

# CHIPP Outreach Group Meeting



*Physiscope Geneva*

*9 March 2011*

*HP Beck*

# Agenda

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11:00	Welcome	H.P. Beck
11:20	Report from Zurich University	Teresa Marrodán Undagoitia
11:40	Report from ETHZ	Christoph Grab
12:00	Report from PSI	Tilman Rohe
12:30	Lunch	
13:30	Physiscope demonstration	Olivier Gaumer
15:00	Report from Bern	H.P. Beck
15:20	Report from EPFL	Fred Blanc
15:40	Report from Geneva	Olivier Gaumer
16:00	Statement from SER	Bettina Mühlebach
16:20	Discussion	All
16:50	aob 05'	

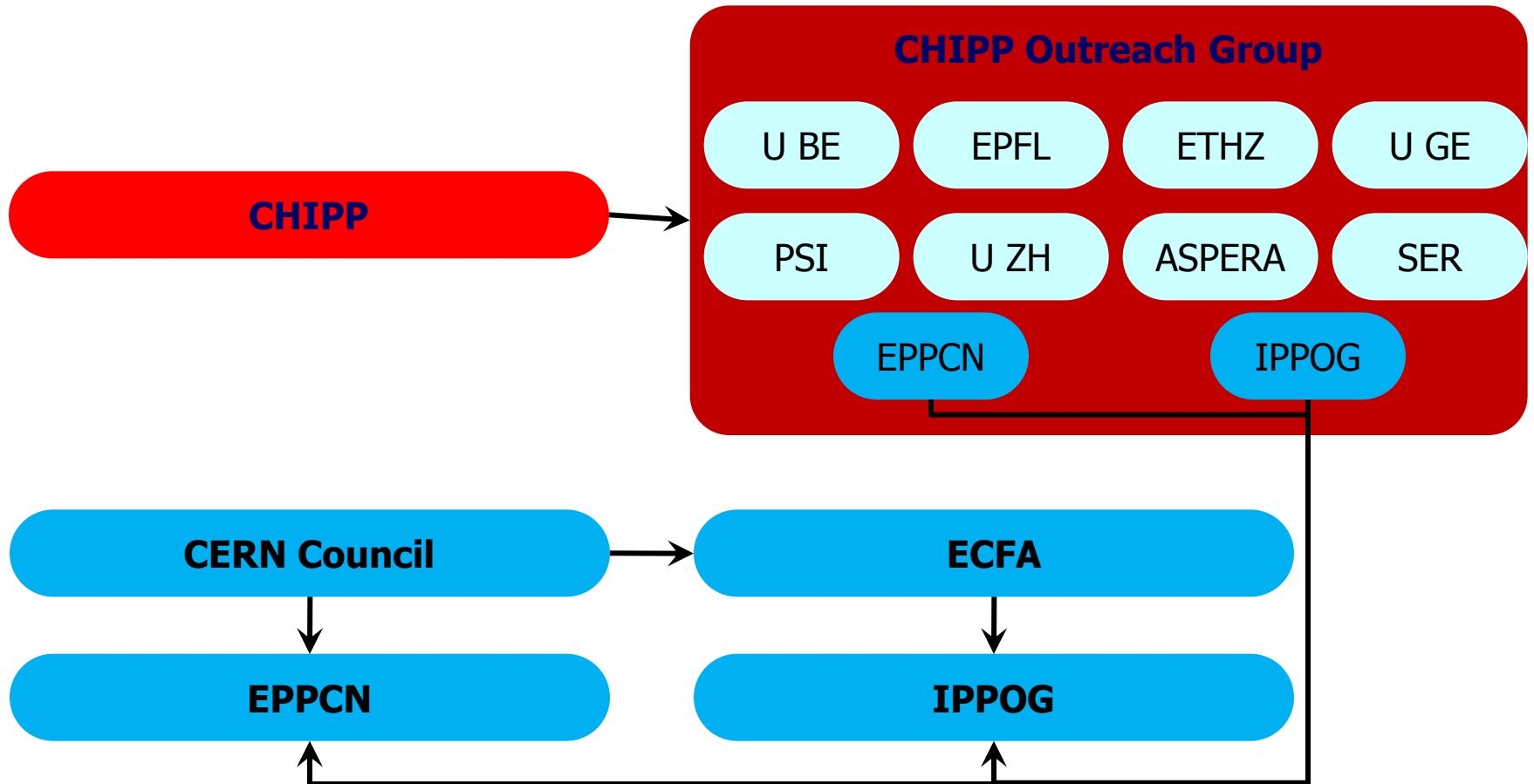
# CHIPP Outreach Group

- The **primarily role** shall be **the coordination of outreach activities in Switzerland**
  - Outreach will normally be done by individual institutes
    - but should emphasize CHIPP and our common or related activities wherever this is sensible
  
- **Target Audience**
  - General Public
  - Schools
    - pupils
    - teachers
  - Universities
  - ...
  
- **Changes since last CHIPP Board meeting**
  - **Marie-Christine Sawley** left ETHZ; replacement not yet identified
  - **Laurent Salzarulo** changed department in SER; replacement: **Bettina Mühlebach**
  
  - **Beat Gerber**, left in November 2009. No successor could be identified
    - discussions with **Uni Bern** (rector, press office) as well as with **PSI press office** (head: Dagmar Baroke) were sobering.
      - rector in principle positive, if resources could be identified
      - press offices state their impossibility to report CHIPP wide, as their mandate defines a different scope (conflict of interest)
        - still possible to help out with infrastructure, or writing dedicated articles,... i.e. press office core business

# CHIPP Outreach Group Composition

<u>Bern</u>	HP Beck (chair) Thomas Becher	contact alternate	<a href="mailto:Hans.Peter.Beck@cern.ch">Hans.Peter.Beck@cern.ch</a> <a href="mailto:becher@itp.unibe.ch">becher@itp.unibe.ch</a>
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<u>ETHZ</u>	Christoph Grab	contact	<a href="mailto:grab@phys.ethz.ch">grab@phys.ethz.ch</a>
