

Track Matching: TMS+ND-LAr

Efficiency plots

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Input files: /dune/data/users/fakbar/trackMatching/LAr/

- ND LAr — neutrino.combined.edep_LineCandidates.root
- TMS — neutrino.combined.edep_LineCandidates.root

7 files are
combined
together

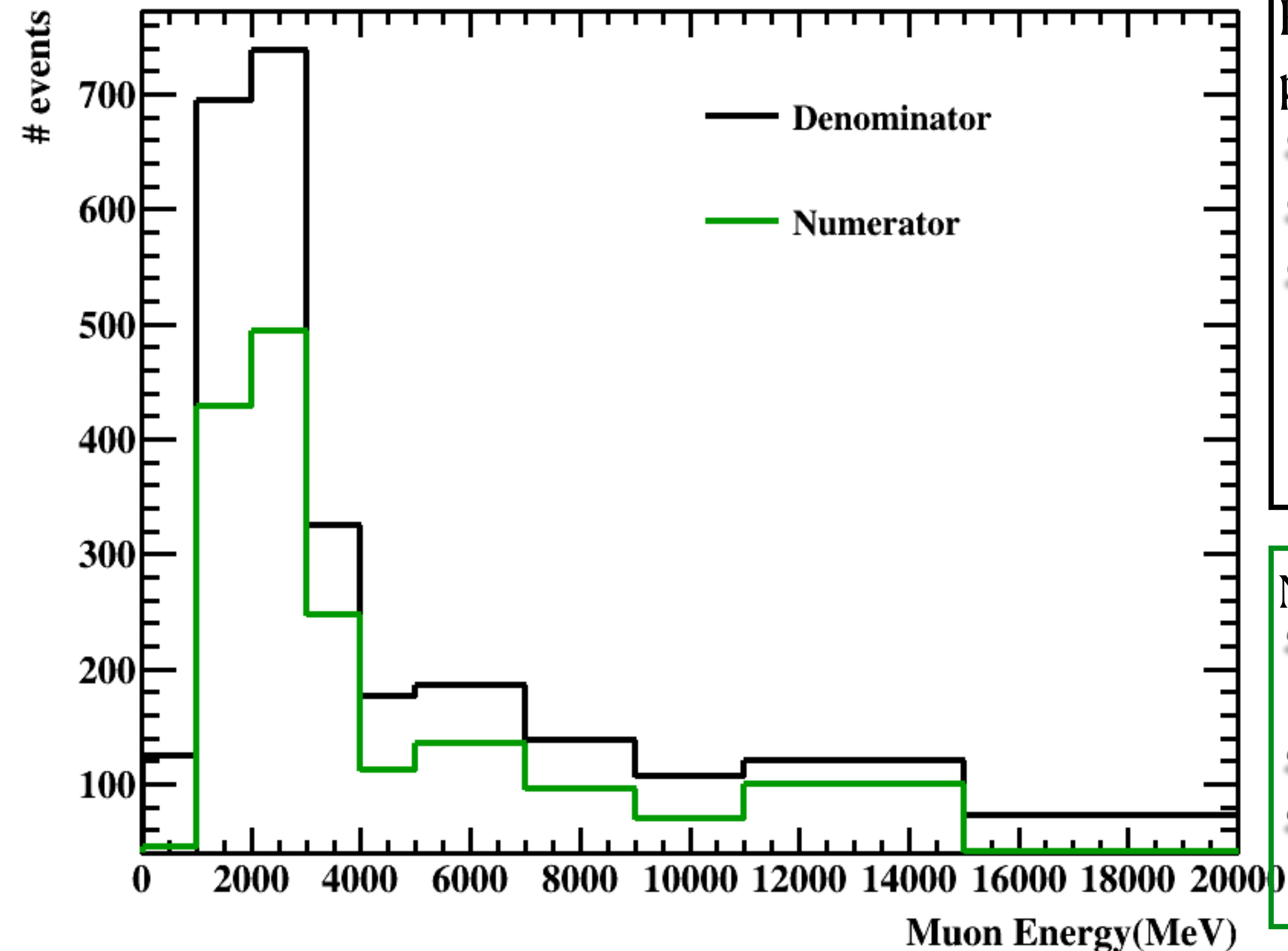
Source files

- ND LAr — /dune/data/users/fakbar/trackMatching/LAr/
LAr_FHC.neutrino.*.summary.root

/dune/data/users/jwolcott/nd-lar-reco/summary_h5/geom-20210623/
neutrino.*.summary.h5

- TMS — /dune/data/users/cwret/tms/track_file_test/
LArTMSProductionJun23withLArCV_July15TrackInfo/
LAr_FHC.neutrino.*.summary.root

