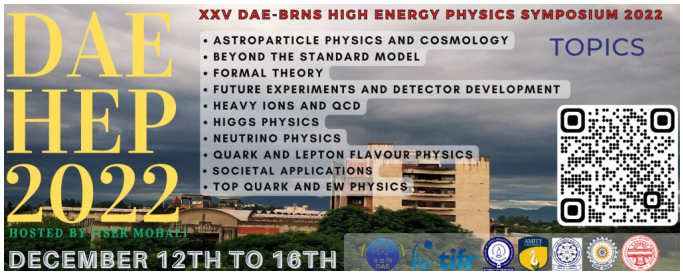

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Development of Muon Tomography for the validation of HGCAL of CMS

Tuesday 13 December 2022 15:45 (15 minutes)

The high granularity calorimeter (HGCAL) of CMS is planned to operate during the high luminosity operation of the LHC (year 2028 onwards), replacing the existing electromagnetic and hadronic calorimeters at the endcap. It will enable a detailed investigation of vector boson fusion processes and Lorentz-boosted topologies at forward rapidity. An extensive validation of the hardware and software components is currently in progress. We have developed a muon tomography technique that is found to be very useful for identifying any problems after changes are made, and testing the correctness of the geometry. We will discuss how this technique is used to figure out energy loss discrepancies with partial-wafer silicon sensors, incorrect rotation of full- and partial-wafer silicon sensors, and validation of GEANT hit positions in HGCAL scintillator tiles.

Session

Future Experiments and Detector Development

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