

C++ and ROOT

Welcome and information

PHYSICS AT THE
TERASCALE
Helmholtz Alliance

C++ - from Basics to Not-so-Basics
and advanced ROOT analysis techniques
11 - 15 November 2013
DESY, Hamburg

The main goal of the school is to help participants learn the techniques of object oriented programming in C++. The school addresses all physicists from the student to the senior level who feel that they would profit from lectures and hands-on exercises on the following topics:

- going from C to C++, function overloading, default parameters, operators
- class basics, namespaces, constructors, destructors
- C++ style input/output operations
- dynamic memory management, pointers
- using Standard Template Library (STL basics) and external libraries (Boost)
- STL data structures, generic algorithms and iterators
- advanced classes: function classes, inheritance, abstract base classes
- handling multiple source files, using make, GIT

The final day of the school is devoted to selected advanced issues of HEP analyses in the ROOT framework. Participants are expected to have a basic knowledge of C or C++ (what is a class? what is a namespace?). The focus is on programming - the physics examples used are very simple.

Registration please see:
www.terascale.de/...??....school2013

Thomas Schörner-Sadenius
DESY-FH



DESY, 11 November 2013

WELCOME ...

- > to Hamburg.
- > to DESY
- > to this first basic C++ (and ROOT) school.
 - Lectures and tutorials to acquaint you with important concepts and techniques
- > The Alliance Centre tries to put such events into existence.
 - Schools on basic concepts in the fields of MC, PDFs, statistics and others.
 - Expert workshops on various topics.
 - Seminars on relevant topics.
 - ...



„ALLIANCE CENTRE“ TASKS

1. “Education”:
Schools, workshops, training events, seminars, ...
2. Significant contributions to the LHC programme:
Various working groups, people in the AC
3. Member support (MC, statistics, PDFs, etc.)
via working groups
4. Networking; definition and exploitation of synergies

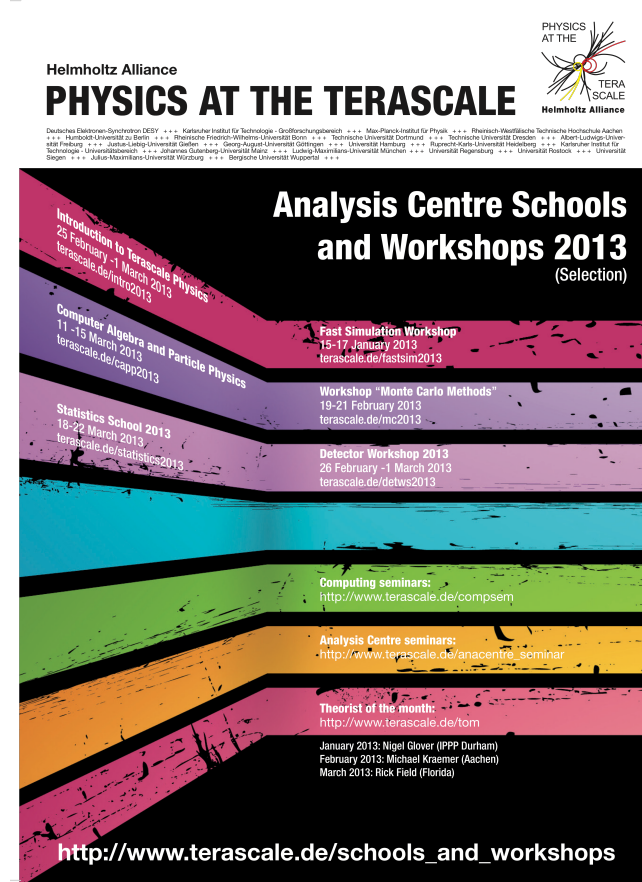
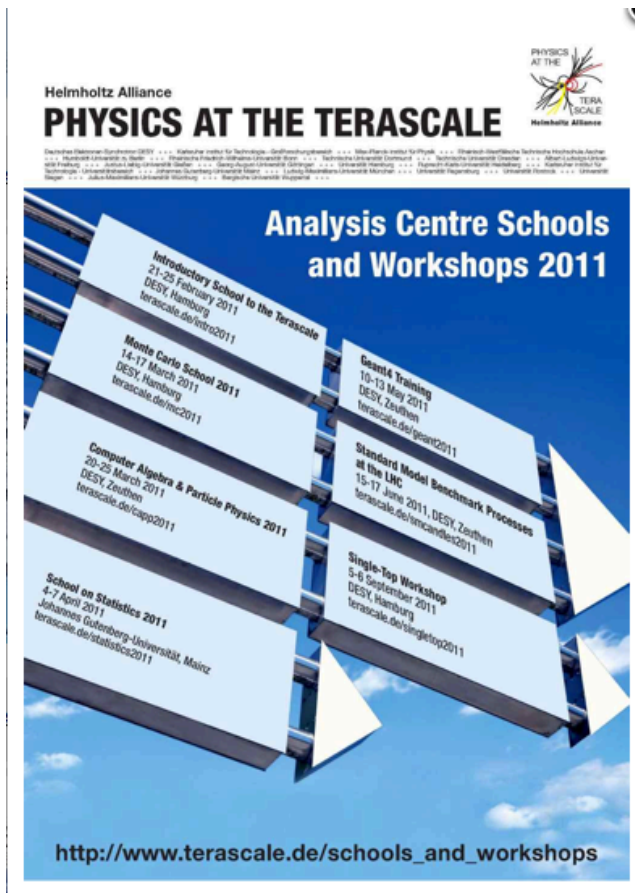


