

CALICE SiW-ECAL+AHCAL

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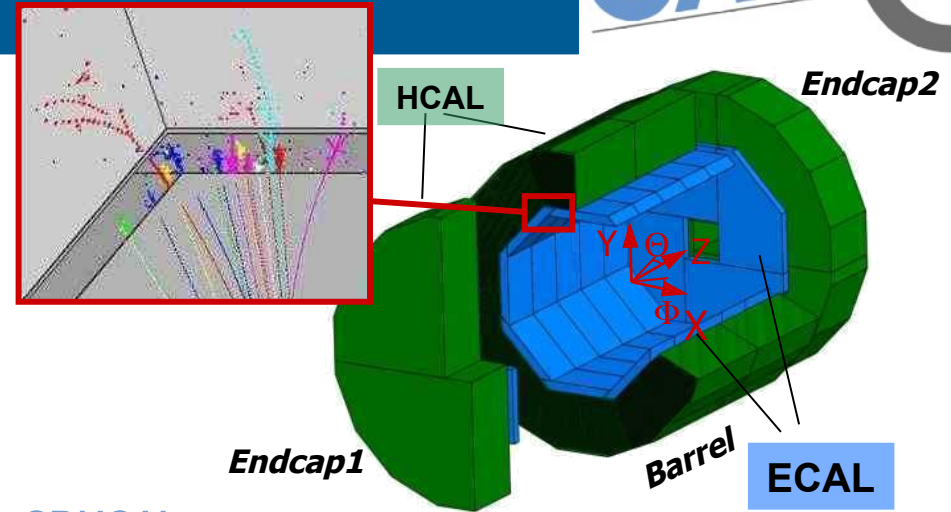
***H2/H4 Users Meeting
30/03/2022***

Physics scope



CALICE

- Highly-Granular Calorimeters Technologies for Future Higgs Factories Experiments
 - ILC, CLIC, CEPC, FCC-ee
 - Particle Flow approach:
 - Track Charged particles by imaging calorimeters,
 - Measure neutrals (γ, h^0)

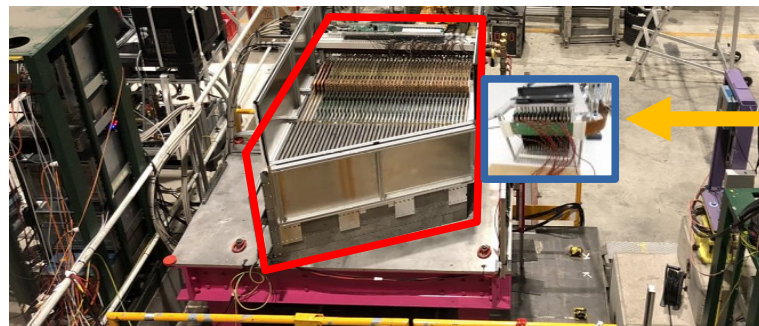


Technological prototypes: SiW-ECAL, ScintW-ECAL, AHCAL, SDHCAL

- → most technological constraints for ILC-calorimeters: Embedded ASICs, Self-Trigger, Delayed RO, min dead-space, ... → LOW DUTY cycle (~10%)

AHCAL :

- 38 layers $72 \times 72 \text{ cm}^2$
- 3×3 cells scintillator + SiPM
- 1.7 cm Stainless Steel ($\sim 4\lambda$)
- 6t, $1 \times 1 \times 1.5 \text{ m}^3$



SiW-ECAL

- 15-22 layers $18 \times 18 \text{ cm}^2$
- $0.5 \times 0.5 \text{ cm}^2$ Si cells
- 2.8+5.6 mm W (24 X_0)
- 100 kg, $0.4 \times 0.4 \times 80 \text{ cm}^3$

H2 - Beam (weeks 23+24, 8-22/06)

Physics program:

- Calibration:
 - high-E muons (100 GeV/c ?), largest beam (\varnothing 10 cm ?), highest intensity
- Resolution studies
 - **Electrons** : $P = 10\text{--}160(+200?)$ GeV/c, Beam Spot $\sim \varnothing$ 5 cm, Rates $\sim 1\text{--}10$ kHz
Good purity
 - **Negative Pions** : $P = 10\text{--}200$ GeV/c, Beam Spot $\sim \varnothing$ 5 cm, Rates $\sim 1\text{--}10$ kHz
- Scans in energy and at different positions.
- **Scissor table needed** (as in past tests)

