German LHC Physics School

Welcome remarks

Helmholtz Alliance
PHYSICS AT THE TERASCALE

Deutsches-Elektronen Synchrotron DESY +++ Forschungszentrum Karlsruhe GmbH +++ Max-Planck-Institut für Physik München +++ Rheinisch-Westfälische Technische Hochschule Aachen +++ Humboldt-Universität Berlin +++ Rheinische Friedrich-Wilhelms-Universität Bonn +++ Universität Dortmund +++ Technische Universität Dresden +++ Albert-Ludwigs-Universität Freiburg +++ Justus-Liebig-Universität Gießen +++ Georg-August-Universität Göttingen +++ Universität Hamburg +++ Universität Heidelberg +++ Universität Karlsruhe +++ Johannes Gutenberg Universität Mainz +++ Ludwig-Maximilians Universität München +++ Universität Regensburg +++ Universität Rostock +++ Universität Siegen +++ Julius-Maximilians-Universität Würzburg +++ Bergische Universität Wuppertal +++

Thomas Schörner-Sadenius

DESY Hamburg
27 September 2010

HELMHOLTZ GEMEINSCHAFT

WELCOME

- … to the (first) German LHC Physics School
  - organised in the framework of the Helmholtz Alliance.
- A week of lectures, lively discussions, hands-on tutorials and social contacts for everybody wanting to get (more) familiar with LHC physics and experimental methods.
- First in a series → we need your input and feedback to improve and make an even better offer to the community next year.
  - 2009: “Detector Understanding with First LHC Data” – slightly different focus, but we nevertheless learned a few lessons.
- Topic “Final states with leptons and/or jets” because
  - … covers basic object reconstruction
  - … is important for Standard Model measurements
  - … is equally important for the more exciting things to come (top, SUSY, BSM …)

THE SCHOOL

- Monday:
  - Introductory lectures on the “Physics landscape” at the onset of the LHC era, on the detector performances and on LHC results.
  - Evening reception at 19:00 in the bistro / canteen appendix.
- Tuesday – Thursday:
  - Topical presentations on leptons, jets and lepton+jets final states and techniques.
  - Discussion
  - Tutorials in the afternoons (next slide).
  - Tuesday: Evening talk by H.-F. Wagner (BMBF) on HEP funding!
  - Thursday: School dinner, 19:00, bistro / canteen appendix.
- Friday
  - Lectures on status of theory and on the plans and prospects for the LHC machine.
  - School wrap-up and feedback session.

Personal request: please leave your laptops off during the lectures!

THE TUTORIALS

- Separately for CMS and ATLAS!
- CMS: Here in seminar room 2.
- ATLAS: In seminar room 52 (ground floor) of university building 69 (Institute for Laser Physics).
  - Problem or challenge: Not in DESY domain – we have to arrange ourselves with different network connections. Information there and then.
- Computer set-up session today at 17:00 – please take seriously!
  - Hope to sort out all remaining issues to make you able for productive work tomorrow.
- We did not manage to equip all of you with Grid / NAF certificates in time. Therefore in some cases pairs of participants have to work together in front of one computer.
  - Please be so kind to offer your assistance to your fellow participants.
  - Somebody with certificate but no laptop?

