iDM and Me

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Me

- 5th Year Graduate Student at UMN
- Deeply integrated into LDMX collaboration
- Excited to learn with and about a sibling project

Expertise

Software, specifically containers, C++, Python, Geant4, and ROOT

Three Prong Tridents

with Cam as Service

Developing analysis in hpstr to hopefully have a clean measurement of tracking efficiency

Tracker Alignment via Kalman Tracks

with PF as Service

Studying why Kalman tracks refit with GBL do not behave the same as original GBL tracks

2016 iDM

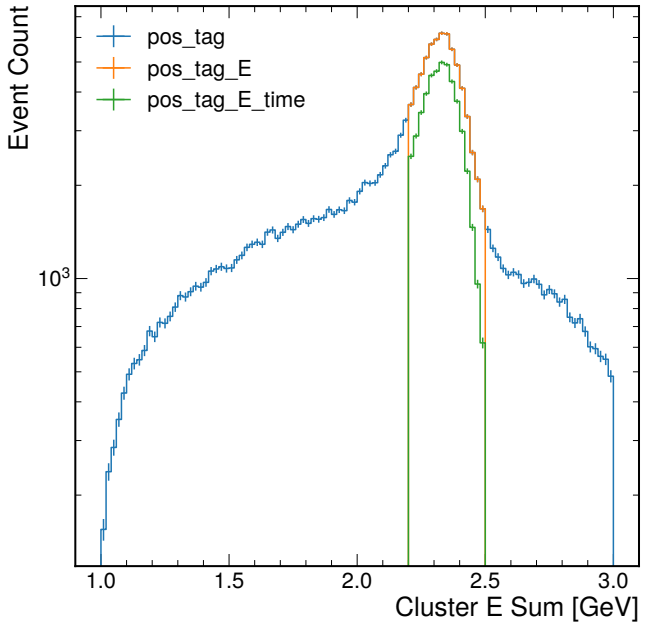
with ??? as Analysis

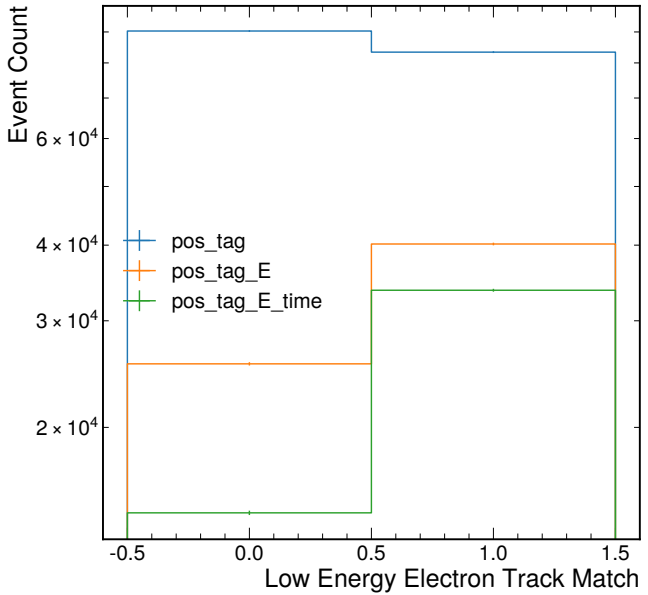
Analyze 2016 physics run, similar to SIMP search but studying differences carefully

Three Prong Tridents

Status

- Familiarized with hpstr ✓
- Developed a pretty clean-cut analysis focused on finding "clean" track events





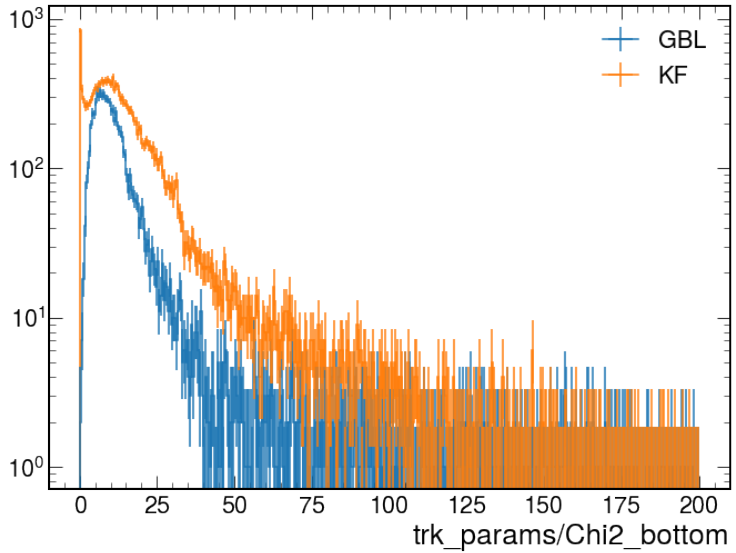
Plans

- Generalize analysis
  - Show ECal crystal occupancy
  - Include dead/off crystals as part of "the edge" when determining if clusters are fiducial
  - Check trigger clusters (for runs where that data was saved)
- Merge processor and its configuration JSONs

