



Contribution ID: 91

Type: Poster

HGCAL module assembly R&D and prototyping activities at TIFR

Monday 12 December 2022 14:00 (1 hour)

Existing endcap calorimeters of the CMS experiment cannot cope with the radiation or pileup expected during the high-luminosity operation of the LHC. Their jet energy resolution also needs to be augmented in order to enhance the physics reach of the experiment. At high jet energy, a correct association between the charged particle tracks and the calorimetric clusters is very important, motivating the deployment of a calorimeter with very high granularity ('HGCAL'). We at TIFR are involved in the R&D and prototyping activities towards hosting an assembly center for the HGCAL modules. These involve a study of precision gluing, wirebonding, visual inspection, and encapsulation of wirebonds with an 8-inch prototype hexagonal baseplate, sensor, and printed circuit board. The talk will give an overview of our activities.

Session

Future Experiments and Detector Development

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Session Classification: Poster - 1