

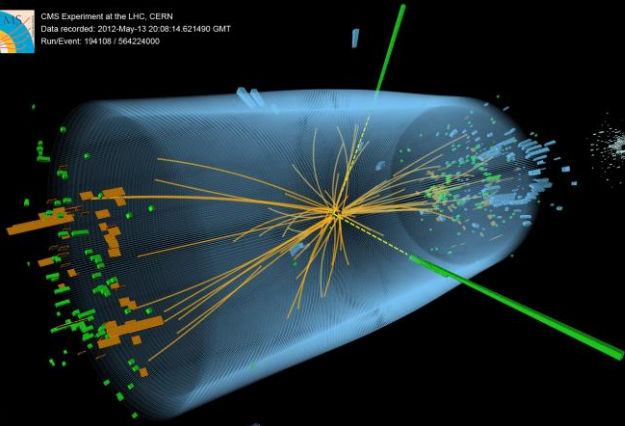
CERN SUMMER STUDENT SCHOOL 2013

3 July 2013

James Wells & Andreas Hoecker (CERN)

CERN is an exciting place

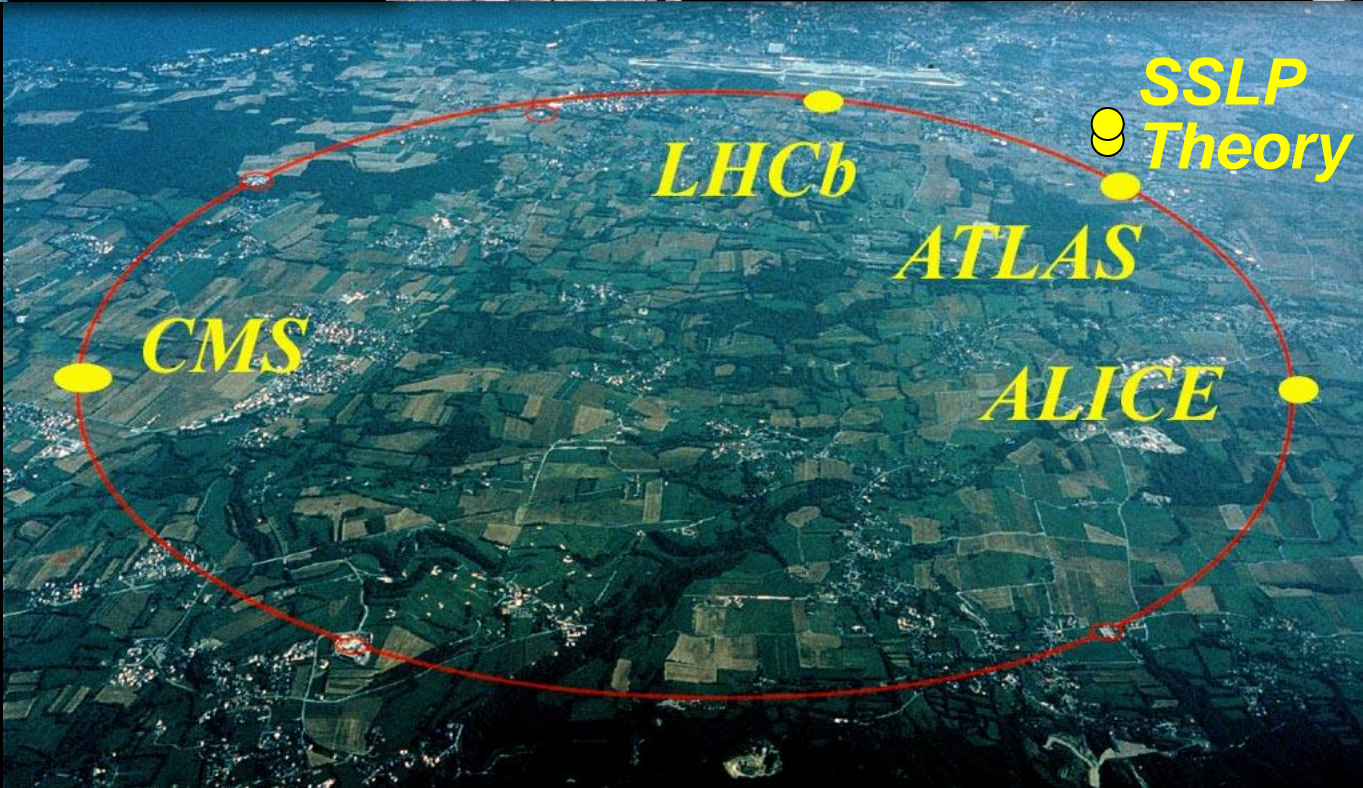
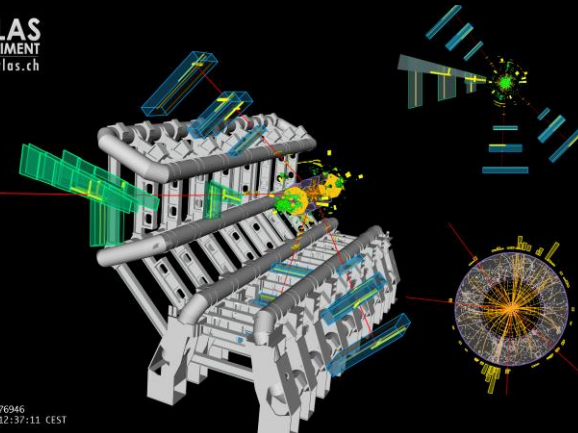
CMS Experiment at the LHC, CERN
Data recorded: 2012-May-13 20:08:14.621490 GMT
Run/Event: 194108 / 564224000



