

The Upgrade II of the LHCb Calorimeter

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The LHCb Upgrade 2 will run at a luminosity of $(1..2) \cdot 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$ to collect $\sim 300 \text{ fb}^{-1}$ of data. This will require a major revision of the LHCb Calorimeter. The increased luminosity will result in very high particle densities and radiation doses in the central area. The ECAL has to provide high-quality energy and position measurement for electromagnetic showers. One option for the central part is a sampling scintillation ECAL comprising radiation-hard crystal scintillators with tungsten converter and organic scintillators with lead converter. Measuring the time of arrival of neutrals with an accuracy of few tens of picoseconds is crucial to mitigate pile-up. The preferred option is to use the intrinsic time resolution of the ECAL modules. An R&D campaign started to optimize the ECAL. It includes studies of fast and radiation hard scintillating materials, simulations, and beam tests. We present the R&D results and the current status of the LHCb Calorimeter upgrade.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

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