OAK RIDGE National Laboratory

TOF Simulation & Reco

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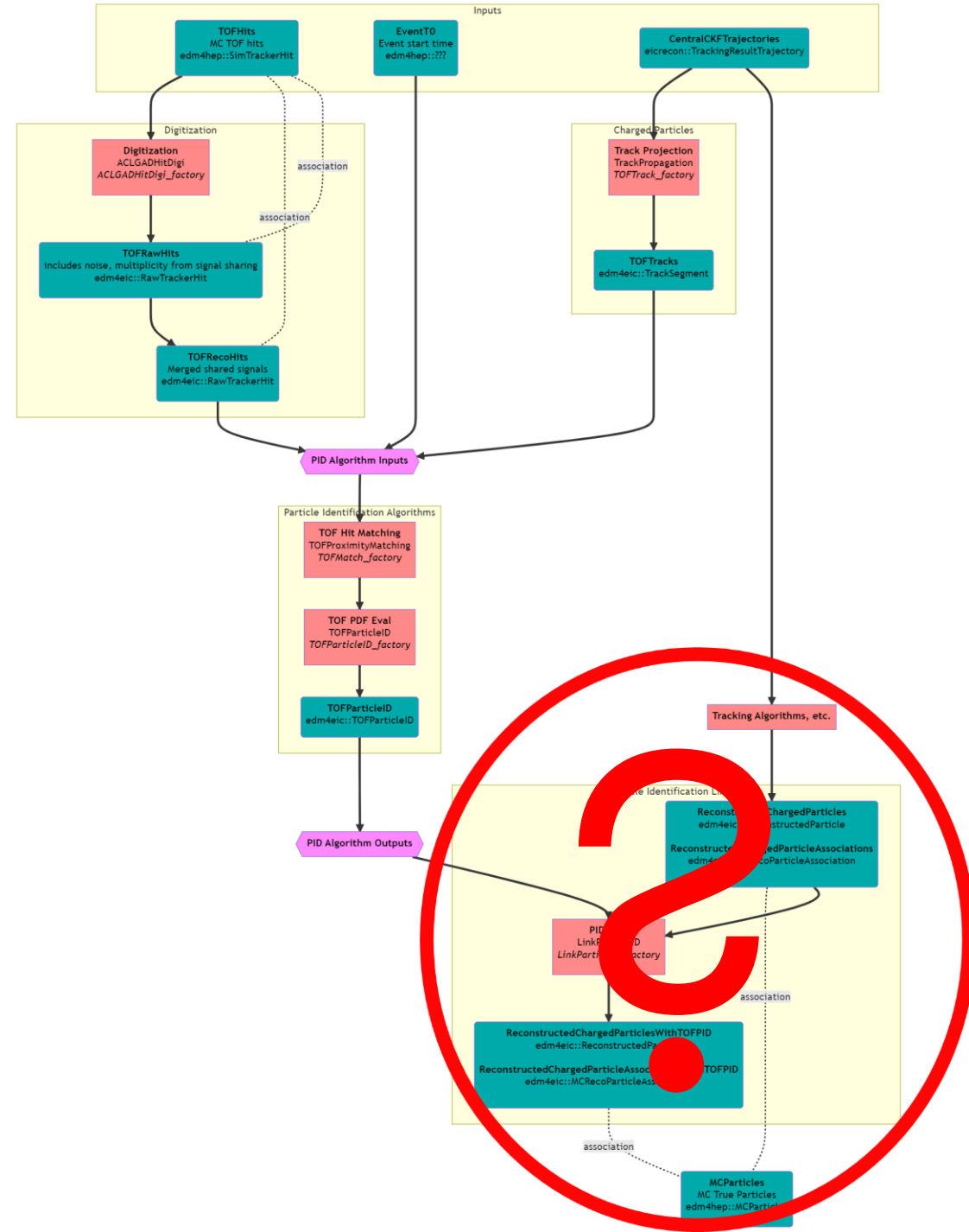
U.S. DEPARTMENT OF ENERGY

TOF in June Simulation Campaign

- No significant TOF changes from previous Arches/Bryce Canyon campaigns
- Still running on simplified forward TOF geometry
  - Detailed forward TOF implementation exists (thanks to Nico), but does not work with ACTS tracking and is thus not used
- "Full" eicrecon TOF reconstruction code **not** included in June campaign
  - No useful output for non-experts at this time
  - Same is true for all PID detectors (!)
- First campaign output files available
  - I have not yet looked into them…

