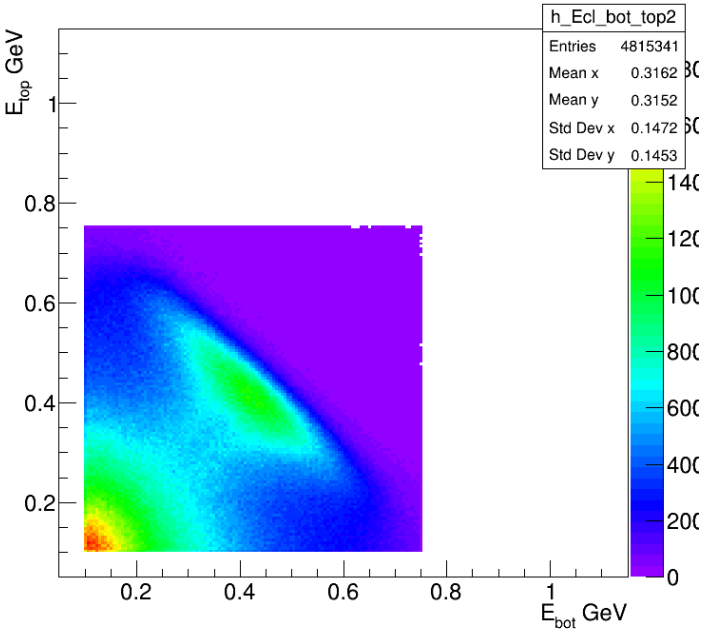
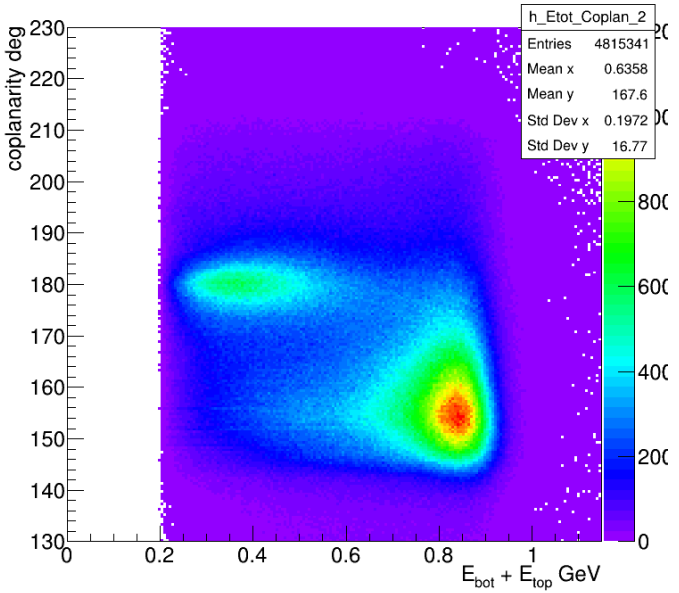
At least one cluster in the bottom and one in the top of Ecal
Time difference < 4 ns

