Monthly report

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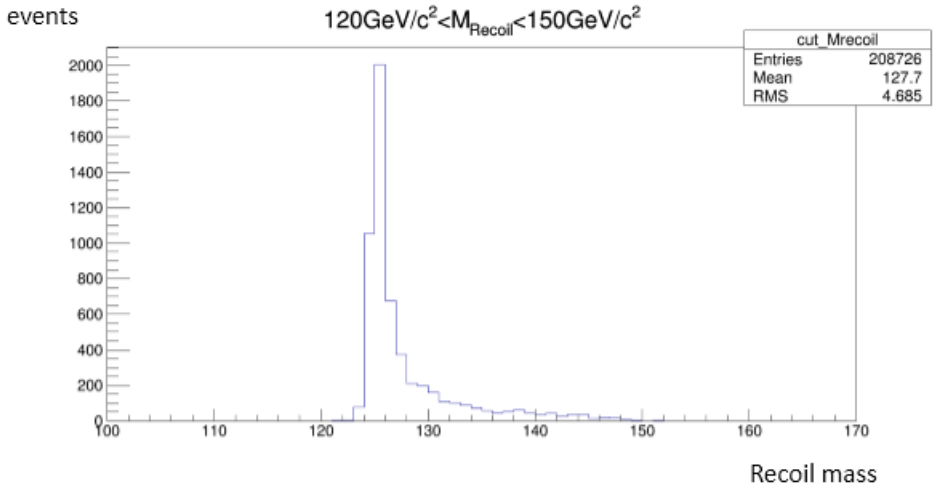
2018/9/30

1)Learn python
2)Learn Maoqiang’s code and modified his code according to Ryuta.
3)Plot cut condition distribution about signal and background to confirm our cut is reasonable and know more physical details.
4)Plot the summary figure of background and signal before cut and after cut.

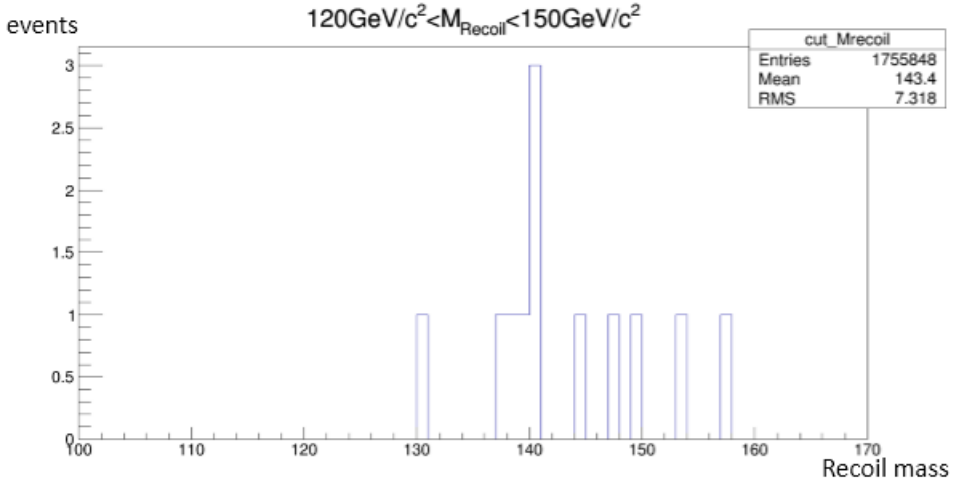
This is one of all cuts, and some background samples.

Before cut Recoil mass distribution:

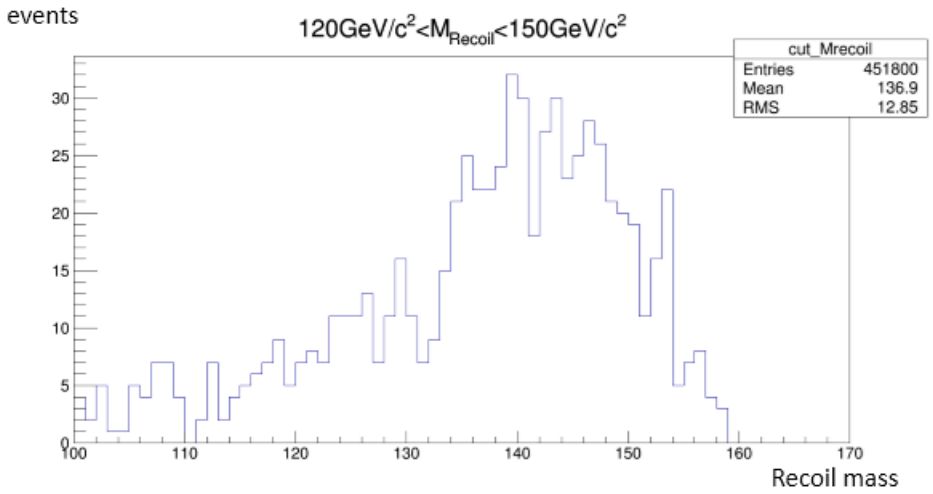
Signal



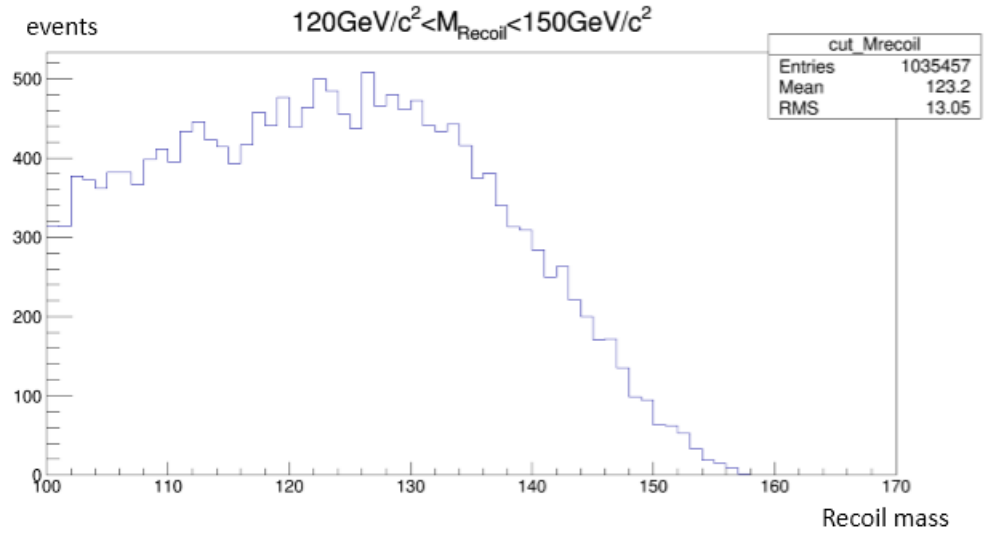
Background: e+e- ->qq



Background: e+e- ->τ+τ-

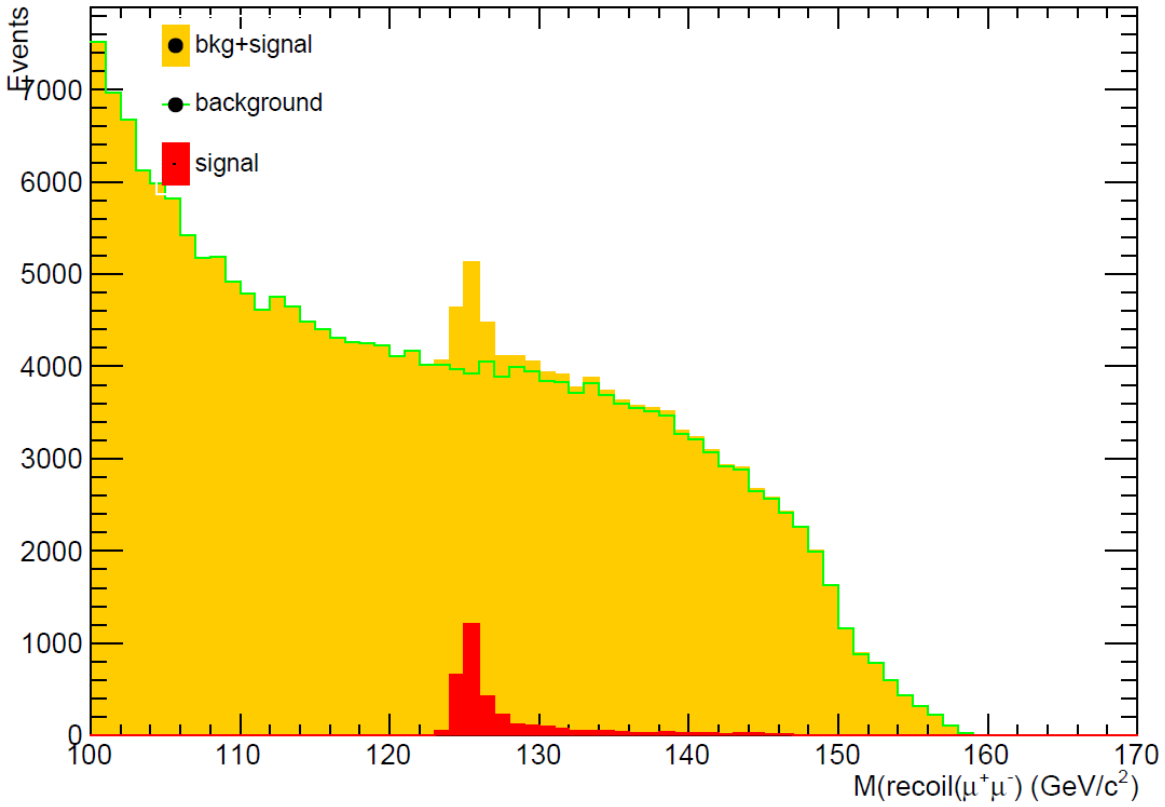


Background: e+e- ->ww_l0ll

