

master student projects
in the LHCb group at Nikhef

Mont Blanc

lake Geneva

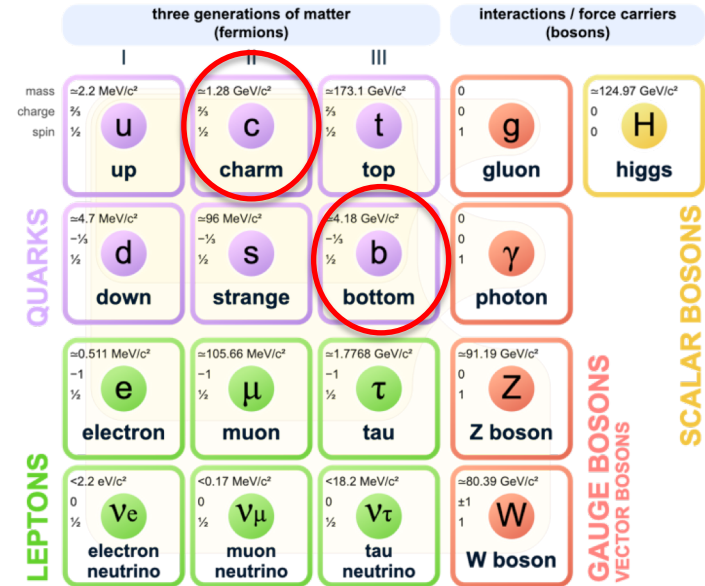
Large Hadron Collider:
13 TeV proton-proton collider in 26 km ring

location of the LHCb experiment

The LHCb experiment at CERN



Standard Model of Elementary Particles



- “forward spectrometer” at the LHC
- optimized for research with ‘beauty’ and ‘charm’ quark decays
- about 1000 scientists from 18 countries

- much of LHCb physics is looking for unexpected rare processes
 1. a larger (or smaller) rate for a known process
 2. something entirely new: a 'bump' representing a new particle or force)
- rare quark decays provide a very rich playing field



Dutch contribution to LHCb experiment

- Amsterdam (Nikhef and VU)
- Groningen
- Maastricht

At Nikhef/VU

- ~10 staff (3 now at CERN)
- ~5 postdocs
- ~10 PhD students



What to expect?

- broad selection of exciting projects
 - physics analysis, possible leading to publication
 - analysis of first data from LHC run 3 (new detectors)!
- supervision
 - usually one PhD student or postdoc plus 1 staff member
- other interactions
 - weekly “b-physics” meeting on Friday morning at 10am
 - remote meetings with ‘physics working group’ at CERN
 - trip to CERN (if reasonably useful for the project)
 - b-physics workshop (2 days)
- final presentation in b-physics group meeting