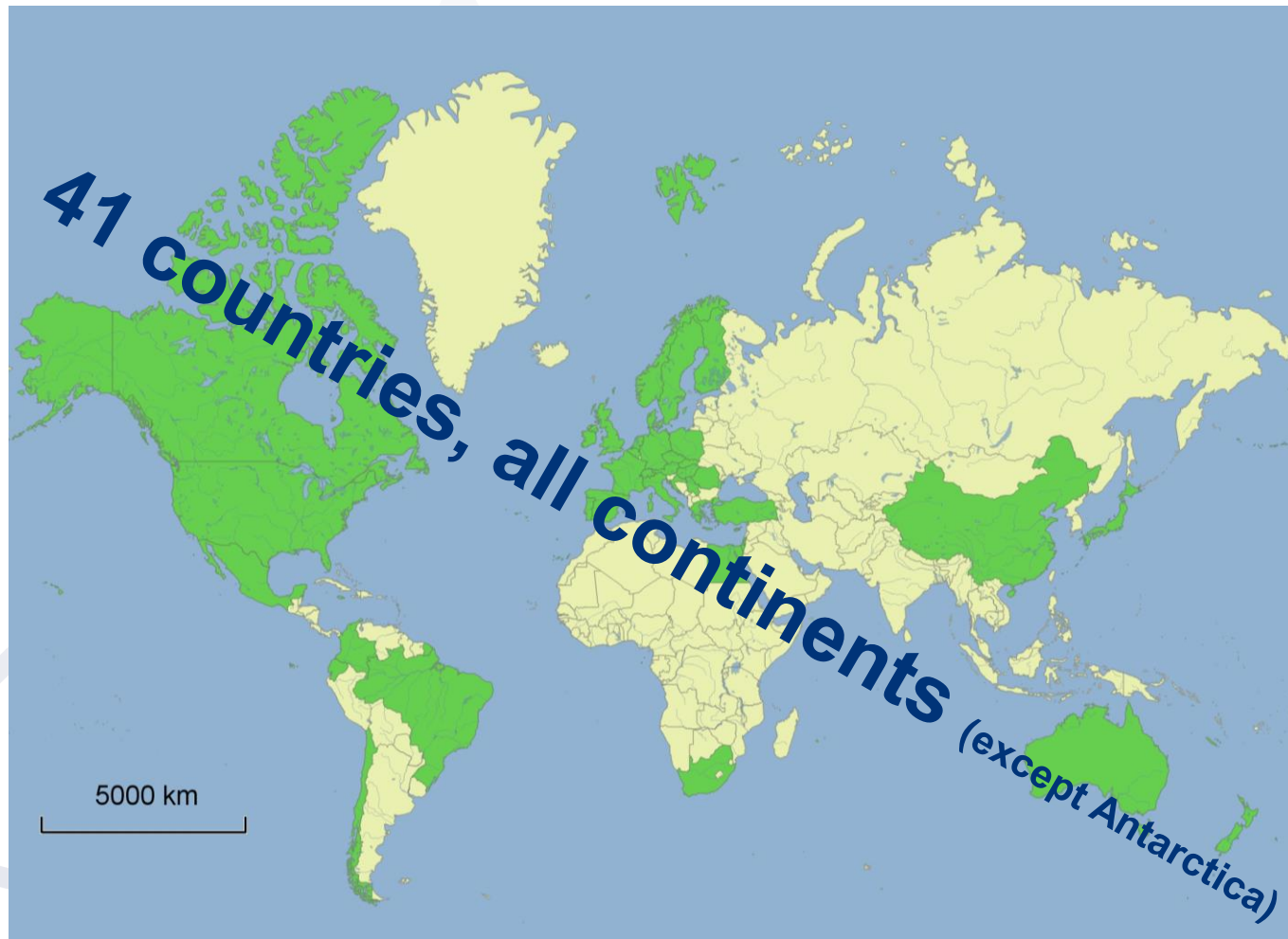
INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