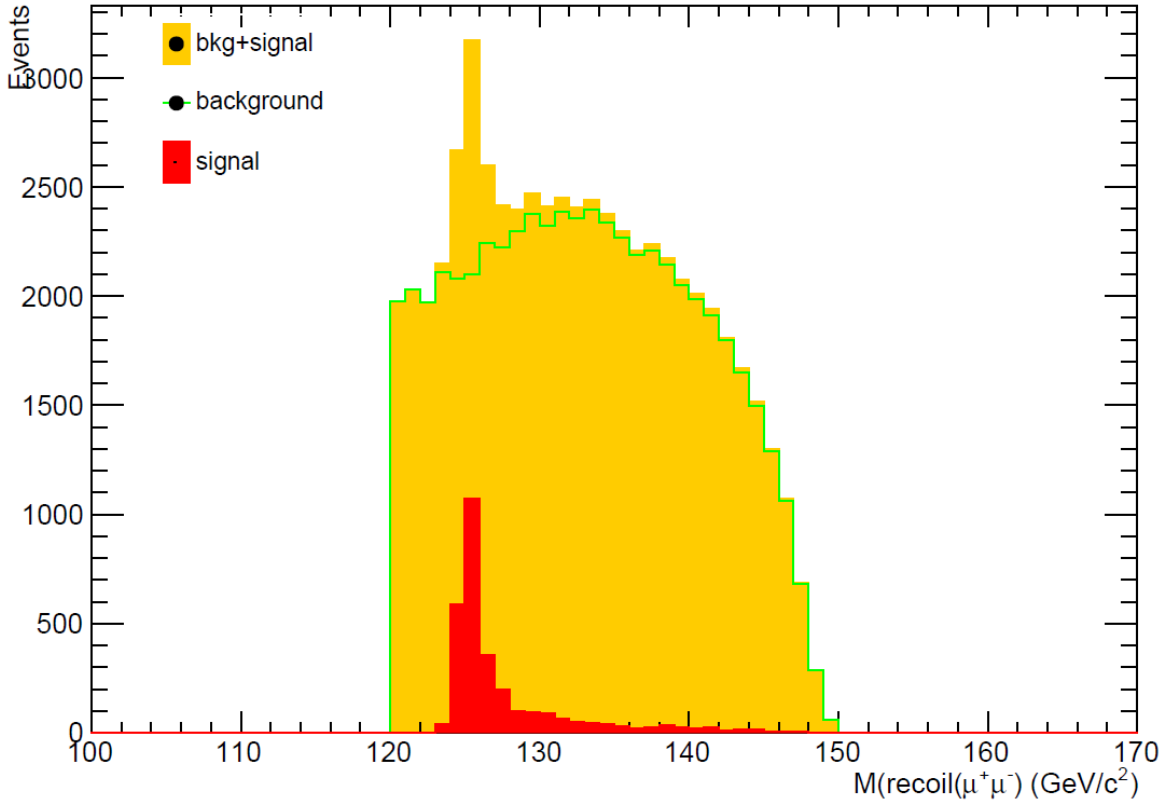


This is signal and all background. Our cut is the mass of recoil in the range (120Gev,150Gev). We keep the signal as much as possible, but we also save many backgrounds.