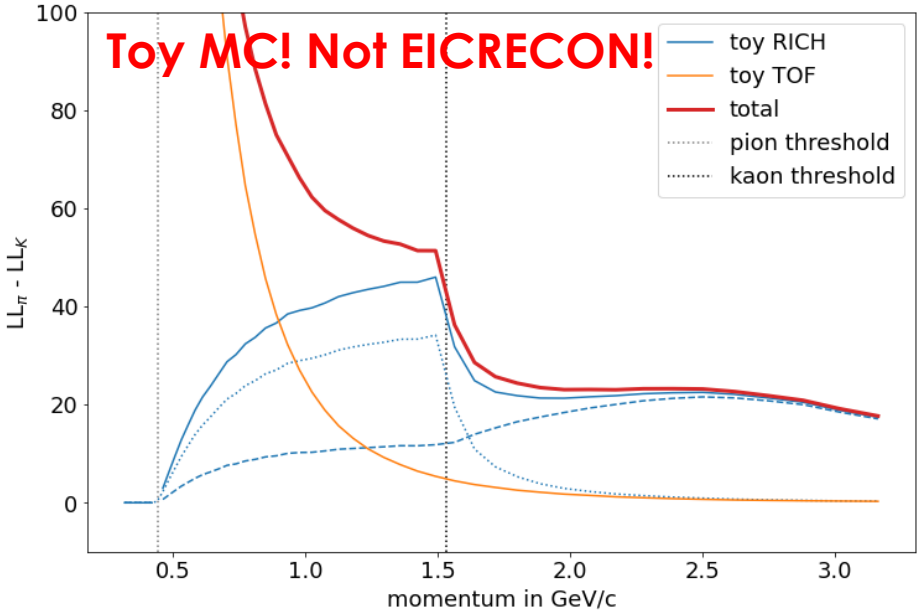
TOF Reconstruction Structure

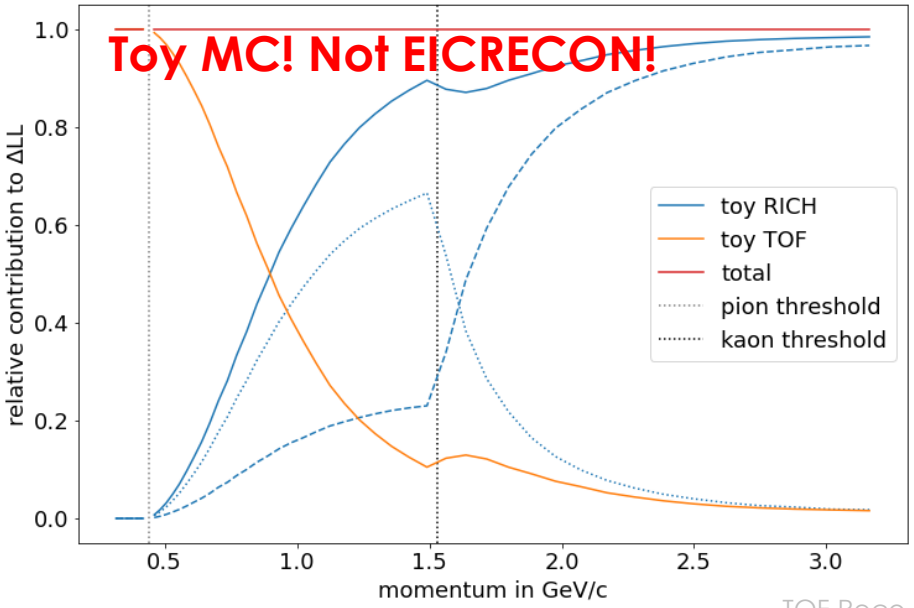
- Based on Chris' Dilks dRICH reco flowchart
  - Good to agree on general approach to unify architectures
- PDF eval currently simple Gaussian
  - Added complexity from AC-LGAD timing digi etc.
- Glaring omission: event T0 iteratively depends on TOF reco…
  - Iterative T0 reco exists in ECCE code base, anyone interested?



Towards Combined PID Performance Plot for PID Review

- dRICH reco code works in largely integrated in eicrecon branch "irtalgo"
  - Can do combined performance plots forward TOF + dRICH
- Plan have something in time for PID review
  - Can always do "offline" combination…
- How to show combined performance?