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AGENDA

	Monday 27 September 2010		Tuesday 28 September 2010		Wednesday 29 September 2010		Thursday 30 September 2010		Friday 01 October 2010	
AM			09:00	**Leptons**- Johannes Haller (*Uni Hamburg*) (until 13:00)	09:00	**Jets**- Peter Schleper (*Uni Hamburg*) (until 13:00)	09:00	**Leptons and Jets**- Ottmar Biebel (*LMU Muenchen*) (until 13:00)	09:30	**Outlook** (until 13:00)
			09:00	Reconstruction, Identification, Isolation - Ingo Bloch (*FNAL*) Outline	09:00	Reconstruction and Particle Flow - Philipp Schieferdecker (*KIT*)	09:00	Lepton+jets events: trigger, selection, reconstruction - Roger Wolf (*Hamburg*)	09:30	Machine Status and Prospects - Helmut Burkhardt (*CERN*)
			09:45	Trigger, Efficiency, Purity - Martin Wessels (*U Heidelberg*) Outline	10:00	--- coffee break ---	09:45	Measurement of W,Z cross sections: techniques, uncertainties, results - Roger Wolf (*CMS Univ. Hamburg*)	10:15	Theory - Peter Uwer (*Humboldt-Universität zu Berlin*)
			10:30	--- coffee break ---	10:30	Hadron und Jet Calibration - Konstantinos Kousouris (*FNAL*)	10:30	--- coffee break ---	11:00	--- coffee break ---
			11:00	Calibration, Resolution - Rainer Mankel (*DESY*) Outline	11:30	Physics Cases - Thomas Nunnemann (*LMU*)	11:00	Estimating background to top physics from data (QCD, W+jets, Z+jets) - Markus Cristinziani (*Uni Bonn*)	11:30	Discussion, Conclusions
			11:45	Physics Cases - Karsten Koeneke (*CERN*)	12:30	Discussion	11:45	Measurement of top cross sections (selection, techniques, uncertainties, results) - Markus Cristinziani (*Uni Bonn*)	12:15	Evaluation and Adjourn
			12:30	Discussion			12:30	Discussion		
PM	13:00	**Registration** (until 14:00)	13:00	--- lunch break ---	13:00	--- lunch break ---	13:00	--- lunch break ---		
	14:00	**Introductions** (until 16:45)	14:30	**Tutorial (Leptons)** (until 17:30)	14:30	**Tutorial (Jets)** (until 17:30)	14:30	**Tutorial (Leptons + Jets)** (until 17:30)		
	14:00	Physics Landscape - Beate Heinemann (*LBL*)	19:30	**Evening Lecture** (until 21:00)			19:00	**Dinner** (until 21:00)		
	14:45	--- coffee break ---	19:30	Competition for large scale research facilities - H.-F. Wagner						
	15:15	LHC Detector Status - Wolfram Zeuner (*CERN*)								
	16:00	LHC Results so far - Thomas Muller (*KIT*)								
	17:00	**Computer Setup** (until 18:00)								
	19:00	**Reception** (until 20:00)								

ORGANISATIONAL DETAILS

- In each session, one member of the organising team will be around.
  - Don’t hesitate to ask in case of questions or problems.
- In urgent cases ;-): 3100 or 3429.
- There will be one coffee break in the morning and in the afternoon.
- At the end of the school (Friday) we will ask for your feedback and opinion on the organisation and the contents of the school.
  - Please help us to improve!
- WLAN is provided in all relevant rooms:
  - SR 2 and all DESY:
  - University building: special personalised accounts will be handed out. (Detail: automatic logout after 2 hours.)