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<u>EPPCN</u>	vacant		
<b>CMS</b>	Vincenzo Chiochia (Uni ZH)		<a href="mailto:Vincenzo.Chiochia@cern.ch">Vincenzo.Chiochia@cern.ch</a>
<b>ATLAS</b>	Alison Lister (Uni GE)		<a href="mailto:Alison.Lister@cern.ch">Alison.Lister@cern.ch</a>

# CHIPP Outreach Group



- **The International Particle Physics Outreach Group (IPPOG) (Formerly EPPOG)**
  - promotes the outreach activities of particle physics institutes and laboratories in the CERN Member States.
  - acts as a forum for the exchange of ideas and experiences related to particle physics outreach.
  - was formed under the joint auspices of the European Committee for Future Accelerators ([ECFA](#)) and the High Energy Particle Physics Board of the European Physical Society ([EPS-HEPP Board](#)).
  - is composed of
    - **one member** nominated by the particle physics community **of each CERN Member State** (HP Beck for CH).
    - **one member** each from **DESY** and **CERN**, appointed by the managements of those laboratories.
    - **additional representatives** from **particle physics experiments, astroparticle physics** and **non-Member States** of CERN.
  
- Next IPPOG meeting: 14-16 April in Kosice

## 27th Meeting of the European Particle Physics Outreach Group (EPPOG) at CERN

### Thursday 14 October 2010

**Introduction** - 160-1-009 (09:00-09:15)

- Presenters: BARNEY, David; KOBEL, Michael

**National Reports** - 160-1-009 (09:15-10:40)

- Presenters: BARNEY, David

**Coffee Break** - 160-1-009 (10:40-11:00)

**Masterclasses** - 160-1-009 (11:00-13:00)

- Presenters: KOBEL, Michael

**Lunch** - (13:00-14:00)

**Databases (EPPOG members, best-practice)** - 160-1-009 (14:00-15:40)

- Presenters: MC CARTHY, Lisa

**Coffee Break** - 160-1-009 (15:40-16:10)

**Future of EPPOG** - 160-1-009 (16:10-18:15)

- Presenters: BARNEY, David; KOBEL, Michael

**Dinner** - 160-1-009 (19:00-22:00)

### Friday 15 October 2010

**Cosmic ray detectors for education** - 160-1-009 (09:00-17:00)

<http://indico.cern.ch/conferenceDisplay.py?ovw=True&99542>

## National Reports 1h25'

Speaker: David Barney (CERN)