International Masterclasses 2014
Central Coordination

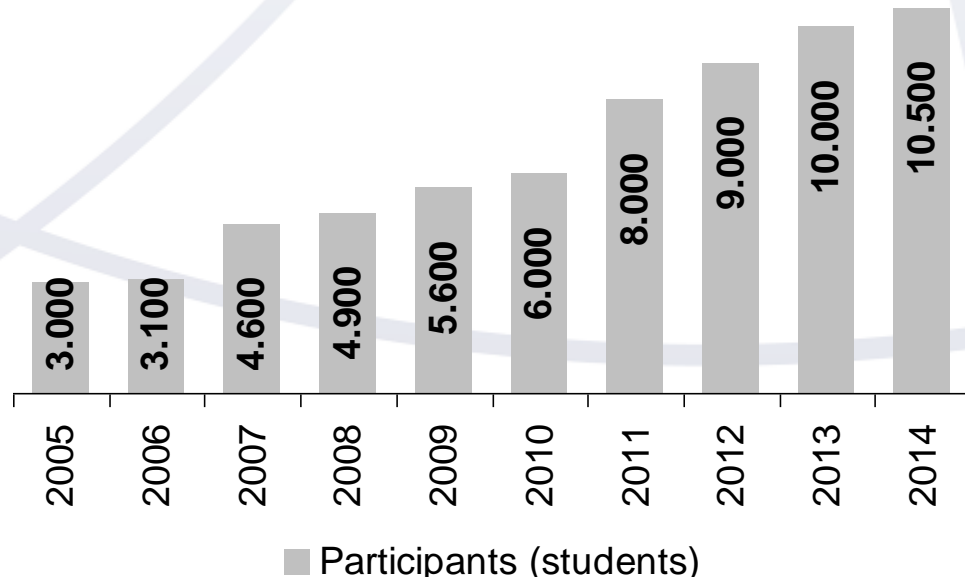
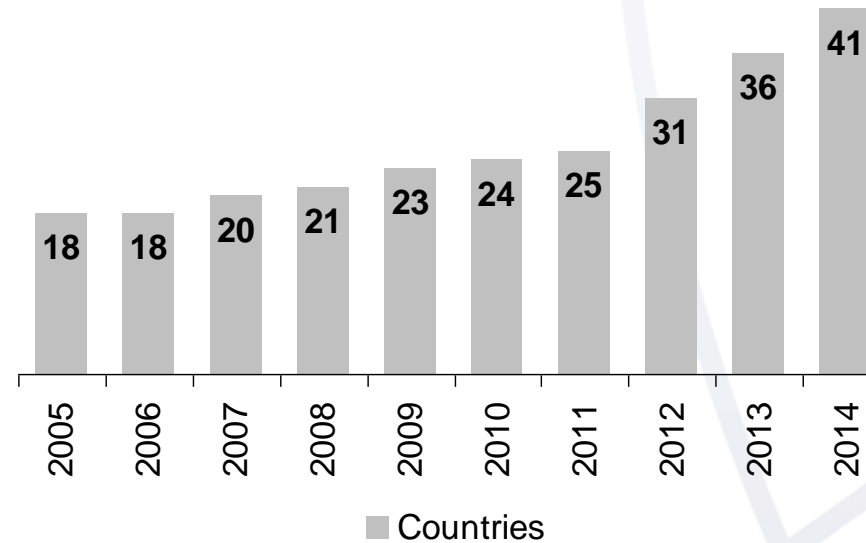
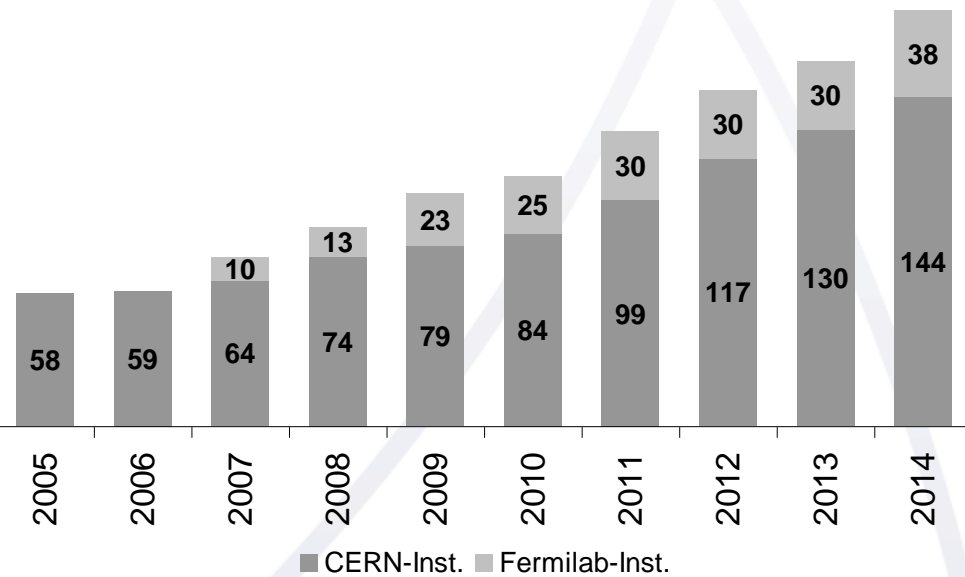
SG meeting – 15.5.2014, DESY Zeuthen