WLAN Access

German LHC Physics School 2010

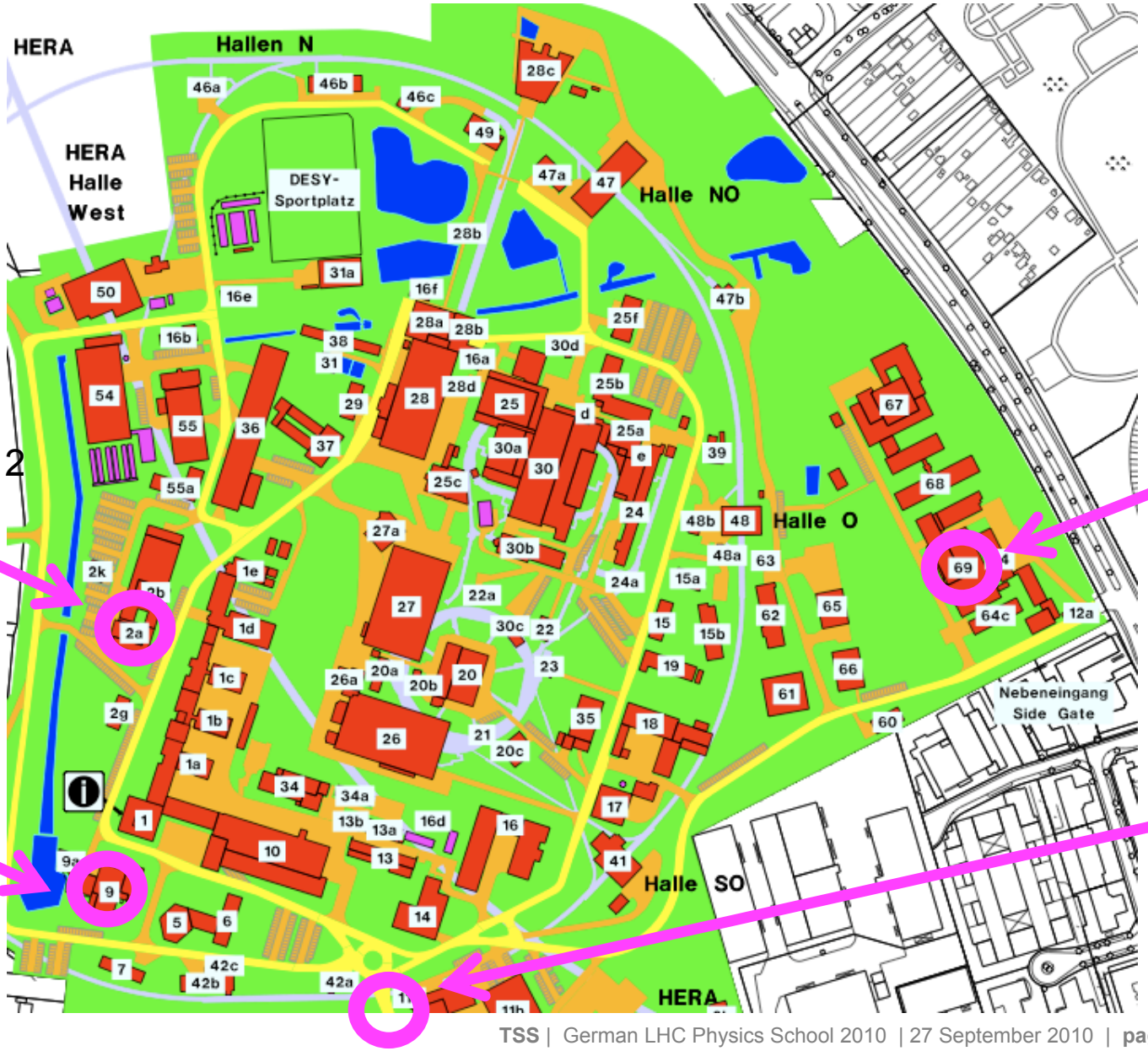
27 September – 1 October 2010

WLAN name:	**Physics 2010**
Access key:	**AWa!V6h?4k**

(Different for ATLAS participants in building 69 → see there)