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German Netzwerk Teilchenwelt 15'

Speaker: Michael Kobel (TU Dresden)

Material: **Slides**  

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Élémentaire & Passeport pour les deux Infinis (France) 15'

Speaker: Nicolas Arnaud (LAL (CNRS-IN2P3))

Material: **Slides**  **more information**  ▼

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Video-artistic exhibits in Italy 15'


Speaker: Catia Peduto (INFN)

Material: **Slides**   **Video** 

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National report from STFC and UK groups 15'

Speaker: Peter Watkins (University of Birmingham)

Material: **Slides** 

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CMS Researcher's Night 10'

Speaker: David Barney (CERN)

Material: **Slides**  

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ATLAS Outreach activities 15'

Speaker: Michael Barnett (Lawrence Berkeley National Lab)

Material: **Slides**  



## Netzwerk Teilchenwelt

### Network Structure



#### Network between scientists, young people and multipliers for insight in scientific research in direct contact with CERN

- Students as young researchers aged 15-19
- Multipliers: Teacher as working group leaders at school workshop responsables in museums, science centres or school labs
- All ~ 20 institutes of (astro) particle physics in D

#### 4 central elements

- Local projects all over the country (national masterclasses and cosmic rays)
- On-site experiences at CERN
- Development of context materials
- Scientific evaluation

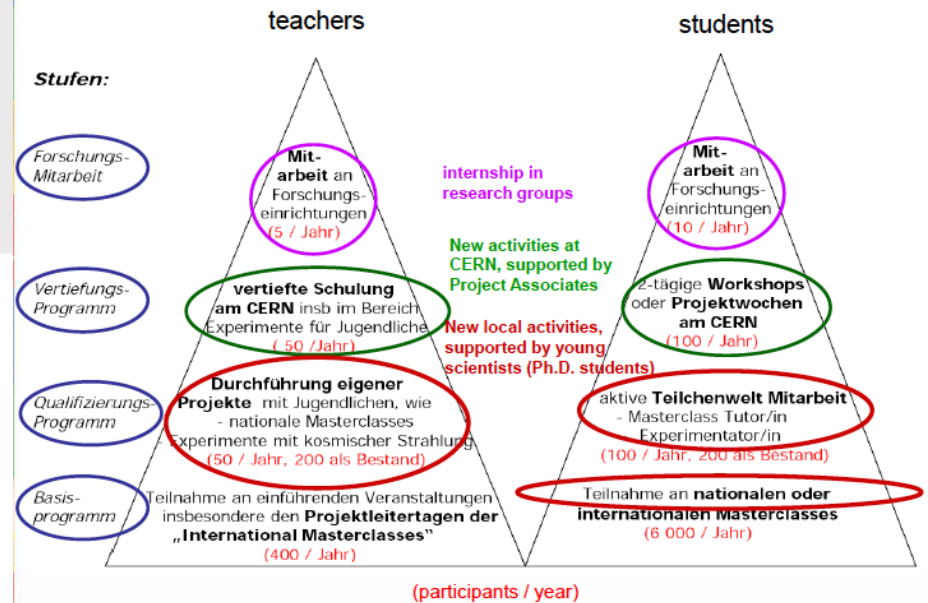
#### 4 levels for multipliers and students

- Basic level masterclasses as introduction
- Qualification level for membership
- Advanced level at CERN
- Research level internships at the institutes

Funded with 750.000€ by Ministry for Science and Education



### project overview Netzwerk Teilchenwelt



Elémentaire & Passeport pour les deux Infinis: magazines & book for 17-19 years old pupils  
Free of charge for students & teachers

