

The Analysis Centre

... and its future ...

Thomas Schörner-Sadenius



„Workshop on Perspectives of the Analysis Project“

DESY Hamburg

23 February 2011

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Thomas Schörner-Schep



„Workshop on Perspectives of the Analysis Project“
DESY Hamburg
23 February

Attention: extremely personal views !!!

The Analysis Centre

... and its future ...

Currently running:

Thomas Schörner-Sadenius



„Workshop on Perspectives of the Analysis Project
DESY Hamburg
23 February 2011

Helmholtz Alliance
PHYSICS AT THE TERASCALE

**Introductory School
“Terascale Physics”**

**21-25 February 2011
DESY, Hamburg**

The “Introductory School on Terascale Physics” aims at providing the essential information and techniques on the subject that bachelor students may find very helpful for a productive thesis.

The programme consists of lectures and hands-on tutorials and computer exercises on physics, data analysis and technical issues. Examples are:

- Physics at the Terascale
- ROOT
- Standard Model electroweak processes at LHC
- QCD at LHC
- Monte Carlo techniques and programmes
- Top physics and searches
- Statistics

Admission to the school will be through a selection by the organisers. Please send an email to anac@desy.de, mentioning the name and institute of your supervisor, together with your experience in high-energy physics (if any). The deadline for registration is 15 January 2011. The school fee will be 50 Euros. Support for travel and accommodation can be granted on request. For more details see www.terascale.de/intro2011

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

➤ The schools and training events!

- Unanimously stated to be a success! (Schools not only in the Analysis Centre!)
- ...shall that be all?



WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

➤ The schools and training events!

➤ The topical workshops (also in Detector Project etc.)

- ... and I think we need more, and better planned!

The collage displays a variety of physics workshops and schools organized by the Terascale Analysis Centre. The events include:

- Advanced Methods of Software Development in High Energy Physics** (27 September - 1 October 2010, TU Dresden)
- German LHC Physics Workshop 2010** (27 September - 1 October 2010, DESY, Hamburg)
- 1st Detector Readout Link Topical Workshop of the Helmholtz Alliance** (14 - 15 February 2011, Bergische Universität Wuppertal)
- Workshop on Top Quark Physics** (7 - 8 April 2011, Bergische Universität Wuppertal)
- Analysis Centre Schools and Workshops 2011** (a series of events including Introductory School, Monte Carlo School, Computer Algebra & Particle Physics, and Single-Top Workshop)
- Workshop on Multi-Parton Interactions at the LHC** (13 - 15 September 2010, DESY, Hamburg)
- Workshop on Single-top physics and fourth-generation quarks** (14 - 15 September 2009, DESY, Hamburg Site)
- Workshop on Detector Understanding with First LHC Data** (29 June - 3 July 2009, DESY, Hamburg Site)
- Institute on Parton Shower and Resummation** (4 - 29 May 2009, DESY, Hamburg Site)

Each poster provides details about the topics, speakers, and registration information. The URL http://www.terascale.de/schools_and_workshops is prominently displayed at the bottom right of the collage.

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

- > The schools and training events!
- > The topical workshops!

(My personal) Lessons from these two:

- > Need stringent (annual) planning for schools, adapted to needs (and numbers) of students.
- > Need to interface with CERN etc.; possibility to develop specific expertise?
- > If no budget available for anything else – schools and workshops programme must be kept up! Question of $\pm 50\text{k/a}$.

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

- > The schools and training events!
- > The topical workshops!
- > **The Analysis Working groups**
 - At least partly and for some time.
 - Put emphasis on documented output, publications (?)
 - How to better identify relevant topics and getting things started?
→ role of and manpower related to the Analysis Centre → later

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

- > The schools and training events!
- > The topical workshops!
- > The Analysis Working groups
- > The VTI and Analysis Centre seminar series
 - In my opinion need to be unified
 - Possibly create one central weekly slot for Alliance activities, to be filled by any Alliance-related activity?

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

- > The schools and training events!
- > The topical workshops!
- > The Analysis Working groups
- > The VTI and Analysis Centre seminars
- > The funding possibilities for guests and visitors.

WHAT WAS GOOD OR SUCCESSFUL?

... concentrating on the Analysis Centre ...

- > The schools and training events!
- > The topical workshops!
- > The Analysis Working groups
- > The VTI and Analysis Centre seminars
- > The strong funding for guests and visitors.
- > (At least **from a DESY perspective ?**):
 - The “Theorist of the week” – although it needs expanding.
 - The “Informal statistics meetings”

WHAT WAS PROBLEMATIC?

... conceptual problems, mostly ... and manpower!

