FIRST YEAR LABORATORY: PROJECT PROPOSAL 2017

PROJECT TITLE **Measuring the D0 meson lifetime with the LHCb detector**		CODE **127**
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PROJECT OUTLINE:

Using data from the LHCb detector from the 2012 run of the LHC at CERN, you will measure the mean lifetime of the D0 meson.
The D0 meson is a bound state of a charm and down quark pair.
At LHCb, the D0 meson is often reconstructed from its decay to a charged kaon and pion.
You will use these reconstructed data events to select signal D0 decays and measure the mean lifetime of these events.
You will become familiar with concepts from High Energy Physics measurements such as event selection, signal purity, optimising 'cuts', and categories of background events; and perform fits to real LHC data.
This project is very computational and will involve writing some code in python (or C++ if you prefer) to perform the analysis.

http://lhcb-public.web.cern.ch/lhcb-public
http://root.cern.ch/drupal/content/pyroot