## Elémentaire

Recurring 8-puzzle shape for the covers

- **Target:** general audience with end of high-school scientific knowledge
- **N1:** From the atom to the nucleus
- **N2:** The neutron
- **N3:** The cosmic rays
- **N4:** The color of the particles
- **N5:** The neutrinos
- **N6:** The Standard Model
- **N7:** When the Universe bangs
- **N8:** Towards the beyond
- **All material available for free download on the website**
- **Copy cost: 3 euros postage paid**  
→ A few hundred subscribers
- **A few 1000's copies printed per issue**  
→ Paid by funding agencies and sponsors (Ecole Polytechnique, etc.)



## Passeport pour les deux Infinis



CERN@school: building a cosmic ray detector @ school

Roadshow to remote places in Scotland

**THE LANGTON STAR CENTRE**

**CERN@school**

Home LUCID CERN@school MBP2

The Star Centre

- Main Activities
- Our Aims
- LUCID
  - Design
  - Capability
  - Results, Analysis and Interpretation
  - Appendix
- Plasma Physics
- Faulkes Telescope
- CERN@school
- MBP Squared
- Blog
- Resources
- Contact Us
- Log In / Log Out

Home LUCID Becky Parker - Canterbury

What Is LUCID? <http://www.thelangtonstarcentre.org>

What is Lucid?

LUCID is a commercial off-the-shelf cosmic ray detector. It will have many applications in the defence against single event upsets and in monitoring the human space environment.

It will form the heart of "CERN@school", a Langton Star Centre Project, which already involves 10 schools across Kent. We hope this national project will help inspire a new generation of physicists for the future.

It will also provide high quality new and useful information about the subtler aspects of cosmic rays, including inclination and higher element intensities.

## The 2010/11 Roadshow a brief introduction

The SCI-FUN Roadshow is taking its unique collection of interactive presentations and over forty hands-on exhibits to school groups and public events across Scotland in 2010/11.

We remain committed to the concept of taking the experience of a science centre to venues across the country.

During the course of our 2009/10 tour, we provided an online questionnaire for contact teachers to submit their opinions on various aspects of the Roadshow programme. We were successful in getting responses from the majority of these contacts, and used this information to compile our 2009/10 feedback report.



### How a visit works

Our equipment is transported in our 7.5 tonne lorry (shown above), from which we unload and set up the materials in an assembly or sports hall, usually in less

STFC – Science and Technology Facilities Council

100 k€/year from STFC  
plus other funds

# IPPOG Outreach Database

- Brand new database that holds recommended tools and materials to be used in bringing the exciting world of particle physics to students of all ages and the general public. Here you can find **videos, brochures, posters, talks, ideas for hands-on activities, and more!** Items stored here are shared by members and partners of the IPPOG network.  
<http://eppog.web.cern.ch/eppog/EPPOGdatabase.html>



Use [Indico](#) for meetings, [CDS](#) for official papers, notes and photos and [EDMS](#) for engineering documents.

For anything else or if in doubt, use [DocDB](#).

Search by   [Advanced search](#)

Browse by: [author](#), [topic](#), [group](#), [see recent](#), [see all](#)

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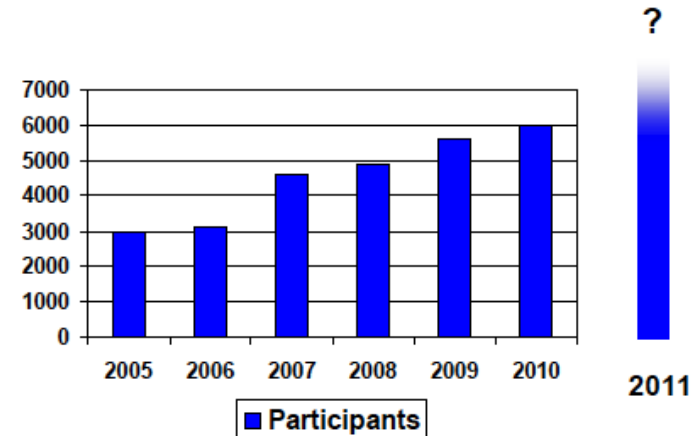
## Document List by Topic

