

First study on
Positive Polarity Run
and
exclusive channel $\pi \rightarrow$
proton₁

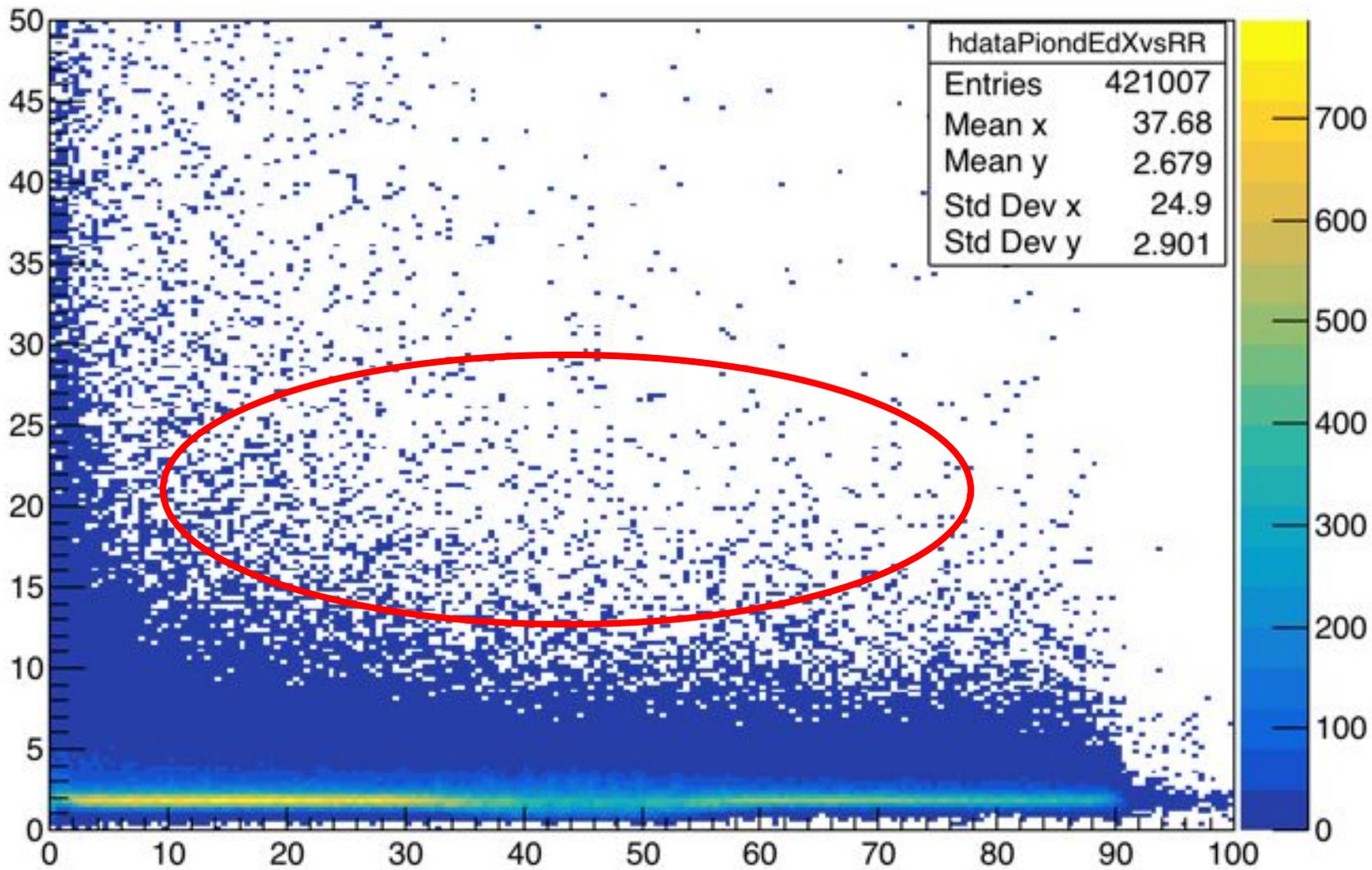
Events from

Lovely1_Pos_
Run1_elenag_v02

Standard
negative run
cuts



Event Selection	Number of Events
Total Number of Run I Positive Polarity Event	528490
WCTrack # of WC Tracks > 0	92102
TOF # of TOF Objects > 0 and $0 \text{ ns} < \text{TOF} < 60 \text{ ns}$ (Good TOF Data)	35213
Beamline Particle ID Filter Picking events with a TOF vs Pz consistent with coming from a p/m $100 \text{ MeV} < P < 1500 \text{ MeV}$ and $10 \text{ ns} < \text{TOF} < 25 \text{ ns}$	17676
