WEEK REPORT

Event

16/12/22

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SBNDCODE RELEASES

- Production tag

| v09.63.00.02 | 15 dic 2022 | ReleaseNotes | | — | — | — |

sbndcode v09_63_00_02 Release Notes

List of sbndcode releases

Download instructions for sbndcode v09_63_00_02

Purpose

Patch release SBN2022B

New features

- SBNSoftware/sbndcode#303
- SBNSoftware/sbndcode#293

Bug fixes

- SBNSoftware/sbndcode#310

Updated dependencies

- sbncode v09_63_00_02

- Weekly tag

| v09.63.01 | 15 dic 2022 | ReleaseNotes | | — | — | — |

sbndcode v09_63_01 Release Notes

List of sbndcode releases

Download instructions for sbndcode v09_63_01

Purpose

Weekly release

New features

- SBNSoftware/sbndcode#309
  - Updated PDS reco1 used in our standard fhicls
- SBNSoftware/sbndcode#303
  - Improvements and corrections to the Simple Flash Matcher
- SBNSoftware/sbndcode#293
  - Added lines to track/shower creation blocks to run the creations over all PFOs

Bug fixes

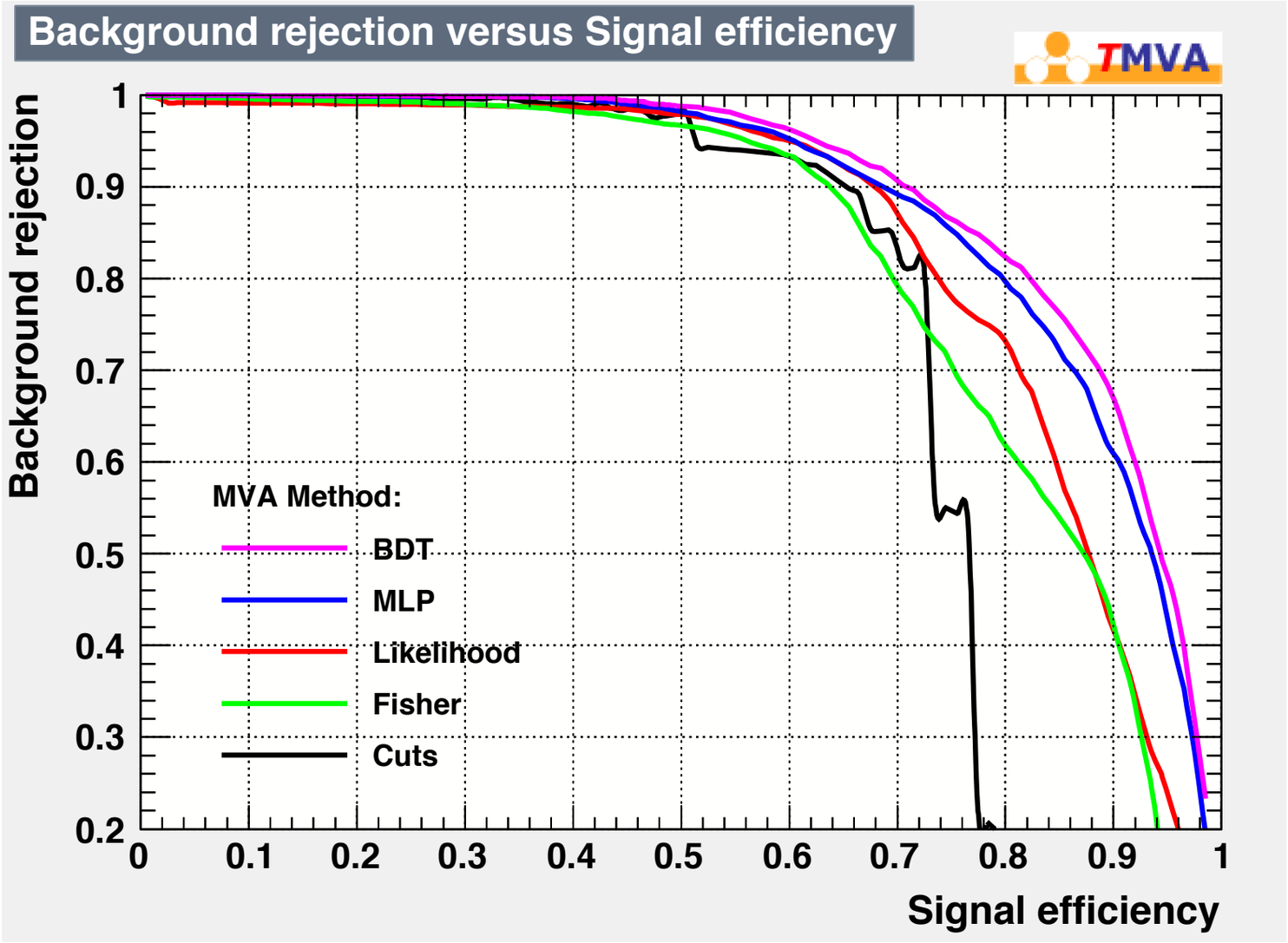
- SBNSoftware/sbndcode#310

Updated dependencies

- sbncode v09_63_01
- larsoft v09_63_01
- sbnd_data v1_16_00

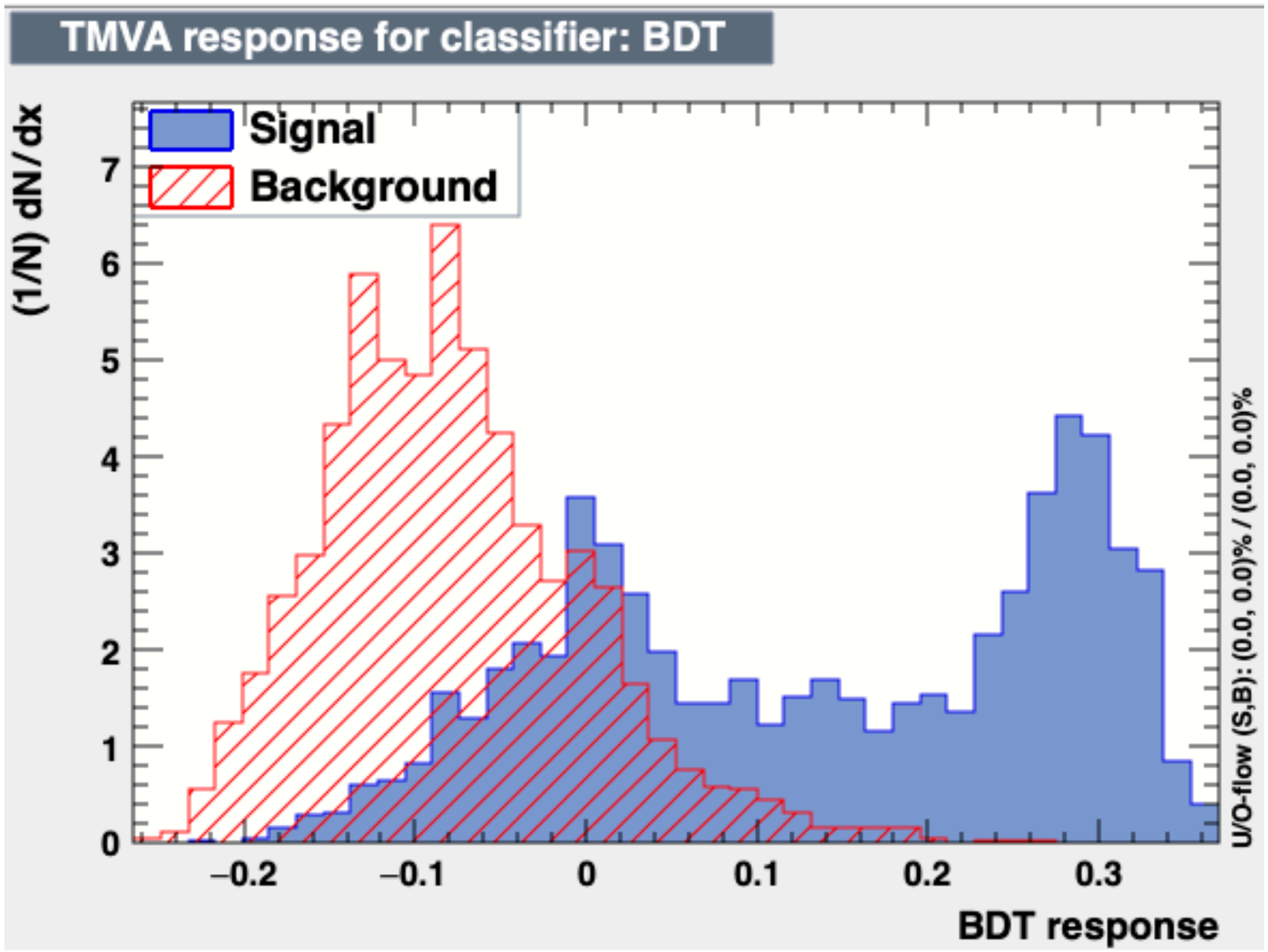
HYPERON SELECTION

- ROC plot from last CM talk
- Best performance: Boosted Decision Tree

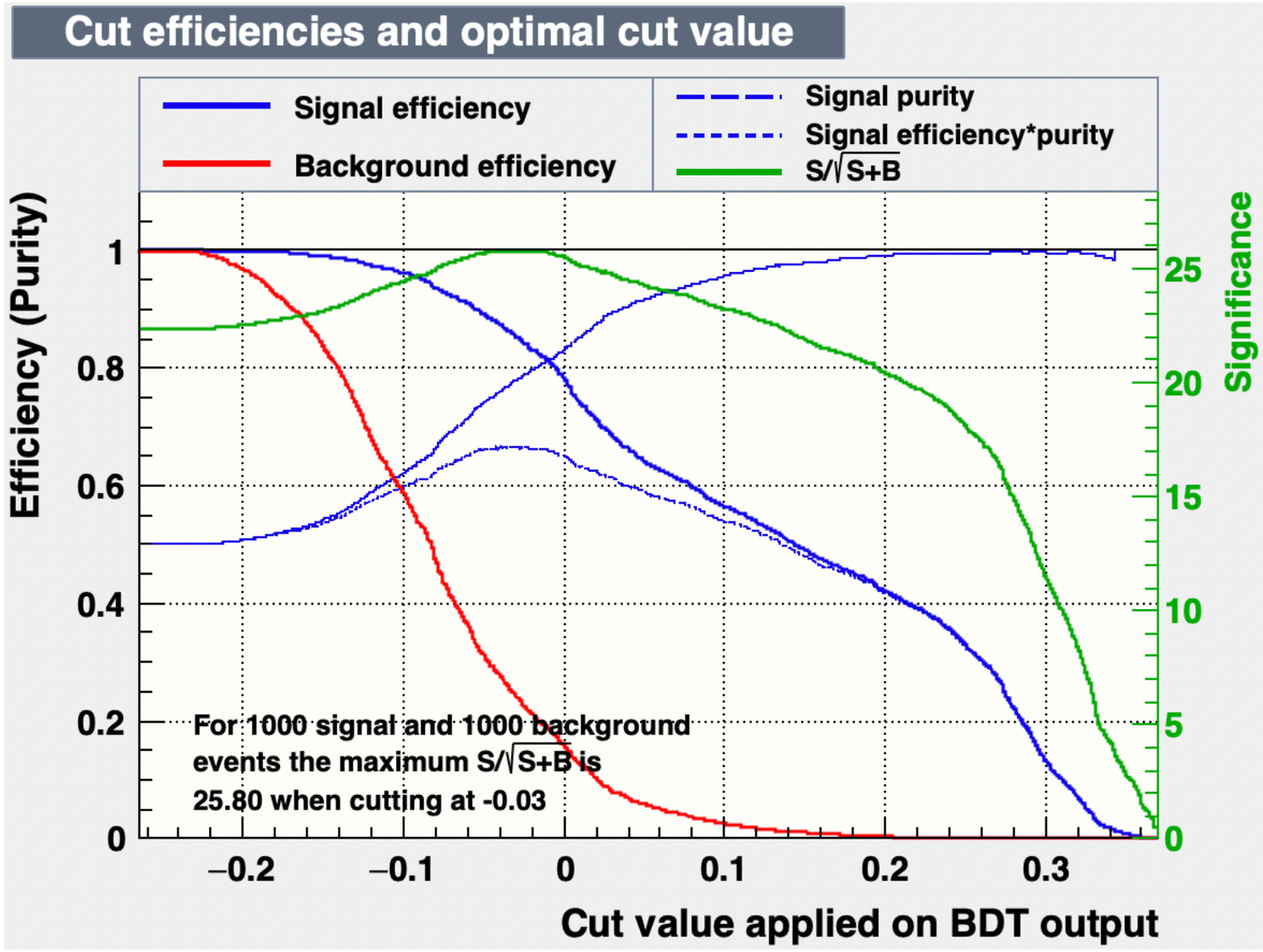


HYPERON SELECTION

- BDT classifier score

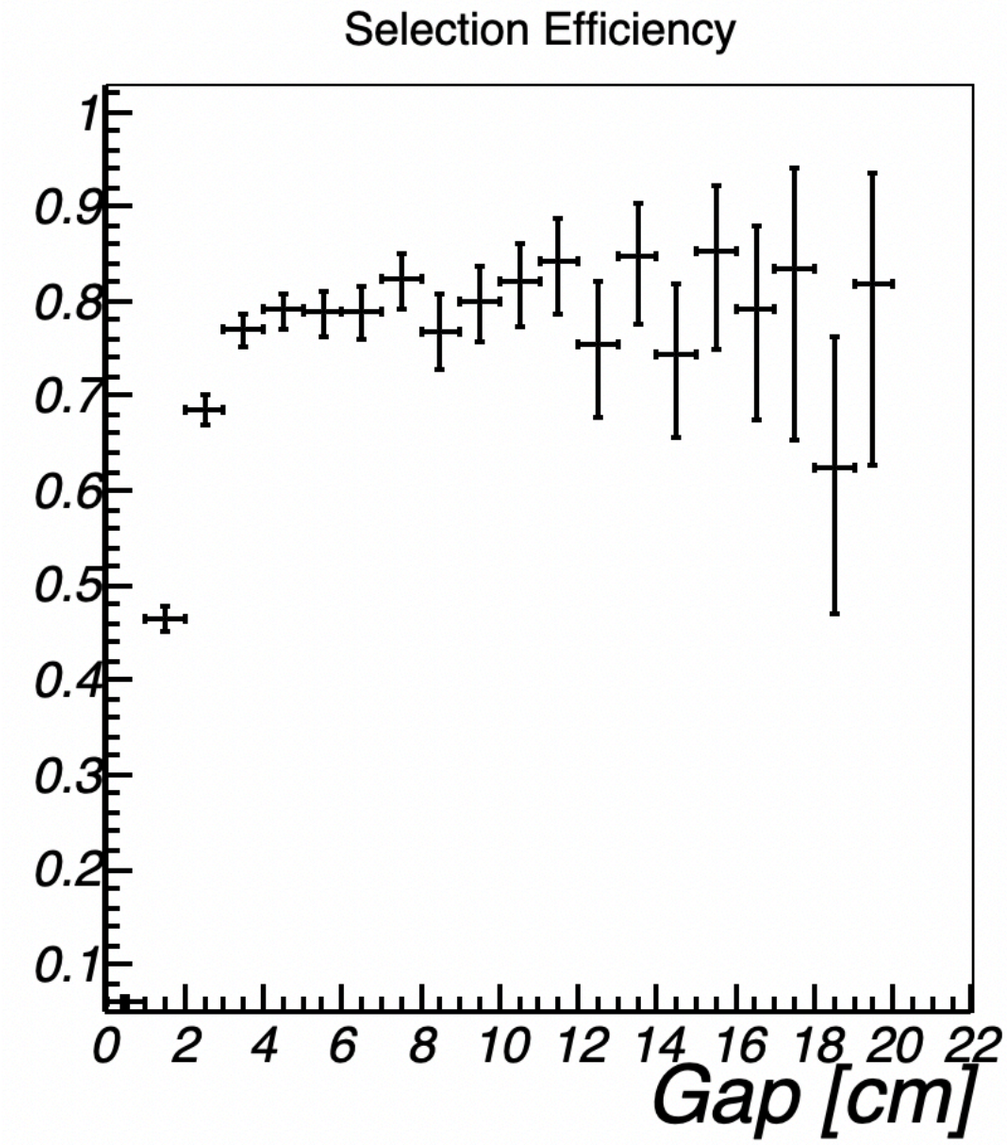