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**If you think that workshops like this one are useful – tell us.
If you have other ideas – let us know: anacen@desy.de**

EDUCATION AND WORKSHOPS



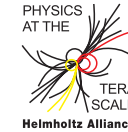
www.terascale.de/schools_and_workshops



C++ IN THE ALLIANCE SO FAR ...

Helmholtz Alliance

PHYSICS AT THE TERASCALE



Deutsches Elektronen-Synchrotron DESY +++ Karlsruher Institut für Technologie - Großforschungsbereich +++ Max-Planck-Institut für Physik München +++ Rheinisch-Westfälische Technische Hochschule Aachen +++ Humboldt-Universität zu Berlin +++ Rheinische Friedrich-Wilhelms-Universität Bonn +++ Technische Universität Dortmund +++ Technische Universität Dresden +++ Albert-Ludwigs-Universität Freiburg +++ Julius-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 +++

Advanced Programming Concepts

8 - 12 October 2012

DESY, Hamburg

The 2012 school and workshop on „Advanced Programming Concepts“ continues the series started in Dresden in 2010, and it supplements the educational programming part of the GridKa school 2012 <<https://indico.desy.de/conference-Display.py?confId=5219>> .

The school will turn the participants into members of two developer teams working, in a highly coordinated way, on a programming project. In the course of the work, basic and advanced programming techniques (class design, design patterns, revision control, build systems etc.), but also project management skills (agile planning, software lifecycle, management styles etc.) will be taught.

The participants of the school are expected to have good knowledge of the C++ programming language and, preferably, also of Python.

Registration deadline: 21 September 2012
The school fee ist 50 Euro.
Please register via the school webpage.
Contact: anacen@desy.de

Organising Committee:
Benedikt Hegner (CERN), Stefan Kluth (MPI München), Thomas Schoerner-Sadenius (DESY),
Hartmut Stadie (U Hamburg), Peter Steinbach (TU Dresden)

<http://www.terascale.de/apc2012>



TIMETABLE

"C++ - from Basics to Not-so-Basics, and advanced ROOT analysis techniques"
from Monday 11 November 2013 (09:00) to Friday 15 November 2013 (16:00)

■ : Sessions ■ / ■ : Talks ■ : Breaks

	Monday 11 November 2013		Tuesday 12 November 2013		Wednesday 13 November 2013		Thursday 14 November 2013		Friday 15 November 2013	
AM	09:00	--- Registration ---	09:00	Lectures (until 10:30)	09:00	Lectures (until 10:30)	09:00	Lectures (until 10:30)	09:00	ROOT Lecture and Tutorial (until 10:30)
	10:00	Lectures (until 11:00)	10:30	--- Coffee break ---	10:30	--- Coffee break ---	10:30	--- Coffee break ---	10:30	--- Coffee break ---
	11:00	--- Coffee break ---	11:00	Lectures (until 12:30)	11:00	Lectures (until 12:30)	11:00	Lectures (until 12:30)	11:00	ROOT Lecture and Tutorial (until 12:30)
	11:20	Lectures (until 12:30)	12:30	--- Lunch break ---	12:30	--- Lunch break ---	12:30	--- Lunch break ---	12:30	--- Lunch break ---
	12:30	--- Lunch break ---								
PM	14:00	Tutorials (until 16:00)	14:00	Tutorials (until 16:00)	14:00	Tutorials (until 16:00)	14:00	Tutorials (until 16:00)	14:00	ROOT Lecture and Tutorial (until 16:00)
	16:00	--- Coffee break ---	16:00	--- Coffee break ---	16:00	--- Coffee break ---	16:00	--- Coffee break ---		
	16:30	Tutorials (until 18:00)	16:30	Tutorials (until 18:00)	16:30	Tutorials (until 18:00)	16:30	Tutorials (until 18:00)		
					18:30	--- School Dinner ---				



TUTORIALS, PRACTICAL PARTS

> All you need is

- A laptop
- Linux / Mac: gcc4.6 or higher (Mac: Xcode)

> For those who do not have a laptop

- You are expected to work in pairs – much more effective! So we only need about 25 laptops.

