BHCal Meeting Jan 9, 2026

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- ePIC Spare Tiles
- Pre-TDR Comments
- CALOROC Workfest

ePIC Spare Tiles

What's needed:

- 50% losses in chimney sectors ➔ 3/32* 50% ≈ 5%
- 2% of B21 and B22 expected losses from the non-chimney sectors.

➔ B21 and B22: 2%+5% = 7% = 45 tiles/shape

➔ B23-B32: 5% = 38 tiles/shape

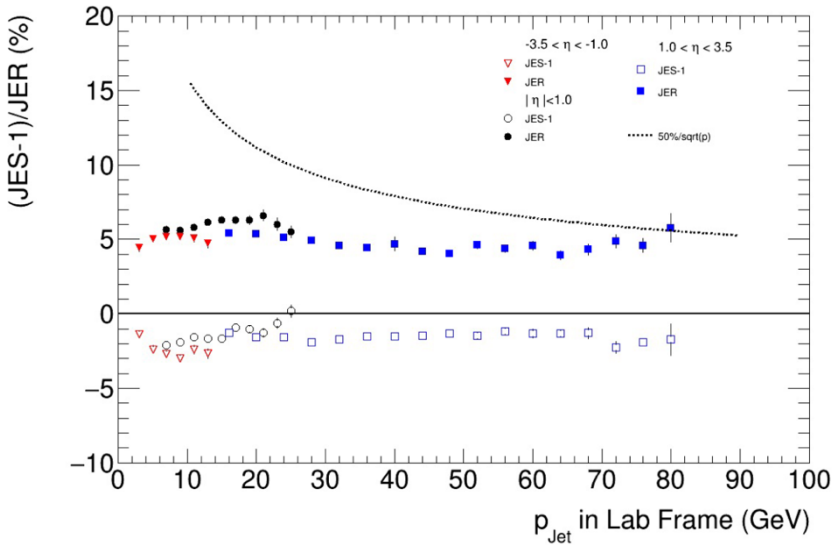
❖ Total of 2*45 + 10*38 = 90 + 380 = 470 tiles

ELJEN TECHNOLOGY

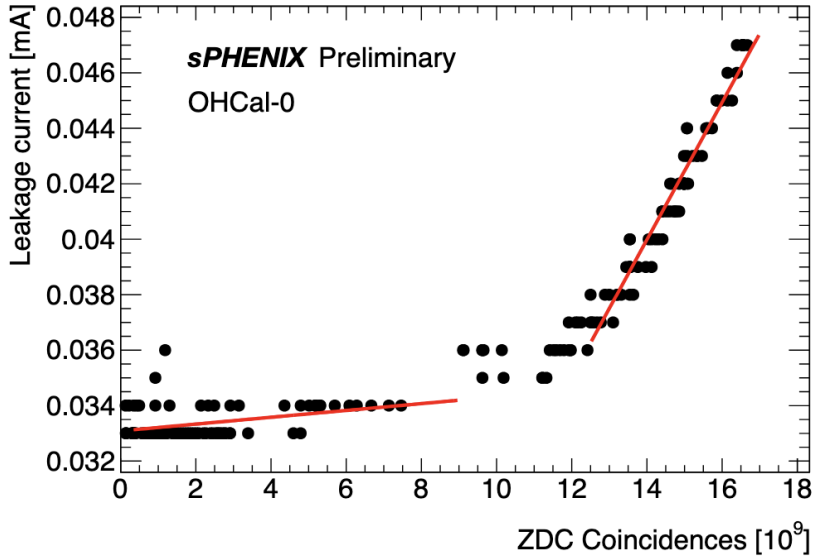
- Initially said they could produce grooved tiles as well as fully wrapped
- "*Unfortunately this is out of our machining capabilities. We would need to offer No Bid.*"
  ➔ couldn't do grooving due to the large tiles
- Requested a quote for producing the tiles without grooving and planned to consult the GSU machine shop to determine whether they could perform the grooving; if not, alternative options would be explored.

Pre-TDR Comments …

- Fig. \label{fig:JetChargeNeutralFractions}: in the caption we cannot have "Received from John Lajoie in private communication." Please, quote the simulation study.



- Fig. \label{fig:HCalleakage} is clearly only a placeholder: please, replace it.



- HIJING simulations : a bibliographic reference is needed

"under section: *Calibration, alignment and monitoring*"

CALOROC Workfest - January Collaboration meeting

(Wednesday, 1/21/2026 @ 8am - 12pm)

- **5-minute presentation from each subsystem**, addressing as many of the points listed below as possible

1. What is the capacitance of the detector per channel? (pF)
2. What is the lowest signal measurement required? (fC)
3. What is the highest signal measurement required? (fC)
4. Do you have a measurement with certain settings of MIP peak, other fixed signal? (With the H2GCROC and settings)
5. What is the charge resolution requirements? (Percentage as a function of charge, not in bits)
6. What is your timing requirements/measurements?
7. What is the expected occupancy per channel from simulation? (Including full background)
8. What is the maximum hit rate per channels needed if all channels are activated at the same time?
9. What is the expected dark noise rate?
10. What is the maximum hit rate required for a single channel? (If only one receives signal)
11. What is the double pulse separation needed? Overlap signals from two independent bunch crossings? (This affects small or large signals differently in your detector?)
12. How many number of samples you require as minimum (max is 7 now in CALOROC)?
13. What is the preference for A or B for CALOROC?

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Objet : [EXTERNAL] [[EPIC-Calo-WG]] CALOROC Workfest on January Collaboration meeting

Dear all,

With Carlos we are planning to have a CALOROC/H2GCROC workfest at the January collaboration meeting. Fortunately, people from the chip design are also joining, so there will be some general presentations expected from the progress of the chip development. The CALOROC chips will be available in 2026 already. We are stepping forward from the protoboards (which many of you received) towards a more complete readout boards with compatibility to both H2GCROC/CALOROC chips. We will have a summary what you can expect as readout kits for small and large readout system kits.

My request to the calorimeters would be to collect some of your updates simulation and measurement studies which will be important for the readout point of view:
1. What is the capacitance of the detector per channel? (pF)
2. What is the lowest signal measurement required? (fC)
3. What is the highest signal measurement required? (fC)
4. Do you have a measurement with certain settings of MIP peak, other fixed signal? (With the H2GCROC and settings)
5. What is the charge resolution requirements? (Percentage as a function of charge, not in bits)
6. What is your timing requirements/measurements?
7. What is the expected occupancy per channel from simulation? (Including full background)
8. What is the maximum hit rate per channels needed if all channels are activated at the same time?
9. What is the expected dark noise rate?
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13. What is the preference for A or B for CALOROC?

Some of these are repetitions from previous requests, but there is certainly an update in testing and simulation, testbeam results etc., it would be good to revisit these questions. You do not have to have answers to these questions, we want to start the discussion so we can give feedback to the ASIC designers and answer all the questions by the end of 2026.
Please when showing measurements, also put the H2GCROC settings there, so we can track which preamp settings are used and why - this also gives a feedback (also request) for adapting the CALOROC to every calorimeter.
I would like to invite also the far-forward (incl ZDC) detectors to present, also the EEEMCal and the ForEcal or any other calorimeter/detector who might explore the option using this chip.

Best regards,
Carlos and Norbert