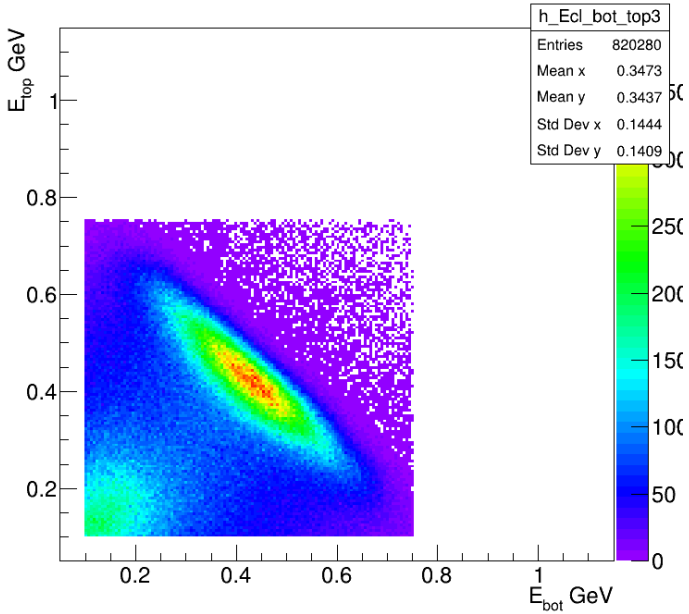
All combinations



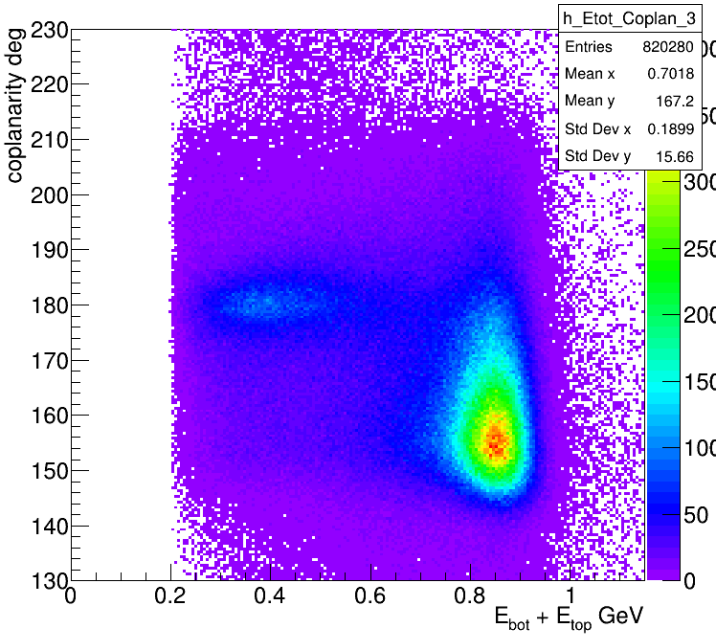
All combinations



In Fiducial

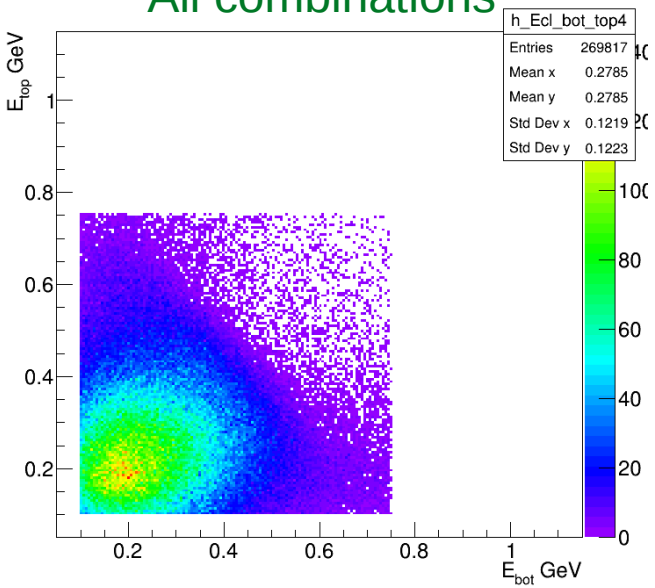


In Fiducial

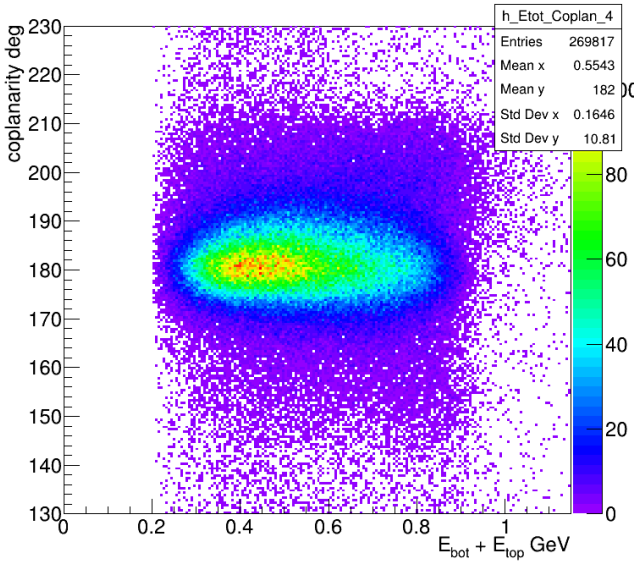


In addition to previous constrains: At least 1 bottom track, 1 top track, 1 neg track and 1 pos track

