Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Effect of Dead Silicon Channels On The HGCAL Energy Resolution SARA NABILI, University of Maryland, College Park — The High Luminosity LHC (HL-LHC) will integrate 10 times more luminosity than the LHC, posing significant challenges for radiation tolerance, especially for forward calorimetry. As part of its HL-LHC upgrade program, the CMS collaboration is designing a High Granularity Calorimeter to replace the existing endcap calorimeters. The upgrade includes both electromagnetic and hadronic components. The electromagnetic portion and the front part of the hadronic section use silicon sensors, while the back of the hadronic part uses a mixture of silicon sensors (in the highest radiation regions at high pseudorapidity) and scintillator as its active components. In this talk, the effect of dead channels on the calorimeter resolution for photons and for pions is presented. The effect of algorithms to mitigate the impact is also presented.

Sara Nabili
University of Maryland, College Park

Date submitted: 21 Feb 2020 Electronic form version 1.4