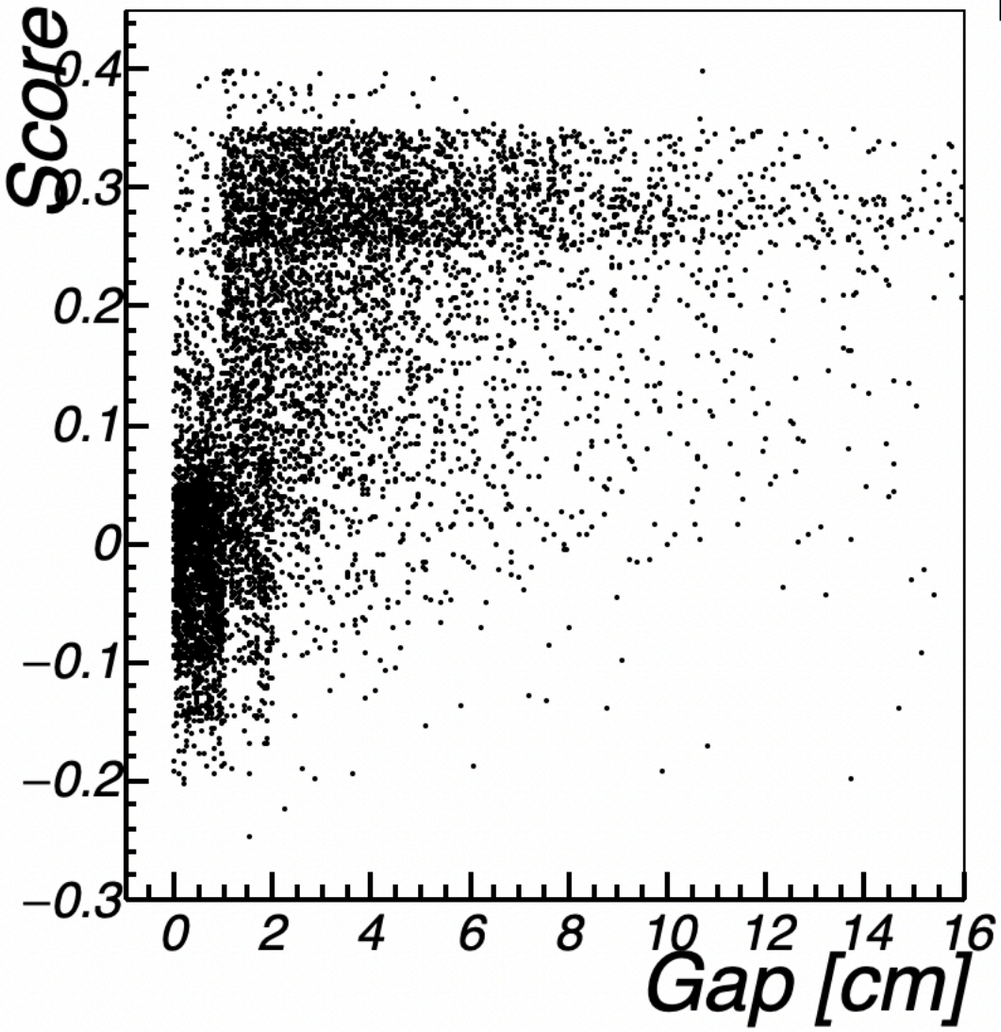
- BDT classifier score



HYPERON SELECTION

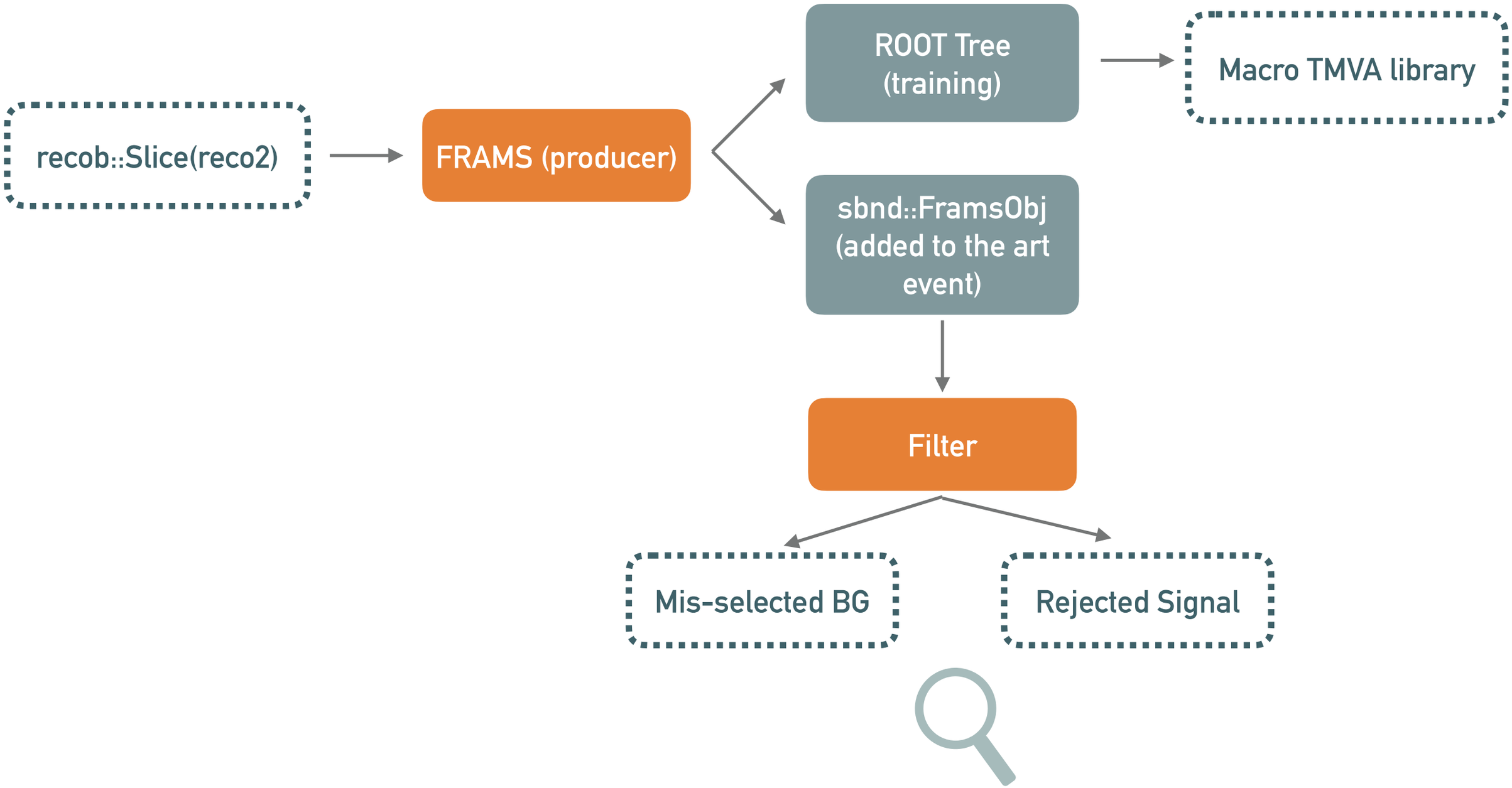
- Selection efficiency vs gap
- BDT score vs gap





HYPERON SELECTION

- Workflow implemented in LArSoft
- FRAMS (Fast Rise Above Muon Signal)

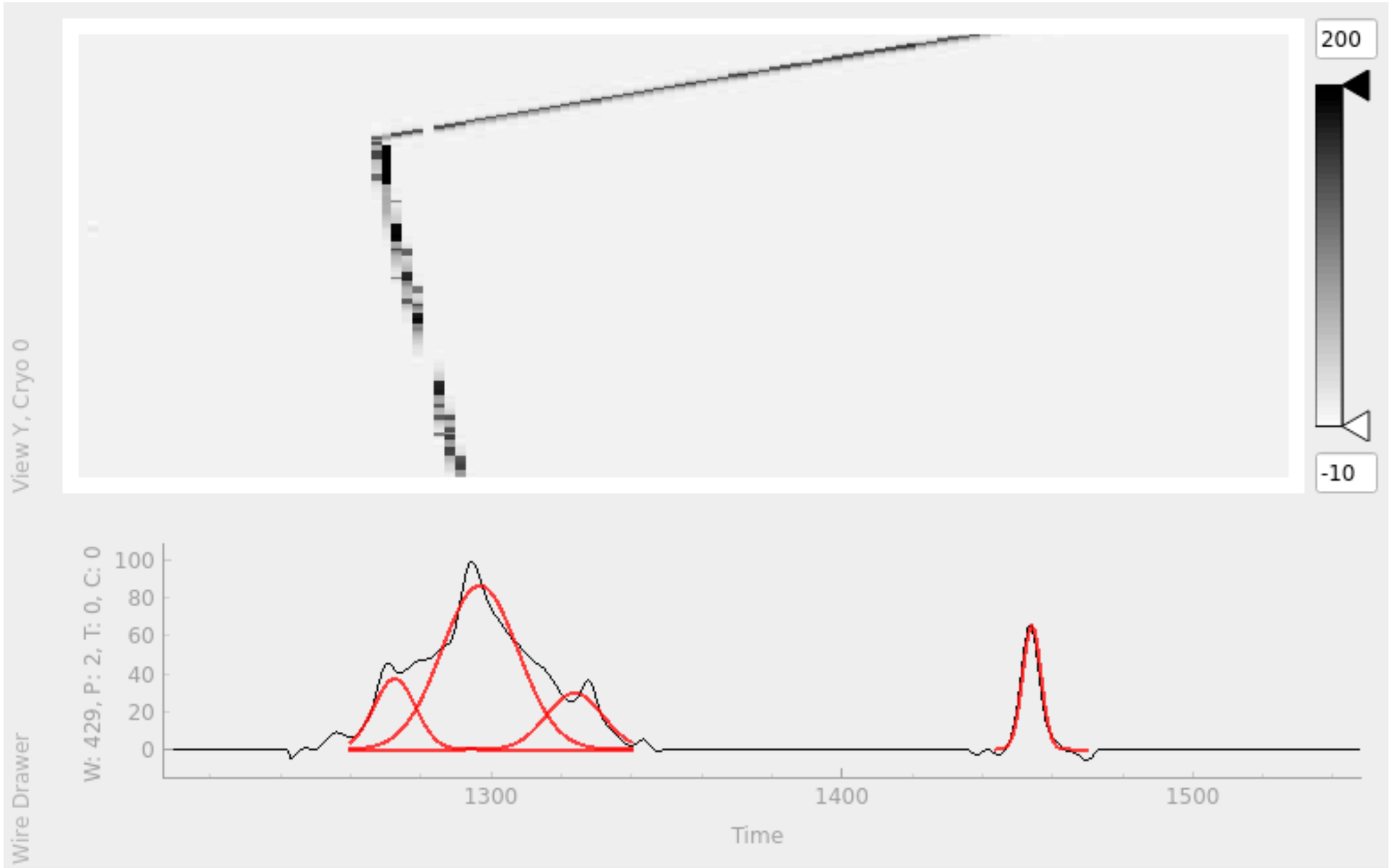


HYPERON SELECTION

- Scanning mis-selected QE:
  - One of the track parallel to the collection wires
  - Inelastic processes
  - Space charge

