Looking for Peanut

P. Shanahan - Fermilab

MINOS Collaboration Meeting

Oxford, January 6, 2006

Looking for Peanut

- 300kG emulsion test detector
- Sitting in front of MINOS since ~Oct. 1
- Not easy to see in MINOS data (not using Peanut Data). I tried:
  - Using muons: they are indistinguishable from rock muons - nothing
  - Using splats of extra energy in 1st planes of detector to tag muons entering upstream - overwhelmed by interactions in 1st MINOS steel plane
  - Look for extra hough track in NtpSt strip info...

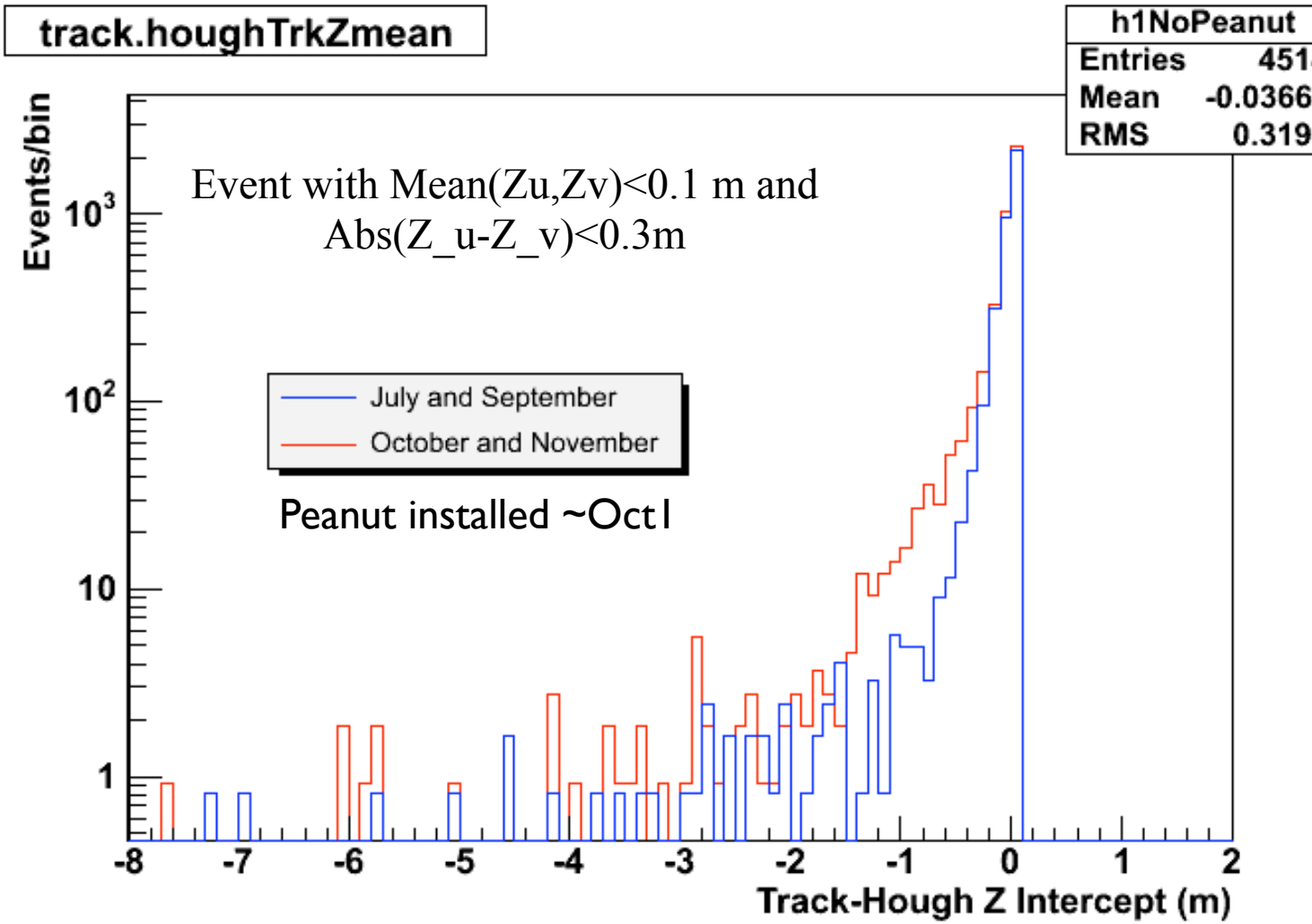
Method

- Select events in NtpSt with a track
- Tag all hits in snarl that are simultaneous with event, not on the track, and not consistent with cross talk
- Look for Hough Tracks (thanks Liz (and Mike and David)?)
- Look for intersection of standard track and hough track
- Compare U and V View

