Debrief | Overall Thoughts

- **Physics Readiness WS:** workshop on our physics readiness for pTDR & early-science (ES) document on 09/17 – 09/18
  - Very productive!
  - See indico page and live notes

- Focus was primarily on ongoing analysis efforts, but also touched on software topics
  - Several important points in reconstruction touched on
    - ☞ (e.g. see right)
  - Also had very productive discussion outlining details of updated pTDR physics chapter and the ES document
    - ☞ See Thursday in the live notes

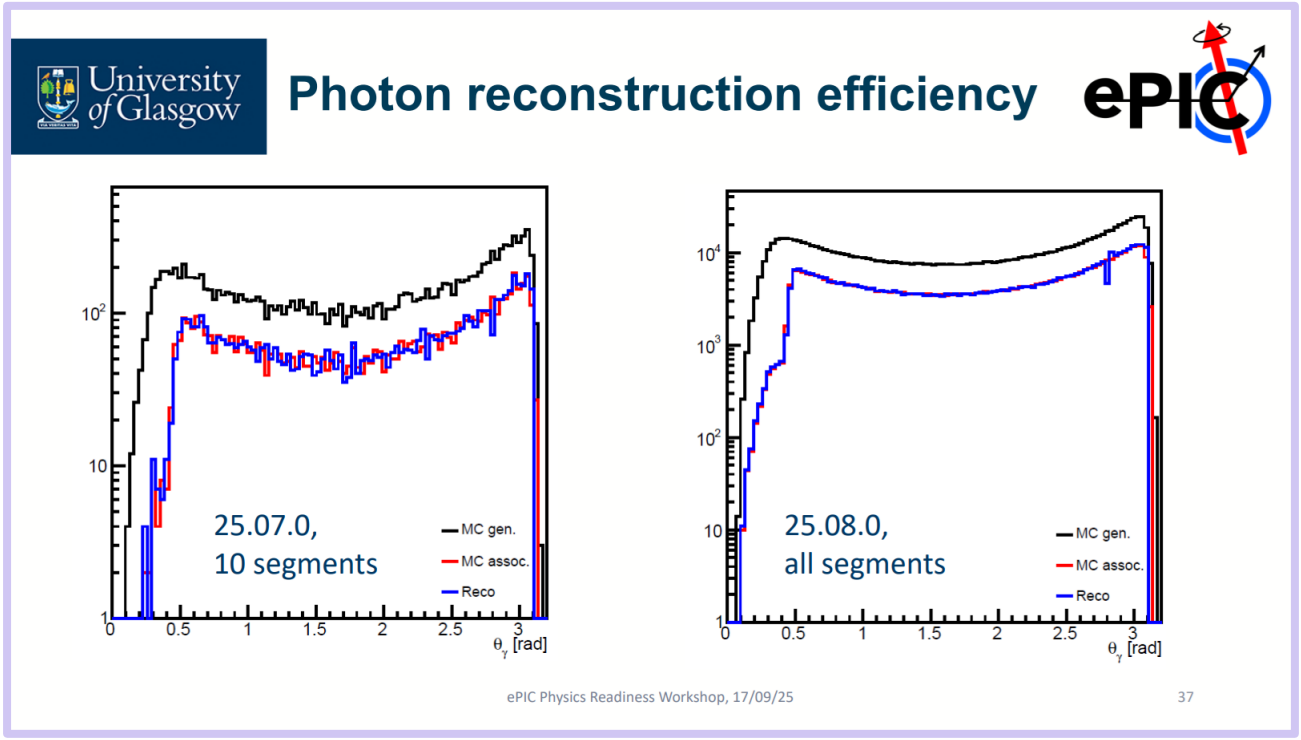
Short- & Long-Term reco. topics discussed:

- Developing a muon-finder a la the electron finder
  - Likely will be driven by BSM-EW/Exclusive groups
- Shaking out issues with background integration (next slide)
- eID developments (slide 3)
- Integrating PF & eID (slide 4)
- Integrating FF & central detectors for event reconstruction
  - Reconstructed particles are in different frames b/n two regions
  - So need to settle on convention

Debrief | Shaking Out Background Issues

- Oliver noticed significant drop in photon reconstruction efficiency after July campaign
  - **Right:** reco vs. MC photons in 25.07.0 & 25.08.0 campaigns
    - ☞ Efficiency previously at ~90%
  - See slides here