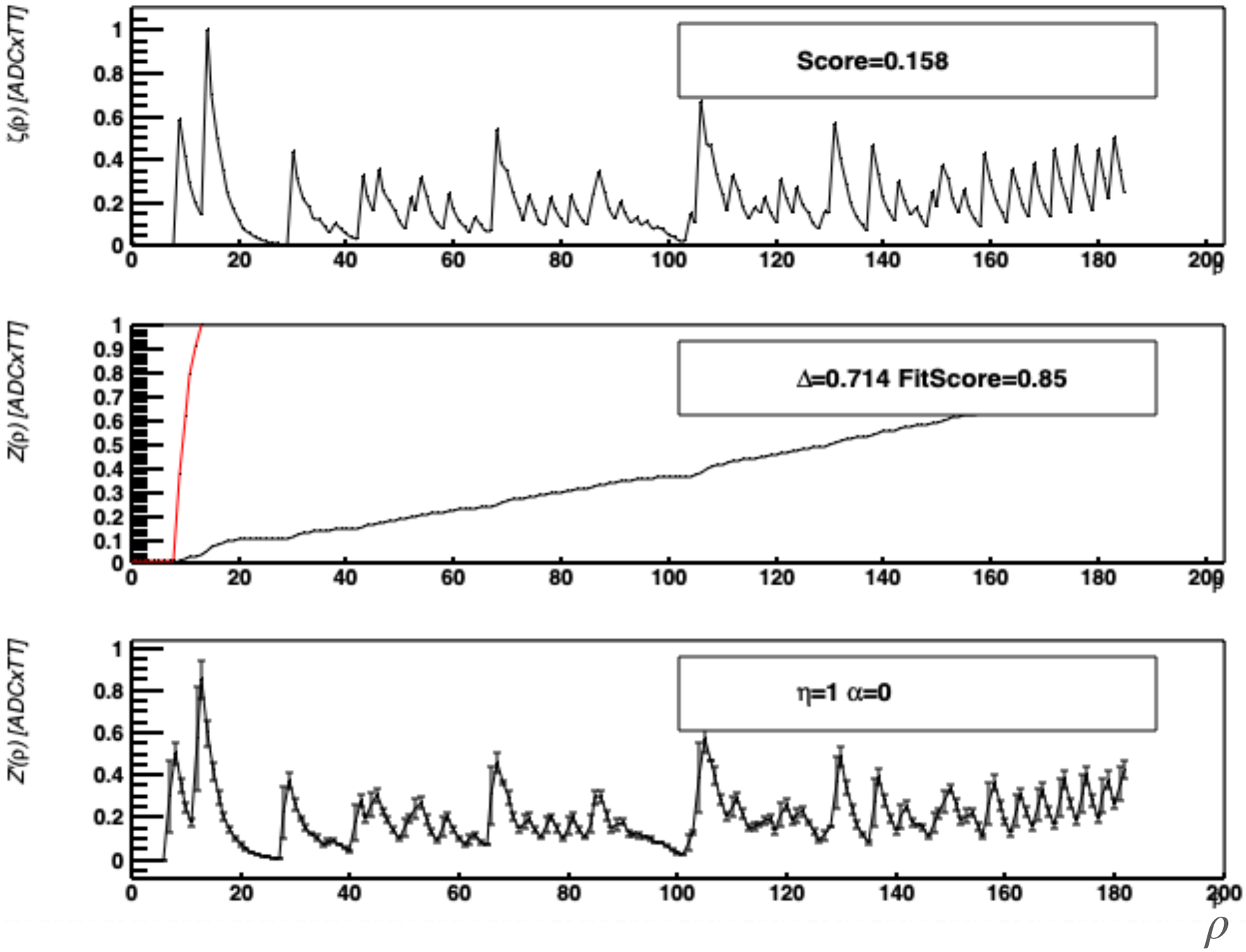
HYPERON SELECTION

- Track parallel to the collection wires



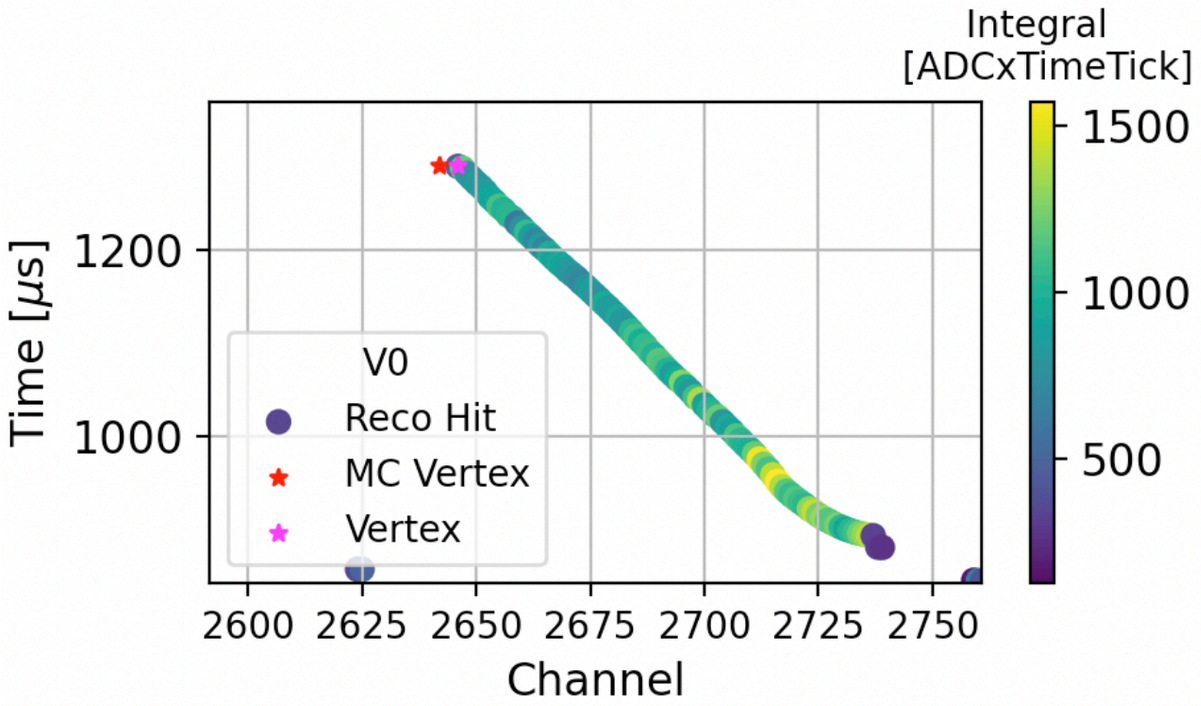
HYPERON SELECTION

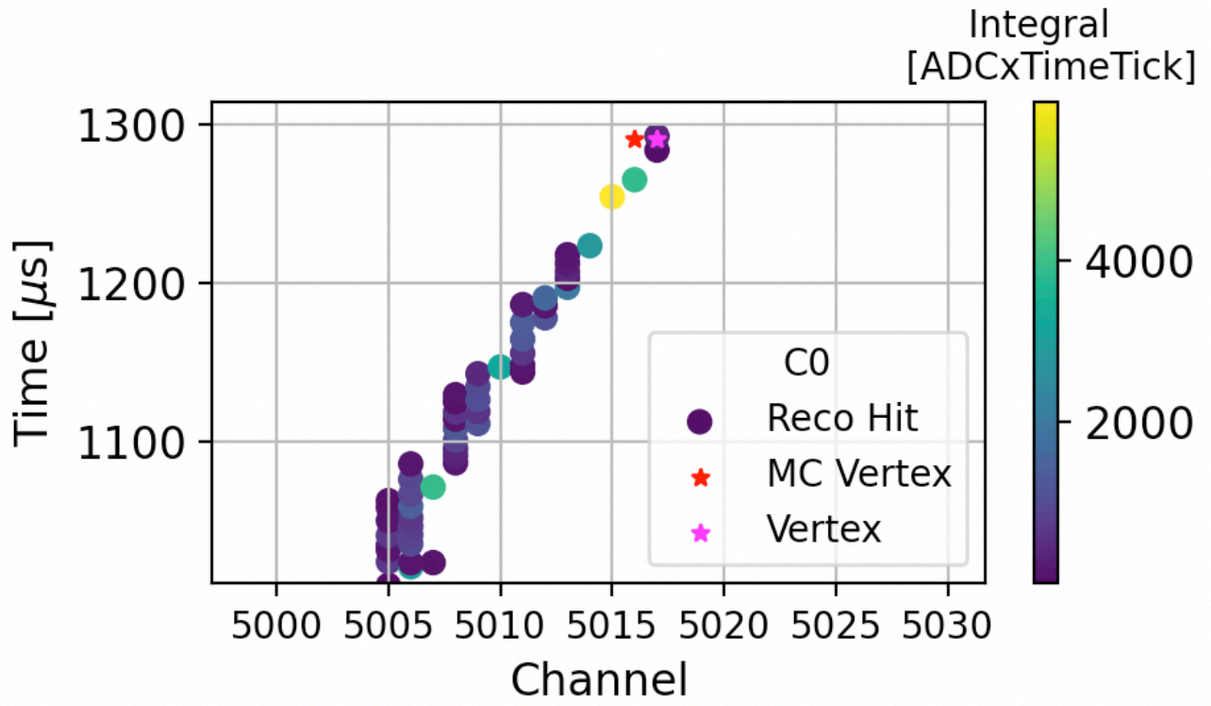