Upstream Track in the TPC Require a track w/ a SpacePoint in the first 2 cm of the TPC	15695
Upstream Track Multiplicity Require ≤ 4 tracks in the $z < 14 \text{ cm}$ of the TPC	12025
Unique match between TPC and WC Track Require 1 and only 1 match between the WC track and a TPC track ($-2 \text{ cm} < \Delta X < 6 \text{ cm}$, $-3 \text{ cm} < \Delta Y < 6 \text{ cm}$, $a < 10^\circ$)	4338
Stopping (or interacting) pion	2163

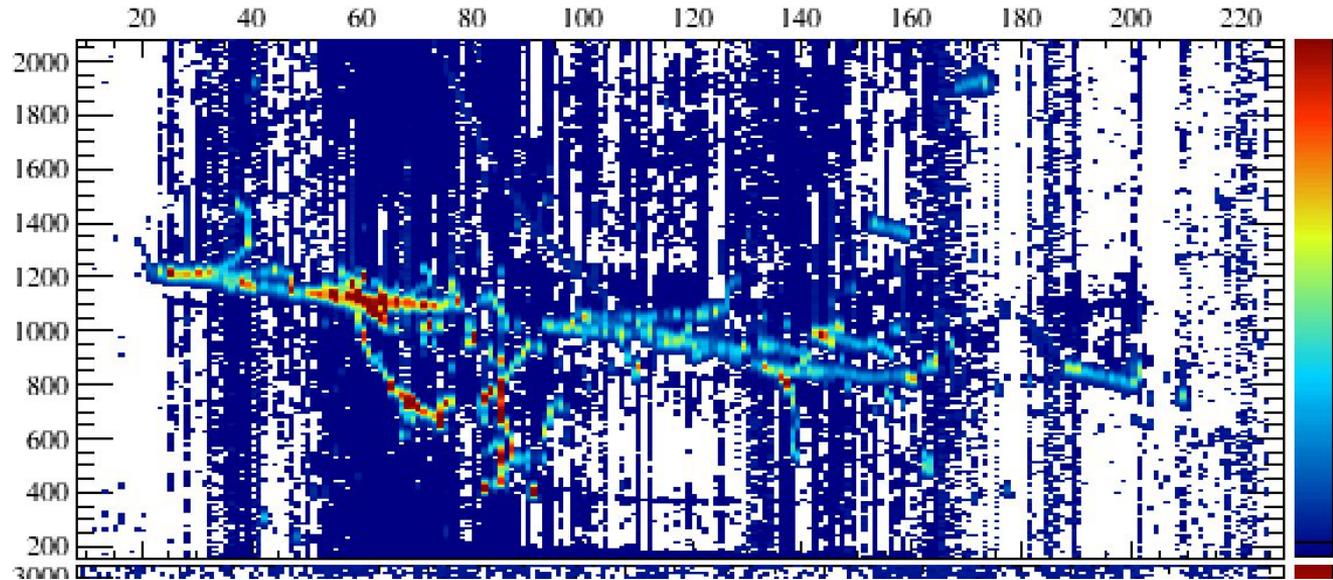


Other particles different from μ /
seem to be present also after
all the cuts
(also the shower cut)

First try:

