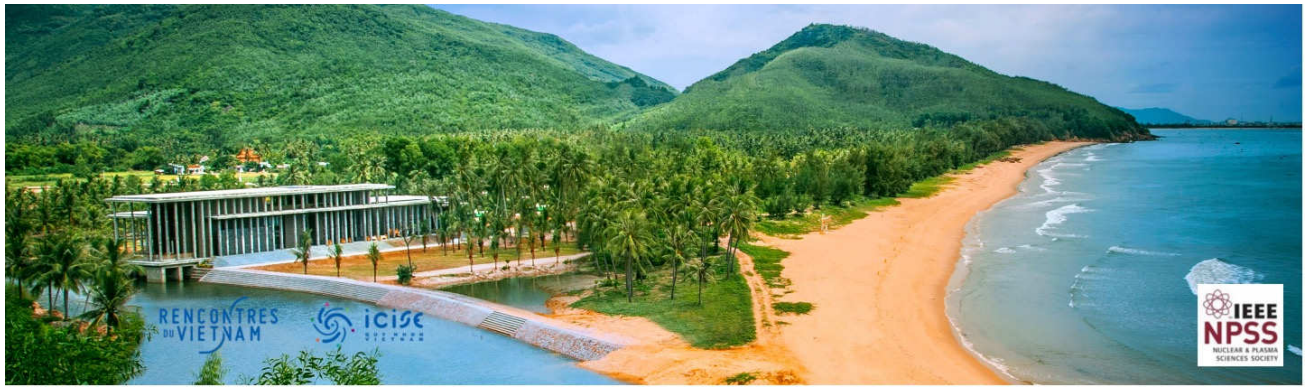

Study on Readout Electronics of CEPC Scintillator Analog Hadronic Calorimeter Prototype

***Z. Shen*[1,2]**, **A. Zhou[1,2], S. Liu[1,2,*], Y. Shi[1,2], J. Liu[1,2], Y. Zhang[1,2]**

[1]State Key Laboratory of Particle Detection and Electronics, University of Science and Technology of China
[2]Department of Modern Physics, University of Science and Technology of China

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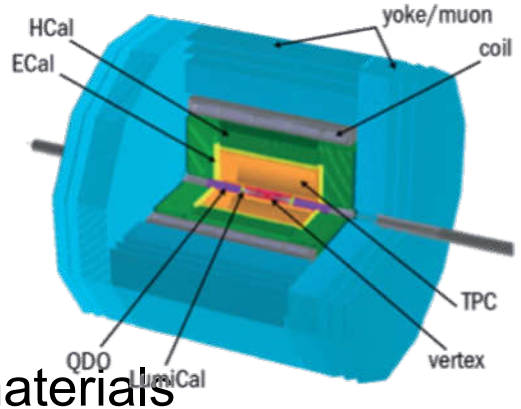
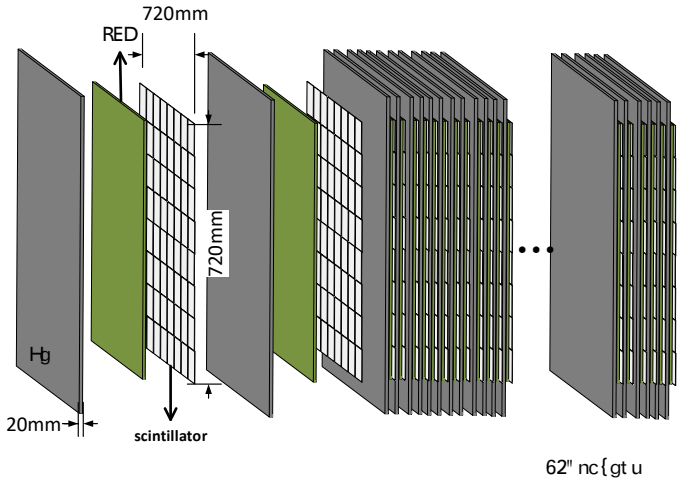
Introduction

- Circular Electron Positron Collider (CEPC)
  - Proposed as Higgs and Z factory
- Analog Hadronic Calorimeter Prototype
  - 720cmx720cm, 40-layer prototype
  - Plastic squares as sampling materials and SiPMs as light-to-charge materials
  - High-granularity calorimeter for high-resolution energy measurement (324 readout channels per layer)
- Requirements
  - 980 fC ~ 500 pC
  - High Integration
  - Temperature compensation for SiPM
  - Online calibration





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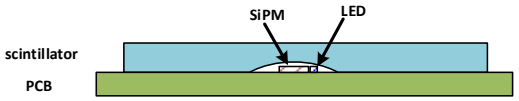
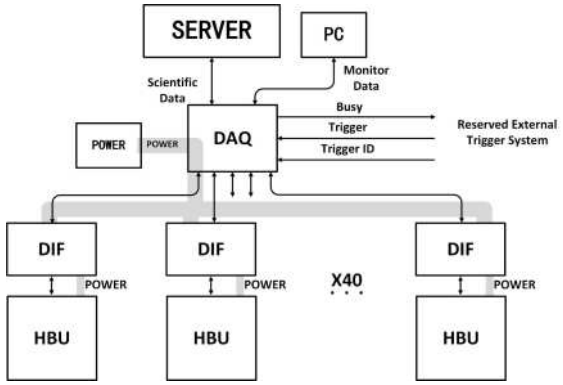
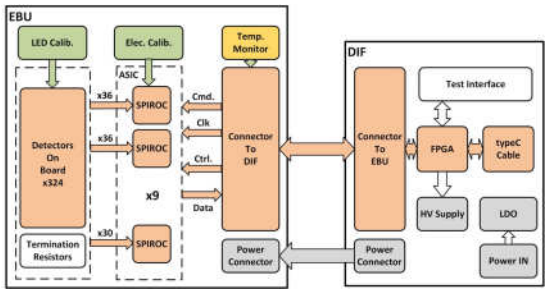


AHCAL Prototype Readout Electronics

- The DAQ system consisting of a data server, a Data Acquisition Board, 40 DIF boards and 40 HBU boards is developed.
- In one layer, there is a DIF and an HBU, which are in charge of reading out the SiPM signals, calibrating SiPM gains and monitoring temperature.
- After the AHCAL prototype implementation, a beamtest combined with CEPC ECAL prototype is successfully carried out.

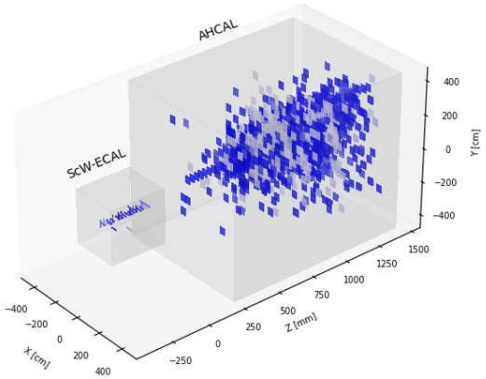


Structure of the DAQ sysem



One layer module

Photo of HCAL prototype



A pi event in the beamtest

Thanks for your attention
Welcome to my poster（Poster A）