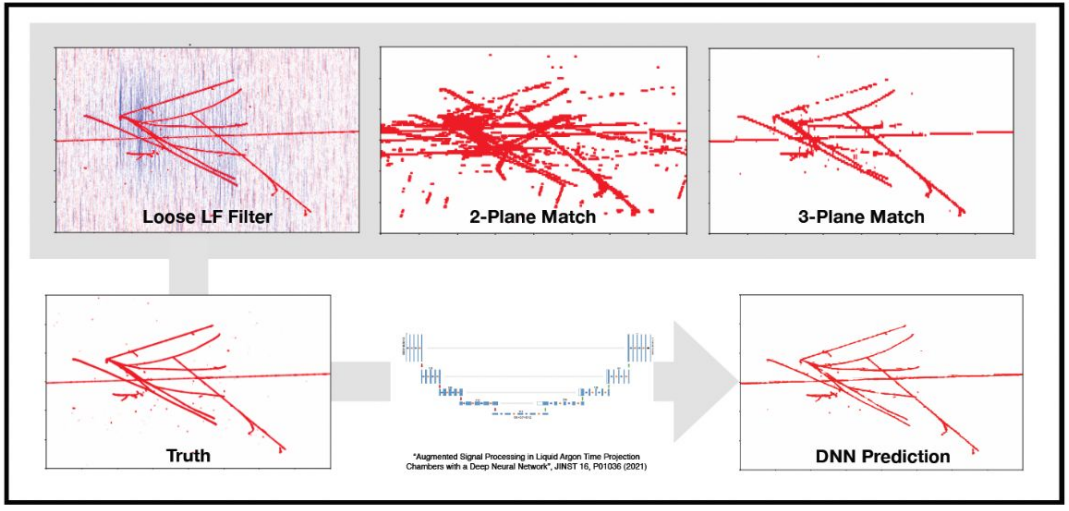
Plot of the Week
SBN Analysis Workshop
July 24-28, 2023

DNN ROI Finding

Topic 1, Moon Jung

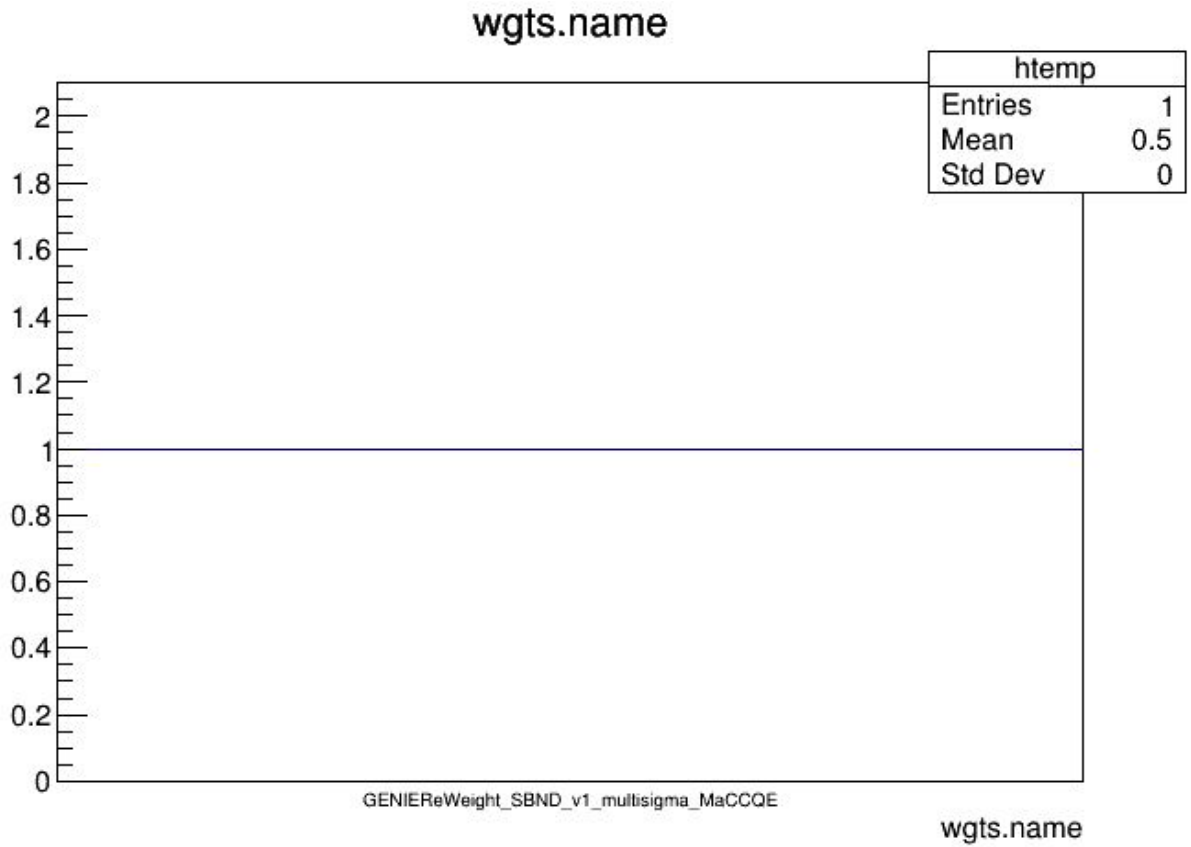
- ROI finding is essential for signal processing to reduce data size, make charge extraction faster and more robust
- DNN ROI finding attempts overcome the computational & performance limitations of the traditional ROI
- The suite of plots below show a first look at the DNN ROI finding workflow with a simulated SBND neutrino event — much more is to come!