International Masterclasses 2014



Participation Statistics



- 183 Institutes (144 + 38)
- 239 Masterclasses (199 + 40)
- 10.500 High-school students



Registration

- Registration via doodle, started on Oct. 24, announced well before
 - Predefined slots, each limited to 5 participants → all VC with 3-5 participants
 - ALICE: discussed and agreed on common dates beforehand
 - LHCb: stand-alone registration, creating schedule, organizing video conferences etc.
- Procedure worked well
 - Institutes were well aware
 - In 2015: take-over LHCb orga?

	Februar 2013			März 2013																
	Di 26	Mi 27	Do 28	Fr 1	Sa 2	Mo 4	Di 5	Mi 6	Do 7	Fr 8	Sa 9	ATLAS W / CERN	CMS / CERN	ATLAS Z / CERN	ALICE / CERN	ATLAS W / CERN	CMS / CERN	ATLAS Z / CERN	ALICE / CERN	
136 Teilnehmende																				
Dresden																				
Innsbruck			✓																	
Czech Technical Uni					✓															
Hamburg																				
Clermont-Ferrand																				
Dortmund																				
Ferrara																				
Split, Croatia																				✓
Stockholm, House of																				✓
Orsay									✓											
Zagreb																				
Paris/LPNHE	✓																			
Banska Bystrica																				✓
HEPHY, Vienna																				✓
Hebrew University, Jc																				
Weizmann Institute, I		✓								✓										
CIEMAT, Madrid																				
Helsinki										✓										
Erlangen					✓															
Nikhef, Amsterdam																				
Valencia														✓						
Barcelona																			✓	



Creating the Schedule

- 12.3. – 11.4.2014 (26 days) (2013: 22)
- 199 Masterclasses (161)
 - ALICE: 14 (10)
 - ATLAS W: 51 (55)
 - ATLAS Z: 67 (58)
 - CMS: 46 (38)
 - LHCb: 21
- 48 VCs with CERN (37)
- 144 institutes registered (130)
- + local Masterclasses, teachers' days
- + QuarkNet program → slides from Ken

date	Tue 1.4.	Wed 2.4.	Thu 3.4.	Fri 4.4.	Sat 5.4.
measurement	VC 1	VC 1	VC 1	VC 1	VC 1
moderators	ATLAS Z	ATLAS Z	ATLAS W	ATLAS W	ATLAS Z
	<i>Silvia Muhammad</i>	<i>Muhammad Fabian</i>	<i>Julia Mirko</i>	<i>Julia Kate</i>	<i>Noemi Ewan</i>
	Athens Univ.	Lecce	Strasbourg	Strasbourg	Heraklion
	Lecce	Tuebingen	Munich	Erlangen	Lisbon, IST-2
	Grenoble	Barcelona	Roma Tre	Prešov	Braga
	Paris	London UC	Wuerzburg	Braga	Novi Sad
	Belgrade	Siegen	Wuppertal	Durban	
		5	5	5	5

