libNEST update

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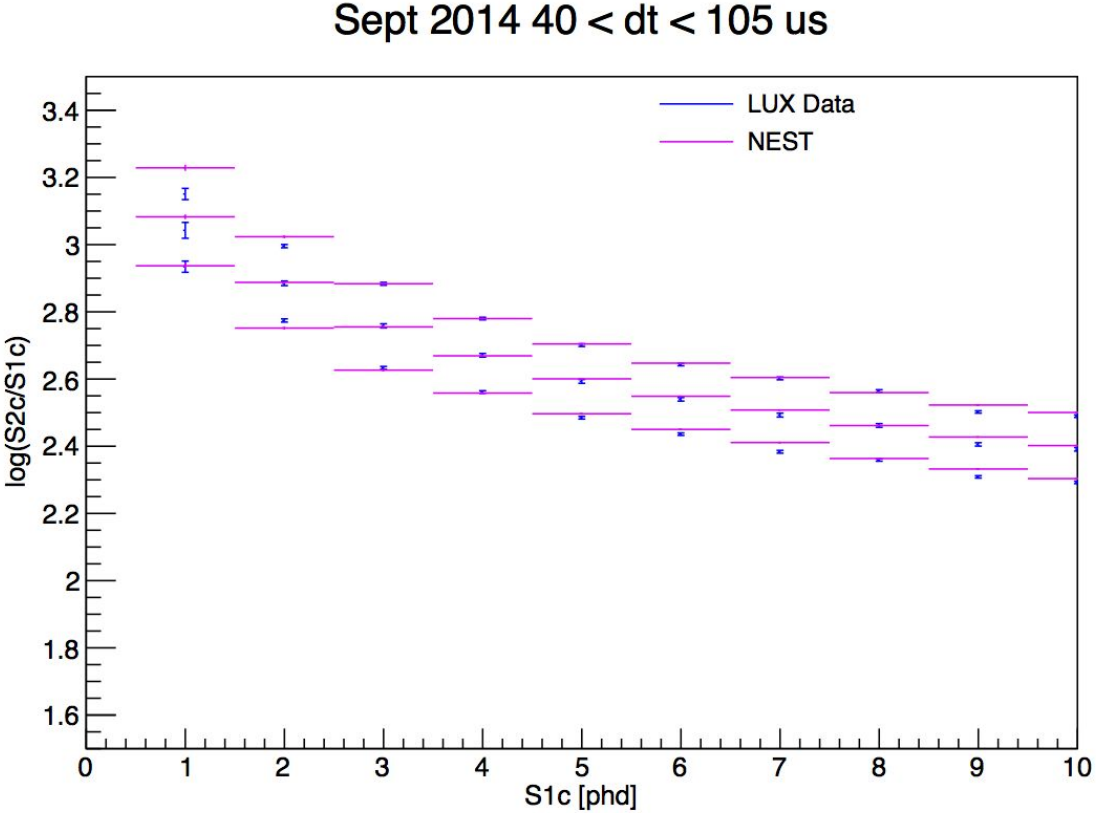
recall...

The means of the ER band agree within ~2%, but there was the issue of the width in the lowest S1 bins

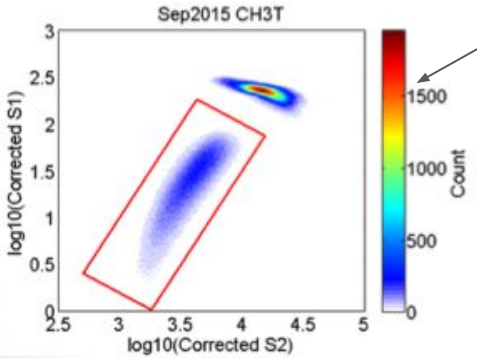
libNEST was predicting the bands to be too wide

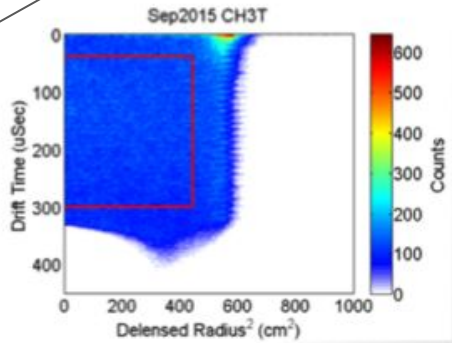


Tritium information from Richard:

