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Luminosity measurement at CMS

The measurement of the luminosity delivered by the LHC is pivotal for several key physics analyses. During the first three years of running, tremendous steps forwards have been made in the comprehension of the subtleties related to luminosity monitoring and calibration, which led to an unprecedented accuracy at a hadron collider. The detectors and corresponding algorithms employed to estimate online and offline the luminosity in CMS are described. Details are given concerning the procedure based on the Van der Meer scan technique that allowed a very precise calibration of the luminometers from the determination of the LHC beams parameters. What is being prepared in terms of detector and online software upgrades for the next LHC run is also summarized.

Primary author: Prof. MAZUMDAR, Kajari (Tata Inst. of Fundamental Research (IN))

Presenter: LEONARD, Jessica Lynn (Deutsches Elektronen-Synchrotron (DE))

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