ATLAS
EXPERIMENT
<http://atlas.ch>

PRESS
COVERAGE
after July 4th seminars at CERN

Run: 189280
Event: 143576946
2011-09-14 12:37:11 CEST



Summer Programme Team

3

- Sharon Hobson (HR)
- Laura Saulnier (HR)
- Eva Tolosa (HR)
- James Purvis (HR)

- Roger Bailey (Accelerators)
- Markus Schulz (IT)
- Andreas Hoecker (Experiment, Chair)
- Luca Malgeri (Experiment)
- Peter Skands (Theory)
- Raymond Veness (Engineering)
- James Wells (Theory)

Opportunities of Working at CERN

4

- Opportunity to work at most advanced experimental facility
- Large community of leading experimentalists, theorists, accelerator physicists, computing experts, engineers, etc
- Exemplifies international cooperation
- **This is the environment where discoveries are made**

Some Major Discoveries at CERN

5

- Neutral Currents 1972
- W and Z bosons (SPS) 1983
- Number of light neutrino families (LEP) 1991
- Precision tests and constraints on Higgs (LEP) 1991–2000
- Evidence for quark gluon plasma (Heavy Ions)
- Creation of anti-hydrogen in the laboratory 2002
- Observation of a new boson – the Higgs boson? 2012

We expect more discoveries in the near future, perhaps some made by you!

CERN Summer Student School

6

Goals: Expose students to forefront research, aid in their development as scientists, teach them knowledge and skills for future work

These goals are achieved through a series of lectures on experimental and theoretical physics, and through individual work within a group at CERN

Your engagement is crucial! Get involved, ask questions, go to group meetings, discuss with fellow students, work hard,

Lectures

7

Lectures have been planned on the most important topics you need to learn to better your career now

Lecturers have been selected because they are one of the top individuals in their fields, and have experience presenting material pedagogically

Nevertheless, **it will not be easy! But that is good....**

There is a discussion period set aside at the end of each day's lectures for you to ask lecturers questions

The 2012 Lecture Programme

8

Lecture Programme can be found at:

<http://summer-timetable.web.cern.ch/summer-timetable/>

Many categories of research represented

- **Experimental Physics** (Accelerators, Detectors, Hadron collider physics, Flavour physics, Neutrino physics, Astrophysics, Antimatter, Nuclear physics, Heavy ions, etc.)
- **Theoretical Physics** (Quantum field theory, Standard Model, Beyond the Standard Model, Cosmology, Astroparticle physics, etc.)
- **Other** (Statistics and Data mining, Electronics, DAQ systems, Medical physics, ROOT, etc.)

2013 SSLP Activities

Lectures everyday from 9:15 -12:00, and discussion session from 12:00 -12:30.

Welcome Drink today at 17:00 at Restaurant 1

“Introduction to CERN” lecture by **DG Rolf Heuer** on Fri, July 5 at 15:00

We will host **several workshops** – see next presentation by Rainer Schwemmer

Student Presentations on Aug 13,14,15 at 9:15

And Finally ...

10

For administrative and scheduling questions, please contact Sharon or Sarah

Feel free to contact the committee chair with questions or comments you might have: andreas.hoecker@cern.ch

Opportunity to give helpful feedback with the student questionnaire → please take the opportunity!

Enjoy CERN, Geneva, your research group, and the lecture series!