Definition of Cuts

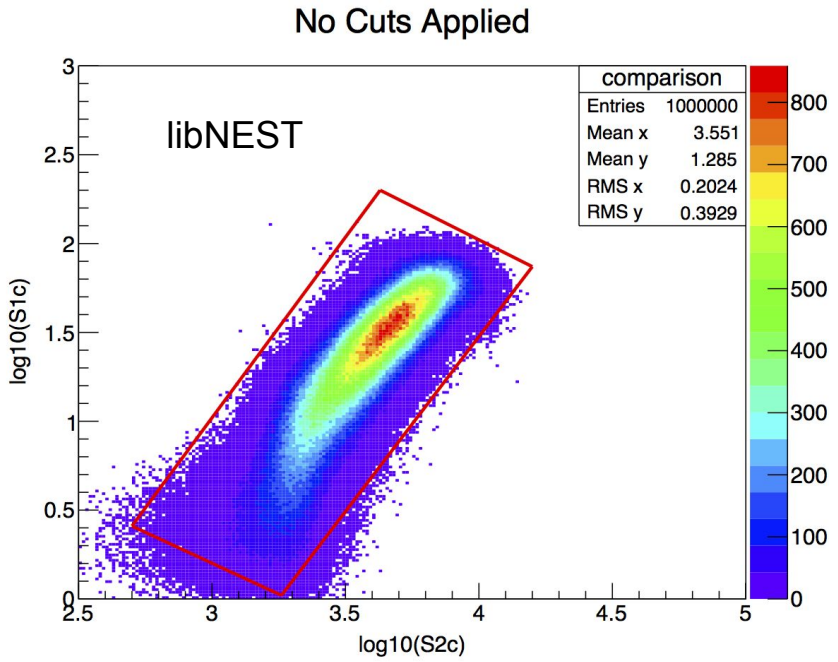
- Clean cut
- Box cut on corrected S1 and S2 area
  - log10(s1_c)+0.7*log10(s2_c)<4.8) & log10(s1_c)+0.7*log10(s2_c)>2.3) & log10(s1_c)-2*log10(s2_c)<-5) & log10(s1_c)-2*log10(s2_x)>-6.5
- Fiducial cut
  - 40 uSec <= Drift Time <= 300 uSec
  - 0 cm <= Delensed Radius <= 21 cm

