

## The LHCb Upgrade

During the LHC Run 1 the LHCb experiment has successfully performed a large number of high precision measurements in heavy flavour physics using  $3 \text{ fb}^{-1}$  collected at centre-of-mass energies of  $7 \text{ TeV}$  and  $8 \text{ TeV}$ .

In LHC Run 2 the LHCb is expected to integrate an additional  $5 \text{ fb}^{-1}$  data, however many of the measurements will remain limited by statistics.

For this reason LHCb will withstand in 2020 a major upgrade during the Long Shutdown 2 of LHC, with the aim to collect  $50 \text{ fb}^{-1}$  of data by 2028.

To achieve this goal the LHCb detector readout rate will be upgraded from the current  $1 \text{ MHz}$  to the LHC bunch crossing rate of  $40 \text{ MHz}$ . The luminosity delivered to the experiment will increase of a factor five, up to  $2 \cdot 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$ .

The online selection of events will be uniquely performed by a pure software trigger, improving the trigger efficiencies. In order to sustain the increased luminosity and readout rate, all the sub-detectors will be upgraded.

The architecture of the upgraded DAQ system and trigger strategy will be presented, as well an overview of the sub-detector upgrades.

### I intend to submit my contribution for the proceedings

Yes

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