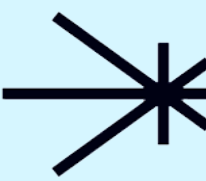




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2024



# The LHCb Starterkit

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Cofinanciado por  
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# What is the LHCb Starterkit?

- A week-long course aimed at new starters, addressing common software techniques used in LHCb.
- It's usually the gateway for people starting their PhDs
- Also a means of getting to know fellow collaboration members!
- Traditionally run by PhD students and Postdocs
- First started in 2015 with 40 people attending
- It's now highly regarded inside the collaboration
- Mattermost channels available for easy communication → also after the week
- 2024 Registration now open!

# LHCb Starterkit 2024 (II)

Nov 25 – 29, 2024  
CERN  
Europe/Zurich timezone



Overview

Timetable

Contribution List

My Conference

My Contributions

Registration

Videoconference

Contact

 [lhc-starterkit-organiser...](mailto:lhc-starterkit-organiser...)

The [Starterkit](#) is a five-day event in which you will learn the basics required to analyse LHCb data. It is a fully hands-on workshop and will take place in hybrid mode, both on [ZOOM](#) and at CERN. Demonstrators will be available during the lessons to offer individual help (whether in person or with breakout rooms on Zoom).

**Join the [Mattermost](#) channel to ask questions!**

The Starterkit will cover tools you'll use day to day during your PhD, including [Bash](#), [Git](#), [snakemake](#) and [Python](#), as well as LHCb specific software, tasks and questions. The source material is already partially available on the [first analysis steps site](#).

**\*\*There will be a 30€/CHF fee to be paid in cash on arrival (or in advance via the secretariat) and an optional 20€/CHF for the social event\*\***

**BEFORE THE WORKSHOP:**

**Attendees should make sure to follow [the course prerequisites](#) before attending the workshop.**

Until the workshop, new members to LHCb are invited to follow the content at the [analysis-essentials](#) and [first-analysis-steps](#) sites.



# The Organization

- The workshop is typically held at the end of November
  - Most new PhDs have joined the collaboration by then
- Preparations begin after the summer break:
  - Call for new organizing volunteers out at the beginning of Sept.
  - 2-3 Zoom meetings between organizers:
    - Schedule + Teaching assignments → Relevance of Run 3 content has been a consistent question lately
    - Other technicalities (coffee breaks, social event, etc.)

# The week of

- Since COVID, workshop held in hybrid mode
  - In-person attendance always ideal
- Five days of lessons
  - Include welcome sessions from spokesperson & physics coordination
  - Some light introductory lecture to LHCb physics
  - Mostly hands-on sessions
- Social event Thursday night
  - Pizzas + Drinks in closed-up cafeteria where people blow off steam

# New this year...

- Bringing back split groups
  - General lectures → everyone in one room
  - Hands-on sessions → reduced groups in two rooms
- Meant to tackle two problems:
  - Level of Python expertise → metric used to split the groups
  - One group can be too large for some specific lessons
- Problems we might encounter → need to double up resources

# The schedule

- One of the hardest things to figure out
- Teachers are volunteers: PhDs + postdocs (some seniors can contribute if the topic requires more expertise)
  - Harder to find organizing volunteers than teaching volunteers (only 1-2-hour commitment + preparation?)
  - Diplomas are handed out if required
- Teachers already experts in the topic → much better experience for students



# The schedule (II)

- 1.5 – 2 days for general lessons (Python + Git + Bash + Snakemake)
- 2 – 2.5 days for LHCb software lessons
  - Especially aimed at learning tools needed early on
  - Can also incorporate some more advanced tools
- Lately → one analysis-focused lesson around Tuesday
  - Had zfit and general statistics
  - This year → BDTs
- Friday → hands-on exercise taken as an in-the-day analysis to use the tools learned during the week

# Some Statistics + Feedback

- 2022: 155 registrations (52 + 103)
- 2023: 77 registrations (52 + 25)
- Feedback polls reveal:
  - Run 2 lessons still useful → but enough
  - Run 3 lessons also useful → not enough
  - Overall it just scratches the surface
  - Non-LHCb software lessons are the least useful
  - Could it work best when students have already used some of the tools?

# The keys to the success

- Lasting impact of the workshop
  - Lessons largely follow online documentation
  - Easy to follow examples, sometimes not useful until years later
- Serves as an entry point for people into the Collaboration
  - Usually first time @ CERN for students
  - First time meeting people outside their groups → relationships can lead to fruitful collaborations later on
- Collaboration-wide effort to champion the workshop
  - Supervisors understand the relevance and are prone to sending students
  - Higher-ups also

# Into the future

- Training materials @ LHCb are being reorganized into a working package
  - Includes Starterkit
  - This will facilitate transitions between organizing teams
  - Aim → keeping consistency by outlining general organizing guidelines
  - Git repo with necessary organizing materials already being developed

# The Run 3 Problem

- Key success up to this point → Excellent Run 2 documentation compiled
- Problem → Run 3 materials not ready yet (software has changed)
- Solution → Need collaboration-wide effort to put together new set of docs
  - Efforts already underway → lack of volunteers so far
  - Run 2 software still part of the schedule this year
  - Next year might be Run 3 only → we'll need all hands on deck to prepare
- We are optimistic:
  - Lasting impact remains key: we are preparing the documentation for the entire collaboration moving forward.

# Take-Home Ideas

- The LHCb Starterkit is a key component of the Collaboration
- Five-day workshop hosted annually by students for students
- Detailed online documentation is key to its success → so far
- Run 3 now here & we are slightly unprepared
- Cause for optimism → there are efforts underway to plan for the future

**Thank you for your attention**