- Track parallel to the collection wires



HYPERON SELECTION

- Track parallel to the collection wires





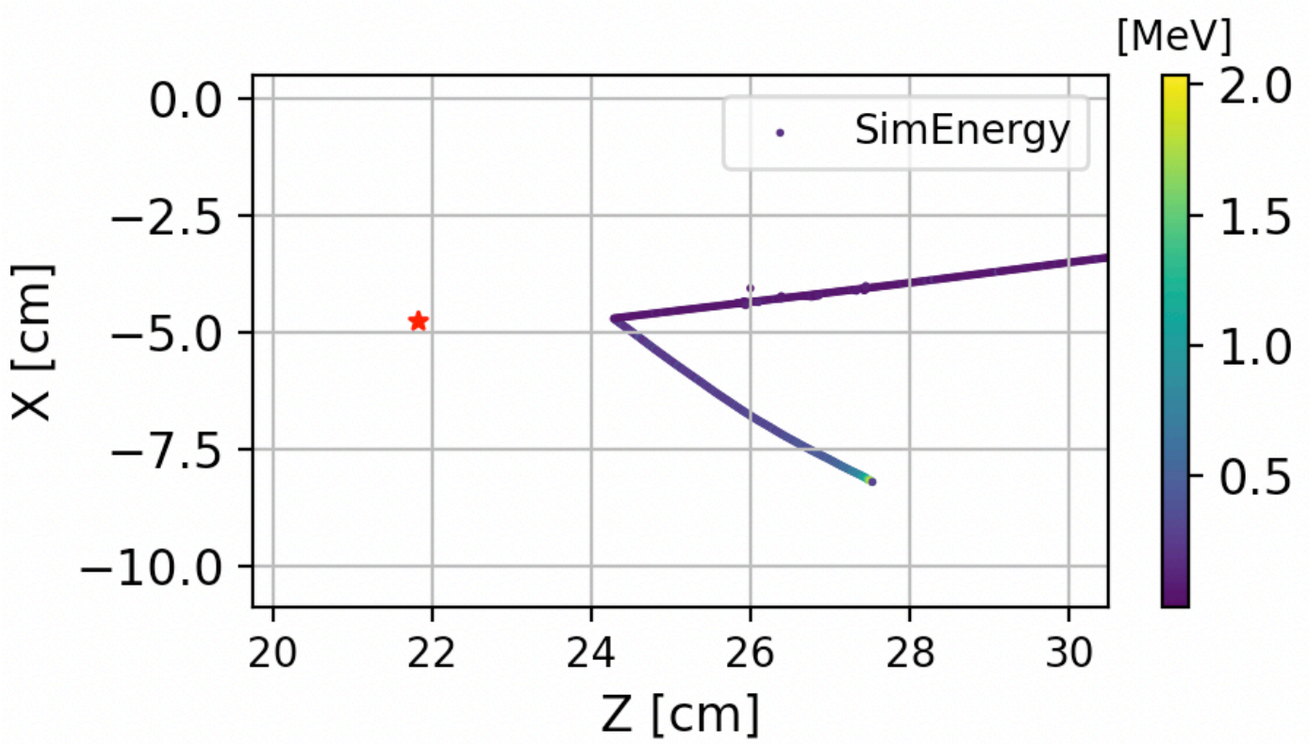
- We use a Gauss hit finder:
  - Quantify “view quality” using hit Gaussian chi2