Afro Papadopoulou

Implementation of nusystematics in the SBND workflow for the xsec related uncertainty (topic 2)

The plot illustrates that such a knob has been propagated all the way through the flat caf file stage

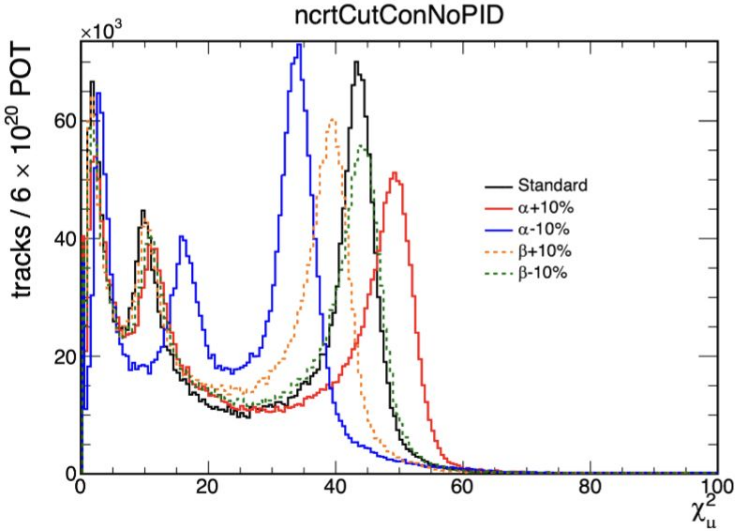


Topic 3

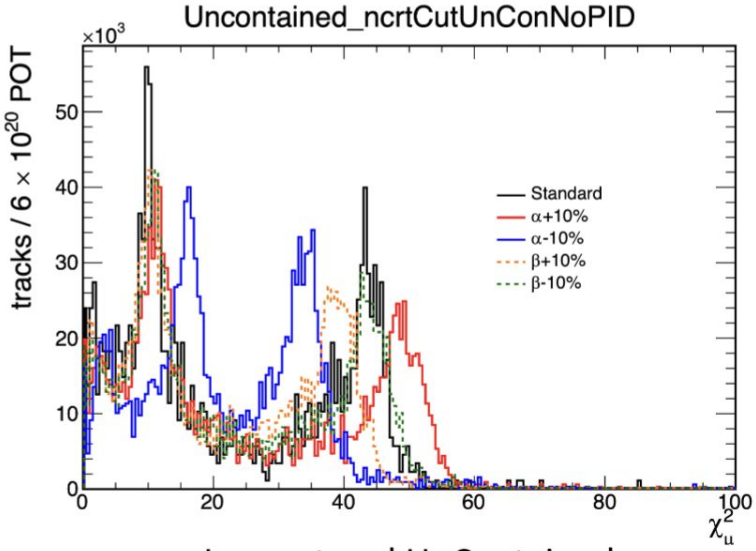
Shweta Yadav
The University of Texas at Arlington

The plots show some of the distributions we will use to validate the approach, that we can assess the uncertainty re-reconstructing in the **reco2 dE/dx** of the **detsim dE/dx**.