DESY

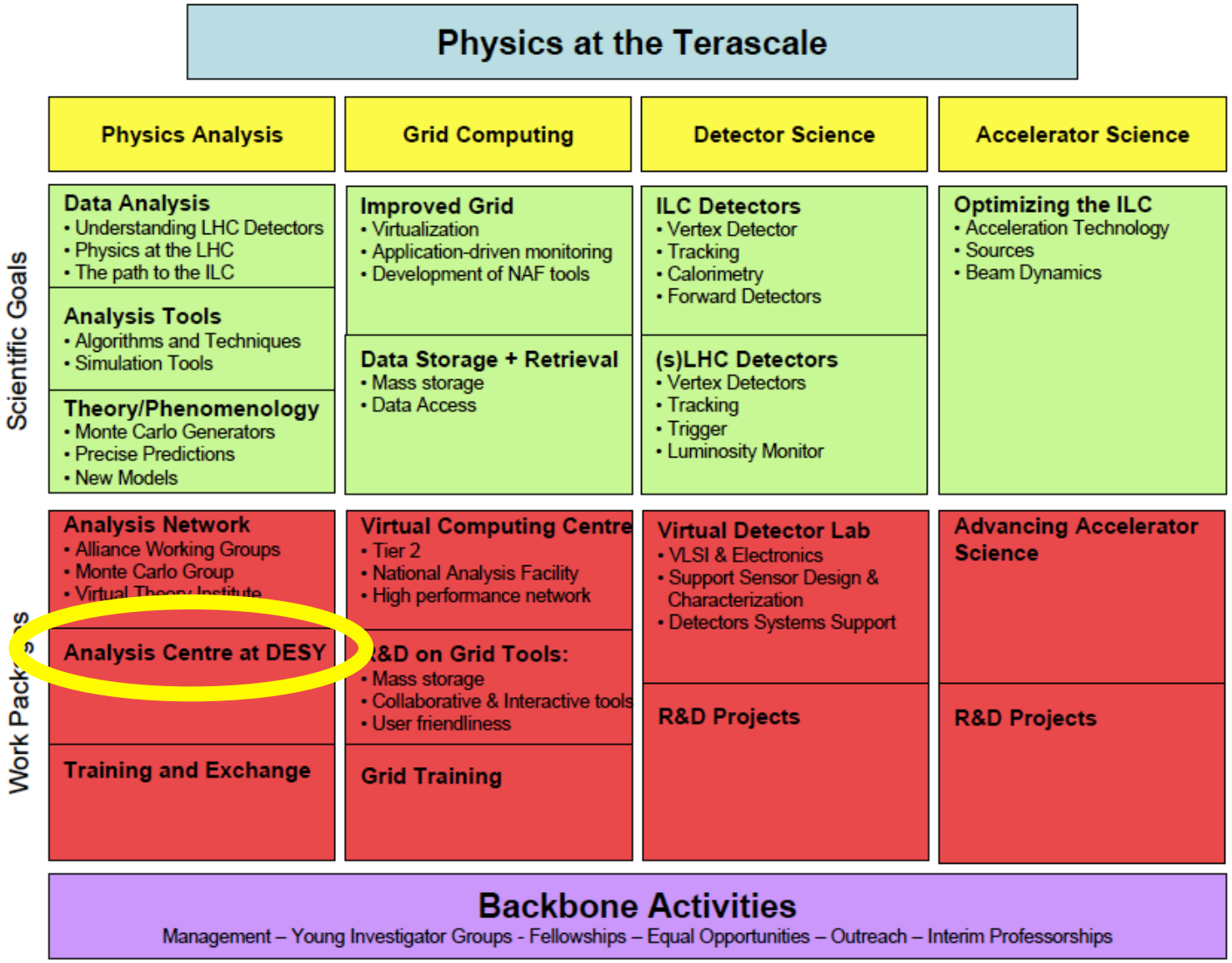
MAP OF DESY


HERA
Hallen N
HERA
Halle
West
DESY-
Sportplatz
Halle NO
Halle O
Halle SO
HERA
Nebeneingang
Side Gate
Seminar room 2
Canteen
B69: ATLAS
tutorial
To main
entrance

THANKS TO …

- All our lecturers!
- All people contributing to the tutorials.
- The organising team.
- The NAF support.
- Michaela Grimm for her invaluable help in the organisation before and during the school.
- The Helmholtz Alliance for funding.
- You – for attending and making this event a success ;-)

ALLIANCE “PHYSICS AT THE TERASCALE”



MISSION OF THE ANALYSIS CENTRE

The mission of the Analysis Centre is to enhance the physics potential of the German LHC / ILC community by providing analysis infrastructure and by supporting analysis-related issues of general relevance.

- ***Education and training*** (schools, workshops, documentation, …).
- **Basic research, tools development** and user support in central fields.
  - Software, algorithms, methods, papers, talks, …
- LHC / ILC ***analysis support*** (to be developed).
- ***Networking***.
- Fields of general relevance ➔ three ***dedicated working groups***:
  - Monte Carlo generators (MC), + SUSY / BSM parameter fitting
  - Parton Distribution Functions (PDFs), and
  - Statistics Tools.
  - Needed by everybody at LHC, building on large HERA/DESY expertise, experiment independent!

DESY

EDUCATION AND TRAINING

NOW …

… have a nice and productive week with many interesting lectures and discussions.