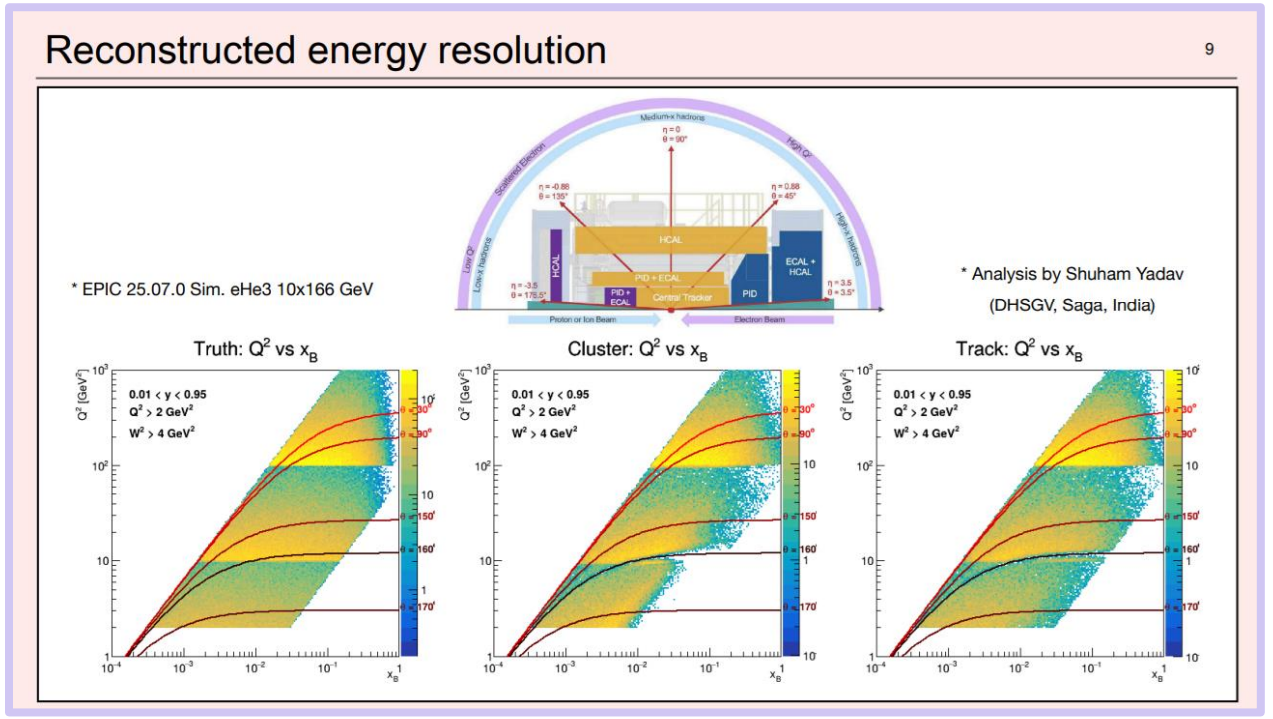
- **Solved by Simon!**
  - Turned out to be a cut on global time in CalorimeterHitDigi algorithm
    - › Passed input through background mixer + HepMC merger in 25.07.0
    - › Time of calorimeter hits no longer ~0…
  - See this issue and PR



Debrief | eID Developments

- Win gave status report on eID studies being carried out by inclusive group et al
  - Included status of/tutorial on the rapid eID prototyping tool
    - ☞ More on next slide
  - See slides here