These plots are using old files (not including 2D deconvolution), only to show the metric developed.



Longest and Contained track per event

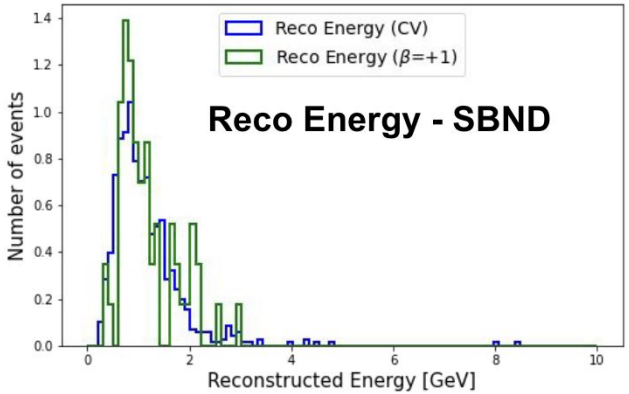


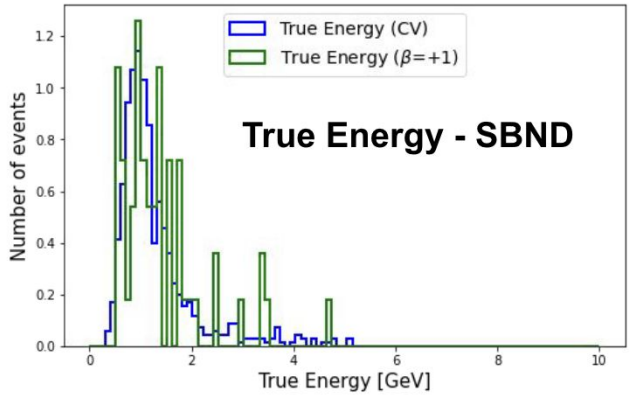
Longest and UnContained track per event

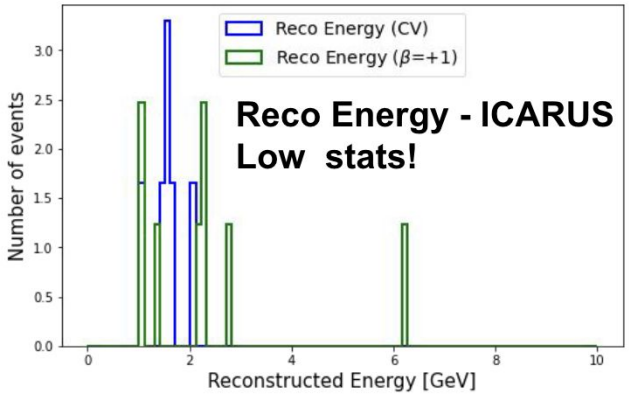
Topic 3: Daisy Kalra, Nupur Oza, Ibrahim Safa

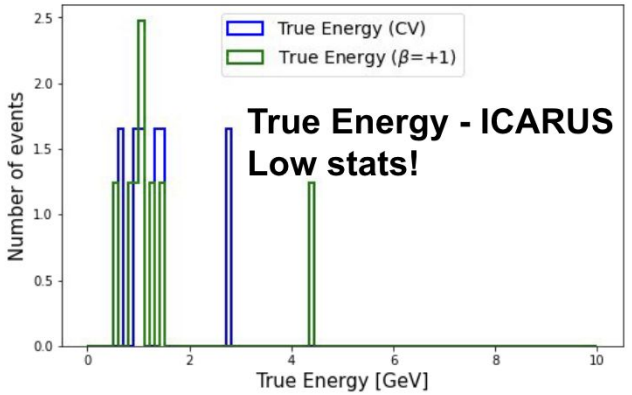
Energy Comparison Plots for CV and Recomb. Variation - SBND & ICARUS

