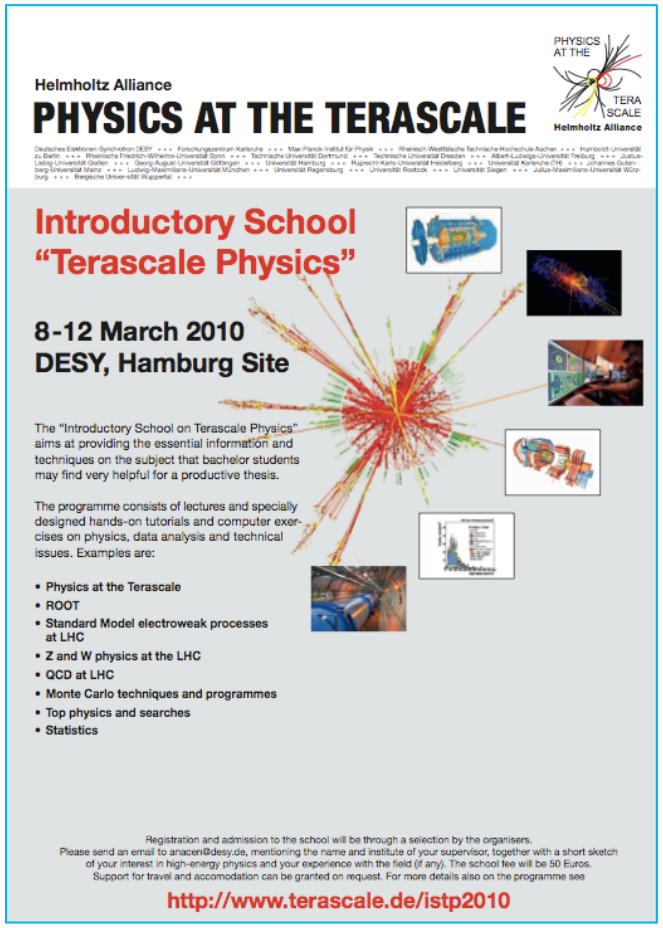
Introductory School to Terascale Physics



Thomas Schörner-Sadenius

Introductory School to Terascale Physics
DESY Hamburg, 8-12 March 2010

HELMHOLTZ GEMEINSCHAFT

DESY

WELCOME …

- … to the first “Introductory School to Terascale Physics”!
- We are extremely happy to welcome 50 young physicists here at DESY for 5 days of lectures, tutorials, social interaction etc.
  - Some flavour of high-energy physics working atmosphere.
  - Beginning of important networking among (future) colleagues.
  - Teaching of aspects vital for successful bachelor / diploma thesis.
- We have been working for this event for quite some time …
  - … and encountered a lot of scepticism and
  - … will have to improvise a lot and
  - … don’t really know ourselves yet what will be our picture at the end of this week.
- Difficult to find the right level of difficulty …
  - … but we think that there is something in it for everybody.
- Your feedback is essential for us …
  - … you will have plenty of opportunity to give!