> Our helper team – will be around for questions:

- Zoltan Nagy
- Simon Plätzer
- Stefan Prestel
- Hayk Pirumov



WLAN



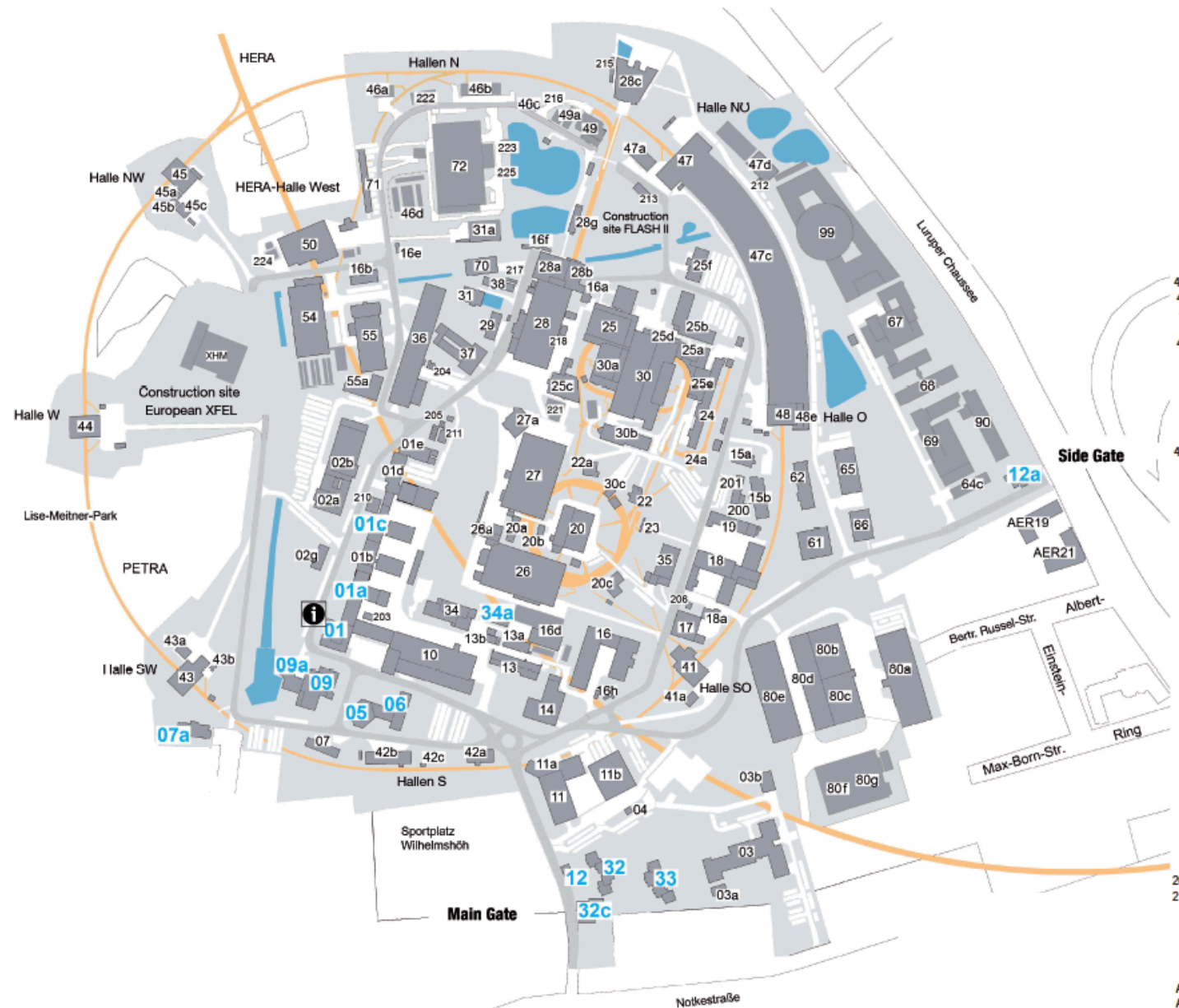
DESY – OVERVIEW



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DESY – OVERVIEW



Guest services

Lecture room

Main entrance

THANKS TO

- > Kornel for his immense work in the preparation and conduction of the lectures and tutorials.
- > Zoltan and Simon for preparing the afternoon project
- > Zoltan, Simon, Stefan and Hayk for their help with the practical sessions in the afternoons
- > Michaela for her administrative and organisational support
- > You for coming (ad your funding agencies for paying)
- > DESY for hosting us and the Alliance for paying ...

