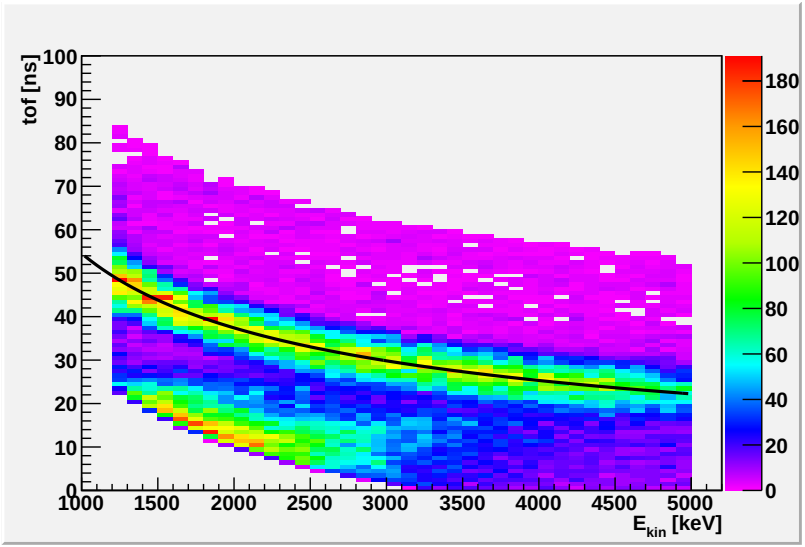
Outline

I will briefly go over the basics of the analysis procedure for the Hjet

The main issue discovered is that the "background" asymmetry is not quite zero

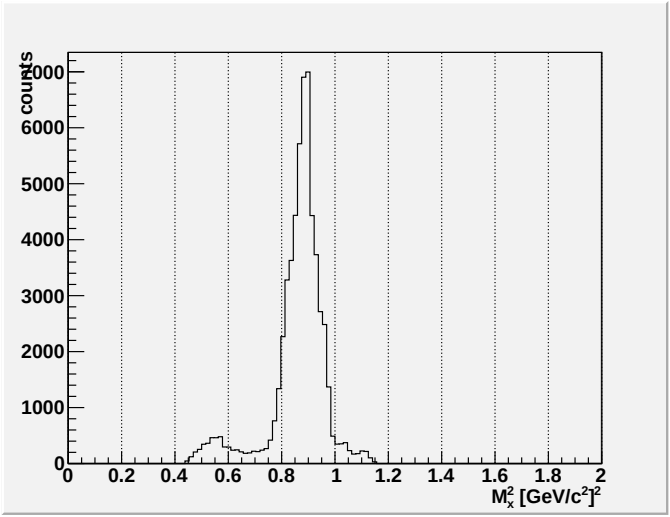
I will show the status of the run9 vs. run12 A_N, with the caveat that the background correction needs (slight) improvement.

Selection of elastic events



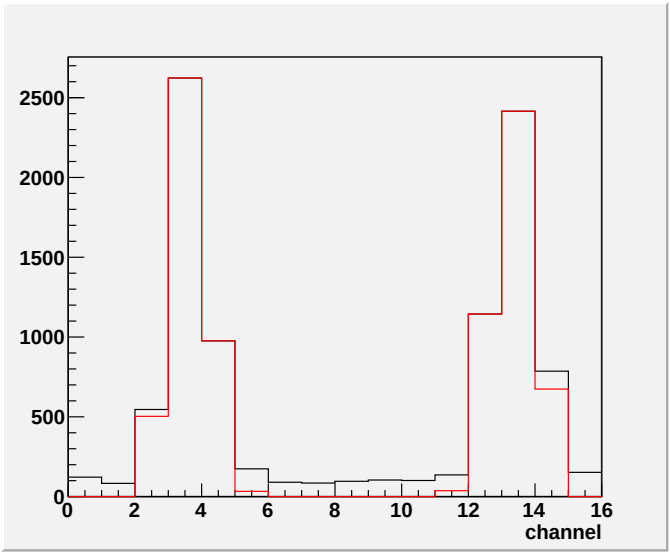
a $\pm$ 10 ns cut is placed around the "banana"

Selection of elastic events



a 2 σ cut is placed on the missing mass distribution (which is calculated with knowledge of strip positions)

Background estimation



The counts in the "side strips" (removed from missing mass cut, set red line) are used to estimate background level in a given energy bin

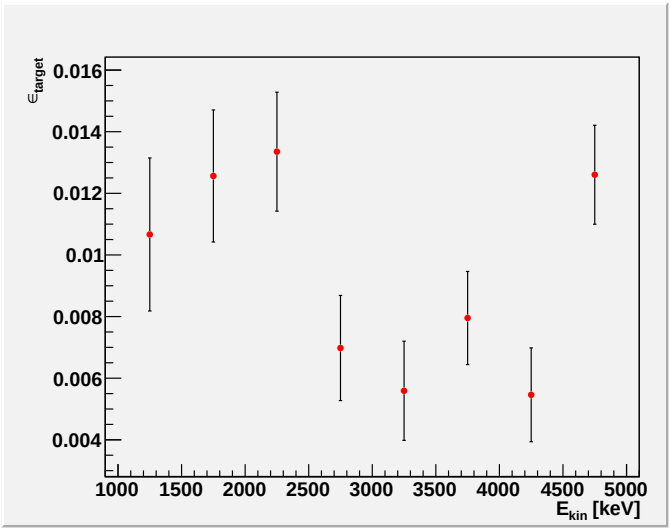
Background estimation

The question is what to do with the background.

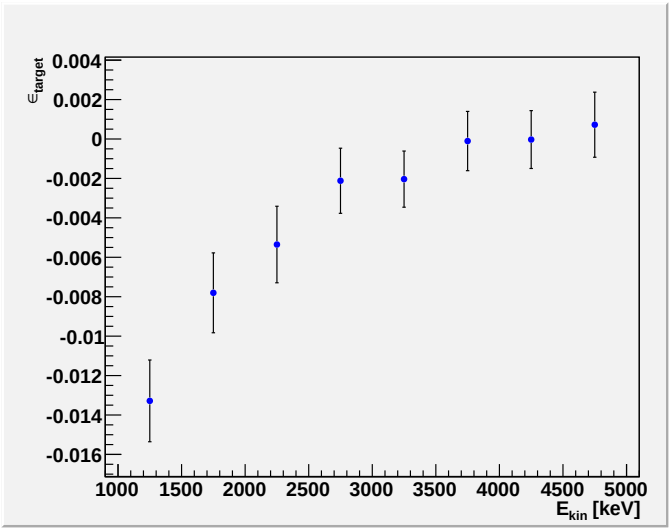
If there is no asymmetry in the "side strips" , then the background can be treated as a simple dilution. So far, the jet analysis from this run has assumed this. In run 11 250 GeV, we measured the side strip asymmetry to be very small.

However, now that we have some statistics I have looked at the asymmetry with respect to target polarization in the side strips. The next slides show the results for blue and yellow sides, separately.

Yellow Background Asymmetry



Blue Background Asymmetry



Background estimation

However, the background asymmetry with respect to beam polarization is much smaller.

This means that the A_N will go down by about 1%, and the polarization will go up by about 1% when this is all taken into account properly.

We can start to wonder just what is making it into the side strips, and why is it different between run 11 250 GeV and run 12 100 GeV...

Now, let's look at some results on the wiki page :

https://wiki.bnl.gov/rhicspin/Polarimetry/H-jet/Run12