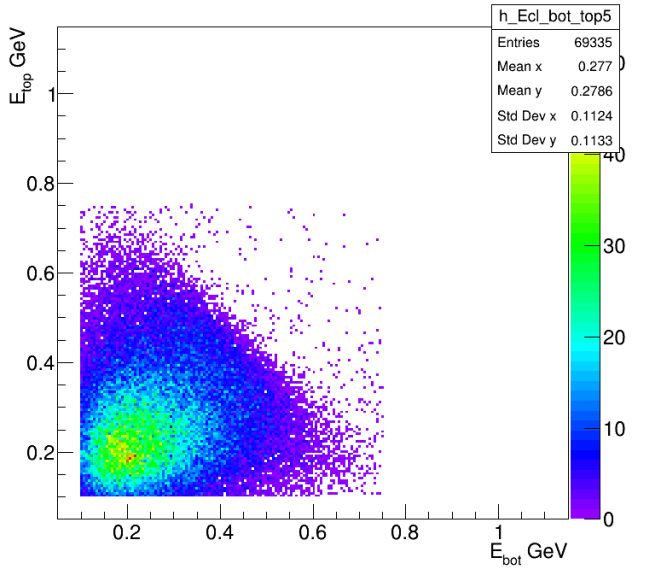
All combinations



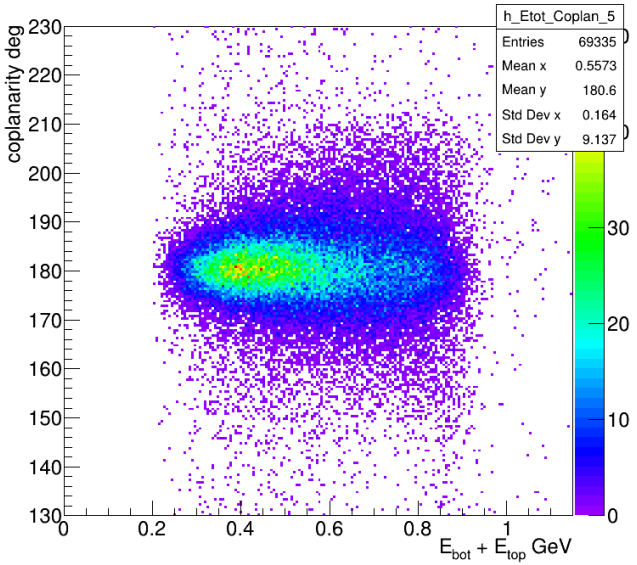
All combinations



In Fiducial

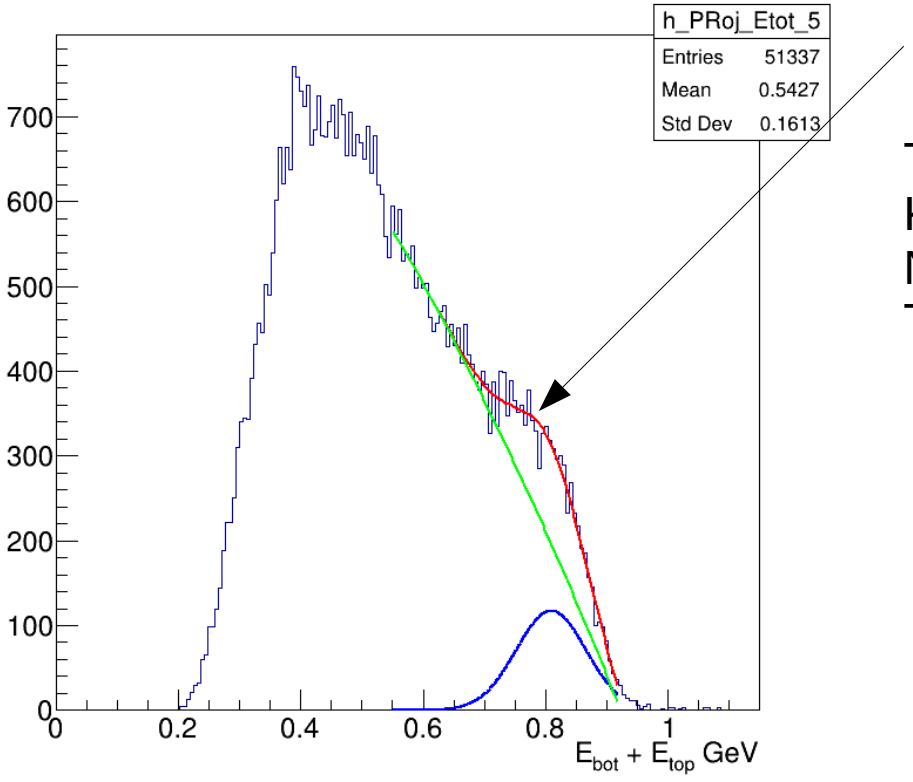


In Fiducial



As one can see this cleans our sample a lot. And we have a domination of coplanar events

Fit in the fiducial region



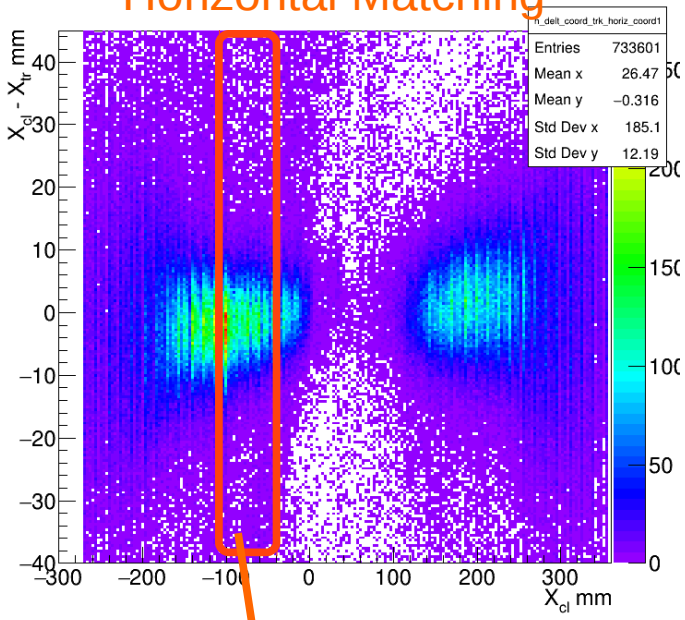
Supposedly trident's peak.

