## Updates

- Reorganization of ePIC (collaboration and) WGs (<u>https://indico.bnl.gov/event/18449/</u>)
  - Evolve DWGs to a structure more appropriate to the (pre-)TDR/construction phase: WGs -> Detector Subsystems. Each project corresponds to a subdetector built by a Detector Subsystem Collaboration of the groups and institutions contributing to it. Each project collaboration will choose its Detector Subsystem Lead/Detector Subsystem Technical Contact work in concert with EIC project CAMS. The breakdown in projects to be discussed/optimized with collaboration.
  - **TOF DWG**: we agreed (?) to have one subsystem for TOF, next is to identify the DSL
- TOF in tracking Nicolas
  - Impact of TOF on angular resolution (and calorimeter performance)
    - Branches created for different TOF material budgets to facilitate this study
    - Study on angular resolution in progress
  - Issue with forward TOF in tracking
    - Rewrite forward ToF geometry
    - Make simplified Forward ToF default in the main branch for the upcoming simulation campaign  $\frac{#373}{}$
- TOF PID in simulation Oskar/Zhenyu
  - Reconstruction, validation plots
- TOF digitization volunteer?
  - Introduce detector noise and : 30 Hz (2-10 Hz from test beam with strip AC-LGAD sensor + GALI-S66+ <u>link</u>)
- 3/27/23• Introduce charge sharing

Zhenyu Ye @ UIC

# Updates

[1] <u>https://wiki.bnl.gov/EPIC/index.php?title=TOFPID</u>
[2] <u>https://wiki.bnl.gov/conferences/index.php/ProjectRandDFY23</u>
[3] <u>https://www.overleaf.com/read/vftxyvjtjrvp</u>

### **Simulation** [1]

- DD4HEP geometry, digitization, reconstruction
- Timing resolution requirement
- Spatial resolution requirement
- Material budget requirement

#### **Project Engineering and Design (PED) [3]**

- Mechanical engineering
  - Barrel TOF
  - Endcap TOF
  - Cooling system
- Electric engineering DAQ PED
  - Precision clock distribution (<5 ps)
  - Timing chips and streaming readout
  - Prototype readout board, cables

### eRD112 [2]

- Sensor
  - BNL, HPK/FBK productions
  - Lab/beam test, Irradiation
- Mechanical structure
  - Low-density mechanical structure

## eRD109 [2]

- ASIC: EICROC1, FCFD1, SCIPP
- Frontend electronics
  - Low-mass service hybrid
- A working meeting by invitation with the project office to discuss TOF engineering on April 6. Let us know if you are interested in attending.
- We will collect inputs/slides and have internal discussions on 3/27 and 4/3 before the meeting.