ePIC Backwards PID Technology Review

Charge to the Committee

The scope of this review is to gather information and feedback on the anticipated performance, cost and risk of two proposed technology choices (the modular RICH and proximity-focused RICH) for the ePIC backwards particle identification system. This review should focus primarily on the detector performance and integration issues.

It is understood that both technology choices are currently evolving from advanced conceptual designs to full technical designs and should be evaluated with this level of development in mind. For the ePIC Backwards PID Technology Review, you are asked to address the following questions for each of the two technology options:

1. Is the anticipated performance, as demonstrated by simulations, test beam, R&D, etc. realistic given existing experience? Is the anticipated performance adequate to address the full EIC science program, as outlined in the National Academy (link) report and the EICUG Yellow Report (link)?
2. Does the mechanical integration of the detector present any unique challenges?
3. Is there an adequate workforce to build, commission and maintain the detector, or are there adequate plans to evolve the workforce towards these goals?
4. Is the cost and schedule presented realistic? Are the production capabilities of vendors fully understood and consistent with the schedule?
5. Have the proponents adequately identified technical, cost and schedule risks? Are appropriate risk mitigations identified? Please comment on production and performance uncertainties for both the aerogel and the LAPPD's.

Please address the above questions point-by-point.