

5TH HEP C++ COURSE AND HANDS-ON TRAINING

11 — 13 OCT 2022

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SIDIS
Software Institute for
Data-Intensive Sciences

WELCOME

- ▶ Fifth edition of a C++ course and training
- ▶ Co-organised by [HSF](#) and [SIDIS](#)
- ▶ Course content split into “Essentials” and “Advanced” (this course)
- ▶ We will record the morning lectures and post them on indico and CDS
- ▶ Organised by volunteers from within the HEP community for HEP

NEW

OVERALL ORGANISATION

- ▶ Feedback is more than welcome
 - ▶ Pre-training survey link sent to participants last week
 - ▶ We'll send you a link to a post-training survey on Friday, please fill it in
- ▶ Communication tools:
 - ▶ [This zoom room](#), used for lectures and training
 - ▶ [Mattermost channel](#), interact with organisers, ask questions ([register first](#))

MORNING LECTURES

- ▶ Every day, Tuesday - Thursday, 9.00 - 11:45 CST including a 15 minutes break
- ▶ The slides are available on the indico page
- ▶ Content is organised in smaller chapters (~ 15 minutes each)
- ▶ Please keep questions until the end of a chapter & use "raise hand zoom feature"

Tue	Wed	Thu
Recap from Essentials Course	Core Modern C++ 2 (lambdas, STL, ranges, ...)	Concurrency
Core Modern C++ 1 (constexpr, move semantics, ...)	Tools (formatting, profiling, ...)	Expert C++ (variadic templates, perfect forwarding, ...)

AFTERNOON TRAININGS

- ▶ Every day Tuesday - Thursday, 14.00 - 16.00 CEST
- ▶ A set of examples are provided at the end of the morning
- ▶ Organised in physical and zoom breakout rooms, 1 mentor / ~ 12 students
 - ▶ If you are remote, please connect again to **this zoom room** and you can join breakout rooms from here
- ▶ Style “a la university lab”, i.e. students work mostly on their own, ask mentors for help in case they have questions or get stuck

CERN ROOMS FOR AFTERNOON TRAININGS

- ▶ 3 rooms for afternoon hands-on sessions:

- ▶ 13/1-017 (15 places)

- ▶ 13/3-005 (10 places)

- ▶ 104/R-B09 (20 places)

