



- Spring Meeting 2010



PT OUTREACH
in HEP/Astrop.

Pushing the limits further out

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LIP/IST
for the LIP/Outreach Group

Oslo, Norway, 17/04/10



What has happened? (summary since October)

- ✓ Big project “Radiation Environment” with 55 schools
 - ☒ A visit to the nearest nuclear power plant organized to start the activities in this schoolyear, 1 National meeting taken place with presentations by students, and another National [closing] meeting to take place next May 8th in Beja.
- ✓ Strong Interplay with Portuguese Physics Society (SPF)
 - ☒ Pedro Abreu elected President of South&I. delegation (1 in 3) of SPF (consequently to its board of directors of SPF); coming next Sat.24 are the regional Physics Olympiads.
- ✓ LIP ILO-TT position created and LIP joined CERN’s Tech.Transf.Network
- ✓ Launch of Ibercivis in Portugal [coming next]
 - ☒ Platform of Volunteering Computing in strong cooperation with Spain; this project has a tremendous outreach potential, specially towards families and the elderly.
- ✓ CERN’s LHC start-up @ 3.5 TeV – March 30th [coming next next]
- ✓ Masterclasses! [coming next³]



Volunteering Computing OR

ibercivis Plataforma de computação voluntária

Colabora em projectos científicos e faz parte do maior computador do cidadão

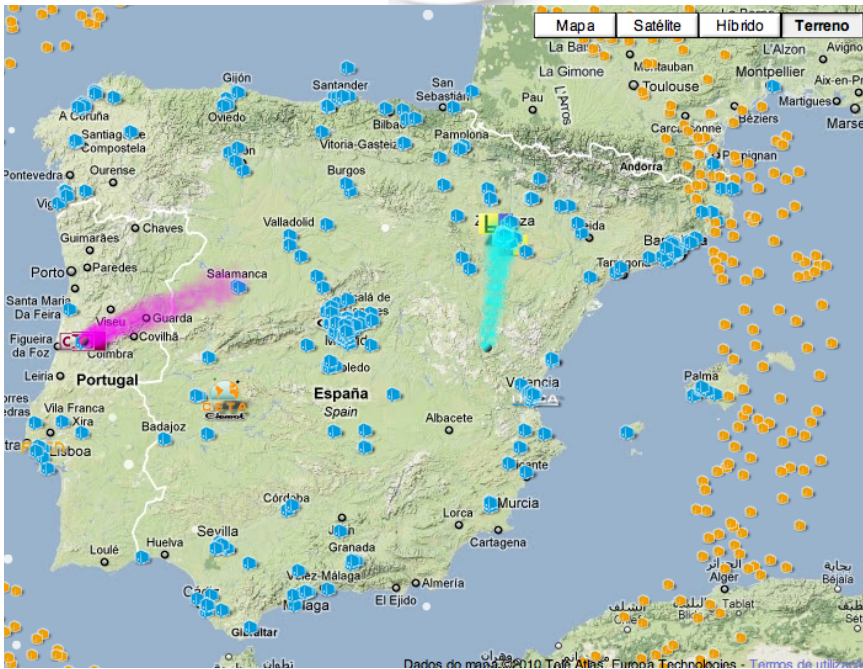
fazer clique sobre o mapa para vê-lo em detalhe
Mapa de Utilizadores

[Ibercivis](#)
[Junta-te à Ibercivis](#)
[Investigação](#)
[Escolas e Divulgação](#)
[Rede Social](#)
[A minha conta](#)
[Prémios](#)
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Escolas e Divulgação

Material Escolar

School Material Didactic Units

Já se encontram disponíveis as unidades didácticas para uso em escolas básicas e secundárias, em língua portuguesa.

São fruto da colaboração do Instituto de Biocomputación y Física de Sistemas Complejos (BIFI) da Universidad de Zaragoza e dos Institutos de Educación Secundaria Goya y Miguel Catalán, assim como do Centro de Educación de Adultos Juan José Lorente e do Centro de Formación del Profesorado nº1, todos eles de Zaragoza. Para a sua elaboração contou-se com o apoio económico da Consejería de Educación, Cultura y Deporte del Gobierno de Aragón.

Apresentação das Unidades (em castelhano)

Ciência e cidadania

A ciência e a investigação ao alcance de todos

Fusão nuclear

A fusão nuclear: Uma energia de futuro



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CERN's LHC re-start at 3.5 TeV

March 30th

- ✓ We arranged for the CERN webcast to be directly fed to our servers from Ciência Viva at FCCN (at the heart of our GEANT network) [THNX JG *et al*]
- ✓ Ciência Viva and The Pavillion of Knowledge proposed to have the broadcast commented by portuguese scientists (prepared in 4 days)
- ✓ The 'crème de la crème' or our Particle Physicists (experimentalists as theoreticians), including researchers from ATLAS and CMS, were present at different times (and some at all times), and commented live the CERN feed, what was (really) happening and what it meant; 2 scientists at CERN were interviewed live (using EVO), passing their enthusiasm
- ✓ Major TV station (with the most known news channel), was present several hours during the day; pt news agency reporting live to their HQ (& beyond).
- ✓ The webcast was being displayed live through Ciência Viva TV, which received more than 3500 connections from different sites (compared to ~60)
- ✓ Major news item in all TV stations in prime time, reporting also this event