Events with more than 20 hits with
residual range > 10
and
 $dE/dx > 8$

----- 40 events -----

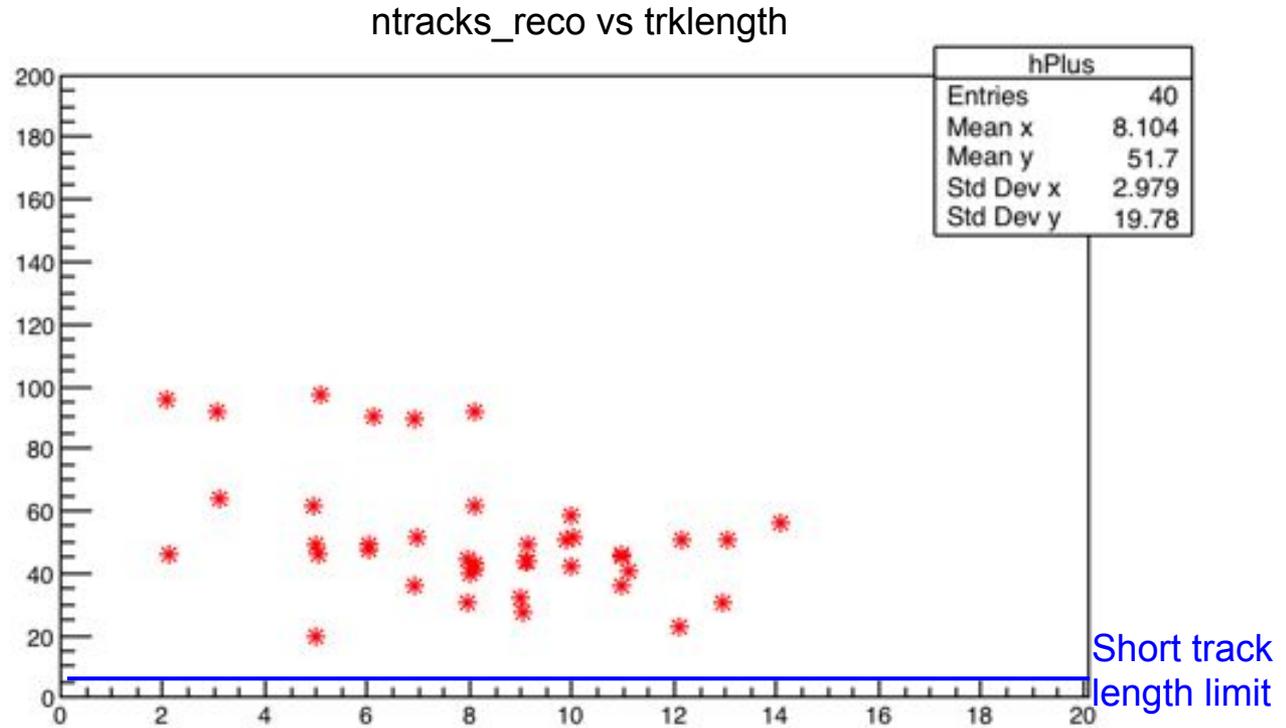


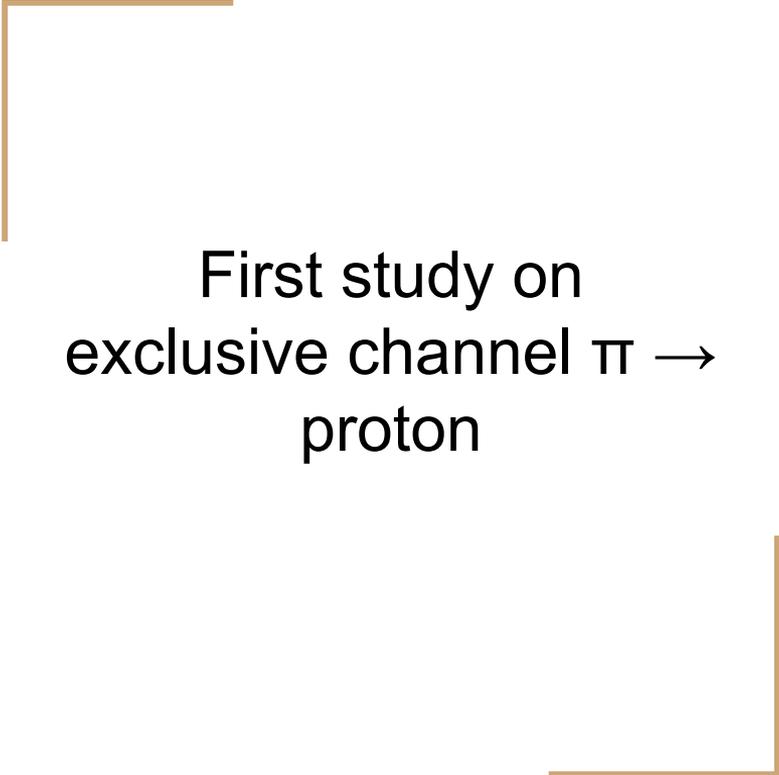
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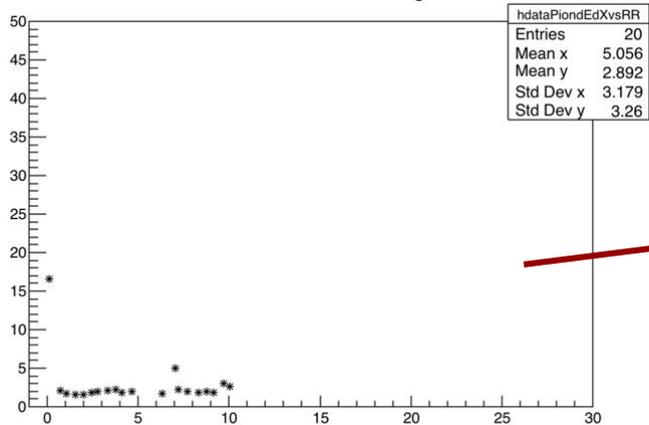
----- **40 events** -----