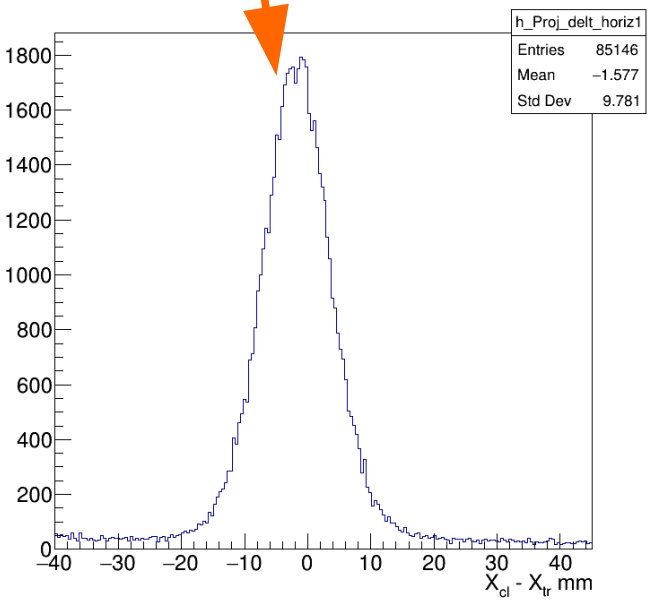
To get an estimate how much are they, one should
Know the background behavior in HPS acceptance.
Now Bradley is working to generate only BH events
That should tell us what should be the BH shape.

This is just a simple fit where as a background a Pol3 was chosen.

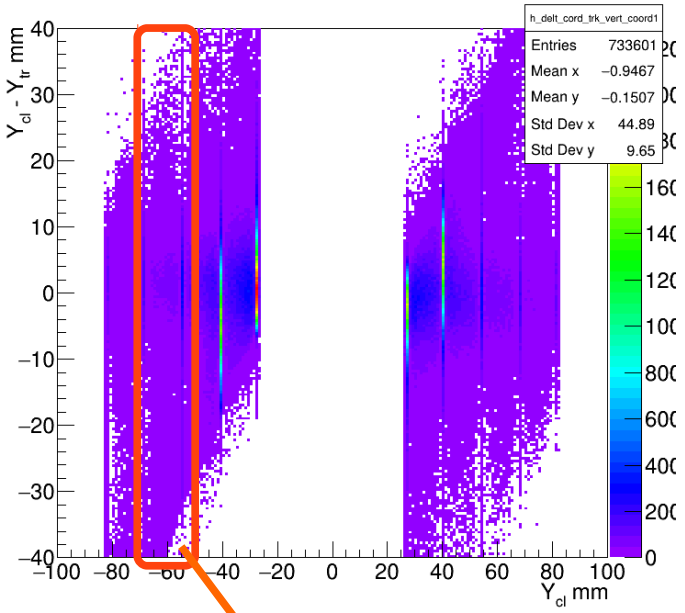
Additional figures: Cluster-track Matching figures

