

ePIC TOF Open Questions

- These slides are intended to document open questions that are creating bottlenecks to advancing the TOF barrel and forward technical design and integration.
- They are not the only open questions!
 - These are the questions that are the immediate show-stoppers and must show progress in the next few months
 - Short-term focus required to resolve these questions

Open Physics/Simulation Questions

- What is the required physics performance for the barrel and forward TOF?
 - How much of an overlap is required with the hp-DIRC and dRICH (aerogel) for 3σ e- π , K- p , and π -K separation
 - This should be set by the overlap required to cross-calibrate the detectors
 - In combination with the start time resolution, this sets the TOF timing resolution requirement. This logic needs to be documented for the preTDR
- Does the 500 μ m pitch in the forward TOF contribute to the tracking resolution?
 - If not then the pitch should be reconsidered to reduce complexity and services requirements, optimize detector for PID only

Open Technical Questions

- Will the barrel TOF staves be “monolithic” or modular? If modular, at what level?
 - Consider anticipated losses/servicing/rework during construction
 - Serviceability for the detector lifetime is a key issue - this may drive/likely drives to modular.
 - This will impact performance and cross-correlates with open physics/simulation question
 - A decision is needed asap as it is correlated with serviceability of other detector inside the barrel TOF.
 - Reducing the material budget below what is required does not help if it makes the detector difficult to build and maintain
- Need a mechanical design for the forward TOF disc
 - Important to be able to plan integration and services

DSC Coordination and Meetings

- To expedite technical progress and finalize the design phase, find a regular meeting time for the foreseeable future for DSC and ePIC leadership along with relevant CAM/project management to ensure priorities are clear and met in a timely manner.
- Is there a better schedule of DSC weekly meetings that will make it easier for more people to participate and communicate?
 - Overlap between sim/physics and technical?
 - Make it easier to engage and integrate new workforce