

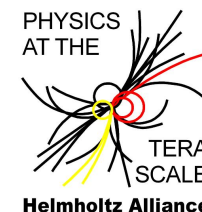
It's Measurement Time!

Statistics School 2014

Thomas Schörner-Sadenius
DESY-FH



DESY, 31 March 2014



WELCOME ...

Helmholtz Alliance
PHYSICS AT THE TERASCALE

PHYSICS AT THE TERASCALE
Helmholtz Alliance

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

It's Measurement Time
Terascale Statistics School 2014

31 March-4 April 2014
DESY, Hamburg

The 2014 statistics school covers the following topics in lectures and practical exercise:

- Basics of statistics and probability
- Parameter estimation
- Unfolding
- Multi-variate analysis

Organisation: Olaf Behnke, Daniel Britzger, Sergei Gleyzer, Vladyslav Libov, Christoph Rosemann, Stefan Schmitt, Thomas Schörner-Sadenius
The school fee is 40 Euro. Registration deadline is 21 March 2014.
Support for travel and accommodation can be granted on request. For more details and to register see:

www.terascale.de/statistics2014

- > ... to the 13th statistics school / workshop organised in the framework of the Terascale Alliance!
 - Typically one introductory-level school and one more advanced event.
- > ... to five days of lectures, tutorials, and discussions.
- > ... to Hamburg
 - We have a dense programme, but I hope that you find some time to toddle around and enjoy the city!



DESY - Deutsches Elektronen-Synchrotron

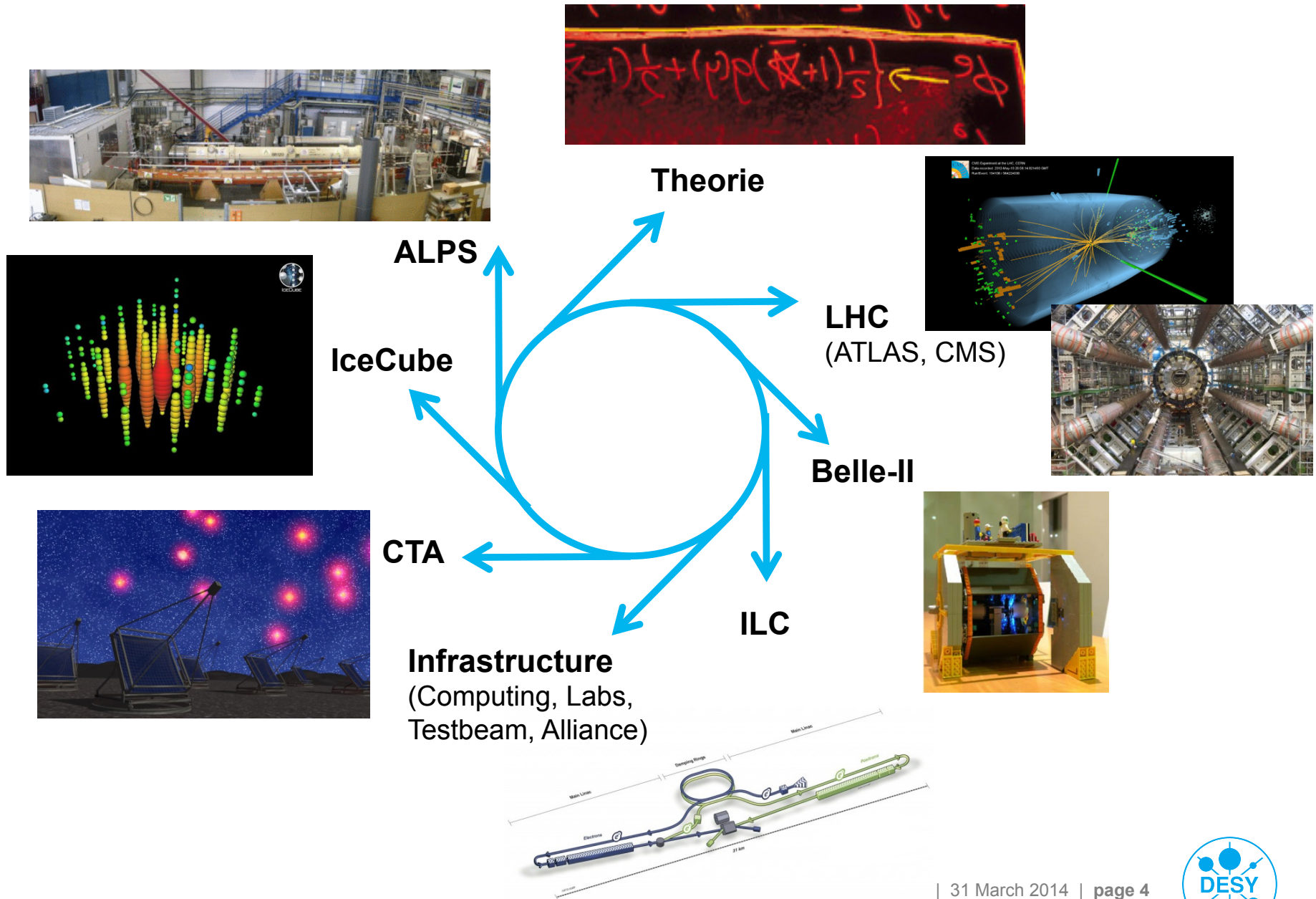
- Founded 18 December 1959
- Research centre of Helmholtz Association, Germany's largest organisation for basic research with large-scale infrastructures.



