



Contribution ID: 215

Type: **Oral Presentation**

LHCb upgrades I and II

Wednesday, 31 July 2019 14:40 (20 minutes)

Since 2010, the LHCb experiment at CERN has been accumulating $1-2 \text{ fb}^{-1}$ of 7-13 TeV pp collision data every year. This b- and c-hadron rich data sample, together with the detector's excellent performance, has allowed LHCb to carry out world leading measurements in the field of flavor physics. Many of these results, however, will benefit from significantly larger data samples, and that is what LHCb's Upgrade I aims to achieve. Between 2019 and 2020, three completely new trackers as well as a more powerful readout electronics will be installed. As a result, the experiment will be able to read out the collision data at the unprecedented rate of 30 MHz, with all trigger decisions performed at the software level. The data collection will increase to about 5 fb^{-1} a year. A further upgrade in 2030 aims to increase the annual integrated luminosity to about 50 fb^{-1} . In this talk I will go over the main technological challenges being overcome to make these upgrades possible as well as a brief overview of what new physics opportunities will open up thanks to the orders-of-magnitude-larger data samples.

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Session Classification: Quark & Lepton Flavor

Track Classification: Quark & Lepton Flavor