date	Tue 1.4.	Wed 2.4.	Thu 3.4.	Fri 4.4.	Sat 5.4.
measurement	VC 2	VC 2	VC 2	VC 2	VC 2
moderators	ALICE AA	CMS	ALICE	ATLAS Z	ALICE
	<i>Michael W. Jason</i>	<i>Sarah Michael P.</i>	<i>Pasquale Leticia</i>	<i>Anna Duc</i>	<i>Alice Stefania</i>
	Frankfurt	Budapest Wigner	São Paulo	Marseille	Warsaw, Univ. T.
	Darmstadt GSI	Brussels Vrije U.	Heidelberg	Dortmund	Geneva CERN
	Praque CTU	Firenze	Orsay IPN	Katowice	Cape Town
	Cairo ECTP	Catania	Nantes	Grenoble	Cairo ECTP
			Geneva CERN		
			4	5	4

date	Tue 1.4.	Thu 3.4.
measurement	VC 3	VC 3
moderators	LHCb	LHCb
	<i>Vava, Ana, Tom, Moritz, Bolek</i>	<i>Vava, Ana, Tom, Moritz, Bolek</i>
	Marseille	Dortmund
	Amsterdam	Paris
	Geneva CERN	Bucharest
	3	3



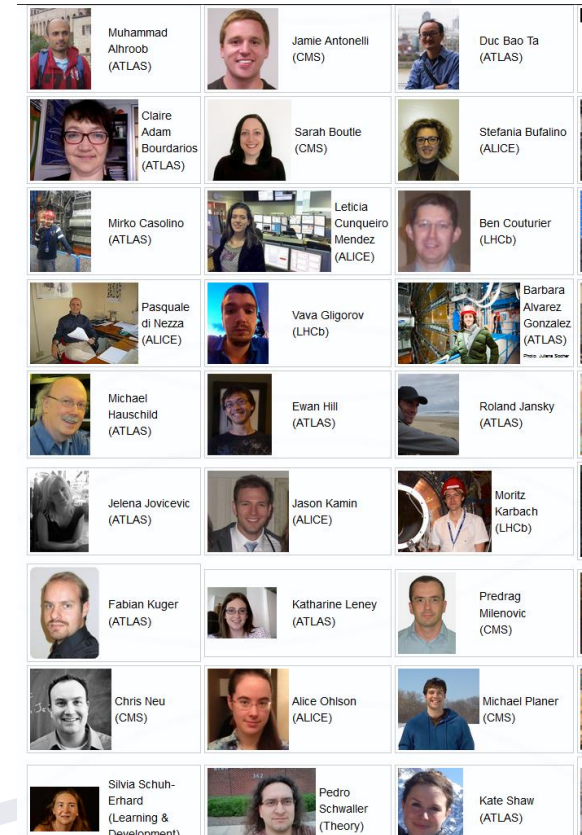
Video conference / institutes

- Test period 17.2. – 28.2., 90 slots offered by Joao + team
- 84 institutes tested (incl. 21 new institutes)
- Manual updated
www.physicsmasterclasses.org/downloads/Manual_Videoconference_Organizers_v10.pdf
- Sessions recorded:
 - ATLAS Z: <https://indico.cern.ch/event/311167/>
 - CMS: <https://indico.cern.ch/event/311544/>
 - ATLAS W: <https://indico.cern.ch/event/312362/>
- Institutes well experienced with Vidyo now
- Availability of chat appreciated
- Vidyo in general worked well, except few sessions with LHCb
- Need more test slots?
- Vidyo links disrupted during IMC ☹
- Info (vidyo links, IP for H.323) „hidden“ ☹



Video conference / CERN

- Moderators: 42 (33), 50 % new
- Multiple channels for announcement/recruiting
- WG VC (Kate, Michael, Marzena, Uta)
 - Manuals for VC for local organisers
 - Manual and twiki for moderators
 - Training for mod. at CERN 5.3.
- Preparation of rooms (teachers' lab, CMS centre)
- Reward for moderators: T-shirt from the CERN shop (Rolf/Maureen)



Internal Communication



- Circulars ~ 1 per month
- archive of circulars on „Local Organisation“ webpage, + more important material, e.g. manual for video conference, step-by-step orga list, templates ...

www.physicsmasterclasses.org/index.php?cat=local_organisation&page=organisation

Measurements

- Most measurements stable, only minor changes
- Guides for Tutors
- + more supporting material (cheat sheets, description of cuts, signal events, ...)
www.physicsmasterclasses.org/index.php?cat=local_organisation&page=exercises
- No DVDs, ISO files instead
- Question time via Vidyo (1 h each measurement)
- Your feedback?