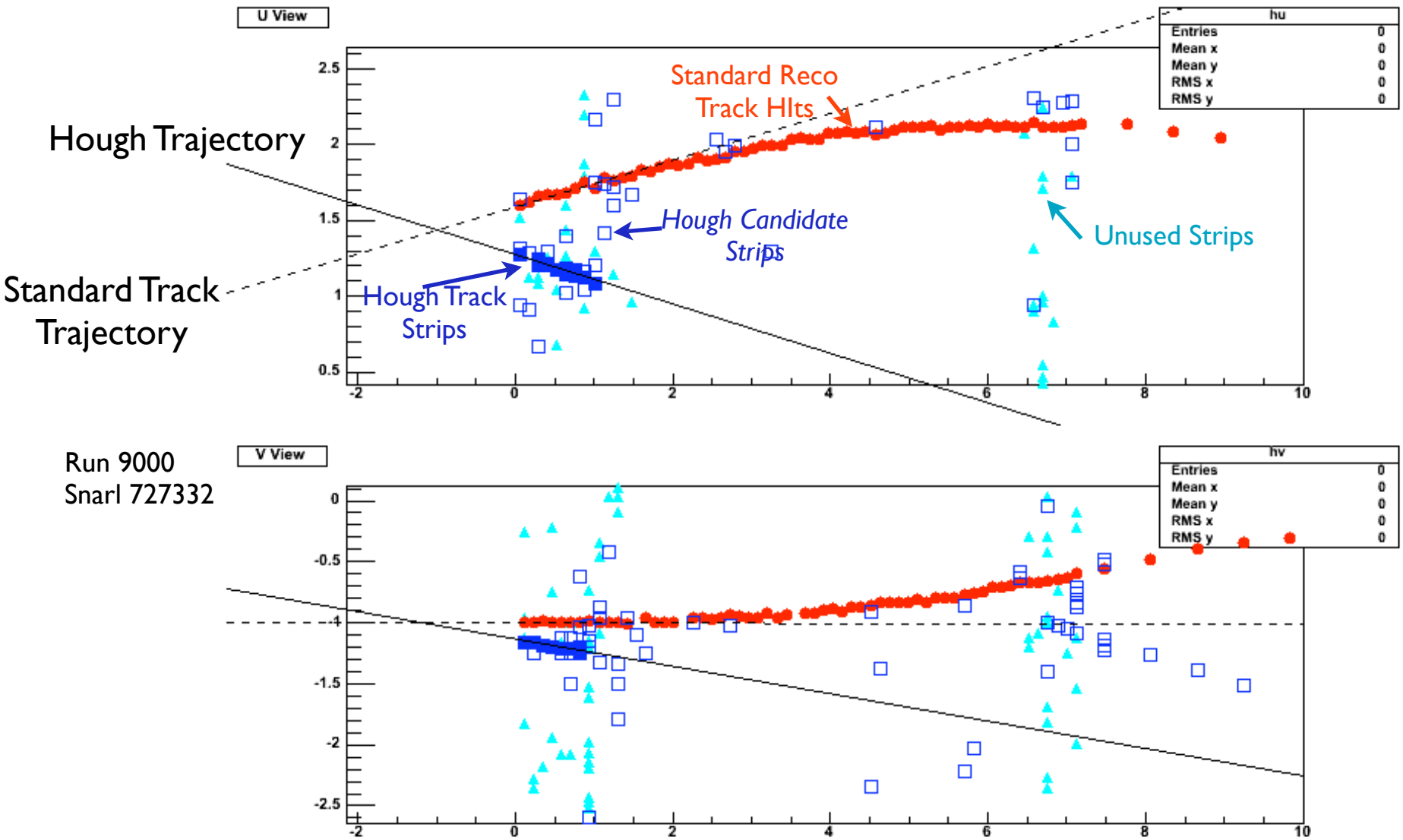
Selection

Mean(Zu,Zv)<-0.2 m

Abs(Zu-Zv)<0.3 m



Example

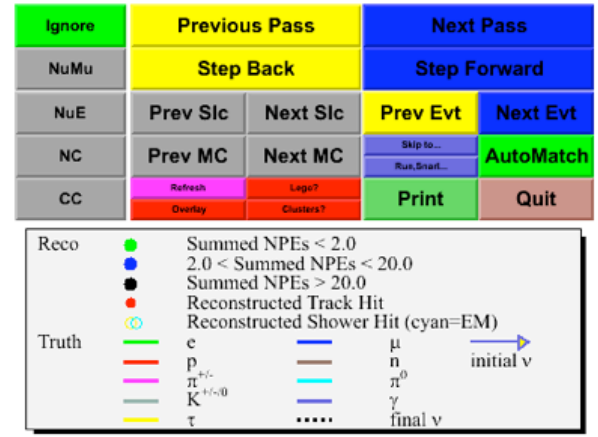


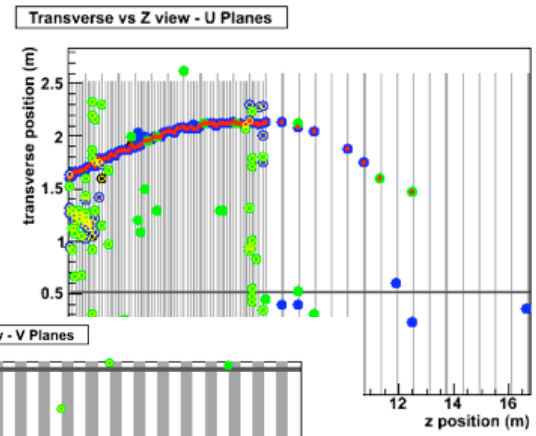
Run 9000
Snarl 727332

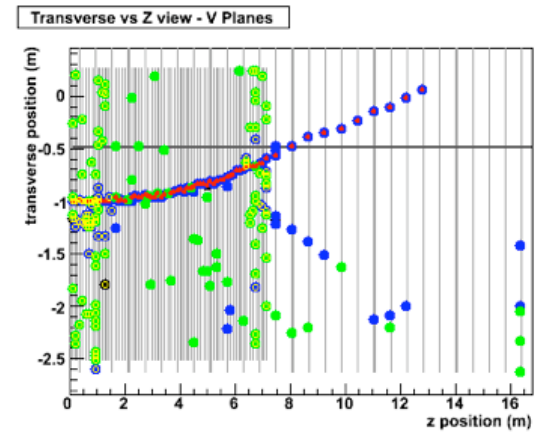
Example

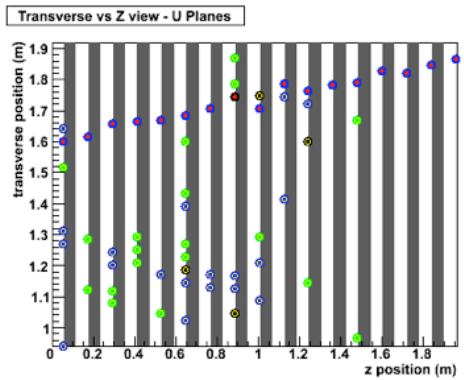
Same Event, in Mad

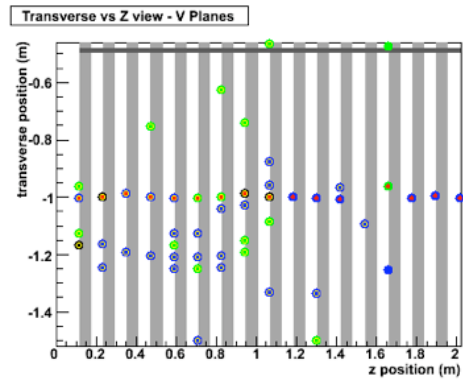
Run: 9000, Snarl: 727332, Slice: 12(/13), Event 9(/10)
Reco
#Trks: 1
#Shws: 2
q/p: -0.249 +/- 0.011, p/q: -4.009
TrkRangeEnergy: 4.182 RecoShwEnergy: 5.749
Vtx: 1.69, 1.85, 0.05
Truth
N/A
N/A
N/A
N/A
N/A
N/A