These documents on [Educators of 25+ year olds](#) (subtopic of [Teachers / Professional Educators](#)) are available:

IPPOG-doc-#	Title	Author(s)	Topic(s)	Last Updated
<a href="#">212-v2</a>	<a href="#">Video Series: Colliding Particles - Episode 6: Beam</a>	<a href="#">Mike Paterson</a>	<a href="#">7. Ages 25 years+</a> <a href="#">ATLAS</a> <a href="#">English</a> <a href="#">Film / Video</a> <a href="#">7. Educators of 25+ year olds</a> <a href="#">5. Ages 15 - 18 years</a> <a href="#">5. Educators of 15 - 18 year olds</a> <a href="#">6. Ages 18 - 25 years</a> <a href="#">CERN &amp; Experiments based at CERN</a> <a href="#">b. 6-15 min</a> <a href="#">Educational Kits</a> <a href="#">Podcast</a> <a href="#">6. Educators of 18 - 25 year olds</a> <a href="#">CMS</a> <a href="#">Individual Teaching Aids</a> <a href="#">LHC</a>	21 Jan 2011
<a href="#">208-v1</a>	<a href="#">Video Series: Colliding Particles - Episode 2: Big Bang Day</a>	<a href="#">Mike Paterson</a>	<a href="#">7. Ages 25 years+</a> <a href="#">ATLAS</a> <a href="#">English</a>	21 Jan 2011

[www.physicsmasterclasses.org](http://www.physicsmasterclasses.org)

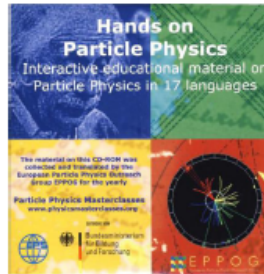
6000 pupils in 2010 from Europe, South- and North America were analyzing real data from particle collisions (LEP data)



## Exercises 2011

- New LHC package with ATLAS and CMS
- W-path and Z-path
- Status: Marge, Konrad, Ken
- + ALICE (extra day)?

- Exercises on CD/DVD and web
- Translation → help of national responsables needed (Nov/Dec/Jan)



- use of real data: underlies restrictions

## Funding and in kind contributions

- Helmholtz-Alliance: Project manager (1/2 time; until end of 2012)
- Wolfgang-Gentner studentship for Konrad Jende (PhD thesis, ending 2012)
- BMBF: upgrade for LHC (development, technical needs, test, translation, CD/DVD, student assistants; ending 2012)
- EPS HEP division (production and shipping of CD)
- CERN IT:
  - Marek Domaracky, CALTECH (CERN)
  - Philippe Galvez, EVO Project Manager (CERN IT)
- CERN outreach (prizes)
- Moderators



Particle Physics  
national Masterclasses

- **Masterclass** events in **Bern, Geneva and Zurich** (ETHZ+UNIZH)
  - **16, 11, 24 March 2011** respectively
  - No more LEP data, but now first time with **LHC data!**
  - e.g. <http://atlas-minerva.web.cern.ch/>
    - The aim of the exercise is to identify particles in the **ATLAS** detector at the LHC. We ask the students to scan a mix of various physics events and classify them in the following categories
      - $W \rightarrow \mu \nu$
      - $W \rightarrow e \nu$
      - $Z \rightarrow \mu \mu$
      - $Z \rightarrow e e$
      - QCD dijet events
    - To do this the **ATLAS event display Atlantis** is used.
    - After the students have finished the results from each group are collected and calculate together the **ratio of  $W \rightarrow e \nu / W \rightarrow \mu \nu$**  and the **ratio of  $Z/W$**  production compare with the predictions and discuss the physics of these measurements.
- Similar exercises are in preparation for **CMS**, and **ALICE**



### Teacher Programmes

*Keep up-to-date with the latest developments in particle physics and related areas, and experience a dynamic, international research environment. CERN offers you the possibility to participate in special programmes for teachers and meet with teaching colleagues from your country or from all over Europe.*



International  
3-day  
Programmes



High School  
Teacher  
Programme



The three-day **Physics Teachers Programme** is an international weekend course in English for teachers from all over Europe and includes seminars, visits and educational activities. Click [here](#) to find out more.