> The (too widely defined) MC, Statistics Tools and PDF groups

- Could – by definition – not live up to expectations raised with Alliance proposal.
- Different approaches: Two activities (PDF group: ABM, HERA-PDF) versus loose collection of many projects (Statistics Tools group) versus “1 generator and some experiment connection / tuning activities” (MC group).
- Not enough dedicated manpower to have more than very selective impact (1.5 FTE in total!). No Alliance-wide / global effect beyond what might have happened anyhow.
- Take up only those project parts that promise success (list later)! Question of decentralisation from Heiko?

My personal conclusion on the groups:

- > Drop global / wide-spread / far-reaching claim, concentrate on few high-profile projects and staff and fund them well.

WHAT WAS PROBLEMATIC?

... conceptual problems, mostly ... and manpower!

> The (too widely defined) MC, Statistics Tools and PDF groups

> The requirement of “experiment-independence”

- Most analysis activities and also tools developed from WITHIN experiments.
- Anyhow: Most fellows “disappeared” in the experiments and did purely experiment-specific work ...

WHAT WAS PROBLEMATIC?

... conceptual problems, mostly ... and manpower!

- > The (too widely defined) MC, Statistics Tools and PDF groups
- > The requirement of “experiment-independence”
- > **The ALLIANCE fellowship programme** (Analysis Centre point of view)
 - Mostly little orientation towards global Alliance goals / projects.
 - Need to better focus resources (Alliance fellows, DESY, universities) on well-defined Alliance projects.

My personal conclusion on fellowships etc.

- > If any funding available at all – fund only activities / positions that connect AT LEAST two different institutes, have strong experiment-independent part and promise gain for whole community.
- > Concentrate person power on few high-profile projects.
- > Suggestion for DESY part: “Applied fellowships” a la FNAL LPC?

WHAT WAS PROBLEMATIC?

... conceptual problems, mostly ... and manpower!

- > The (too widely defined) MC, Statistics Tools and PDF groups
- > The requirement of “experiment-independence”
- > The Alliance fellowship programme (Analysis Centre point of view)
- > **The leader of the Analysis Centre**
 - Filling the proposal ideas with life is interesting and challenging physics / organisational / management task, requiring creativity and communication.
 - In future would like to organise regular conceptual and project discussions with community – identification of projects and manpower?
 - Wouldn't want to see the role of the Analysis Centre leader reduced to school organisation ;-)

WHAT WAS PROBLEMATIC?

... conceptual problems, mostly ... and manpower!

- > The (too widely defined) MC, Statistics Tools and PDF groups
- > The requirement of “experiment-independence”
- > The fellowship programme (from an Analysis Centre point of view)
- > The leader of the Analysis Centre
- > “What is an Alliance project?”
 - Original idea of numerous tools / packages / papers with “Alliance brandmark” very ambitious. Might work in selected topics.
 - More realistic: Analysis Centre as platform / meeting point / support centre for activities, like for example BSM fitting group.
 - Nevertheless: Long list of potential projects – question of manpower (last slide). See also comment from Heiko.

FUTURE: “PROJECT AND WORKSHOP CENTRE”?

... how to proceed ?

- > Continue schools and workshop, and carefully define their programmes, also with a view to the “global” situation (at CERN, at FNAL, ...)
- > Fund and staff projects with high impact probability and (minimum) strong person-power commitments from two/three institutes.
 - Many ideas for projects around, will show a few on next (last!) slide.
 - Commitment to Alliance and its goals must mean something, especially in times with scarcer funding!
 - Question of hiring “high-profile” people, for example MC, as discussed in Frankfurt?
- > Strengthen international connections
 - CERN and FNAL physics centres
 - Network of institutes with similar situations as DESY and D universities (Scandinavia? Poland? Eastern Europe? Russia? ... build on well-established DESY connections?)
- > Turn towards physics / data interpretation (still LHC startup phase!)
 - Role of (ex) LHC-D working groups?
 - Strong recent impact of “BSM parameter fitting group”

POTENTIAL PROJECTS

... loose collection of ideas ...

- > PDF platform at DESY
- > MC network
- > CASCADE
- > Data preservation project
- > Data interpretation project / extended BSM fitting activities
- > LVMINI, APLCON, Fitting project
- > Proffit and MC tuning
- > HERWIG++ node?
- > QCDLab-PDF
- > Geant4 node
- > Unfolding project
- > QCDLab-MC generator
- > MC theory development
- > BAT, ROOSTATS, and other statistics / BSM fitting projects
- > ...

- Select few, staff and fund them well.
- Support versus development?
- Postdocs versus established people?
- ...