Publicity

- CERN press release on March 10 😊

<http://press.web.cern.ch/press-releases/2014/03/10th-edition-international-masterclasses-particle-physics-attract-more-10000>

- Additional press release English/German/French (incl. section for local activities) to be distributed by the institutes

- For media coverage see „In the media“ webpage

www.physicsmasterclasses.org/index.php?cat=press

- 27 entries in March
- 16 in April



Summary

- Preparation went very smooth in general
- Measurements and tools improved
- Moderators very motivated and well prepared
- Very few cancellation by institutes on short notice
- High level of support by vidyo team during IMC
- Very positive feedback from many institutes
- ISO image prepared very late, due to work on some measurements
- Vidyo tests could need more slots
- Minor improvements in video setup (hardware) at CERN



Organisation

Central organisation at TU Dresden

Michael, Uta, student assistants

WG Video conference

Kate Shaw, Michael Hauschild, Marzena Lapka, Uta

SG (Steering group)

Farid Ould-Saada, Michael Kobel, Ken Cecire, Despina Hatzifotiadou, Pete Watkins, Yiota Foka, Ralf Averbeck, Nicolas Arnaud, Vava Gligorov, Uta Bilow

NEWS:

TU Dresden senior fellowship for Ken (Sept 14 – Feb 15)

→ IMC headquarter in Dresden!

www.physicsmasterclasses.org/index.php?cat=imprint



Funding and Support

- **Coordinator (50 % FTE)**
2013-2015 funded by CERN (3 years)
- **Student assistants: TU Dresden**
- **Funding from EPS HEPP Division** (confirmation pending)
- **in kind contributions** (CERN, Vidyo team, moderators, ...)





INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

Ken 's slides for Central
Coordination!

SG meeting - 15.05.2014, DESY Zeuthen



Masterclasses with Fermilab videoconferences, status 2014

9 countries, 29 institutes:

- New Institutes in Latin America, Caribbean (MICAb program)
- Growth in U.S.
- Return of Japan (ATLAS)
- British Columbia did their own videoconferences

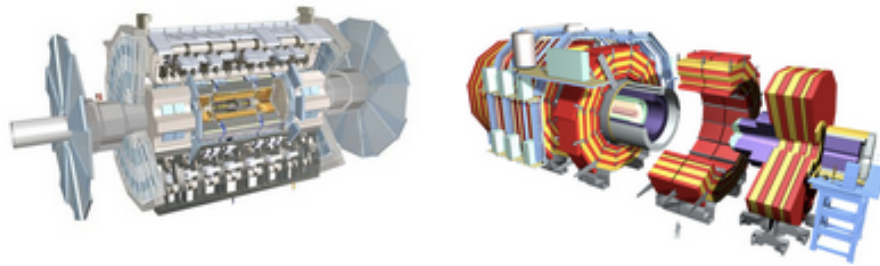
Stable videoconferences:

- 11 returning moderators
- 1 new moderator – at CERN 2013
- May need more in 2015
- Most consistent so far

Center	Masterclasses	Countries	Videoconferences
ATLAS Z*	13	4	5
CMS WZH	19	7	12
Combined	29	10	16

* includes Australian masterclasses planned for July

MICAb



New Masterclass Institutes in

- Colombia (2)
- Ecuador
- Chile
- Jamaica
- Mexico

with further growth anticipated



Objectives

Participating teachers:

- gain knowledge and skills to successfully complete investigations using LHC data;
- interpret event displays from ATLAS or CMS and explain their meaning;
- conduct LHC investigations with students and successfully prepare them for masterclass; and
- assist mentors in organizing and facilitating a masterclass.

Participating students:

- assist their fellow students in the masterclass.