The **High School Teacher Programme** is a comprehensive international course held in English, aimed at teachers who would like to spend the first three weeks of July at CERN. The next session will take place from 4th July - 24th July 2010. Click [here](#) to find out more.

The **National Teacher Programmes** are held in the mother tongue language of the participants from CERN member states. Click [here](#) to find out more about their content, when the next session is planned for your country, to access the agenda, to find archived material of previous sessions and contact information.



# ***CERN – Teacher Programmes***

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Swiss teachers do not participate in the CERN Teachers Programme  
(with very few exceptions)

Every year, Swiss Teachers get pointed to the CERN teachers programme,  
via a written letter from Uni ZH in view of the Swiss Masterclasses – no success?

# Contacts with Swiss Teachers

- Contact with **PHBern** and Bernese teachers education
- Contact with **PHZH** and especially the new ZH effort via HSGYM
  - a forum to discuss between **HighSchool** & **GYM**nasium teachers
- Efforts often limited to cantonal boundaries, with some reaching out to neighbouring cantons ...
  
- **Visits and talks at Swiss high schools**
  - ZH has contacts with several schools
  - BE is organizing every Winter the 'Physik am Samstag' lecture series
  
- **Getting school classes to CERN!**
  - e.g. one class (14 pupils, 2 teachers) from Kantonsschule Glattal (ZH) next week at CERN, and another class from MNG Rämibühl (ZH) in a few weeks
  
  - **CERN is happy** to organize such events (see next slide for details), but indicates that **extra resources** are not unlimited. Participation from schools, cantonal funds or SER? may be required if this should take off...

# A Swiss School Class program at CERN...

- **31.1.2011:**
  - 13:30 Einführungsvortrag (Sascha Schmeling; 40-R-D10)
  - 14:30 Kaffee und Plausch (Sascha Schmeling, Konrad Jende; 501 (R1))
  - 15:30 Besuch der Protonenquelle und des LINAC II - ein Linear- und einer der Vorbeschleuniger für den LHC (Sascha Schmeling; 354)
  - 16:45 Besuch von SM18 (Konrad Jende; SM18)
  - 18:00 Ende des ersten Tages
- **01.2.2011:**
  - 09:30 Ausstellungen auf dem CERN-Gelände (MICROCOSM (33), GLOBE (80))
  - 11:00 Vorlesung zu Antimaterie (Michael Doser; 40-R-A10)
  - 12:00 Mittagessen (501)
  - 13:30 Besuch des AD - Antiproton Decelerator (Michael Doser; 193)
  - 15:00 Cloud Chamber Workshop - Bau eines Teilchendetektors (Konrad Jende; 6-2-004)
- **02.2.2011:**
  - Der Vormittag ist noch in Planung. Es wird auf jeden Fall eine ausführlichere Führung durch den MICROCOSM geben und vielleicht noch einen Workshop im CryoLab. 13:00 Schnitzeljagd durch Genf zum Erkunden der Stadt. Am Abend könnten wir bei Interesse, Bedarf und finanzieller Ausstattung Ihrerseits (das müssten Sie entscheiden) ein traditionelles Käsefondue in Genf einnehmen - hierbei wären etwa 30 Franken pro Person einzuplanen. Bei Interesse melden Sie sich bitte bei mir, damit ich eine Reservierung vornehmen kann.
- **03.2.2011:**
  - 09:30 Besuch bei LHCb/CAST (Martin Hawner; Abfahrt bei Gebäude 33)
  - 11:00 Masterclasses-Einführungsvortrag (Konrad Jende; 503-1-001; gemeinsam mit Deutsche Schule Genf)
  - 12:00 Mittag (501)
  - 12:45 Masterclasses-Messung an echten LHC-Daten (Konrad Jende; 503-1-001)
  - 15:00 Masterclasses-Abschlussbesprechung (Konrad Jende; 503-1-001)
  - 15:30 Besuch bei ATLAS (Konrad Jende, Martin Hawner; 3162)
  - 16:30 Evaluation der Masterclasses (Konrad Jende; 4-3-006)

