The LHCb Starterkit

High-energy physics software training for the 21st century

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On behalf of the LHCb Collaboration
HEP a century ago
HEP today
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  • Outdated/incomplete documentation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](http://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/
- Get **in touch**! lhcb.starterkit@cern.ch