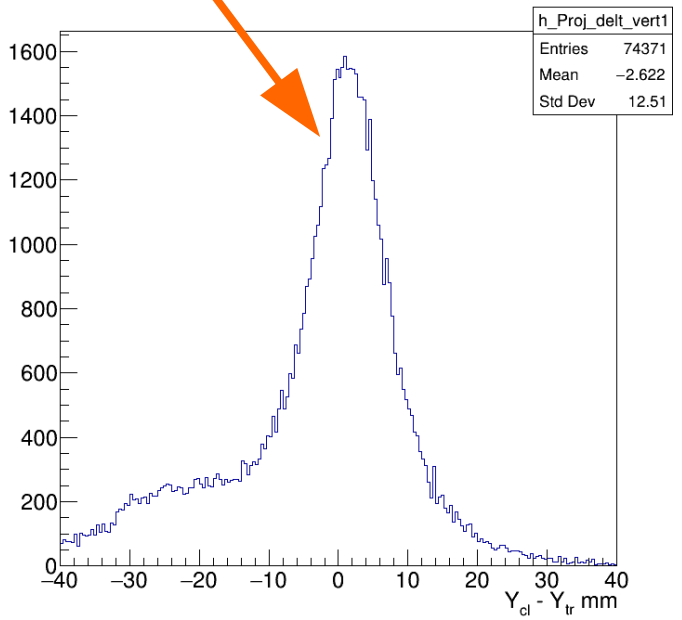
Horizontal Matching





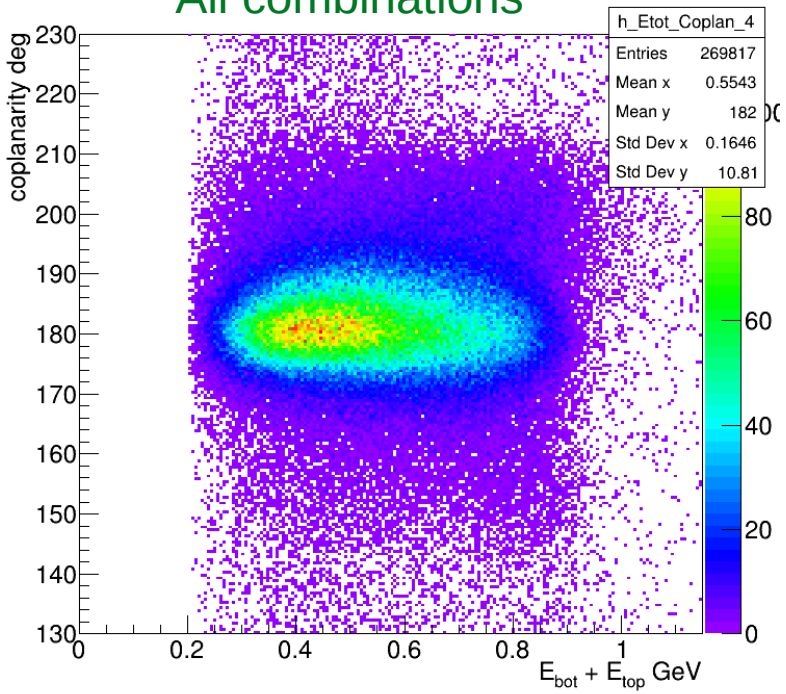
Vertical Matching



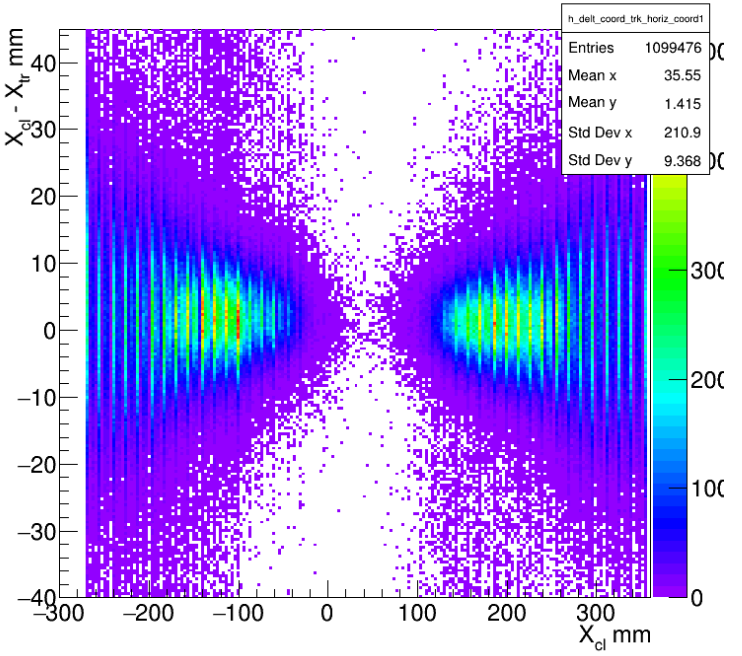


The background is quite small in horizontal matching, and there is some background in vertical matching.

