

Aftermath of the March 20-21 review

https://indico.bnl.gov/event/18499/

GD/I Backwards RICH Review

Mar 20 – 21, 2023
US/Eastern timezone

- Overview
- Timetable
- My Conference
- My Contributions
- Background Material

Zoom information for open sessions is the usual GD/I meeting link:

Zoom connection: <https://bnl.zoomgov.com/j/1612787551?pwd=VzBZYVpsMGM3TnpMRHI2K1puOFd5Zz09>

Meeting ID: 161 278 7551
Passcode: 707179
One tap mobile
+16692545252,,1612787551#,,,*707179# US (San Jose)
+16468287666,,1612787551#,,,*707179# US (New York)

ZOOM Recording

Day-1 (open access)

https://bnl.zoomgov.com/rec/share/25M0ladfZXX1z_N3ZJ7yObQ0XzwH6zUuM0i-FSndnN3u1JJsJekJNOIKHqw4Kkt.KGu61O214QPt1ORO?startTime=1679307692000
Passcode: @k6T*%WK

Day-2 (including costing, ask GDI for password)

https://bnl.zoomgov.com/rec/share/ZN5qqtZnr4J_imSgqJBP6ImyjqTmlu7CCbKZegCRxFuRRyTk-s8osQhpLECCI3nC.KaCDF7nrBZS776xa?startTime=1679392294000

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- Virtual meeting
- GD/I group based review panel with four external reviewers

- Five symmetric talks given by mRICH and pfRICH groups
 - Overview (AK)
 - Photosensors & FEE (AK)
 - Performance studies (Chandra & Kong)
 - Mechanical design, services, integration, aerogel (Alex & AK)
 - Workforce, cost & schedule (Bernd)

- Closeout yesterday, with the first findings / recommendations announced
- There will hopefully be fact checking stage before the final report is out

- ePIC / EIC project management plan towards the Barrel EmCal & Backward RICH resolution must be in the works

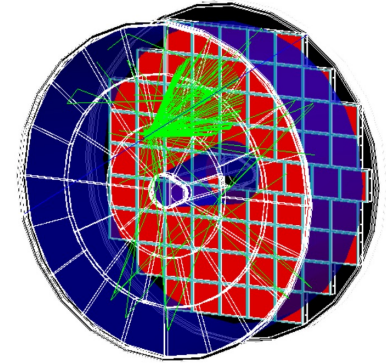
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- We are going to politely point out to a number of possible misunderstandings, reflected in the closeout slides
- Since both teams have *an identical photosensor* in their design, we are also going to propose they both repeat their studies with the same HRPPD $QE \cdot CE(\lambda)$ curve, whatever one is suggested / provided by the GD/I (software) group
- We can probably also suggest providing more technical details (like the actual shape of the SPE Cherenkov angle distribution), as a consistent report
- However, there is seemingly no time for an apple-to-apple comparison of the two designs in ePIC software framework (just because the mRICH team will likely not make it on a time scale of a ~week or so)

pfRICH CDR draft v01

- For various reasons, was not made available to the review panel
- We are going to start the internal circulation today
- Let us thank all contributors and especially the editorial team (Brian, Kong, Alex J, Thomas) for their hard work
- Please provide your feedback, ideally on a time scale of a week
- Please check that your recent studies are included (in a due way)
- Version v01 should perhaps be forwarded to ePIC and EIC project management right away (complemented by the costing sheets)
- Version v02 should be out by the end of March

A Proximity-Focusing RICH for the ePIC
Experiment
– Conceptual Design Report –
(Draft 1.0)

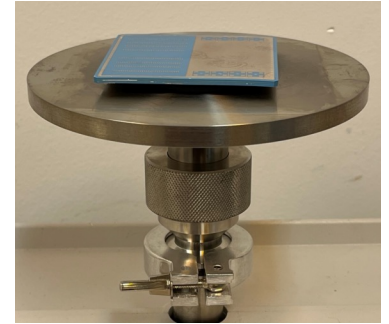
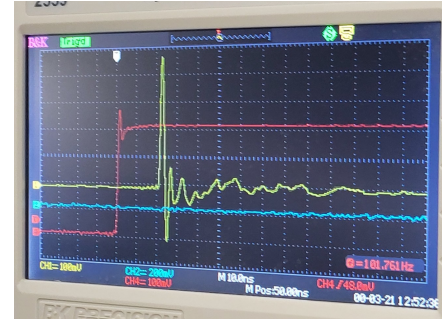
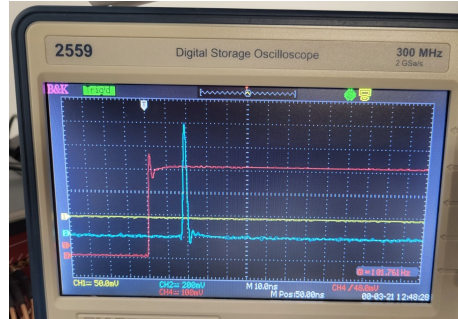
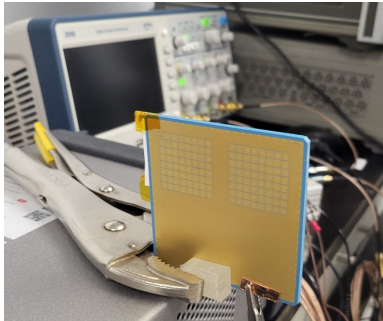


What are the next steps?

- Obviously, we should refine all the studies, at least for the CDR purposes
- More stuff needs to be added to CDR text
 - EmCal case with the up-to-date crystal geometry
 - Time of Flight for low momentum K/p separation
 - Jet substructure PID resolution (?)
 - HRPPDs in magnetic field (Argonne data analysis)
 - (?) Planacon MCP-PMT case, and other risk mitigation strategies
- Software porting to ePIC framework
- By the time we are done with all this, there is hopefully a decision announced

News from the HRPPD re-design front

- First two 3" multi-layer ceramic anode plates by Techtra were examined at Incom
 - Flatness is tolerable on a 3.0mm thick plate, less so on a 2.5mm thick one
 - Vacuum tightness of the 3.0 mm plate confirmed
 - No cross-talk introduced in the ceramic stack
 - No apparent signal degradation either



- Full size (120mm) plate with 1024 pads will be built by May
- The next two weeks Samtec compression interposers will be tried out at the PCB shop