PROGRAMME

	Monday 08 March 2010		Tuesday 09 March 2010		Wednesday 10 March 2010		Thursday 11 March 2010		Friday 12 March 2010	
AM	09:00	**Registration** (until 12:30)	08:30	**Electroweak physics I** (until 12:30)	08:30	**Ingredients for measurements, and electroweak physics (2)** (until 12:30)	08:30	**Top physics** (until 12:30)	08:30	**Student reports** (until 11:00)
	12:30	**Lunch** (until 14:00)	08:30	Lecture: Standard Model electroweak process at LHC / ILC (1) - Arno Straessner (*IKTP, TU Dresden*)	08:30	Lecture: Measuring cross sections at LHC (1) - Ian Brock (*University of Bonn*)	08:30	Lecture: Top physics and necessary tools - Arnulf Quadt (*II. Physikalisches Institut, Georg-August-Universität Göttingen*)	11:00	**Discussion, questions&answers, school closing** (until 12:30)
			09:10	--- Short break ---	09:10	--- Short break ---	09:10	--- Short break ---	12:30	--- Lunch ---
			09:20	Lecture: Standard Model electroweak process at LHC / ILC (2) - Arno Straessner (*IKTP, TU Dresden*)	09:20	Lecture: Measuring cross sections at LHC (2) - Ian Brock (*University of Bonn*)	09:20	Lecture: Top physics and necessary tools (2) - Arnulf Quadt (*II. Physikalisches Institut, Georg-August-Universität Göttingen*)		
			10:00	--- Coffee break ---	09:55	--- Coffee break ---	09:55	--- Coffee break ---		
			10:20	Tutorial: Z-->ll physics (1) - Arno Straessner (*IKTP, TU Dresden*) Eckhard von Toerne (*University of Bonn*)	10:20	Tutorial: W physics (1) - Arno Straessner (*IKTP, TU Dresden*) Eckhard von Toerne (*University of Bonn*)	10:20	Tutorial: Top physics - Wolfgang Wagner (*Bergische Universität Wuppertal*)		
			11:20	--- Short break ---	11:20	--- Short break ---	11:20	--- Short break ---		
			11:30	Tutorial: Z-->ll physics (2) - Arno Straessner (*IKTP, TU Dresden*) Eckhard von Toerne (*University of Bonn*)	11:30	Tutorial: W physics (2) - Arno Straessner (*IKTP, TU Dresden*) Eckhard von Toerne (*University of Bonn*)	11:30	Tutorial: Top physics (2) - Wolfgang Wagner (*Bergische Universität Wuppertal*)		
			12:30	**Lunch** (until 14:00)	12:30	--- break ---	12:30	--- Lunch ---		
PM	14:00	**(Important) Preliminaries** (until 18:30)	14:00	**QCD** (until 18:30)	14:00	**Monte Carlo** (until 18:30)	14:00	**Higgs, searches, and statistics** (until 18:30)		
	14:00	Welcome and organisational issues - Thomas Schoerner-Sadenius (*DESY*)	14:00	Lecture: QCD at LHC (1) - Thomas Schoerner-Sadenius (*DESY*)	14:00	Lecture: Monte Carlo simulation and calculations for high-energy physics (1) - Zoltan Nagy (*DESY*)	14:00	Lecture: Higgs and other searches (1) - Ivor Fleck (*Siegen*)		
	14:20	Introductory lecture: Physics at the Terascale (1) - Daniel Wicke (*U Mainz*)	14:40	--- Short break ---	14:40	--- Short break ---	14:40	--- Short break ---		
	15:00	--- Short break ---	14:50	Lecture: QCD at LHC (2) - Thomas Schoerner-Sadenius (*DESY*)	14:50	Lecture: Monte Carlo simulation and calculations for high-energy physics (2) - Zoltan Nagy (*DESY*)	14:50	Lecture: Higgs and other searches (2) - Ivor Fleck (*siegen*)		
	15:10	Introductory lecture: Physics at the Terascale (2) - Daniel Wicke (*U Mainz*)	15:25	--- Coffee break ---	15:25	--- Coffee break ---	15:25	--- Coffee break ---		
	15:50	--- Coffee break ---	15:45	Tutorial: Jets at LHC (1) - Frederik Ruehr (*Heidelberg*)	15:45	Tutorial: Monte Carlo (1) - Stefan Gieseke (*Universitaet Karlsruhe*)	15:45	Tutorial: Searches and statistics (1) - Ivor Fleck (*Siegen*)		
	16:10	Tutorial: ROOT (1) - Kevin Kroeninger (*University of Goettingen*)	17:05	--- Short break ---	17:05	--- Short break ---	17:05	--- Short break ---		
	17:10	--- Short break ---	17:10	Tutorial: Jets at LHC (2) - Frederik Ruehr (*University of Heidelberg*)	17:10	Tutorial: Monte Carlo (2) - Stefan Gieseke (*Universitaet Karlsruhe*)	17:10	Tutorial: Searches and statistics (2) - Ivor Fleck (*Siegen*)		
	17:20	Tutorial: ROOT (2) - Kevin Kroeninger (*University of Goettingen*)								