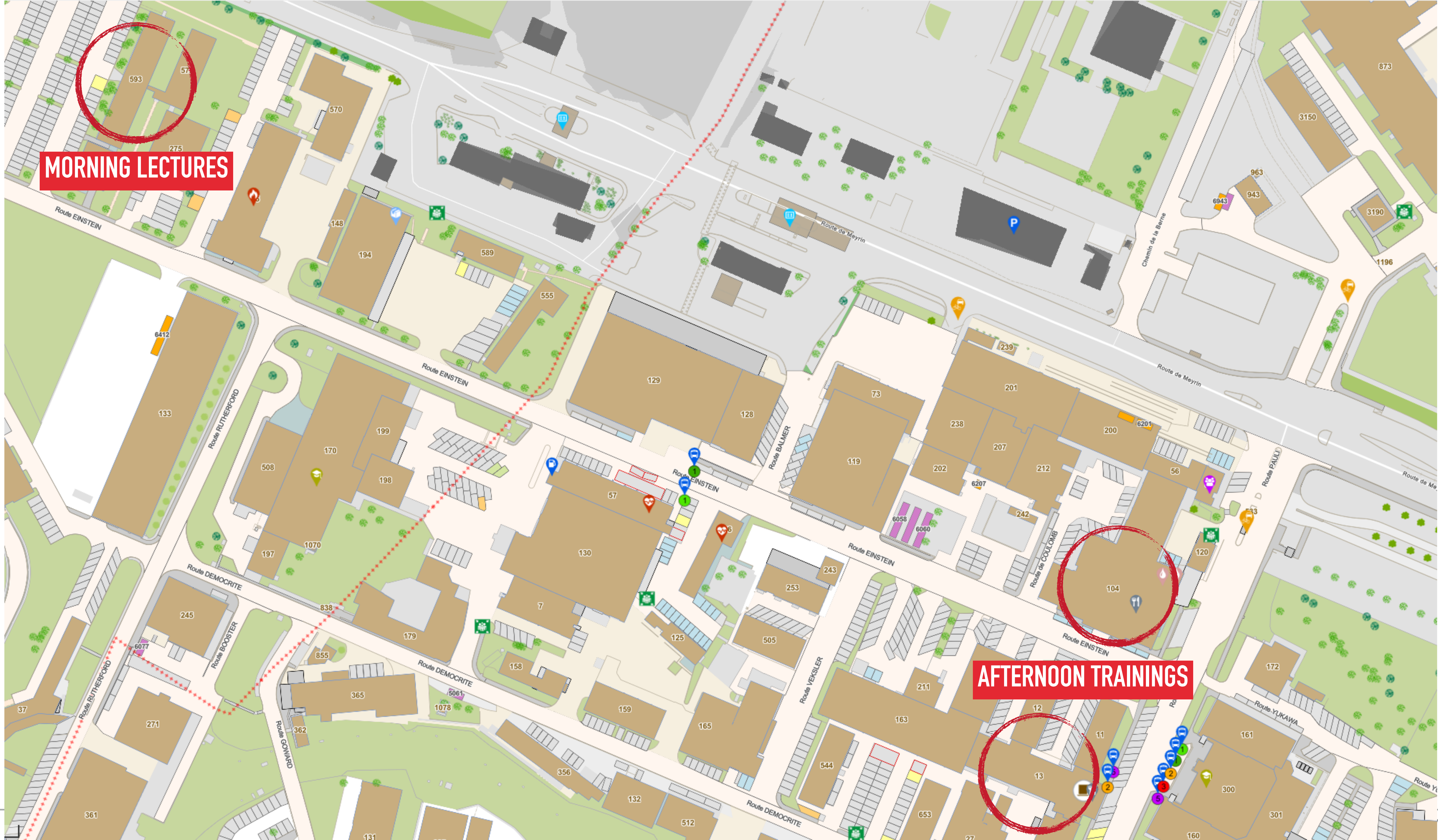


- ▶ If you are on premise, please subscribe to one of the rooms

- ▶ Wir circulate lists in a moment

MORNING LECTURES

AFTERNOON TRAININGS



ATTENDANCE CERTIFICATE

- ▶ If you prefer an attendance certificate
 - ▶ Please drop me a mail if you want to receive one
 - ▶ Please also make yourself “findable” in zoom (i.e. use a name that we can associate to your registration)



CERTIFICATE OF PARTICIPATION

Amy Farrah Fowler

has attended the first **HEP C++ Course and Hands-on Training** from **12 - 16 October 2020**

The course was organised into 12.5 hours of lectures and 8 hours of training sessions.

The lessons were taught by Dr. Sebastien Ponce (CERN) and the training sessions supported by mentors from within the high energy physics community.

The course content ranged from basic to advanced concepts of C++ software engineering and included up to the C++ '17 ISO standard.

The event was co-organised by the training working group of the **HEP Software Foundation*** and the **Software Institute for Data Intensive Sciences****

More information about the event can be found at <https://indico.cern.ch/e/cppfall20>



Dr. Graeme A Stewart
CERN / HSF



Dr. Sebastien Ponce
CERN / Course Lecturer



Dr. Stefan Roiser
CERN / SIDIS

* <https://hepssoftwarefoundation.org>
** <https://sidis.web.cern.ch>

AFTERNOON BREAKOUT TRAINING ROOM ORGANISATION

- ▶ Today Tuesday we start with setting up your environments and some first examples. Mentors today are:

Name	OS	Room
Sebastien Ponce	Linux	13/1-017
Attila Krasznahorkay	Linux, MacOS, Windows	zoom
David Chamont	Linux, Docker	zoom
Guilherme Amadio	Linux, MacOS, WSL	zoom
Stephan Hageboeck	Linux, MacOS	104/R-B09
Enrico Guiraud	Linux	zoom
Bernhard Gruber	Windows, Linux	13/3-005
Walter Lampl	Linux	zoom

Many thanks to all volunteering mentors:

**SEBASTIEN PONCE
ABHISHEK LEKSHMANAN
GUILHERME AMADIO
WALTER LAMPL
MICHAL SIMON
ENRICO GUIRAUD
DAVID CHARMONT
ATTILA KRASZNAHORKAY
STEPHAN HAGEBOECK
BERNHARD GRUBER**