

Abstract Submitted
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CMS HCAL Endcap Simulations for the High Luminosity LHC

KEVIN PEDRO, University of Maryland, CMS COLLABORATION — The long-term high luminosity upgrade to the LHC will increase the levels of radiation affecting the CMS calorimeters. By the end of Phase 2, parts of the electromagnetic and hadronic endcap calorimeters could receive up to 10 MRad of radiation. A model of the radiation damage to HCAL, which has been implemented in the CMS fast simulation, will be described. The effects of radiation on physics capabilities with jets will be presented, with the most important effect coming from scaling of photodetector noise due to recalibration. In addition, a standalone Geant4 simulation with a simplified geometry can be used to test configurations with new radiation-hard ECALs. Results for pion response and resolution with new configurations will be shown.

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