



- Autumn Meeting 2010



~~1-Language~~

~~National Programmes for teachers~~



CERN's Teachers Programs in Portuguese

Pt, Br,
Mz, Cv,
St
An, Gui,
Ti, Mo

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CERN, Geneva, Switzerland, 14/10/10



¹ LIP, Lisboa and Coimbra, Portugal

³ CBPF/SBF, Rio de Janeiro, Brasil

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⁴ CERN, Geneva, (Mick w/ Rolf Landua & Maureen Prola-Tessaur, etc)



.pt OR/HEP Activities (summary since March)

- ✓ Big project "Radiation Environment" with ~55 schools
- ✓ Start Building Spark Chambers (LIP Tabletop's version)
 - ✓ Sold 2 (pt Science Centre and Univ. Complutense de Madrid)
 - ✓ 1 offered to Pierre Auger Observatory, in Malargüe, Arg.
(but will be used next November in the very big "Tecnopolis" exhibition in Buenos Aires, Arg., celebrating the bi-centenary)
- ✓ Summer Students at LIP
 - ✓ 7 stays organized (4 to 15 days), financed by "Ciência Viva"
 - ✓ Subjects from "Radiation Environment" to "ATLAS Detectors", "ATLAS Events" and "Auger Public Data" – Guide prepared -> School
- ✓ Teachers Programs in Portuguese
- ✓ Seminars at Schools (also related to School Visits to CERN)



CERN's Teachers Programs

✓ HST – High School Teachers at CERN

- ✓ 3 weeks vacation time in summer
- ✓ international group
- ✗ very very few opportunities per country (relatively)

Not much
feedback
to us

✓ Weekend Teachers Workshop

- ✓ 3 days in March
- ✓ international group
- ✗ Very short and intense, very few opportunities per country

No
feedback

✓ National Teachers Programs

- ✓ 1 week working time outside scholar calendar
- ✓ **One language**, easily accessible
- ✓ Many opportunities per country → Build a Database of Contacts

**VERY
IMPORTANT!**



CERN's National Teachers Prog.s

Yr./C.	AT.	BE.	BU.	CZ.	DK.	FI.	FR.	DE.	GR.	HU.	IT.	NL.	NO.	PL.	PT.	SL.	SP.	SE.	CH.	UK.
2006										1								1		
2007					1			4		1			1	3	1	1	1			2
2008			1	1	1	2	2	2	2	1				4	1	1	1	1		2
2009			2	1		2	1	2		1	1			4	1	1	1			
2010	1		1				1	2	2	1		1		4	1	1	2			4

(+difficulties in multilingual countries?) Total: 60! (+7 o.c.)



And let's not forget about

CERN's based (other) Education

✓ Summer students

- ✓ 2 paid months in summer
- ✓ lots of work, lots of learning, lots of parties
- ✓ true peace and collaboration culture build-up

✓ CERN Trainees (ex: Portuguese Engineers Program/AdI)

- ✓ 1-2 years of training
- ✓ go back to home country to start-up a business, etc...
- ✓ selected graduates – engineers, physicists, etc
- ✓ specialization and integration into teams
- ✓ lots of work, lots of learning (no parties(?))
- ✓ funded by member state – thus number limited by funds [mostly]



CERN's Portuguese Teachers Pr.

- ✓ Started in 2007, in a yearly basis (4 eds. so far)
- ✓ ~45 pt teachers participating in each edition out of >~200 pt candidates applying
- ✓ All talks in portuguese, except the last (in english)
- ✓ All visits in portuguese
- ✓ Hands-on a Cloud Chamber with .pt translation
- ✓ No teacher stresses for the language barrier
- ✓ Big interaction between scientists and teachers
- ✓ Strong interaction between teachers and CERN



CERN's PTP Prep. Work

- ✓ Projects layout and budget submitted by March
- ✓ Approval by Ciência Viva – National Agency for the Scientific and Technological Culture (CV) in April
- ✓ Applications in May, from High School Teachers and equiv.
- ✓ Selection in June – Board constituted by LIP/OR subprojects coordinators, LIP's and CV's Management
- ✓ Criteria based on Curric.Vitae, stressing participation and enthusiasm in OR Activities (HEP and related fields)
- ✓ Selected list sent to the Ministry of Education for authoriz.'s



CERN's PTP Prep. Work II

- ✓ Visits negotiated with Mick and CERN Visits Service
- ✓ Speakers contacted and fixed for all talks (difficult), prepared for the level and contents needed to focus on
- ✓ Guides in Portuguese assigned for the visits (very tough!)
- ✓ Some support researchers (could also be speakers):
1 support researcher per 35 teachers, present at all times
- ✓ 2009 and 2010: What started as a special case, became a regular activity in the CERN's program, with enthusiastic support by the DG (no much [more] money involved)



Special cases: CERN's PTP 2009 ...