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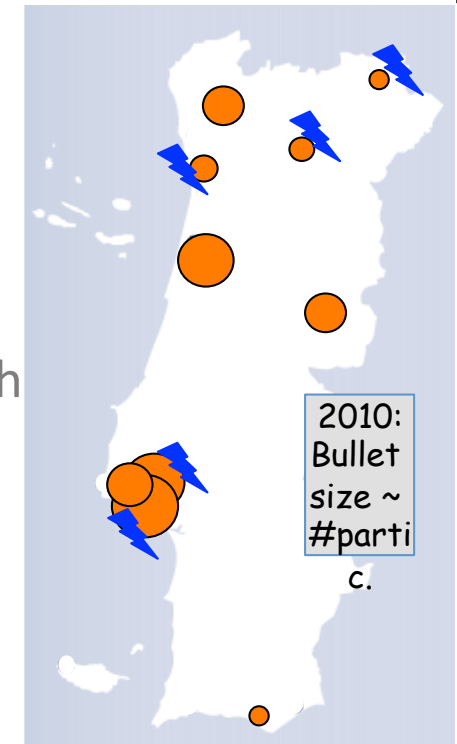
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Masterclasses

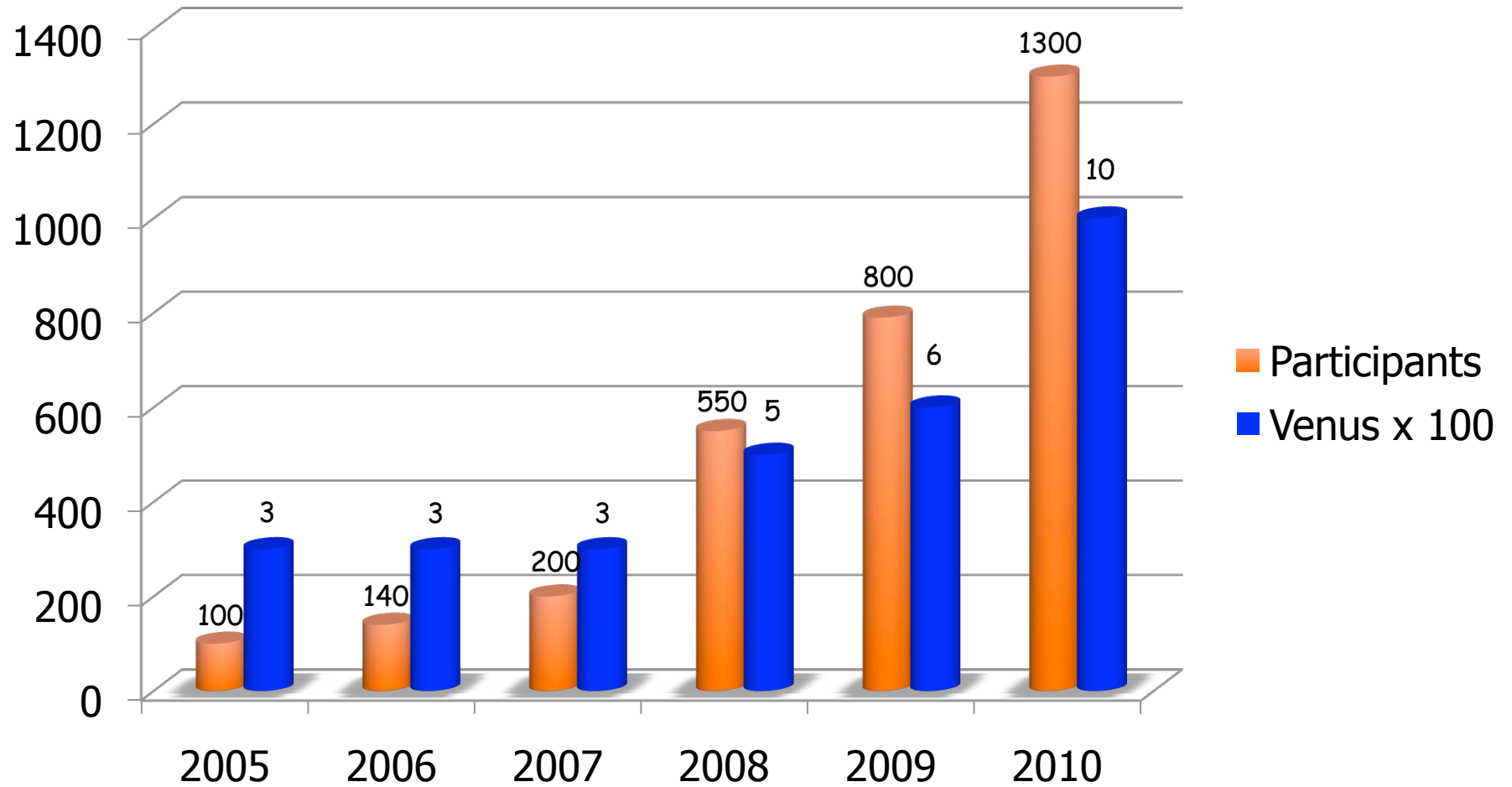
Report of 2010

- For our 6th Edition of the Masterclasses, we knew to expect more than 950 stds.
- We had already taken to CERN 132 high-school teachers from all over Portugal, that were engaging their students and their colleagues
- In many places, participation was severely limited (be it in #students/teacher, #students/school, or low number of vacancies filled quickly on a FIFO basis)
- At IST, a second big day was created to cope with the very high demand (coming from other places being full) – video made
- We succeeded to make it in 9 locations (+1 repeated), at “far” locations difficult to reach -> report on National TV, for a total of 1300 (!!) participants (at sites varying from 36 to 360)





Masterclasses





Masterclasses

Concept presented to the
Pierre Auger Collaboration

- Can we extend this concept for the institutes participating in the Pierre Auger Collaboration?
- Based on the Auger Public Events, e.g., each group analysing 100 events and evaluate statistically (and combine data/results afterwards):
 - the evolution of the energy spectrum at around 10^{18} eV, for example
 - Incoming directions and build a map in galactic coordinates
- In these masterclasses, data repetition issues are not expected, and the time zones have to be taken into account when setting the schedule of the common video-conference sessions



Summer Students Occupation with the Auger Public Data

- Portuguese Agency Ciência Viva's yearly program of promoting the science in the youth. In this program, around 1000 high-school students go to 100 institutions to work with scientists in their fields of activity.
- LIP received since 2004 around 30 students in 4-6 stays of 5-15 days. LIP proposals go from characterization of detectors and detector components in high energy physics and cosmic rays, simple data analyses of simulated events (from ATLAS at CERN), studies of environmental radiation, and since 2009, studies with the Auger Public Events.
- The Auger Public Events were and will be used as a basis to explore ultra-high energy cosmic rays, in a stay of 15 days for 4 students oriented by LIP Auger people (Catarina Espírito Santo and Sofia Andringa). A very preliminary guide was prepared to guide the work of the students and was improved with the students difficulties and suggestions.