Beam Instrumentation:

- Wire Chambers, Trigger Scintillators, Čerenkov Detectors

Logistics

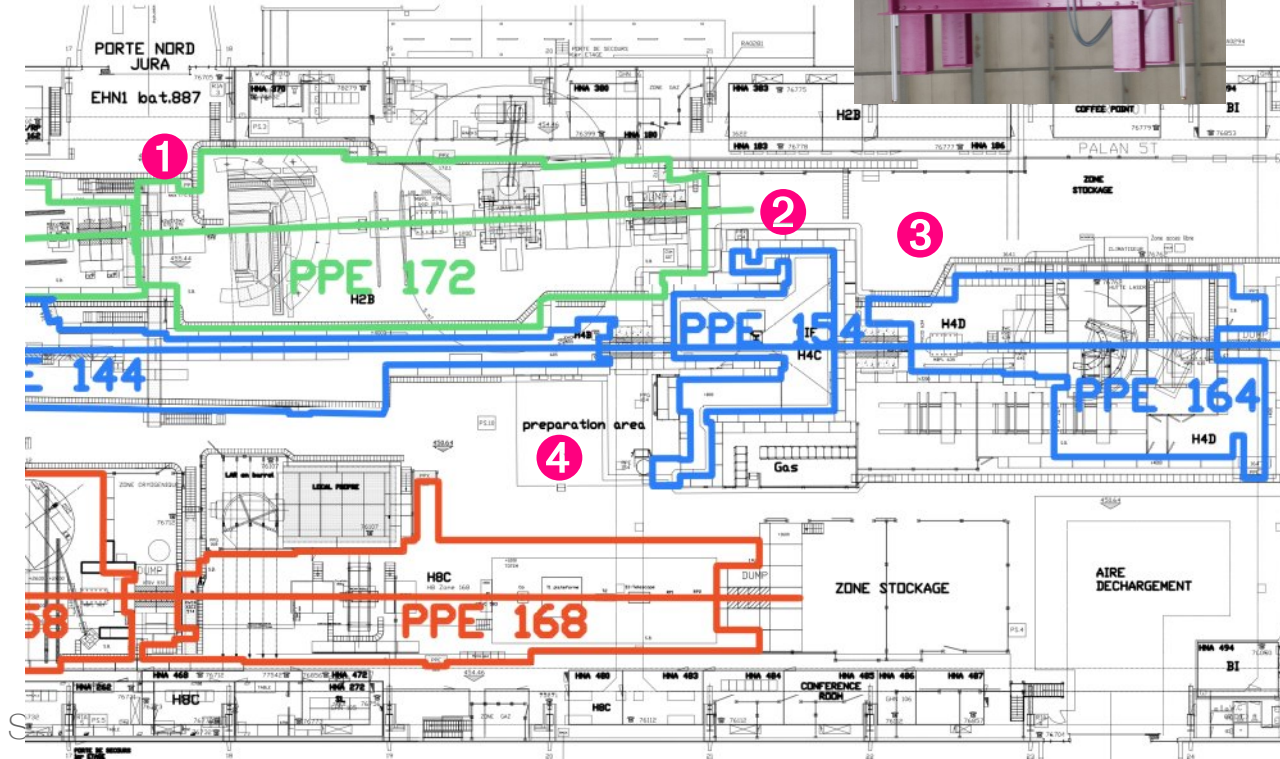


(un)Loading of the AHCAL

- in hall: 1 standard 20-foot open-top container (P6.0×L2.4×H2.3 m³)
- Detector platform ~ 6t, 1.5×2 m²

Mounting zone for AHCAL

- 1 week before
- 3 crates + detector + cooling : 4×4 m²
- Need power on 380V plug.
 - Previously done in “porte nord jura” ① but too tight now ?
 - ②, ③ or ④ available ?



(un)Loading of the SiW-ECAL ✓