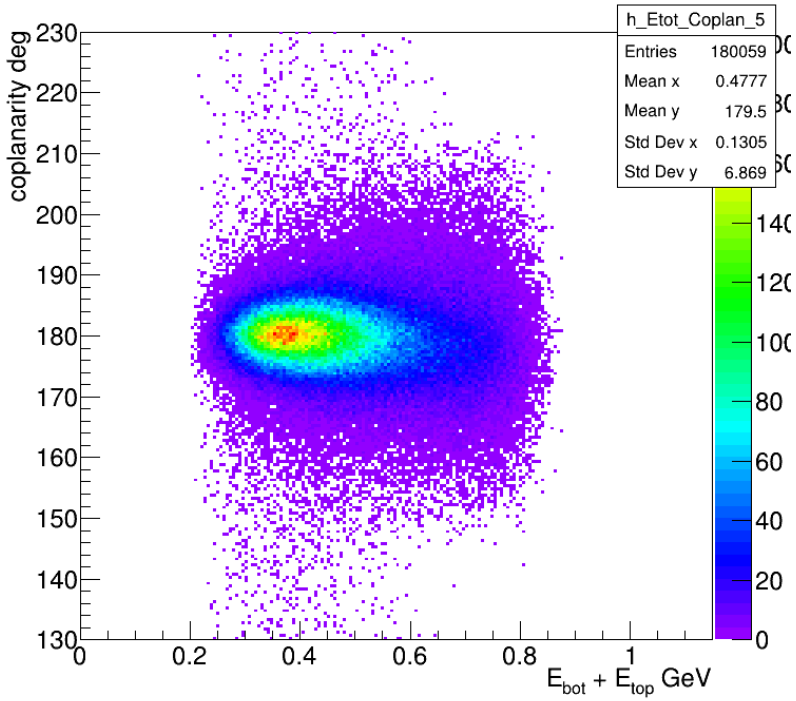
All combinations



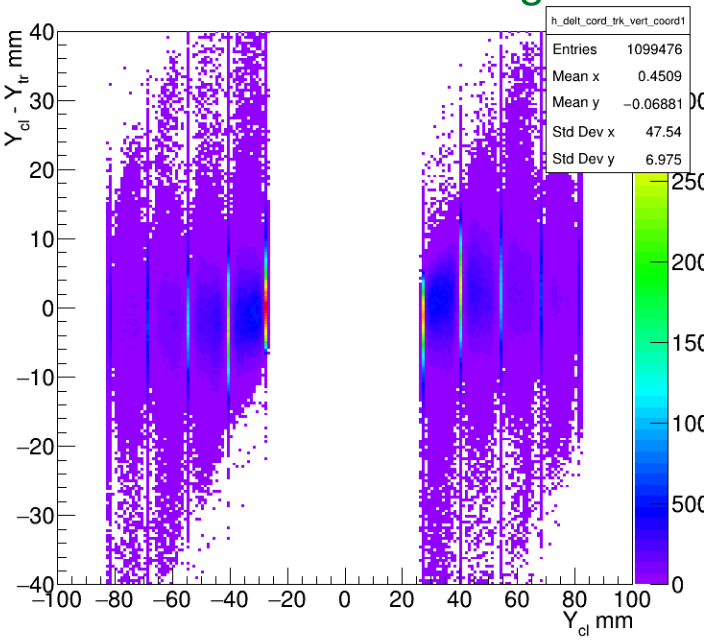
Horizonta Matching



In Fiducial

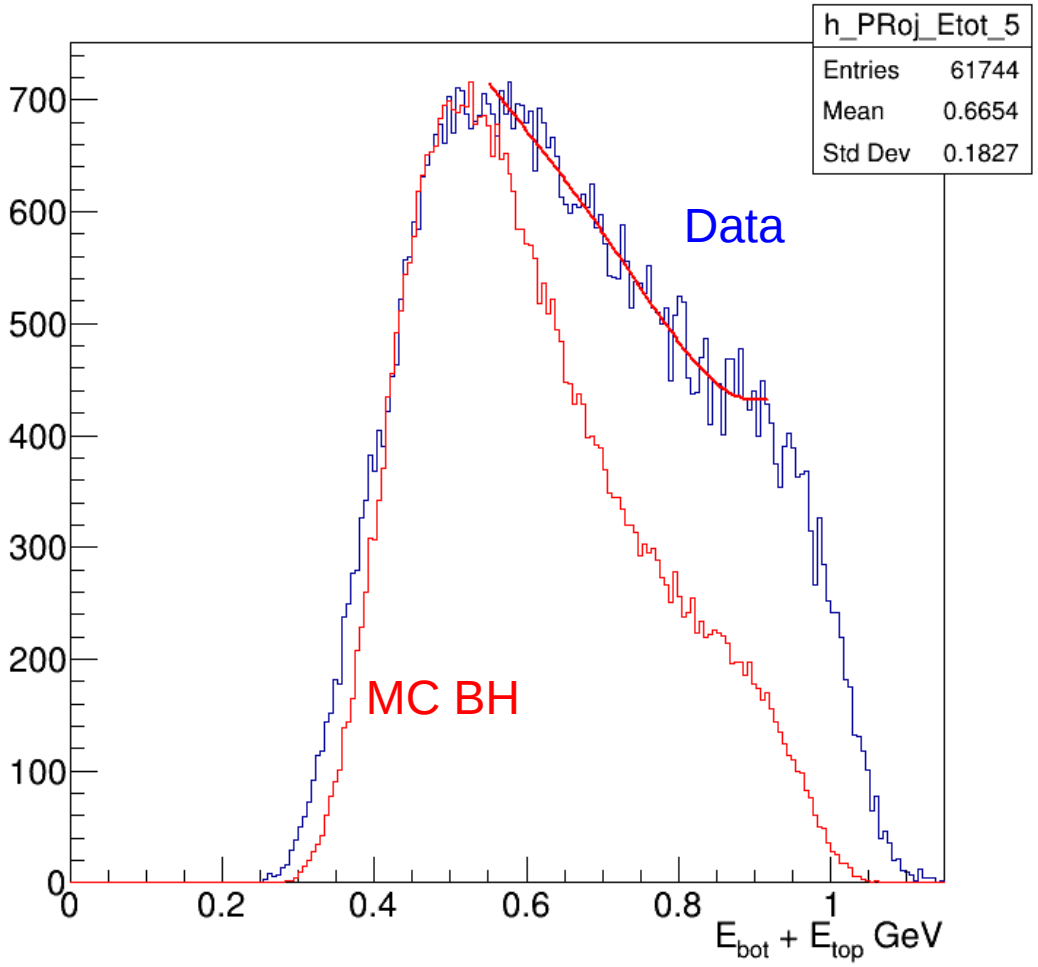


Vertical Matching

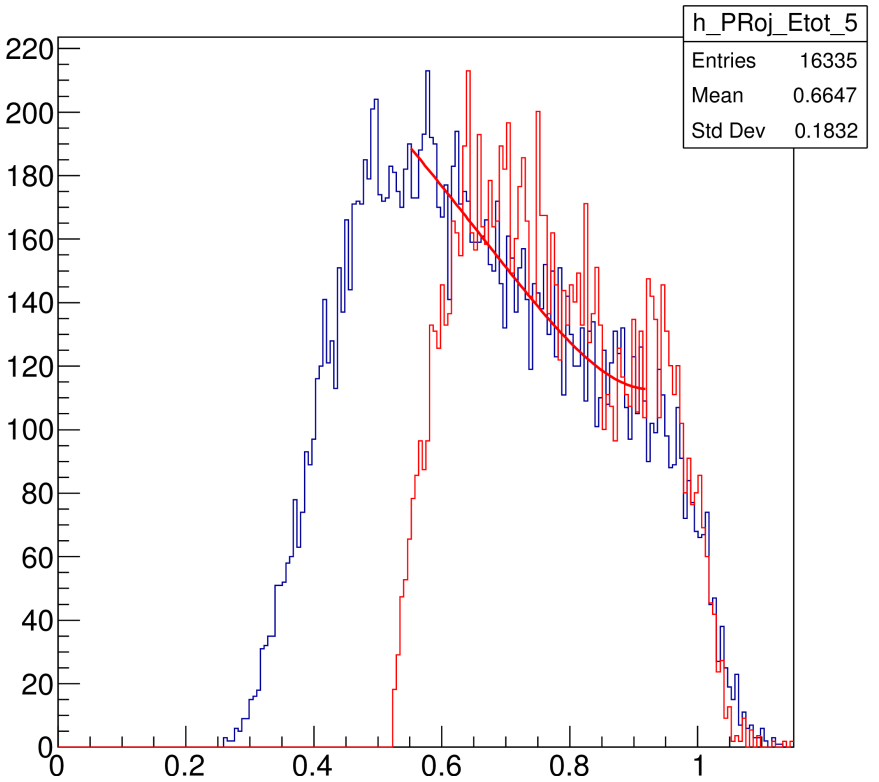


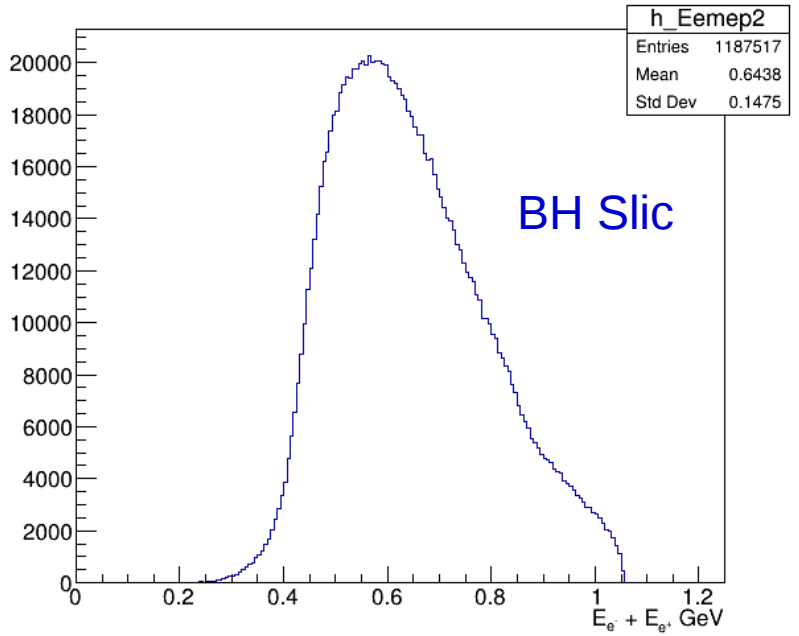
MC is only Bethe Heitler

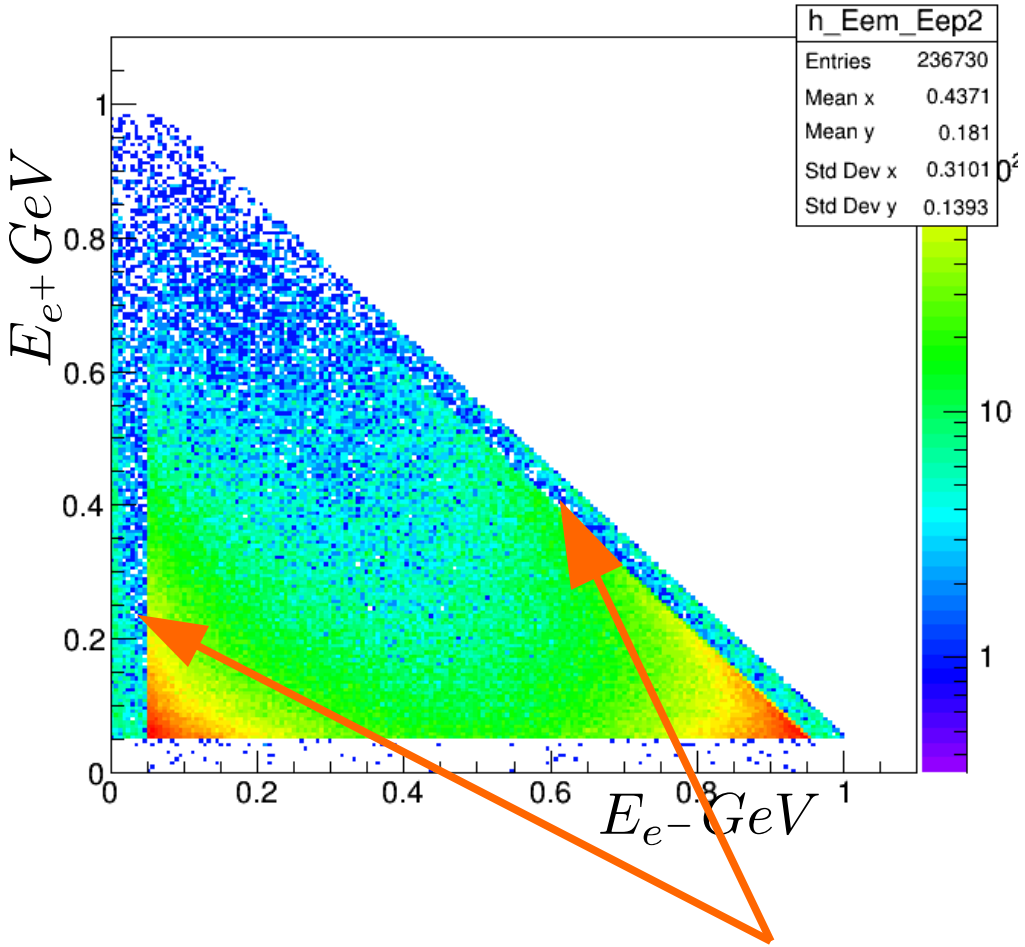