- As a by-product of this guide, there is the idea to use the Public Auger Events in a short activity, as in the EPPOG Masterclasses, in Autumn 2010(?)



What will happen? (things expected in ~6 months)

- ✓ **CERN Trainees meeting organized by LIP's ILO-TT, AdI, FCT, CV**
 - ☒ An event with the success stories of this major advanced engineering formation program at CERN, with a presentation of the program evaluation, is due next Fri.30.
- ✓ **Launch of IDPASC**
 - ☒ As a result of the efforts of LIP Director (and Professor at IST, Mário Pimenta), several european universities will sign next May 13th an agreement of cooperation, for an **I**nternational **D**octorate in **P**article and **AS**troparticle physics and **C**osmology.
- ✓ **4th CERN's Portuguese Teachers Program [September 5-10, 2010]**
 - ☒ What started as a 1-week program for 45 portuguese teachers, has evaluated in the last year to a truly international program for teachers in portuguese; this year we'll expect 45 Pt., 20 Br., 5 Mz., 5 An., 1 from Cape Verde and 1 from São Tomé.
- ✓ **CERN's Travelling Exhibition at Lisbon in 2011 (Summer/Autumn)**
 - ☒ A Portuguese side to it, built on our detectors (Spark Chamber, Cloud Chamber, etc), is being prepared to be displayed coupled to it; a trial of this is expected in Nov.2010



Thanks for your attention

Backup slides



[reminder (General Outreach...

v Outreach and Public Education in Science

happens in Portugal at a very large scale:

☒ 1 BIG* +19 Interactive **SCIENCE ALIVE** Museums

(*The Knowledge Pavillion, Lisbon, w/ 250K visitors/year)

☒ 1000 Projects w/ ~3000 schools (~200 K students)

☒ 1600 Summer events w/ ~30 K persons

☒ 700 students in 54 Institutes (1-14 days in summer)

☒ Special one-week events (S&T week, Space w.)

...coordinated by the "**Agência Ciência Viva**" – National Agency for the Scientific and Technological Culture



...is not only in High Energy Physics)]

+ v Calouste Gulbenkian Foundation

- ☒ Exhibitions about science

(just finished "200 Years of Darwin")

- ☒ Monthly seminars about science since 2003

(with our "big stars" on science communication)

- v 5 Science museums permanently open

- v TV programs (in Open[1.pt weekly] & Cable Channels)

- v U. projects (open days, Univ. seminars at schools, etc.)

- v The **Road Shows** by "NFIST" (truck w/ expts.)