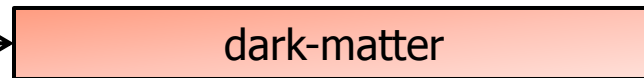
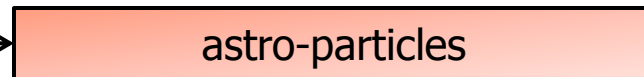
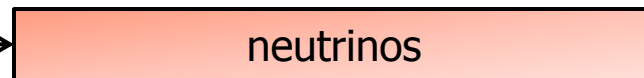
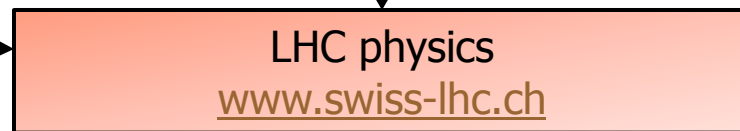
- **Good coverage in Swiss media**
  - **in particular regarding LHC and  $\nu$  tau oscillation**
  - Press (TdG, BZ, Tages Anzeiger, NZZ,...)
  - TV (Einstein, 10vor10, Sternstunde Philosophie,...)
    - but also smaller brochures
      - e.g. Kundenmagazin Centralschweizerische Kraftwerke CKW, etc.
  
- **Press releases** from CERN are a good trigger for media
  - University, ETH & PSI press offices active from time to time
    - but: press offices claim that if the Swiss media is reporting, then their message on top of the Swiss media reports would go unseen...!
    - We need: press releases with **Swissness** enhancement to gain impact

# Swiss Web Sites

not yet existing



entry portal for swiss particle physics



Modular design  
Topics can be added  
(these proposed here do not yet exist...)

WP-1 & WP-2: design, implementation and maintenance of Swiss particle physics web portal

- **CHIPP Outreach needs funds** to effectively do its job
  
- **Agora**
  - brand new **tool from SNF**
  - <http://www.snf.ch/E/funding/science-communication/Pages/agora.aspx>
  - supports public science communication projects by researchers
  - budget of **one million Swiss francs** for the 2011 call for proposals, which must be **submitted between mid-May and mid-August 2011**.
  
- **Document** describing Swiss Outreach activities and commitments (EPPCN, IPPOG) ~ready.
  - 5 Workpackages described covering the Web portal (design and maintenance), press releases and news feeds, the Swiss node for the CERN LHC communication group, common publications, a best practice database, and extra events and would require a budget of **100 kCHF/year recurring** for a **50% FTE** plus **30 kCHF** travel, print, misc.
  - **Kick-start overhead** of: **1 FTE for six months + 115 kCHF** to set up the web-portal.

3/3/2011

## Taking science into the public

**With its new funding scheme "Agora", the Swiss National Science Foundation (SNSF) wishes to intensify the dialogue between science and society. "Agora" is open to researchers from all disciplines for communication projects. The first call for proposals will be launched in mid-May 2011.**



Science explained and discussed: "Agora", the SNSF's new funding scheme, supports public science communication projects by researchers. (c) Philippe Wagneur

One of the strategic objectives of the SNSF is to have more and better communication between science and society. This does not imply merely spreading scientific knowledge among members of the public, rather the aim is to offer insights into scientific working methods and discuss the societal significance of research. Which is why the SNSF encourages researchers from all disciplines to venture forth into the marketplace of Greek antiquity: "Agora" is the SNSF's new funding scheme for public science communication projects. It has been allocated a budget of one million Swiss francs for the 2011 call for proposals, which must be submitted between mid-May and mid-August 2011.