We have Muon energy information only in the TMS file



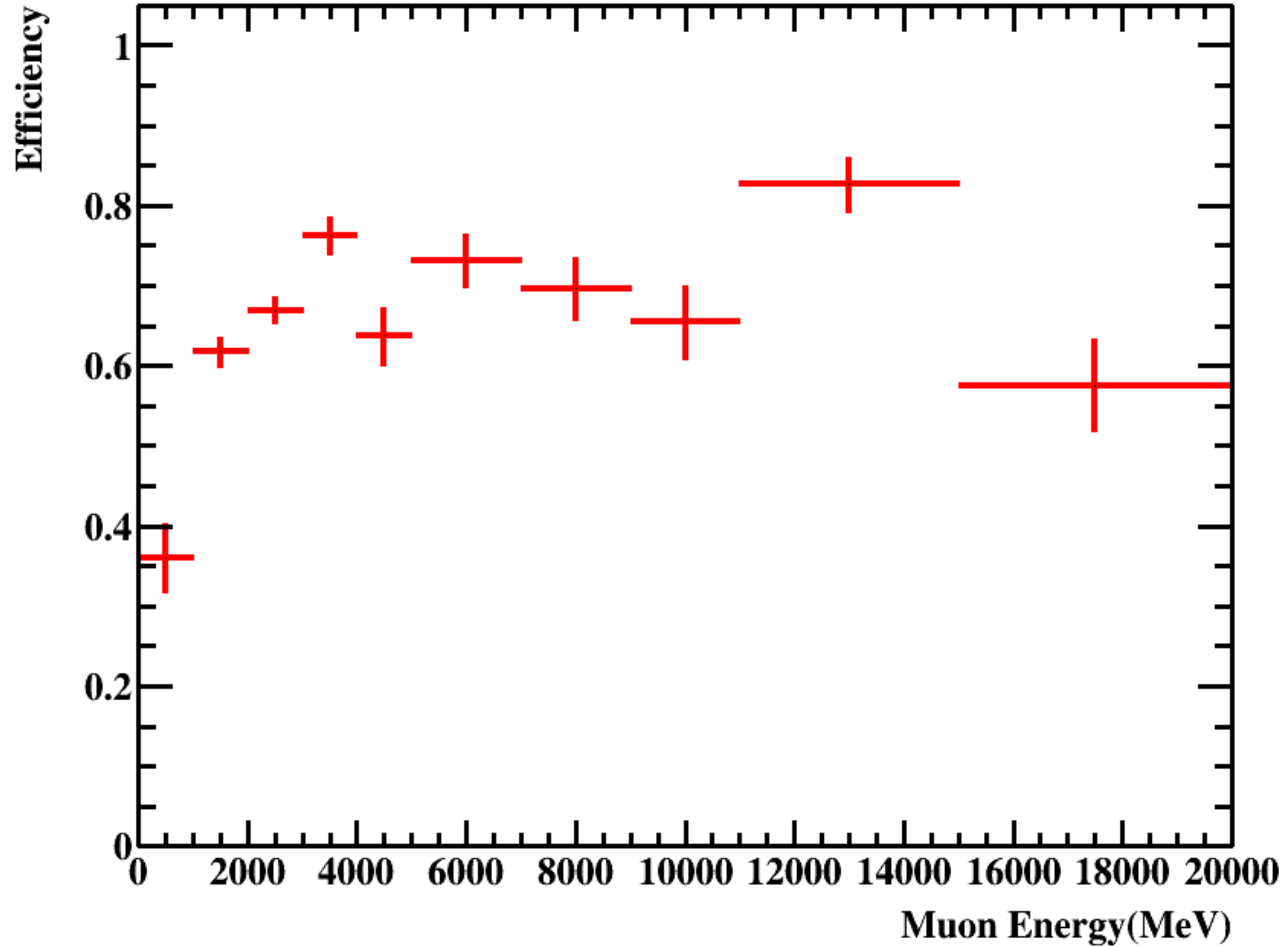
Events in the Denominator are passing:

- Only CC events
- Events with Muon angle < 20
- FV using Muon vertex:
 - $-3000 \text{ mm} < x < 3000 \text{ mm}$
 - $-1670 \text{ mm} < y < 330 \text{ mm}$
 - $4650 \text{ mm} < z < 7650 \text{ mm}$

Numerator = all the events that are:

- Common in both ND-LAr and TMS files
- Passes the LAr fiducial cuts
- Passes the end point of the track in LAr $z > 9000 \text{ mm}$

Efficiency vs Muon Energy



Next Steps...

- Make plots for Efficiency vs Muon theta
- Need more statistics
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