- ✓ CERN and UNESCO trying to promote CERN in non-members
- ✓ LIP suggested to allow for teachers from non-member states to participate in the PTP 2009, starting w/ Brasil
- ✓ CERN asked LIP if Mozambican teachers could be included
- ✓ Besides the 45 Pt teachers (not to be diminished), invited 10 Brazilian and 5 Mozambican teachers
- ✓ In the end, we had 44 Pt, 11 Br and 5 Mz teachers
- ✓ Brasil Fed. Gov. paid for Br teachers +1 support researcher
- ✓ CERN and Portug. Gov. paid the Mz teachers participation
- ✓ Very great success story, extending CERN limits (60! Partic.'s)
- ✓ CERN effectively OutReached towards far countries!



...and 2010 !

- ✓ Given the success of 2009 (with 11 Br. + 5 Mz.), we offered to receive 20 Br., 5 Mz., 5 An., 1 Cv., 1 St. – in the Program in Pt.
- ✓ The 5 An.[golans] and 1 Mz. could not make it after all
- ✓ Among the 20 Brazilians – 1 teacher running a prized blog (“Física na Veia”), 1 teacher also science journalist for “The Globo Net.”
- ✓ Also 45 Pt teachers, which will get certified diplomas (official formation time), after being assessed by a serious test
- ✓ Brasil Fed. Gov. paid for Br teachers +1 support researcher
- ✓ CERN and Portug. Gov. paid the Mz/Cv/St teachers participation
- ✓ Very great success story, extending CERN limits (71 Partic.'s!)
- ✓ CERN effectively OutReached towards far countries!



CERN's PTP Week remarks 4U...

- ✓ Everything happens in one week! It's only ONE Week!
And relativity tells us that it is a very long week that flies over very quickly! (depends on the point of view and on the speed you are running between events and problems)
- ✓ Forget relativity(*), and keep tight control on Time!
(*wrt you and the speakers)
- ✓ Get all Speaker's talk files downloaded to Indico
- ✓ Smile! (all talks are video-taped and made available)
- ✓ Prepare working sheets and make teachers work (Q&A's)
- ✓ Have fun! (that you have fun is also important for teachers)



CERN's PTP post-mortem

- ✓ Analysis of Evaluation questionnaires (PTPs: $(4,8 \pm 0,5)/5$)
- ✓ Budget closure and Shipment of Certificates of Participation
- ✓ Expect a great increase in
 - ☒ engagement in your OR activities
 - ☒ requests of Schools Visits to CERN
 - ☒ masterclasses adhesion and participation
 - ☒ requests for OR seminars at Schools
 - ☒ mailing! (doubts, suggestions, school news, etc)
 - ☒ ...but is this not we all dream about to see it happen?!
 - ☒ ...and look forward desperately for next edition!



Conclusions

v CERN's Teachers Program in Portuguese

- ⏏ Had a very large impact (4 editions made)
- ⏏ Pt candidates: 191+242+193+218 (590 w/out rep.)
- ⏏ Teachers: 177 Pt, 32 Br, 9 Mz, 1 Cv, 1 St, 0 An
- ⏏ ++Activities at schools (out of these contacts)
- ⏏ Aggregating Pt speaking communities with CERN
- ⏏ VERY IMPORTANT TOOL TO OUREACH CERN TO DEVELOP. C. !!!

v Why not You (yet) ?!(*) [challenge picked by Fr]

- ⏏ Follow another country's program for a no-pain start
- ⏏ Many visit itineraries prepared to be used
- ⏏ Contact Mick Storr or Rolf Landua (*)when applicable
- ⏏ Very important tool to reach [language-related] "poor" countries!