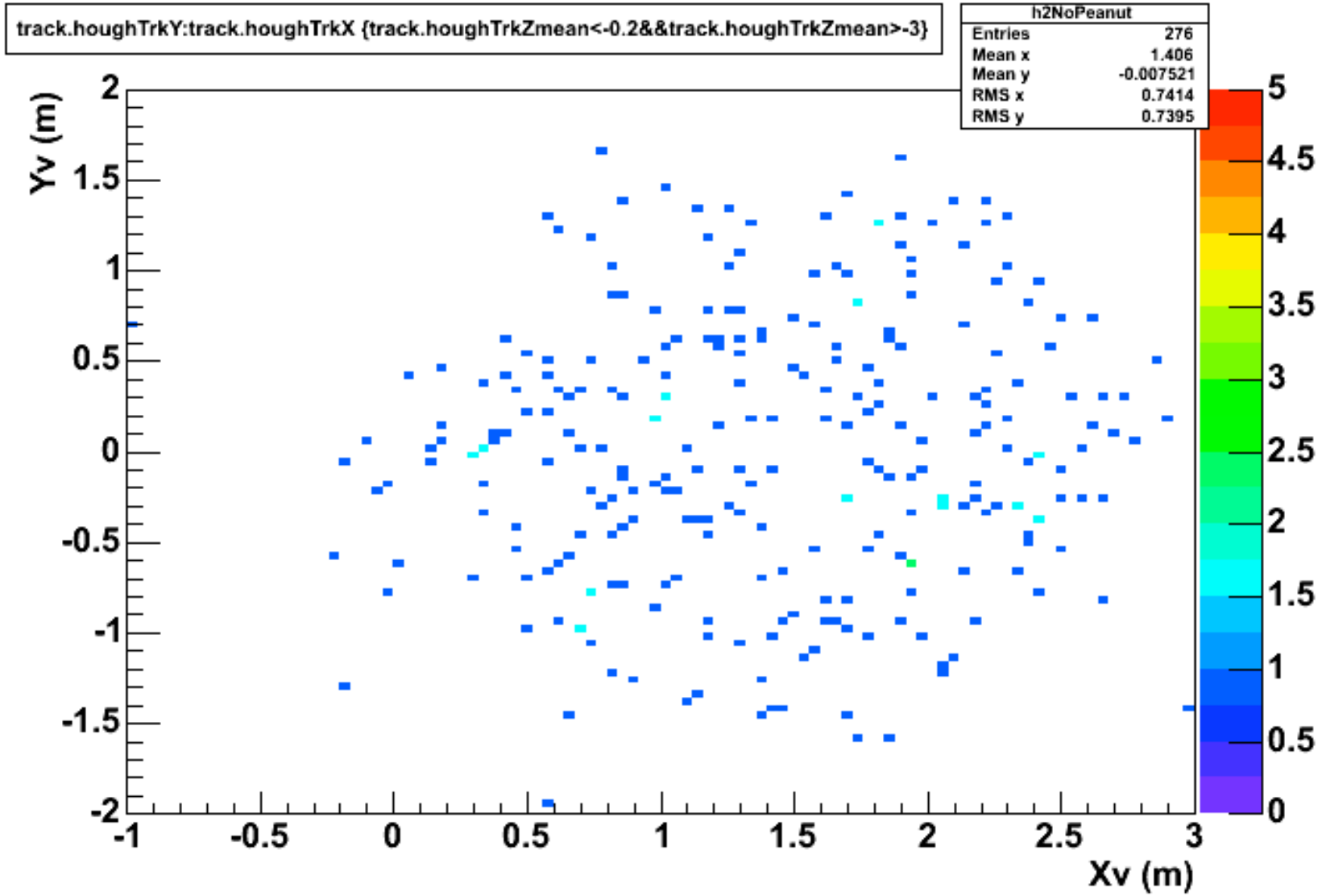


Zoom

Vertex Distribution

July and September Data

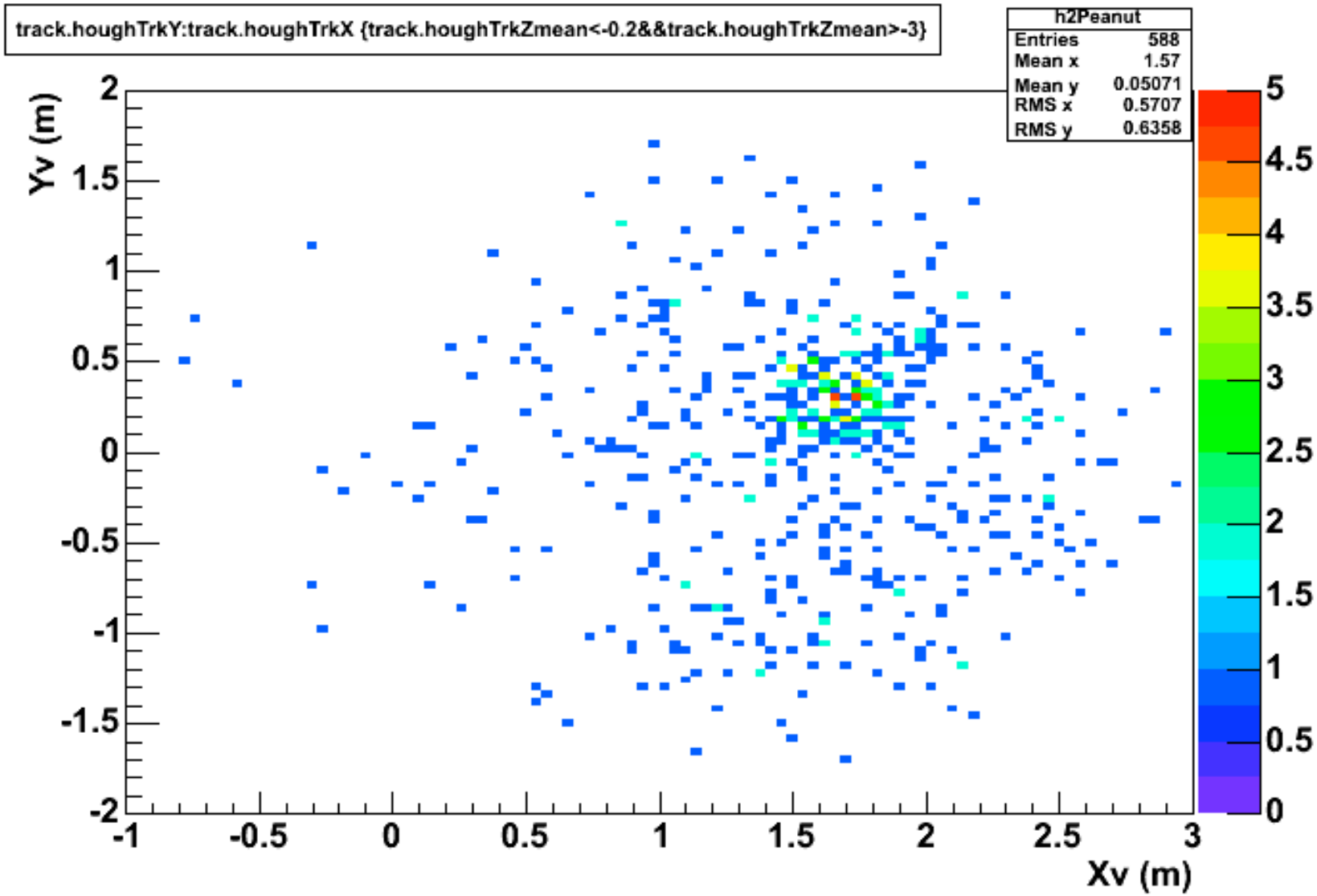
Normalized



Vertex Distribution

October and November Data

Normalized



Motivation

- A quite rare process (relative to all activity in plane 1) could be massaged out without going back to reco level.
- Can this (or this general approach) be used (as a starting point) for other topics?