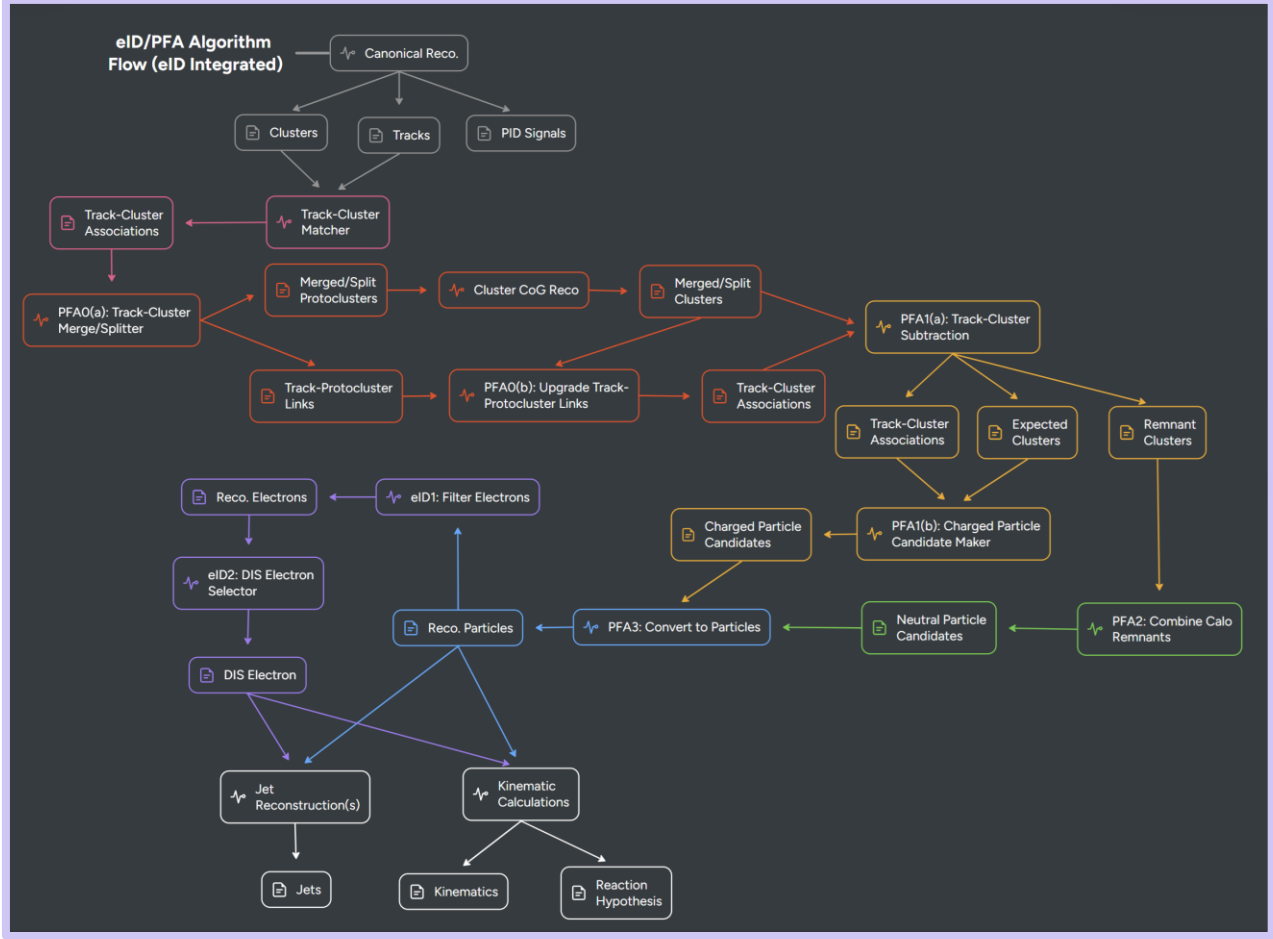
- **Identified issues to be resolved in EICrecon/software stack**
  - Found a mistake in boost.h (see slide 22 – 23), will open issue/PR soon
  - Noted that reconstruction is unreliable for eA systems
    - ☞ Needs thought on how to improve…



Debrief | eID and PF Integration

- I discussed PF status and future reco/physics priorities
  - Most of discussion was on integration on eID (spanned Win's and my talk)
  - See slides here

- **A few levels of integration:**
  1) Need to propagate recent developments in prototyping tool to EICrecon (easy)
  2) After PFAlpha, need link eID to PF output (see right, medium)
  3) Making sure prototyping & EICrecon are coherent (hard)
     - › Prototyping tool evolved a lot: need to avoid technical debt…
     - › How to better facilitate prototyping/interfacing reco algorithms with "analysis-y" contexts?



Backup | Next Reconstruction Priorities Brainstorm

- Open discussion on future physics + reconstruction priorities will be part of this week's Phyiscs Readiness WS
  - Scheduled for Wednesday, Sep. 17th at 1:40 UK time
  - ☞ So want to brainstorm some possible priorities/to-do's from reconstruction side

Some thoughts:

- PID development/integration (eg. upcoming TIC discussion)
- Evolution of PF/eID after baseline
  - Expanding topoclustering (clustering across calorimeters)
  - Integration of PFAlpha and eID
- Generalized resonance reconstruction

More thoughts:

- Expansion of kinematic/inclusive algorithms
  - Eg. The "Reaction Hypothesis" floated on Aug. 4th
  - Tighter integration of central & FF/FB regions
- Timeframe integration
- Background impact on holistic reconstruction