All plots are area normalized









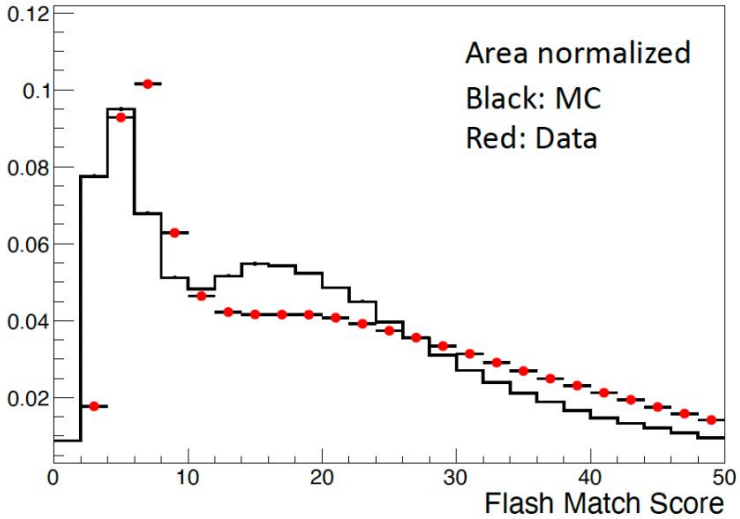
Nevis Laboratories
Columbia University

CRT-PMT Matching Efficiency

Jacob Larkin - Topic 4

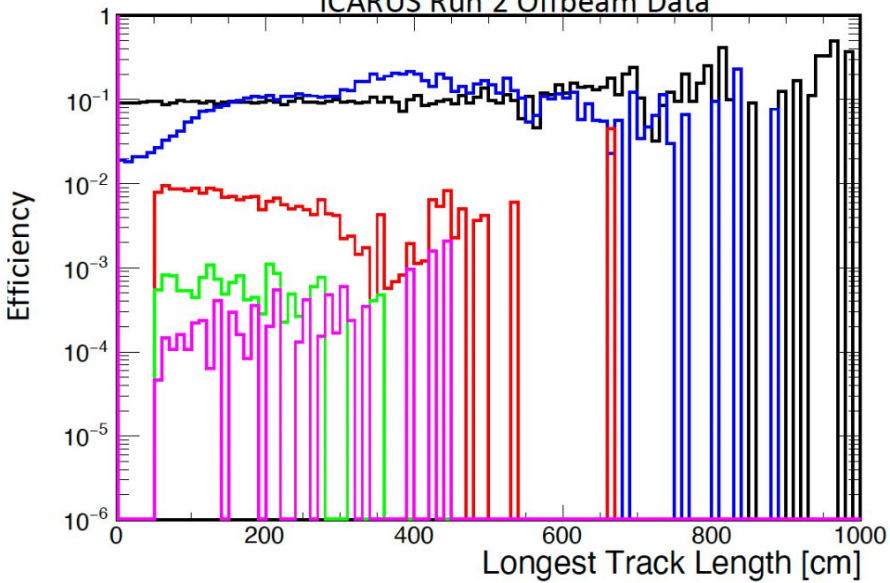
- Offbeam data is all cosmics, want efficiency as low as possible
- CRT-PMT matching alone rejects 90% of offbeam data with a flat distribution
- CRT-PMT matching also cuts 90% of remaining cosmics after 1mu1p selection

ICARUS Run 2 / 2023A MC Comparison



Black: CRT-PMT Matching only
Blue: Flash matching && track direction cuts only
Red: 1mu1p selection only
Green: 1mu1p + CRT-PMT matching
Pink: 1mu1p + flash matching + track direction cut

ICARUS Run 2 Offbeam Data



And the winner is...


Thank you!

Going for the bacon donut!
[Thank you Joseph!]