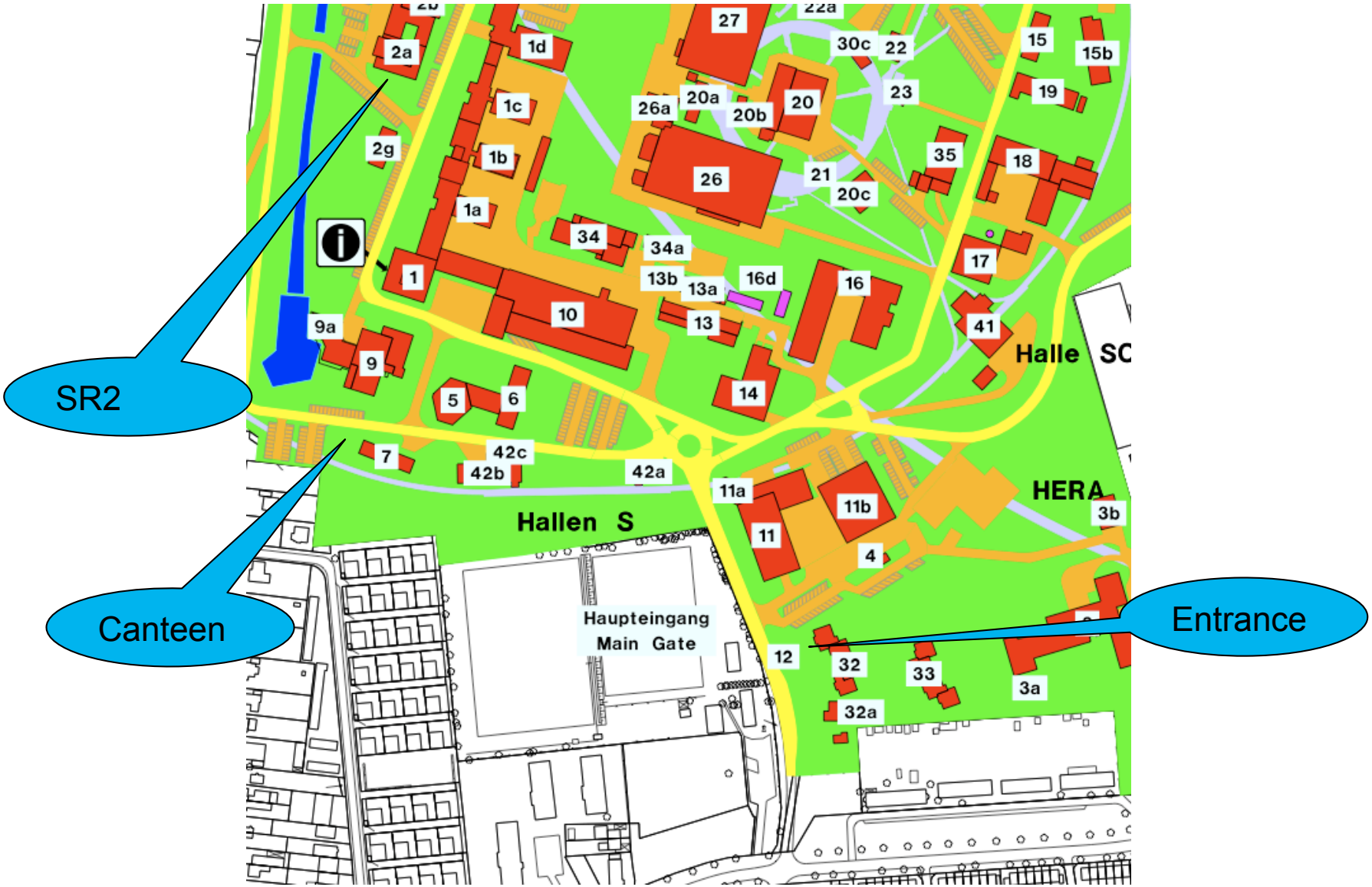
Reception!

Dinner!

ORGANISATIONAL ISSUES

- If you have not yet registered: Please contact me or Mrs. Grimm.
- This seminar room is our home for the week.
  - Also booked SR 5 for student work, as quiet room etc.
- We ask you to keep screens of desktop machines and laptops off during lectures.
- We provided a WLAN for all; information on that has been handed out.
- Tutorials on the desktop machines; accounts have been handed out.
  - Please note that the work is performed in pairs – two students share one PC.
  - We don't have many supervisors – have to see how it works out.
- Reception and dinner are in the canteen appendix.
  - Reception: Monday 19:30, Dinner: Wednesday 19:30
  - Lunches and breakfast can be taken in the canteen as well.
  - Evenings: I'd suggest going downtown. Ask your Hamburg fellow students for ideas (and drag them along).

ORGANISATIONAL ISSUES



STUDENT PRESENTATIONS

- Each tutorial shall be especially observed, documented and reported on (in the Friday morning session) by a team of ~three students.
  - Several benefits: these three will pay special attentation, repetition of material for all colleagues, improving your presentation and documentation skills, etc.
  - We ask for volunteers, otherwise we will volunteer teams.
  - You can use any technology you like that you find installed somewhere: Linux, windows, Apple, … Tex, Powerpoint, Keynote, …
  - Idea: Summarise task, results, main messages for 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 (see last slide)
  - … 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, technicians, DESY IT, …

THE HELMHOLTZ ALLIANCE "PHYSICS AT THE TERASCALE"