TOF Reco etc.

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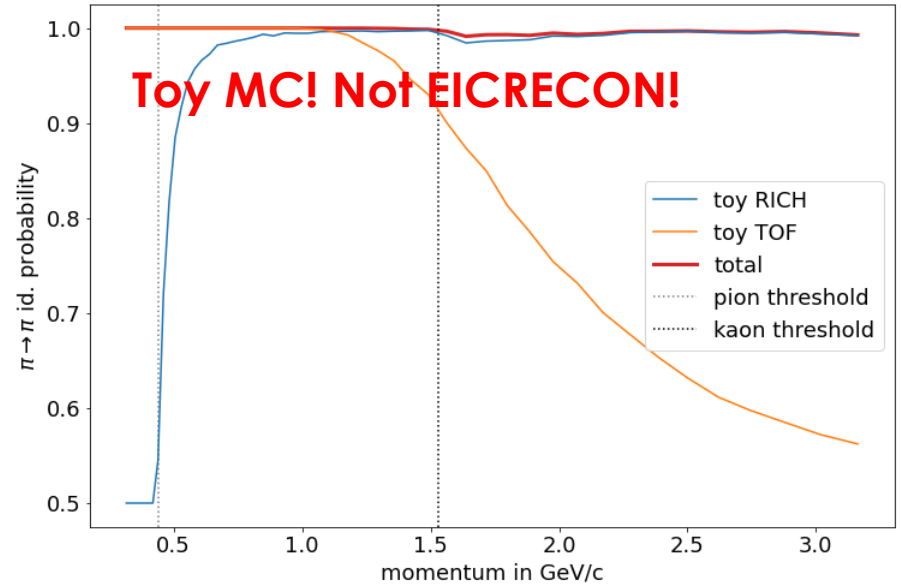

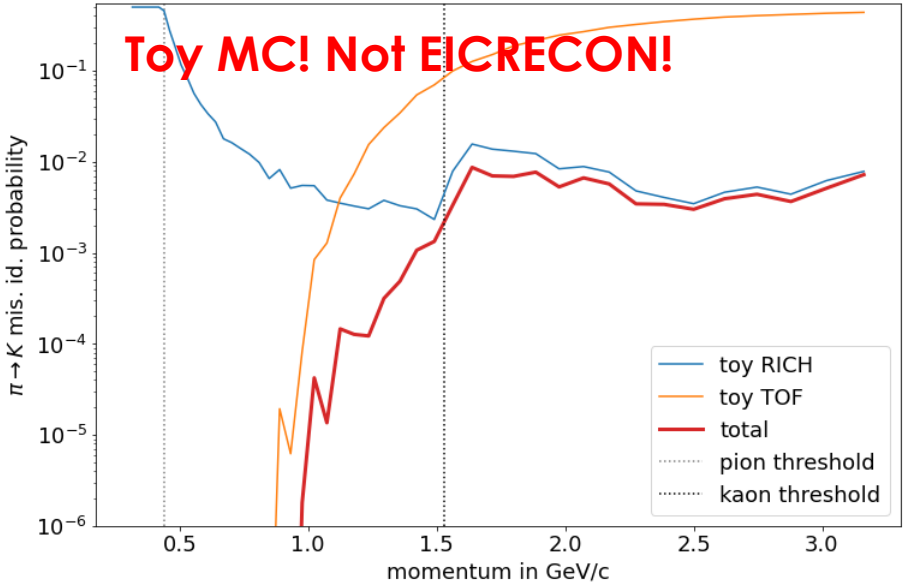

dRICH Reconstruction Software Tutorial

- Series of 1 hours tutorial lectures by Chris Dilks
  - https://github.com/eic/drich-dev/blob/tutorial/doc/tutorials/README.md
  - https://indico.bnl.gov/event/19679/ and following
  - June 9, 10 am EST: Setup and Running Simulations
  - June 16, 10 am EST: dRICH ePIC Geometry Code
  - **June 22, 11 am EST**: Running Reconstruction and Benchmarks
  - June 30, 10 am EST: Reconstruction Code Part I
  - July 7, 10 am EST: Reconstruction Code Part II
  - July 14, 10 am EST: Geometry Parameter Scanning

- Focused on dRICH and IRT, but surely valuable for everyone interested in PID reconstruction