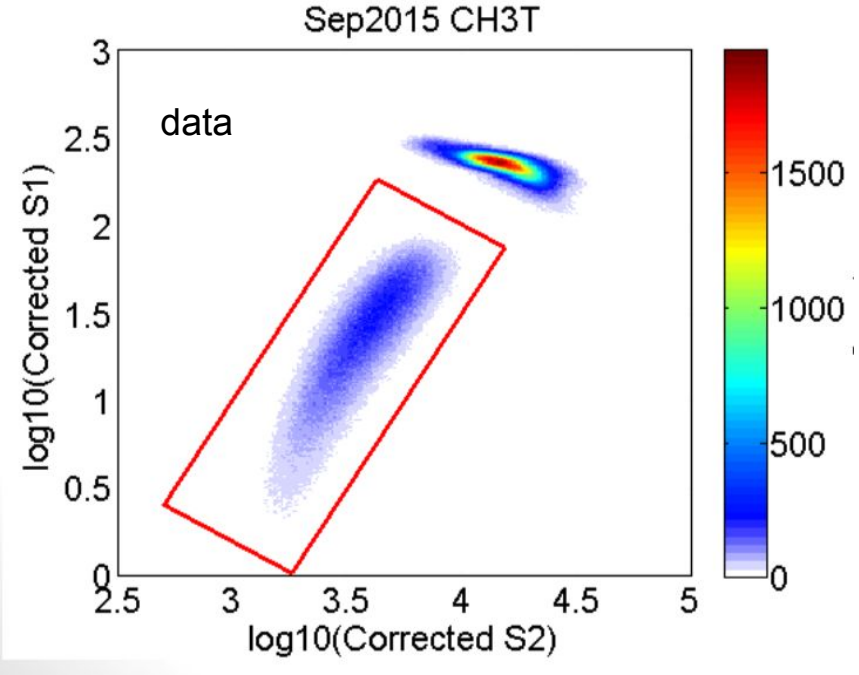




I missed making this cut with libNEST

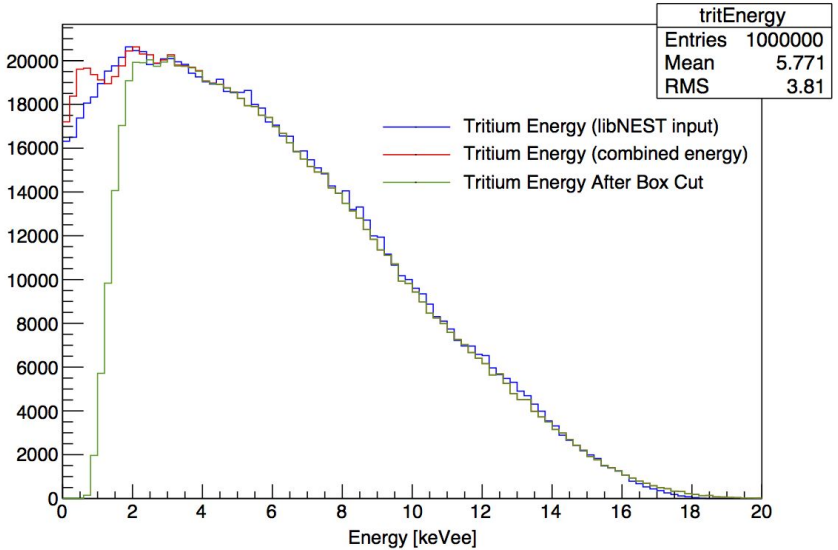
Effect of box cut - libNEST (II)

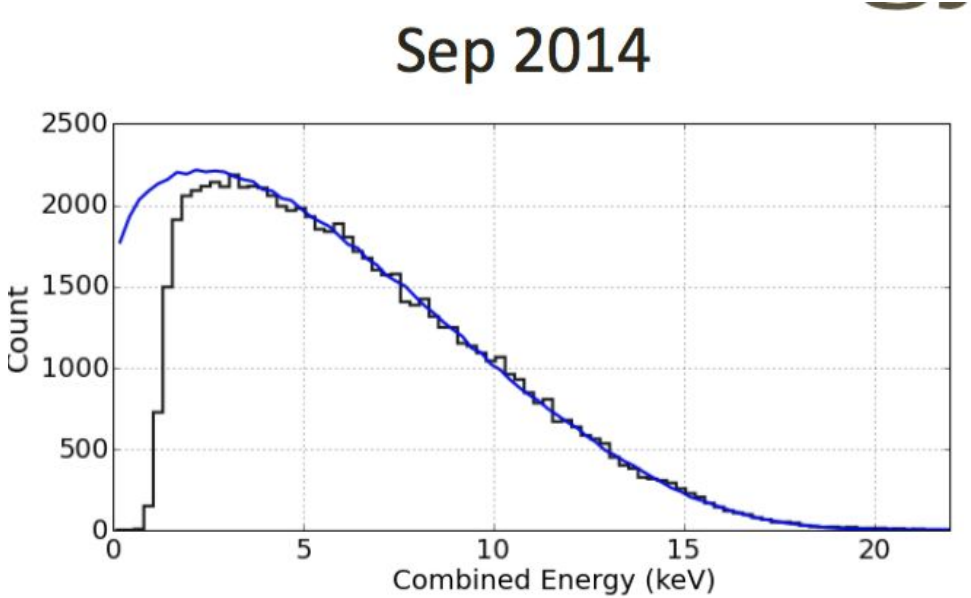




More smearing in libNEST

Effect of box cut - libNEST (III)