- Located in Hamburg and Zeuthen (Berlin)
- Annual budget: 192 MEUR (90% federal money, 10% state money)
- 2000 staff (650 scientists), 100 apprenticeships, 700 students and young postdocs.
- 3000 guest scientists from 40 countries.
- Particle physics, photon science, accelerator development and operation.



Particle Physics at DESY



THE HELMHOLTZ ASSOCIATION + ALLIANCE



Helmholtz: Largest German research organisation with 3.8 billion budget and 36,000 people. One research area: “Structure of Matter”.

Particle physics: DESY + KIT

Helmholtz Alliance (since 2007): Use complementarity of Helmholtz and universities.

DESY + IT + MPI + 17 universities;
1000 physicists.

Concentrate on physics analysis, Grid computing, detector development (and accelerator research).

Important aspect: education and training.

EDUCATION AND WORKSHOPS

Helmholtz Alliance
PHYSICS AT THE TERASCALE

Deutsches Elektronen-Synchrotron DESY · · · · · Karlsruher Institut für Technologie – Großforschungsbereich · · · · · Max-Planck-Institut für Physik · · · · · Österreich-Österreichische Technische Hochschule Austria · · · · · Humboldt-Universität zu Berlin · · · · · Rheinisch-Westfälische Technische Universität Aachen · · · · · Technische Universität Chemnitz · · · · · Albert-Ludwigs-Universität Freiburg · · · · · Johannes Gutenberg-Universität Mainz · · · · · Georg-August-Universität Göttingen · · · · · Universität Hamburg · · · · · Ruprecht-Karls-Universität Heidelberg · · · · · Karlsruher Institut für Technologie – Universität Wuppertal · · · · · Johannes Gutenberg-Universität Mainz · · · · · Ludwig-Maximilians-Universität München · · · · · Universität Regensburg · · · · · Universität Tübingen · · · · · Universität Wien · · · · · Julius-Maximilians-Universität Würzburg · · · · · Georg-August-Universität Göttingen · · · · ·

Analysis Centre Schools and Workshops 2011

Introductory School to the Terascale
21-25 February 2011
DESY, Hamburg
terascale.de/intro2011

Monte Carlo School 2011
14-17 March 2011
DESY, Hamburg
terascale.de/mc2011

Computer Algebra & Particle Physics 2011
20-25 March 2011
DESY, Zeuthen
terascale.de/capp2011

School on Statistics 2011
4-7 April 2011
Johannes Gutenberg-Universität, Mainz
terascale.de/statistics2011

Geant4 Training
10-13 May 2011
DESY, Zeuthen
terascale.de/geant2011

Standard Model Benchmark Processes at the LHC
15-17 June 2011, DESY, Zeuthen
terascale.de/smcandl2011

