

# The LHCb RICH Upgrade

*Saturday, July 7, 2018 10:00 AM (12 minutes)*

The LHCb RICH detectors have been operating successfully since 2010 and proven to be an essential element of the experiment thanks to their excellent particle identification performance. During the Long Shutdown II of the LHC in 2019-2020, the two detectors will be upgraded in order to maintain their PID performance while operating at significantly increased luminosity, aiming to collect 5 fb<sup>-1</sup> per year. This will allow to greatly enhance the statistical precision of physics measurements and to advance the search for very rare B<sup>-</sup> and D-meson decays. To cope with the challenges of the 40 MHz readout rate and increased occupancy the two detectors will undergo a major upgrade. The Hybrid Photon Detectors will be replaced by multi-anode PMTs together with new front-end electronics capable of reading out every bunch crossing of the LHC. Additionally, the optics of the upstream RICH detector will be modified. Following many tests with particle beams and simulations, the LHCb RICH Upgrade is now in its final stage. The current status of the upgrade will be presented.

**Primary author:** BLAGO, Michele Piero (CERN)

**Presenter:** BLAGO, Michele Piero (CERN)

**Session Classification:** Detector: R&D for Present and Future Facilities

**Track Classification:** Detector: R&D for Present and Future Facilities