### **Creative freedom for projects**

Researchers can plan and conduct projects in collaboration with the public relations offices of universities or with museums, journalists and artists. "Agora" does not set any limits on the form and content of projects: whether exhibitions, books, films, discussions or art/multimedia projects, anything is conceivable as long as it brings science to life. This does not include projects comprising marketing campaigns or institutional communication and media relations. Projects must refer to research of high quality and provide an impetus for true dialogue with the public, in which the researchers are expected to play an active role. As far as possible, the project should be recyclable, generate sustainable interest and form part of a wider regional, national or international framework.

Projects linked to scientific work under a National Research Programme (NRP) or a National Centre of Competence in Research (NCCR) cannot be funded as separate communication budgets have been allocated for such research.

# *Workpackages → see doc for details*

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- WP-1 design & implementation of Swiss particle physics web portal
- WP-2: maintenance of Swiss particle physics web portal
- WP-3: press releases and news feeds
- WP-4: EPPCN delegate
- WP-5: common publications
- WP-6: IPPOG Database
- WP-5: extra events

## **Kick-off (six months duration):**

**90% FTE & outsourcing of web-portal → 115 kCHF**

## **From the on:**

**50% FTE/year maintenance & 30 kCHF/year travel, printing needs → 100 kCHF/year**



# ***SER – Status 2010 (Laurent Salzarulo)***

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## **50 kCHF from SER**

The project must be further (financially) supported by all involved Universities and institutes. - ok

The project should be for young people who are about to take the decision what to study (tbd)

Should be a global project targeted for young people.  
Preferably the project is long term (3 years)

My understanding is that CHIPP funding must be confirmed first, only then the 50 kCHF from the SER can be unlocked.

**Bettina Mühlebach** is the new SER representative - replacing Laurent Salzarulo

# Conclusion

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- CHIPP Outreach activities ongoing
  - small scale, individual initiatives, all Swiss sites are active, no (or only little) coordination needed
    - Visits to Experiment sites (ATLAS, CMS, LHCb, ...)
      - Schools, Journalists, VIPs
    - Open day events at local site
    - Student/Fresher days at local site
    - Public talks at schools, clubs (rotary, lions,...), industry, ...
    - Interviews @ TV / Radio / Printed press
    - Maturitätscommissionen
  
- Looking for funds from SNF (Agora) to professionalize CHIPP Outreach and its impact
  - would, in my understanding, also unlock SER money

## ➤ e.g. Einstein in China

- two year travelling exhibition in 2010 and 2011 in China
- sponsored by: **Presence Switzerland (FDFA), SwissNex (SER), Uni Bern, ETHZ Bern Historical Museum,...**

## ➤ Beijing

Jun-Oct 2010

## ➤ Guangzhou

Nov 2010–Feb2011

## ➤ Hongkong

Apr-Aug 2011

## ➤ Shanghai

Oct 2011 – Feb 2012



## *Special events*

- **many more**, as I will learn from the groups delegates at the forthcoming CHIPP Outreach Group meeting at the
- **Geneva Physiscope** in one of the coming weeks (doodle poll active). Thanks to Olivier Gaumer for making this possible.  
<http://www.physiscope.ch/>





# BackUp

# CHIPP Outreach Group

One **delegate** (+one **alternate**) physicists from every CHIPP site  
 – alternate physicist to ensure better coverage of activities at each site  
 not (necessarily) required to participate in meetings

One **delegate** from **ASPERA, EPPCN, EPPOG & SER**

<u>Bern</u>	HP Beck (chair) & <u>EPPOG</u> Thomas Becher	contact alternate
<u>EPFL</u>	Frederic Blanc Aurelio Bay	contact alternate
<u>ETHZ</u>	Christoph Grab vacant	contact alternate
<u>Geneva</u>	Olivier Gaumer Bernard Révaz & <u>ASPERA</u>	contact alternate
<u>PSI</u>	Tilman Rohe Malte Hildebrand	contact alternate
<u>Zürich</u>	Angela Buechler-Gehrmann Teresa Marrodan-Undagoitia Vincenzo Chiochia	contact alternate
<u>SER</u>	Bettina Mühlebach	
<u>EPPCN</u>	vacant	