Before cut

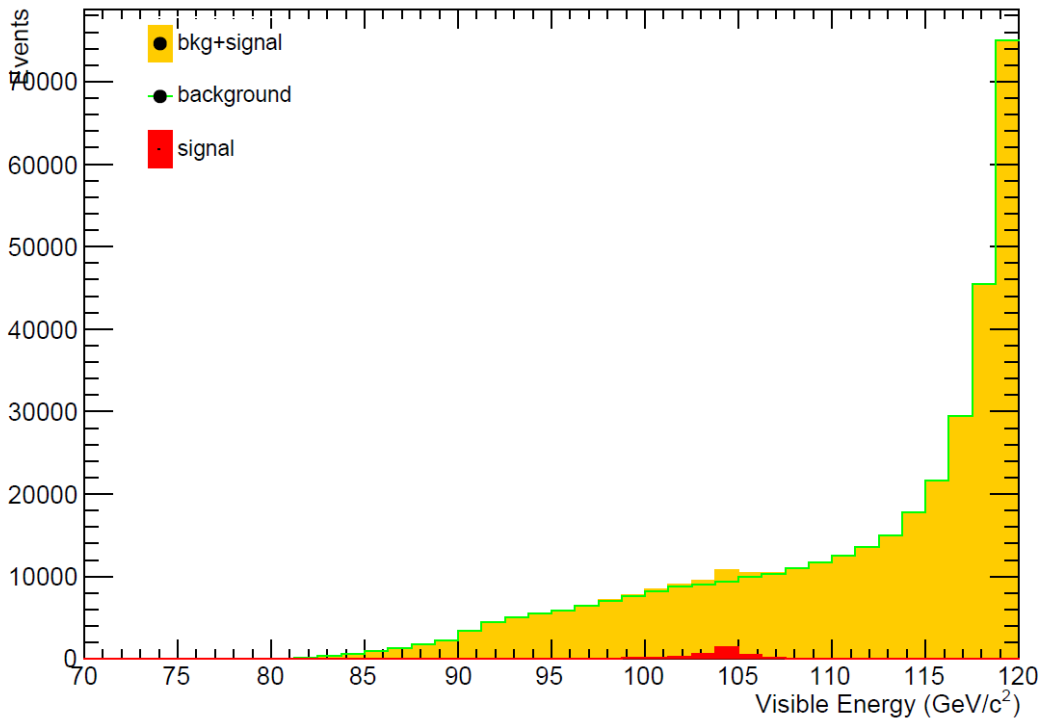


After cut

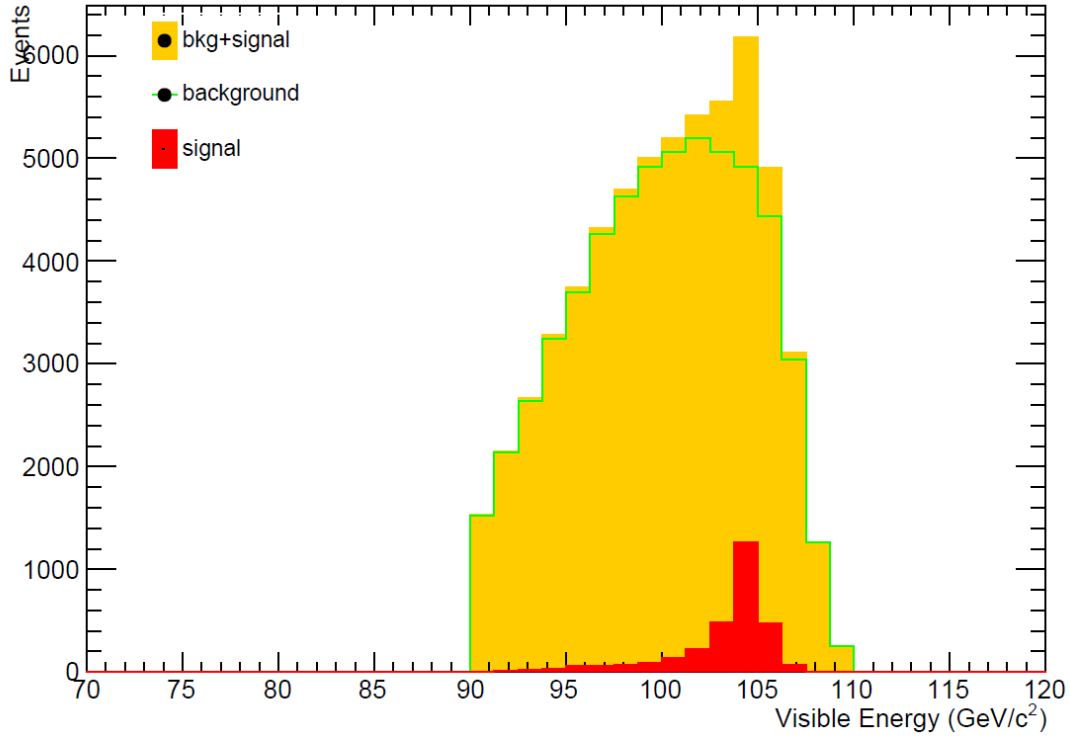