Single-Top Workshop
5-6 September 2011
DESY, Hamburg
terascale.de/singletop2011

http://www.terascale.de/schools_and_workshops

www.terascale.de/schools_and_workshops



TIMETABLE

Statistics School 2014 "It's Measurement Time!"

from Monday 31 March 2014 (08:00) to Friday 04 April 2014 (18:00)

: Sessions / : Talks : Breaks

	Monday 31 March 2014		Tuesday 01 April 2014		Wednesday 02 April 2014		Thursday 03 April 2014		Friday 04 April 2014	
AM			09:15	Unfolding I - Stefan Schmitt (DESY) Daniel Britzger (DESY)	09:15	Unfolding III - Stefan Schmitt (DESY) Daniel Britzger (DESY)	09:15	Multivariate Analysis Techniques Theory I Fundamentals - Sergei Gleyzer (DESY) Harrison Prosper (Florida State University)	09:15	Uncertainties from theory - Markus Diehl (DESY)
			10:45	--- Coffee Break ---	10:45	--- Coffee Break ---			10:45	--- Coffee Break ---
			11:15	Unfolding II - Stefan Schmitt (DESY) Daniel Britzger (DESY)	11:15	Highlight talk	10:45	--- Coffee Break ---	11:15	The Big Picture: Statistics and the Future of Particle Physics (tentative) - Harrison Prosper (Florida State University)
			12:45	--- Lunch ---	12:15	--- Lunch ---	11:15	Multivariate Analysis Techniques Practice I: Likelihood-based Tutorial - Sergei Gleyzer (DESY) Harrison Prosper (Florida State University)	12:45	Closing words
							12:45	--- Lunch ---		
PM	13:00	Registration	14:00	Parameter estimation I - Olaf Behnke (DESY) Vladyslav Libov (Ukraine)	14:00	Parameter estimation III - Olaf Behnke (DESY) Vladyslav Libov (Ukraine)	14:00	Multivariate Analysis Techniques Theory II Advanced Methods - Sergei Gleyzer (DESY) Harrison Prosper (Florida State University)	13:00	--- Lunch ---
	14:00	Welcome							14:15	DESY guided tour
	14:15	Basics I - Allen Caldwell (Max Planck Institute)	15:30	--- Coffee Break ---	15:30	--- Coffee Break ---				
	15:45	--- Coffee Break ---	16:00	Parameter estimation II - Olaf Behnke (DESY) Vladyslav Libov (Ukraine)	16:00	Parameter estimation IV - Olaf Behnke (DESY) Vladyslav Libov (Ukraine)	14:45	Multivariate Analysis Techniques Practice II Classification Tutorial - Sergei Gleyzer (DESY) Christoph Rosemann (DESY Hamburg)		
	16:15	Basics II - Allen Caldwell (Max Planck Institute)			19:00	Dinner(Canteen)	15:30	--- Coffee Break ---		
	18:15	Welcome Reception(SR4)					16:00	Multivariate Analysis Techniques Practice III: Function Estimation Tutorial - Sergei Gleyzer (DESY) Christoph Rosemann (DESY Hamburg)		



ORGANISATIONAL ISSUES

- > Late registration: every day with Mrs Clayton in building 1, 1c/O2-337.
- > Tutorials:
 - Made using your laptops or the provided DELL desktops on the National Analysis Facility (NAF2.0) – accounts already with you.
- > Social events:
 - Small (!) reception tonight with drinks and some fingerfood (in this SR).
 - Workshop dinner on Wednesday in the DESY bistro.
- > Requests from the organisers
 - No laptop work etc. during lectures
 - Questions immediately – and feedback is very welcome.
- > WLAN – information has been handed out.



COMPUTER ACCESS

- > Account: schoolXY (XY=21-70)
- > Password: NAFws2014
- > Login: ssh schoolXY@naf-school0Z Z=1,2,3,4
Load-balancing is applied.