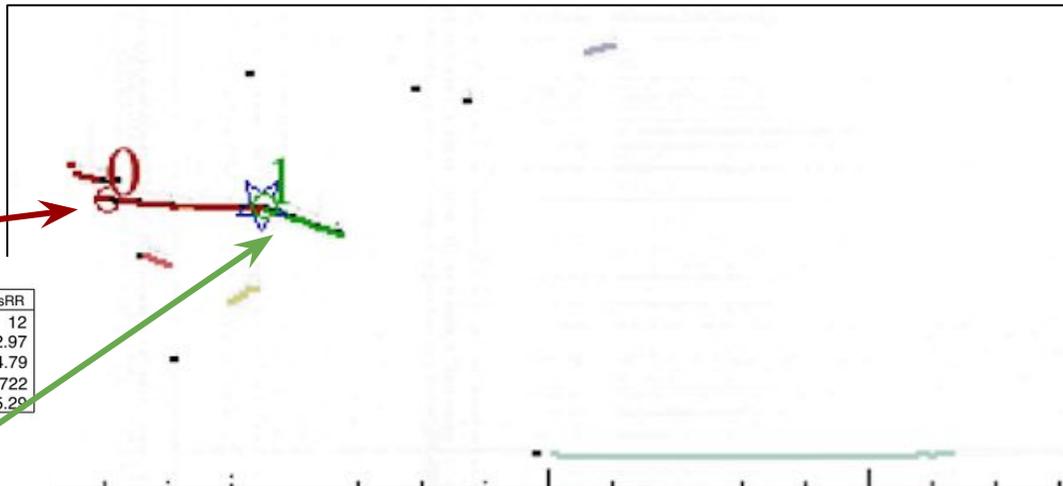


First study on
exclusive channel $\pi \rightarrow$
proton

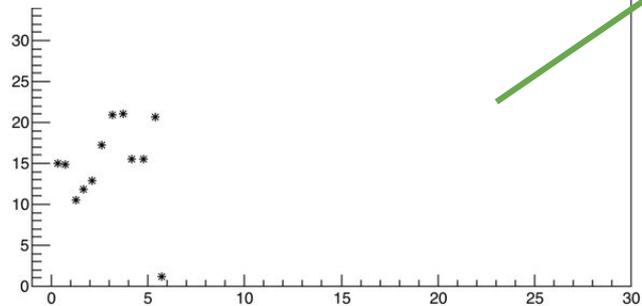
dE/dX vs Residual Range



itaPiondEdXvsRR	
Entries	12
Mean x	2.97
Mean y	14.79
Std Dev x	1.722
Std Dev y	5.29



PMT "noise"



To simplify the search I started a first scan on events with

only 1 track in the first 14 cm of the chamber and

≤ 4 ntracks_reco \rightarrow 1434 events

≤ 2 ntracks_reco \rightarrow 961 events

in order to find some “measurable” characteristics

Some problem with the naming of files from Reco.fcl:

The file is named `lariat_digit_r005885_sr0065_20160125T004048_Reco2d.root` ... but events that are reconstructed are from Run 5573.

The same for the anatree: the run present in a single file are (for example)

Strange

Do someone know how this problem can be solved?

