

LHC Physics Centre at CERN

- The LHC Physics Centre at CERN (LPC): why, what?
- Ongoing initiatives and longer-term goals
- Role of PH physicists in the LPC, and other open issues in need of discussion ...

Why a LHC Physics Centre at CERN?

There are important elements in the LHC programme that are of broad interest to all experiments, and to CERN as a whole

E.g.

- interaction between theorists and experimentalists
- workshops, joint LEP-style WGs, ...
- nurturing a healthy scientific life at CERN, with a special attention to the users who look up to CERN as a source of formation and education (e.g. students and researchers from less-favored countries)

These things don't happen by themselves

Goal of “the center” should be to ensure that these areas are covered

- continue promoting usual initiatives (e.g. workshops)
- identify/execute new actions (e.g. actions for students, joint LEP-style WGs, ...)
- ensure that CERN's **resources** are best used to maximize its **support** to the LHC physics programme, both outside and inside CERN

Areas of interest:

- Physics
- Support (CERN and non-CERN physicists)
- In-reach, networking and education

Physics

- Maintain, strengthen and focus the Workshop activity, historically promoted and supported by the TH Division
 - LPCC gives more flexibility, ability to promptly respond to needs, streamline the process (collect inputs, organize, support, advertise, document, ...)
 - Complementary to TH Institutes (long-duration, organized \geq 1 year in advance, on TH budget, competing with other non-LHC initiatives,...)
- Provide umbrella for existing activities (MC4LHC, PDF4LHC, MC4BSM, HI forum, etc.)
- More direct support for needs of collaboration with theorists
- Initiate and support joint-WG activities

Ongoing initiatives

- Workshops:
 - Quarkonium production (Febr 19)
 - LHC tools readiness (March 29 - March 30)
 - W/Z+jets workshop (April 1)
- LHC experiments' WGs:
 - Minimum Bias and Underlying Event WG (next mtg March 1-2)
 - LHC Luminosity Task Force (first mtg being scheduled)
- Requests of LPCC engagement in the activities of the PDF4LHC WG, Forward Jets at the LHC, etc.

Examples of future initiatives

- Improve the access of LHC physicists to the resources of the TH group: lots of untapped potential!
- “MC” expert in residence
- LHC Physics Day:
 - 1-2 days/month allocated by default to the discussion of an LHC topic.
 - Place holder for workshop-like activities, but with fixed dates, for ease of scheduling
- Continue organization of required workshops and WGs
- ...

A mechanism agreed with the management of the experiments to setup the joint WGs:

forum of physics coordinators

Support of CERN and non-CERN physicists

All physics-related activities (Wshops, WGs, etc) are of course supporting the analysis needs of physicists We address here issues like hardware, software, infrastructure, technical training, manpower, etc

Ongoing initiatives

- Internal review of analysis needs of CERN groups (exp reps: Carminati/Safarik (ALICE), Elsing/Froidevaux (ATLAS), Janot/Spiropulu (CMS), Ruf (LHCb)
- planning of Tier-3 resources, assessment of infrastructure needs (computing/software support, ...)
- Open review of SFT (chair: Mapelli; exp reps: Carminati, Elsing, Harvey, Charpentier)
 - Geant-4, ROOT, Genser, etc

Support of non-CERN physicists *

Possible directions:

- Experiment-specific Analysis tutorials (e.g. FNAL's J-terms):
 - can help defining the infrastructural needs to support the CERN groups and, possibly, the users
- Fellowships/PDSA:
 - maybe not? No need to overlap with EP/TH programmes!
- Studentships:
 - mainly dedicated to students from institutes with lack of proper analysis structure, or lack of student supervision. Issues:
 - infrastructural needs (office space, supervision, software/computing support to get up to speed, ...)
 - source of support

* will discuss PH physicists at the end

Issues

- Need to discuss more generally the issue of what is meant by “users’ support”, and what it is CERN should provide
- I need to educate myself:
 - learn more about the user community’s needs and requests (look at the 2009 users’ survey; is there something more specific to the LHC users?)
 - learn more about what CERN and/or the experiments already offer today
- **The model and experience of the TH Division can be valuable:**
 - **supporting the users is the best way to support yourself!**

Inreach, networking, education

Ongoing initiatives:

- LHC status reports (two before Christmas, to restart in March with weekly updates of the accelerator status and plans -- Friday 3:15pm)
- First contacts with DESY LHC Analysis Center and FNAL LHC Physics Center
- Interactions with students

Interactions with students

- Several meetings with students' reps:
 - organized a questionnaire for the students' community (150 responses)
 - held an open meeting to discuss needs and suggestions
- Actions proposed:
 - Creation of a students' electronic forum, led by a group of volunteers, to help integration of new students (liaison with HR, Users' office, etc)
 - Representation of students in some CERN bodies (e.g. Academic Training Committee)
 - Organization of dedicated lectures
 - Organization of periodic poster sessions
- First lectures: "The operations of the LHC accelerator", April 7-9

Inreach/networking: plans

- Create a good web page, source of information and primary reference on LHC physics for the **HEP community**
 - document status of LHC operations (in collaboration with LHC people)
 - document LHC-related papers, activities, events, at CERN and elsewhere
 - collaborate with the INSPIRE team (<https://twiki.cern.ch/twiki/bin/view/Inspire/WebHome>)
 - portal to resources (from tools, to the list and expertise of TH visitors,)
 - access point for users' feedback/input, applications (studentships, etc),
- Identify common activities with other "LPC" centers, in addition to the obvious ones (workshops, schools, etc): knowledge management, data preservation)

You and the LPCC



uncle Rolf needs you !

You and the LPCC

- What can PH physicists gain from the LPCC ?
- What is the incentive for you to invest in the LPCC ?
 - Play a role in defining “the best of all possible worlds” for doing LHC physics at CERN, as CERN physicists
 - what would you like to see in place, to happen, to maximize your potential to get the physics done?
 - computing/software infrastructure
 - physical infrastructure
 - social infrastructure
 - The LPCC could provide the forum to carry out this needs-assessment exercise, and to solicit the necessary support from the management (as it’s doing for the more specific Tier-3/computing review)
 - As stressed before, engagement in providing users’ support can bring more and better people to CERN (e.g. students to join your groups), strengthen the case to input fresh resources in PH

Possible initiatives to start with ...

- Common lunch or end-of-the-day drink once/week
- More frequent “Thoiry-like” events, LHC focused, with better TH participation
- Facilitate visibility and interactions of/among fellows (e.g. TH retreat in Les Houches)
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Other issues

- What about non-LHC physicists?
- Is the LPCC a “context”, a “framework”, or is it a real group of LPCC-flagged people? Does it *need* a “home” ? Shall it *get* one ?
- How many physicists does it take to run the LPCC ?
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I would be most happy to receive all possible feedback, positive and negative, ideas, suggestions, requests, etc.etc.

As **individuals**, please contact me to discuss your views

As **group leaders**, please stimulate the discussion within your group, and coordinate a group response. We can start an informal discussion at the retreat of PH group leaders on Febr 9.