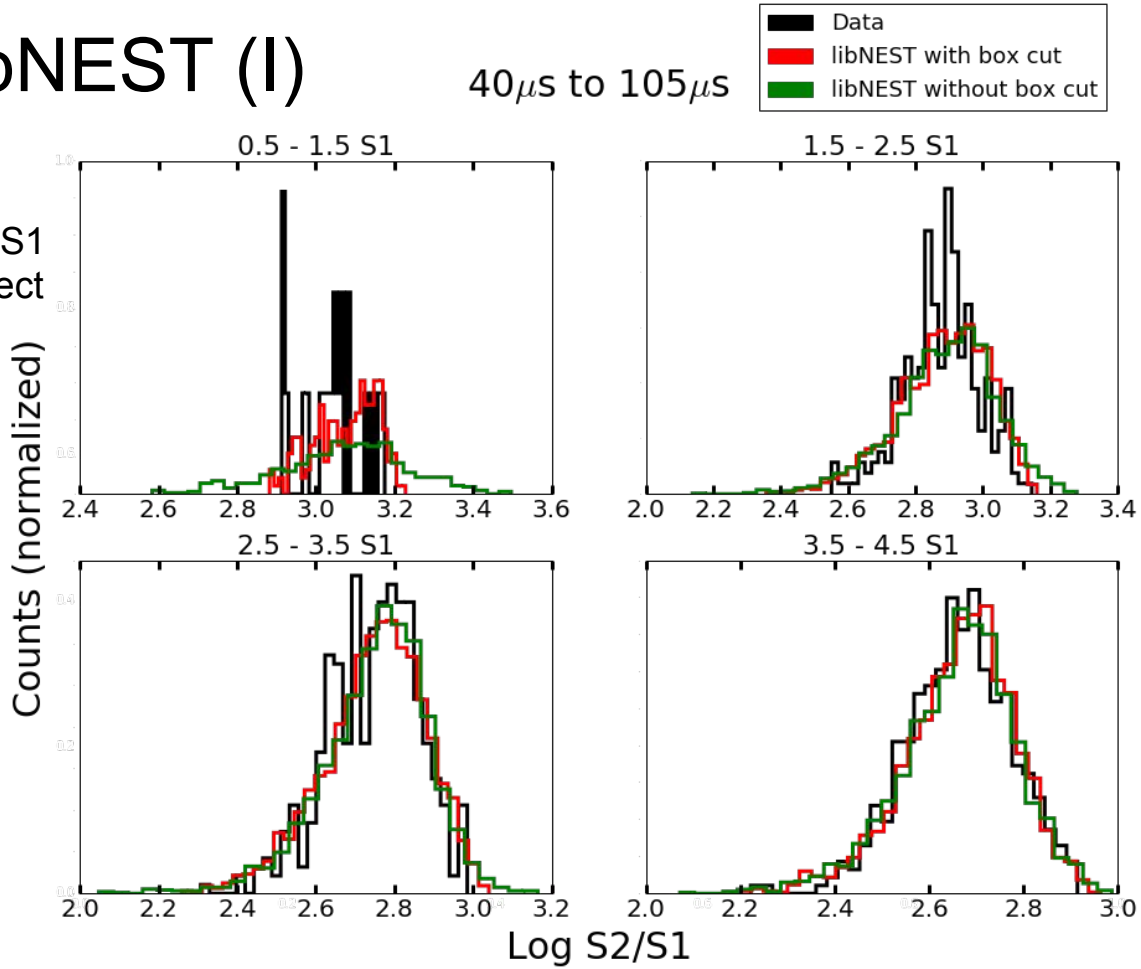


libNEST tritium reconstructed energy spectrum is a better representation of data when the box cut is made

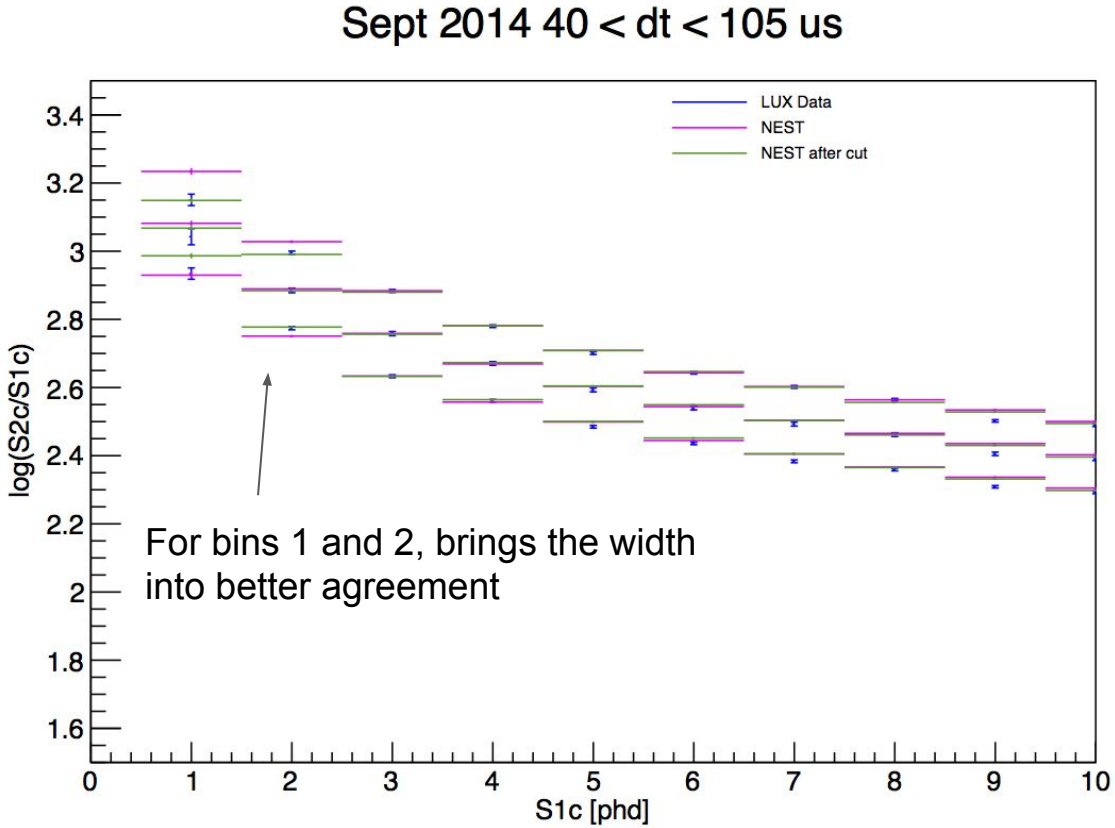
Effect of box cut - libNEST (I)