MC VERTEX DISTRIBUTION

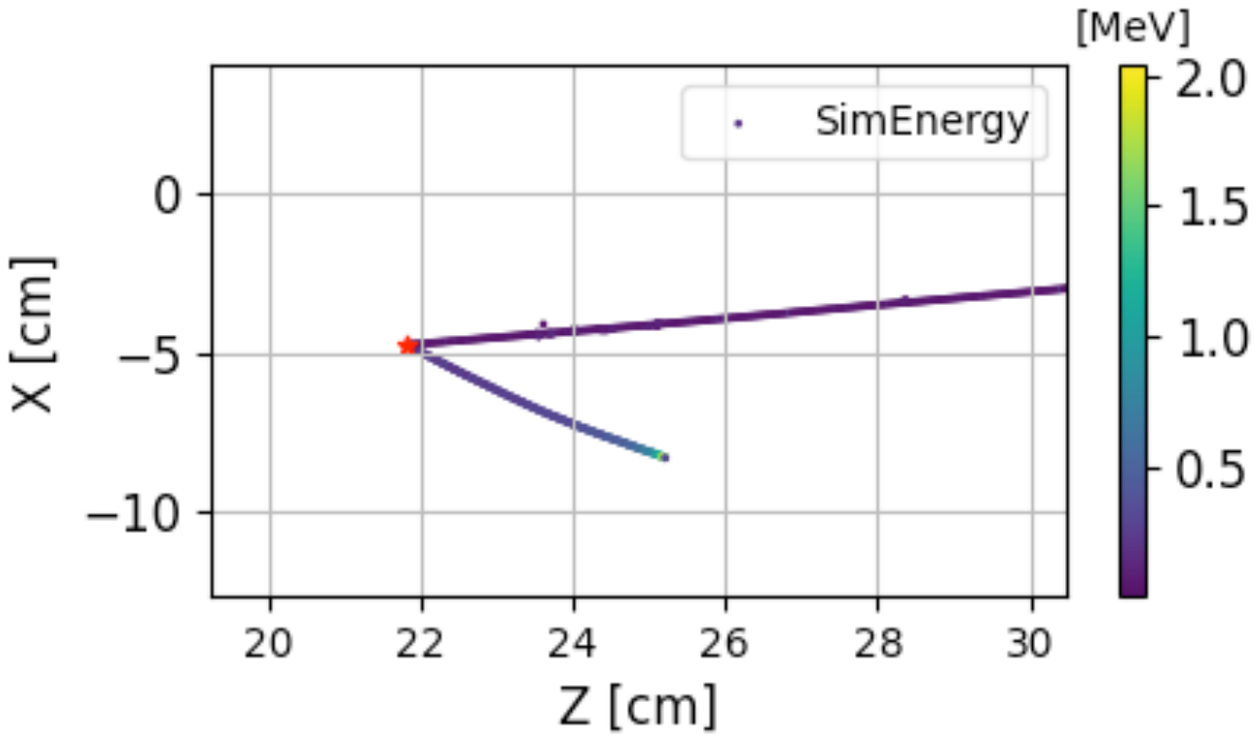
Sim energy deposits:

With space charge applied

- At Z~20 cm, ΔZ~2.5 cm

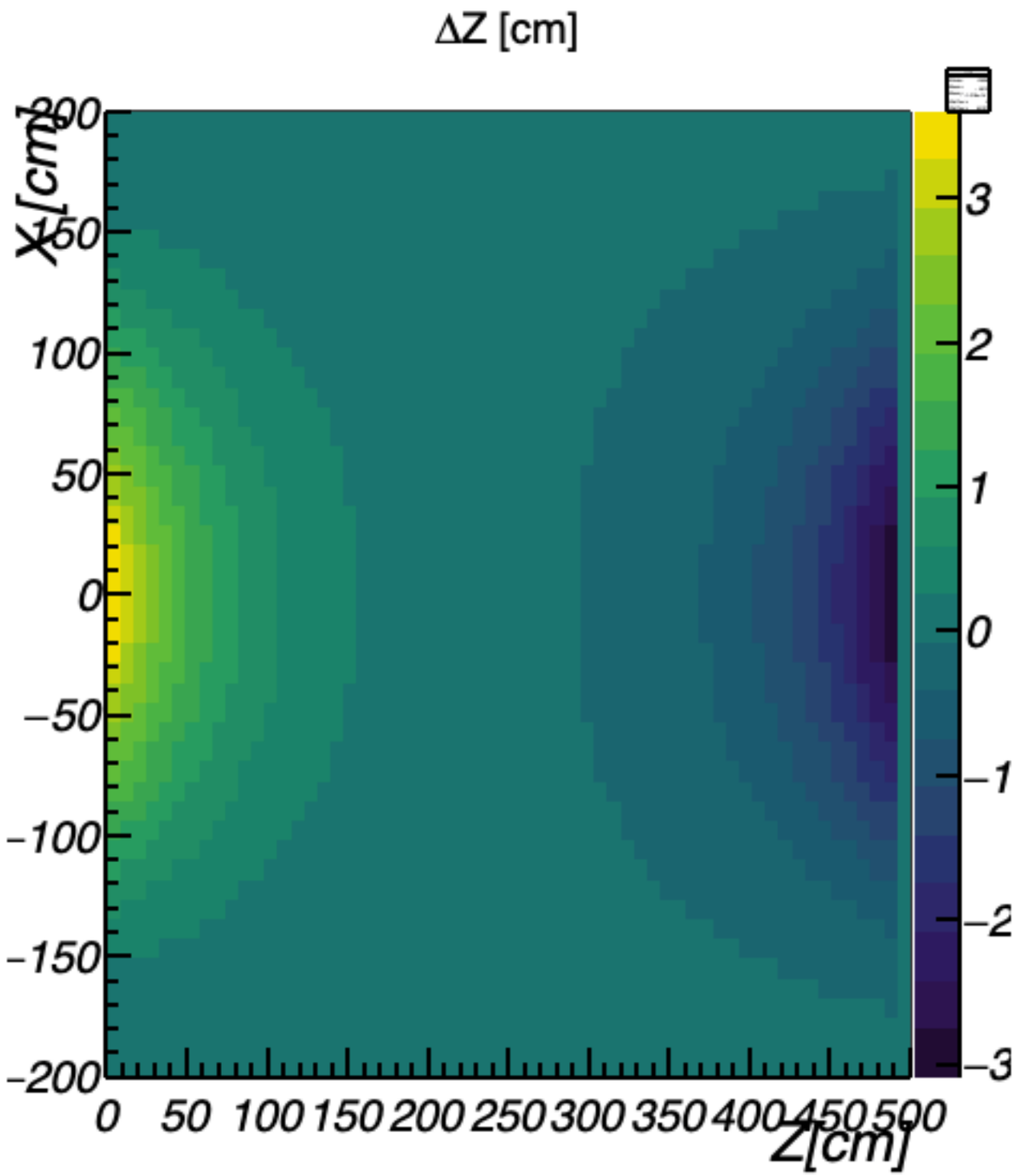


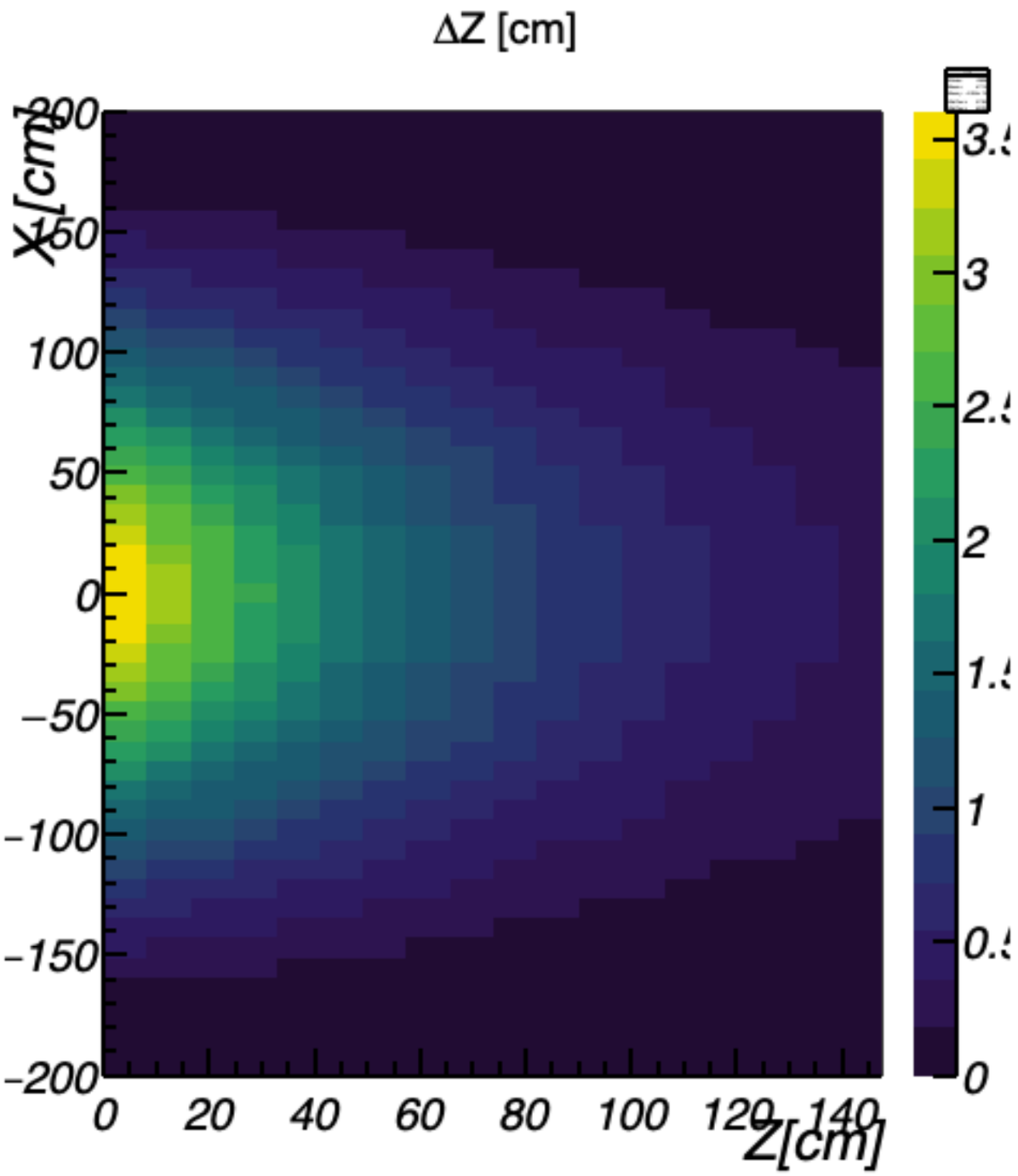
Without space charge applied



MC VERTEX DISTRIBUTION

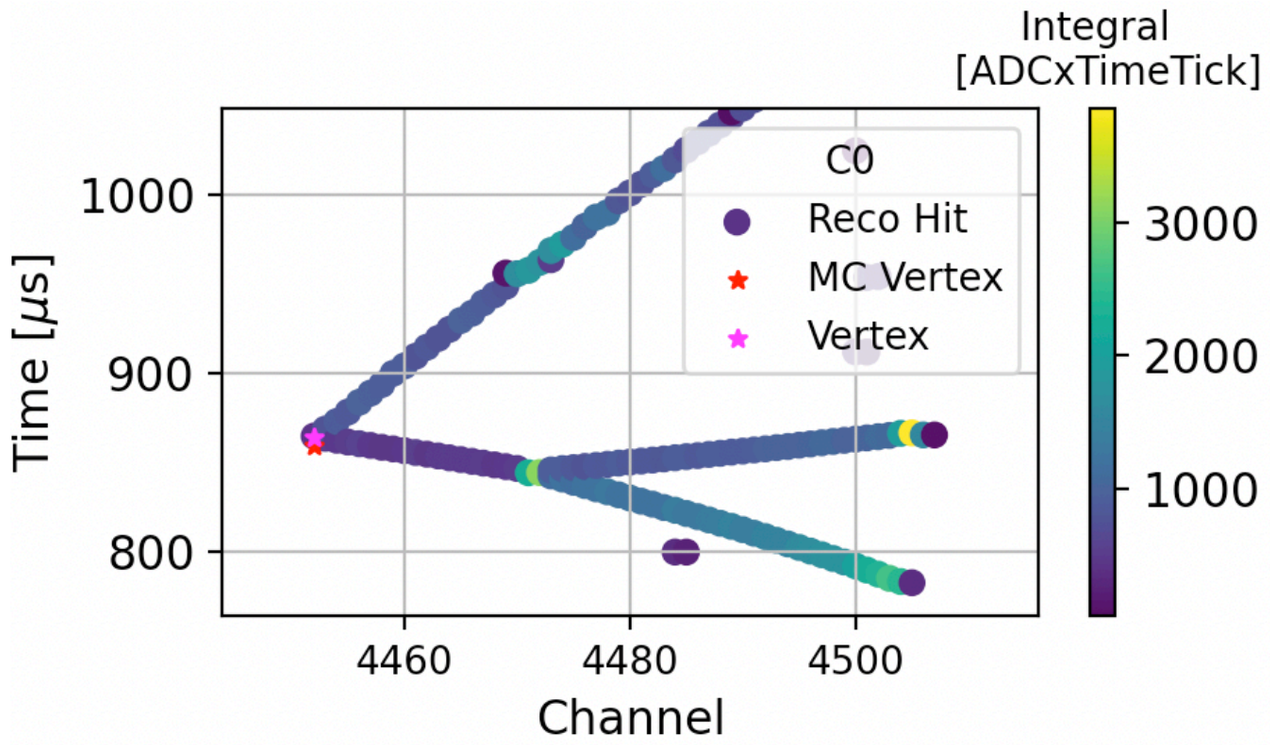
Space charge effects ΔZ at Y=0 cm





HYPERON SELECTION

- Inelastic



- Higher level variables:
  - Identify lines, vertexes…

HYPERON SELECTION

- Good reco