Tracker Alignment

Status

- Met with HPS folks (PF, Norman, Robert) ✓
- Running hps-java with PF ✓
- Learning about alignment and tracking procedures [1]



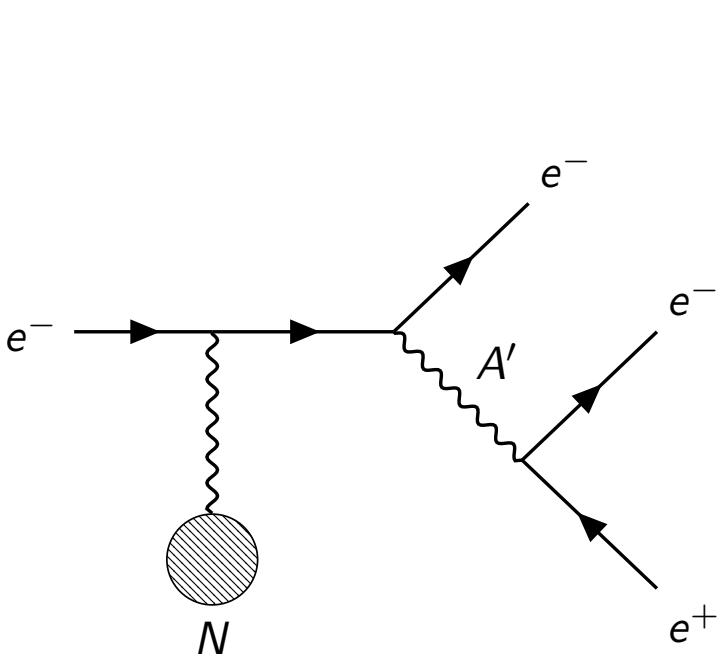
[1] Shoutout to PF for being a great tutor

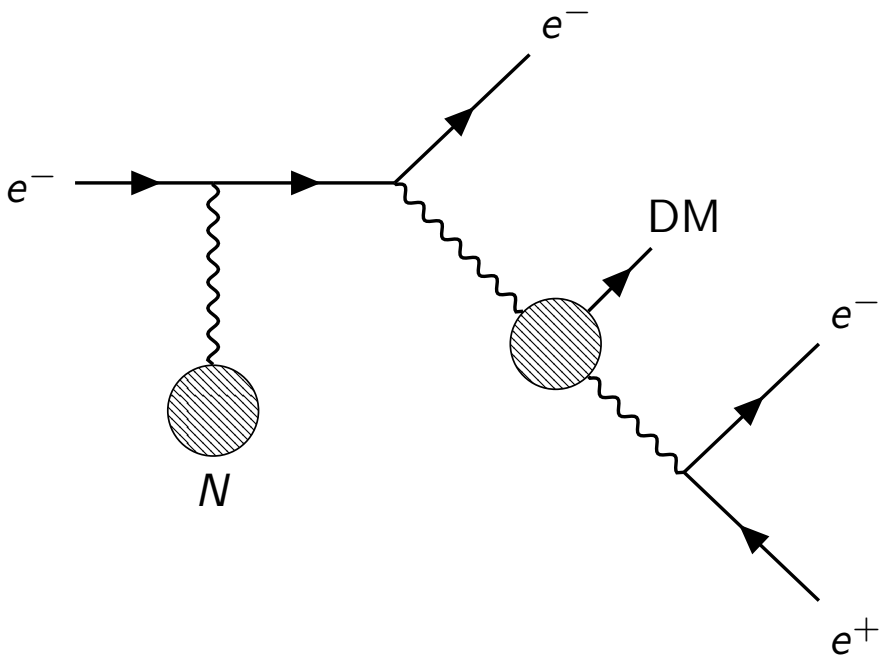
Plans

- Introduce known misalignment and try to re-align
- Search for difference between KF and GBL alignment procedures

2016 iDM

reading





Plans

- Develop MadGraph model with help from theorists
- Put model into HPS and see how this signal behaves differently than SIMPs
- Cut-n-count analysis of 2016 physics data