40μs to 105μs

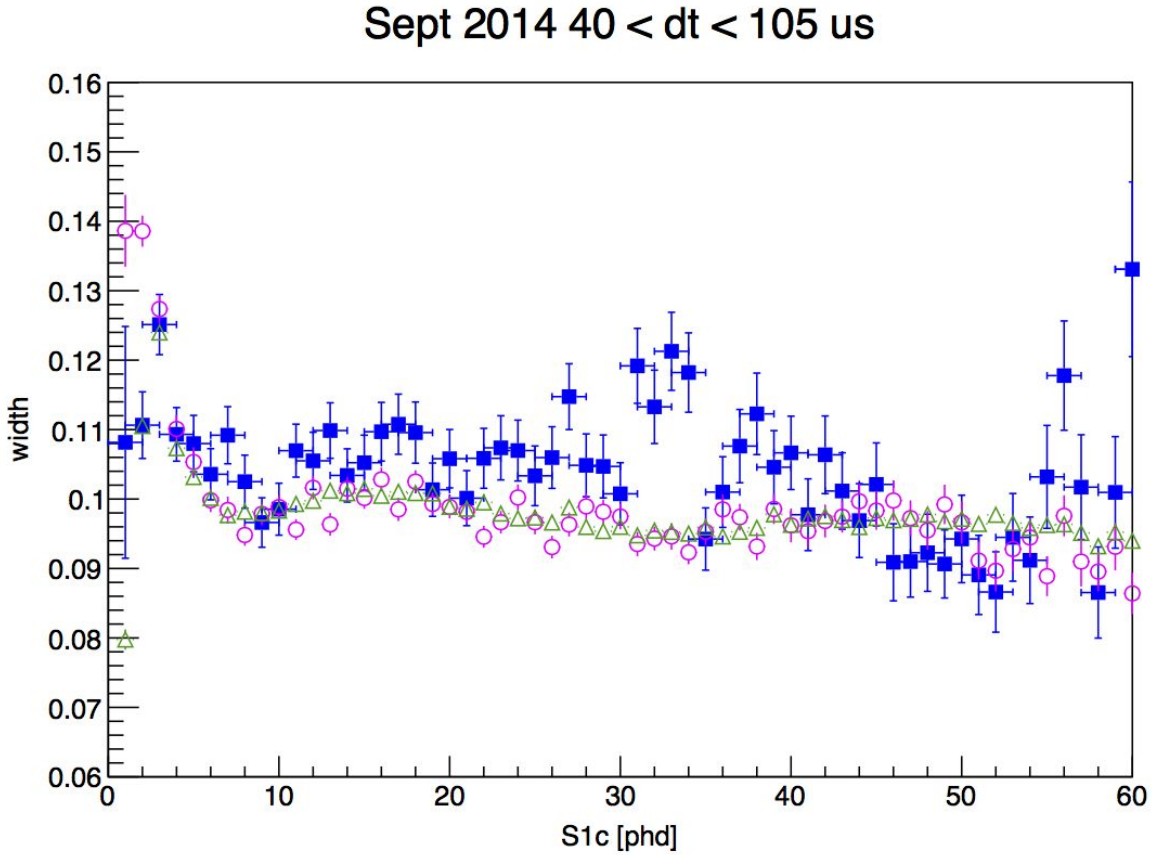
In the smallest few S1 bins, cut has an effect



What does it do?



Compare the widths



Overall, the width might be too narrow.

That is a new thing to look at

But this fixes up the low S1 bins

More to do...

- Decide what to do about width being too narrow
  - Really, look at additional time / z bins and decide how bad the issue is
- Finish up spike counting
  - Brian and Evan are on it!