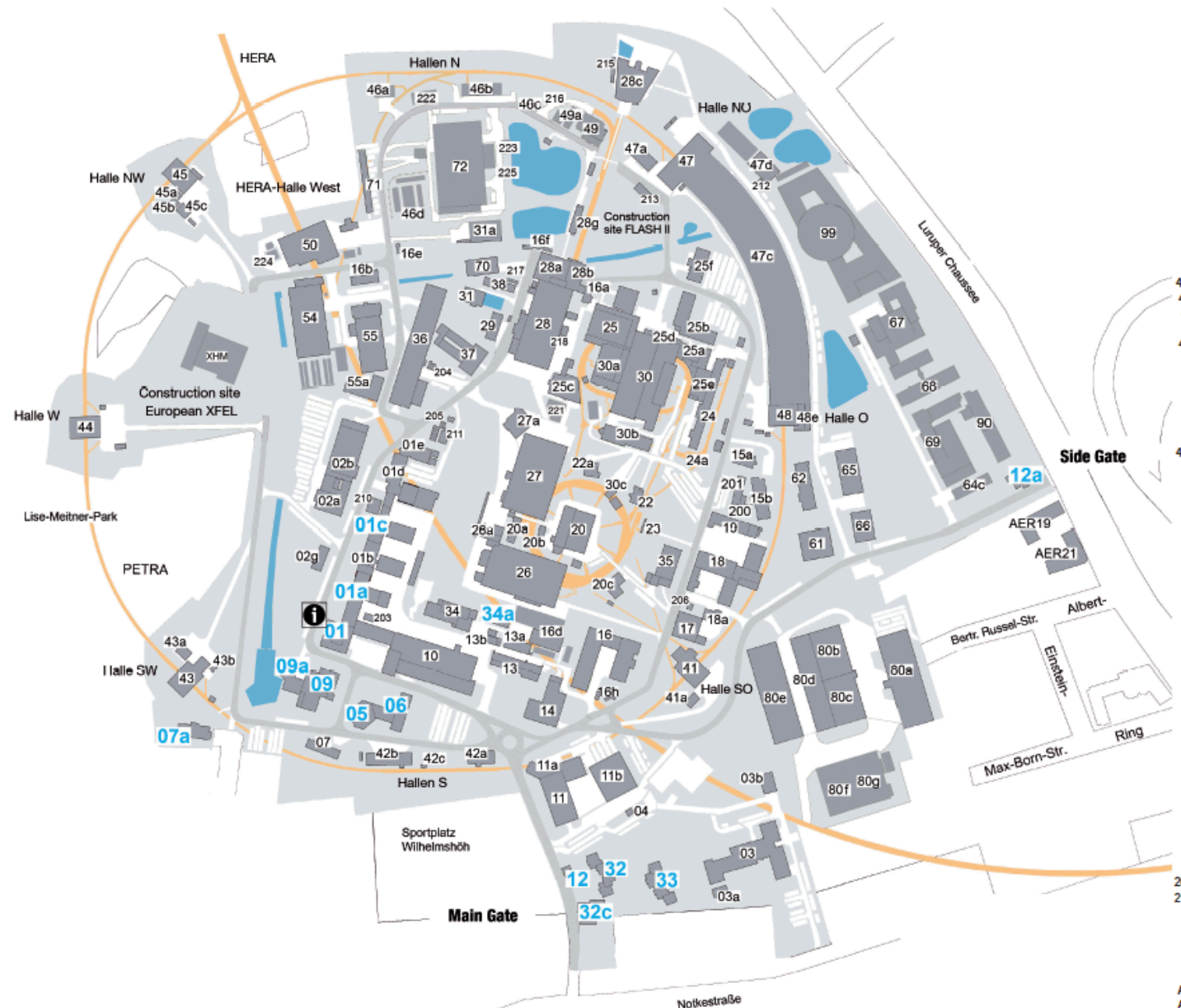
DESY – OVERVIEW



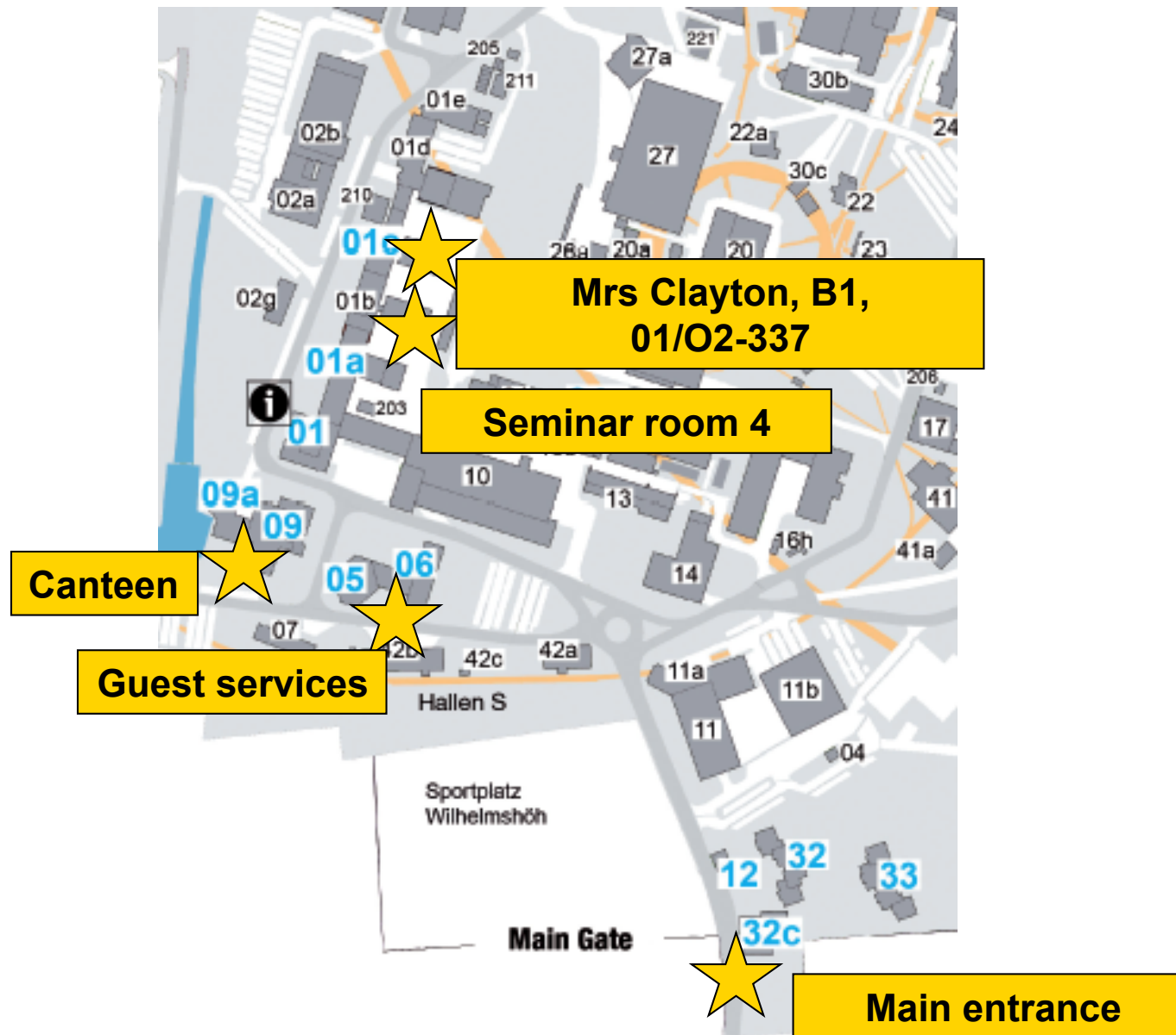
DESY – OVERVIEW



DESY – OVERVIEW



DESY – OVERVIEW



WHERE TO GO?

- > Sternschanze S-Bahn (local train) station and surroundings
 - > St. Georg (north of main station)
 - > Altona - Ottensen (west of the Altona station)
 - > Portuguese quarter (Landungsbrücken)
 - > University quarter (Dammtor, Grindel, ...)
 - > Eimsbüttel
 - > ...
- ➔ ask your local colleagues!



THANKS TO ...

- > ... to your home institutes
 - ... for contributing to the budget and sending you here!
- > ... to DESY
 - ... for hosting us!
- > ... to the Helmholtz Alliance
 - ... for the money and the framework!
- > ... to all lecturers and tutors
 - ... for their immense work!
- > ... and finally to all people behind the scenery which are necessary to put things in place:
 - Secretaries (Mrs. Clayton, Mrs Price), technicians, DESY IT, ...

