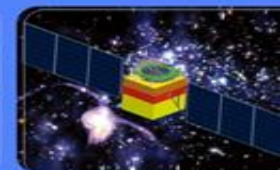


The Status of the HCAL

2024-08-27

WWW.IHEP.CAS.CN



Qian Sen, on behalf of the HCAL Group

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The comments from the IDRC Chair

- 1. The man power of the HCAL and ECAL should be fixed on the name of the person.
 - The group is divided into two parts: ECAL and HCAL;
 - The people of the HCAL Group have fixed them one by one with functions and contributions.
 - The HCAL Group will setup samll group:
Physics; Simulation; Scintillator Detector; SiPM; Electronics; Mechanics; DAQ Software; Calibration; Beam Test.
 - Could accept the other university and collage to join us?
 - Xian Jiaotong Uni.
 - Haerbing Industry Uni.
- 2, The R&D of the GS, the mass producation?
 - There is the GS collaboration Group could do the R&D work;
 - The mass production of the GS will be discuss after the R&D work by the GS Collaboration Meeting;
 - Beijing Qiu-Shi High Energy Tech-Developing Company will on behalf of the GS group for the sample supply and post.

Status and plan of HCAL simulation

By the Simulation Gerop , Hengne Li

- The geometry of the barrel and endcaps has been implemented in CEPCSW, and the glass scintillator has been placed as a sensitive material in CEPCSW.
- Preliminary implementation of digitization of GS-HCAL.
 - Considered the non-uniformity of the glass scintillator and SiPM saturation effects.
 - The electronics model is based on the AHCAL prototype and requires further discussion with the electronics group.
- Preliminary simulation results based on CEPCSW have been obtained:
 - Tested the MIP response and the simulation of 10 GeV muons.
 - Obtained preliminary results for the single π energy resolution.
- Future plans:
 - Continue refining the glass scintillation model and digitization model, optimizing geometry design, and calibrating parameters. For example, further discussions with the electronics group are needed regarding the precision in digitization.
 - Validation using standalone simulation.

