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Using a Deep Neural Network to Mitigate Impacts of Inoperative Si Cells in the CMS HGCal KATHRYN STURGE, CHRISTOS PAPAGEORGAKIS, SARAH ENO, University of Maryland, College Park, CMS COLLABORATION — A deep neural network is used to mitigate impacts of inoperative silicon cells in the Compact Muon Solenoid High-Granularity Calorimeter (HGCal) detector upgrade on photon and electron energy measurement. The deep neural network (DNN) trained on a photon sample is shown to be effective in improving the particle energy resolution for both photons and electrons with different fractions of inoperative cells present in the detector. The same DNN is also effective in mitigating impacts of inoperative cells for sensors with different size and thickness than that of the training sample.

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