Resources

- [Masterclass Library](#)
- [Preflight checklist for center leaders](#)
- [International Masterclasses](#)

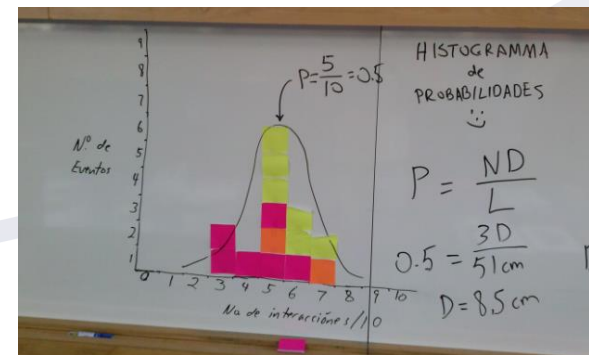
Institutes 2014

Institute	Location	Workshop Dates	Measurement
University of West Indies	Mona, Jamaica	February 11	CMS WZH
Universidad Iberoamericana	Mexico City, Mexico	February 16	CMS WZH
Universidad de San Francisco de Quito	Quito, Ecuador	February 20-21	CMS WZH
Universidad Antonio Narino	Bogota, Colombia	February 24-25	ATLAS Z
Universidad de los Andes	Bogota, Colombia	February 26	CMS WZH
Universidad de Antioquia	Medellin, Colombia	February 27	ATLAS Z
Pontificia Universidad Catolica	Santiago, Chile	March 8-9	ATLAS Z

<http://tinyurl.com/micab>

MICAb: Masterclass Institutes Collaborating in the Americas and Beyond

- Funded by CMS and ATLAS
- Additional support for Chile from Notre Dame Luksic grant
- Workshops to prepare teachers and physicists for masterclasses
- Connect with Fermilab
- Use pilot QuarkNet Data Workshop format
- Participation of faculty was very important

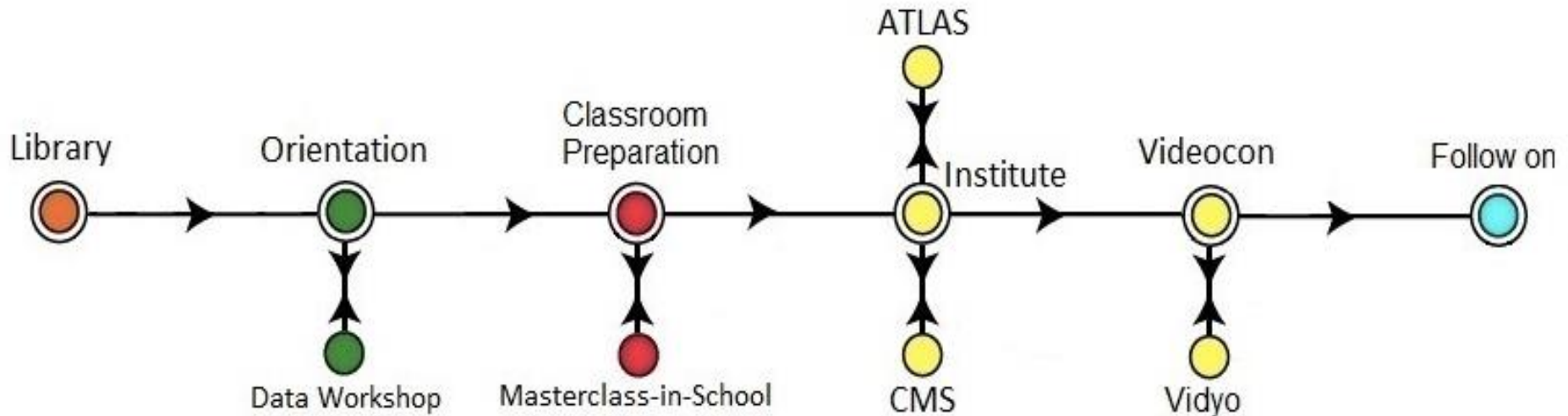


Masterclass Library (QuarkNet)



any URL for this page: <http://tinyurl.com/mc14lib>.

The Masterclass Library contains most of the information needed for physicists and teachers to run a masterclass. The Project Map below is arranged in the typical chronological order in which a masterclass prepared and then carried out. The order is more descriptive than prescriptive.



New home at <http://tinyurl.com/mc14lib> using QuarkNet drupal site

Questions

- What worked well this year?
- What did not?
- What were your observations based on how the masterclasses went?