The LHCb Starterkit

• High-energy physics software training
• for the 21st century

CHEP 2016

Albert Puig Navarro
On behalf of the LHCb Collaboration
HEP a century ago
HEP today

- Big Data
- $O(100 \text{ PB})$
- Massive amounts of computing power
- Massive amounts of software
- Immense software complexity
The issue

• We’re trained to be physicists
• We’re asked to do programming
• We need training

Source: xkcd.com/722
The issue

• Current situation

• Broken tutorials

• Outdated/incomplete documentation

• Hours are wasted

• Experts repeating answers to trivial questions

Source: xkcd.com/1343
The solution

• The Starterkit team provides...
  • Online tutorials
  • Interactive workshops

• Goals
  • Improve software literacy
  • Teach good practices
  • Socialisation amongst collaboration members
The tutorials

• Freely accessible GitHub-hosted webpages

• Easy to follow

• Regularly updated, collaboratively

• Inspired by well-established Software Carpentry: software-carpentry.org
The Starterkit

- General **tools**, basics of **LHCb software**
- Interactive, hands-on approach
- **40 participants**
  - Out of ~80 new students each year
  - Targeted at **new collaboration members**
- **4 days**
- **12 instructors**
The Impactkit

- **Focused** training
- Covers typical use cases
- **20** participants
- **3** days
- Concluded with a hackathon
The workshops

• Social aspect: networking
The organisation

- Organised mostly by and for PhD students
  - Non-permanent staff, requires good knowledge transfer
- Held at CERN, using existing infrastructure
- Typically once a year
- No collaboration expenses
Conclusion

• Starterkit initiative huge **success**

• Participant feedback overwhelmingly **positive**

• Material freely **available**: [lhcb.github.io/starterkit/](http://lhcb.github.io/starterkit/)

• Get **in touch**! [lhcb.starterkit@cern.ch](mailto:lhcb.starterkit@cern.ch)