MC doesn't go up to beam energy.
Now will study kinematics of missing events at the generator level.



TriTrig and Data







This was changed from the regular run card

0d0 = eftot ! minimum energy for f+ plus at least one f-

What does this cut mean exactly?

0.050 = ef ! minimum E for f+ and at least one f-

One can see the effect of the cut on e+, but in all events there is at least on e- that has energy above 50 MeV, so effectively this shouldn't cut any event

What the discontinuity correspond to?

Backups

As one can see at the generator level there are events having energy sum close to the beam energy

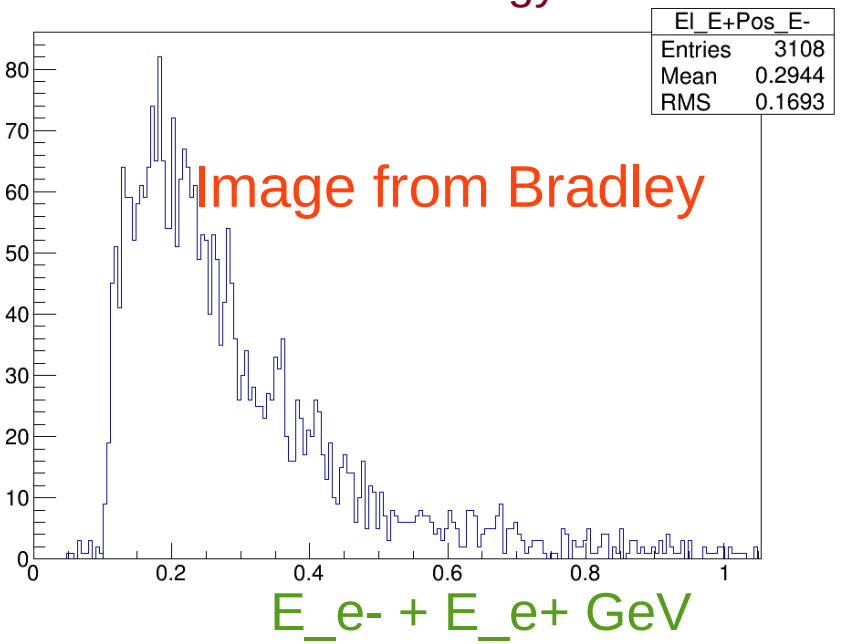


Image from Bradley