Our cut about visible energy is 90Gev < visible energy < 110Gev.

Before cut

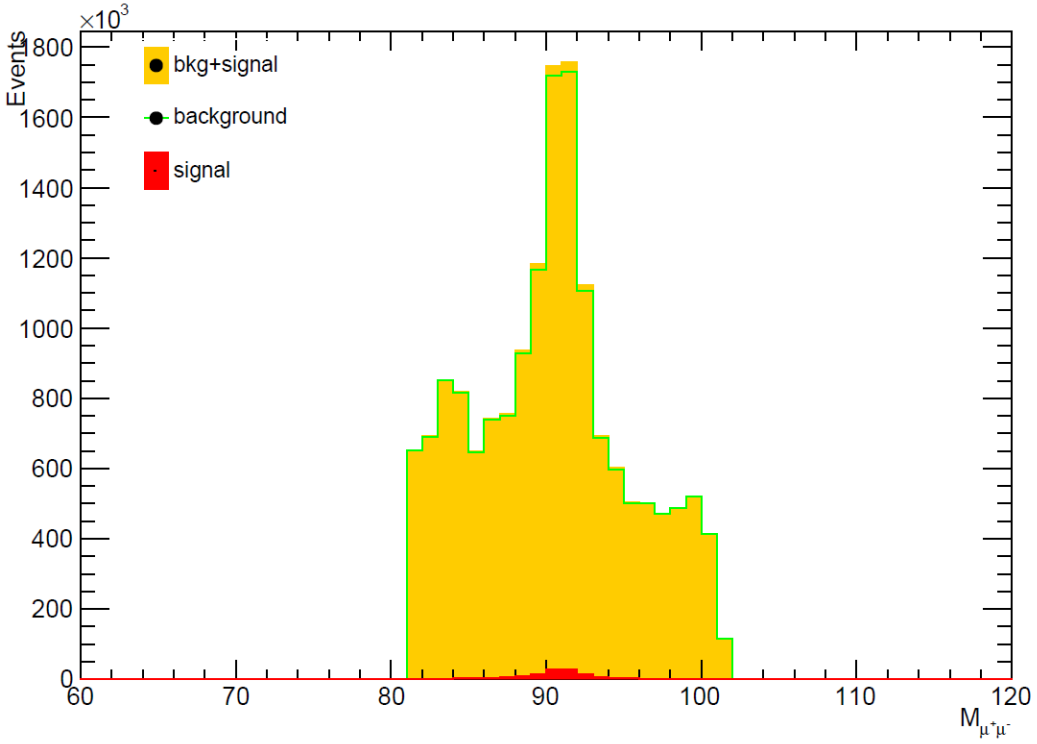


After cut

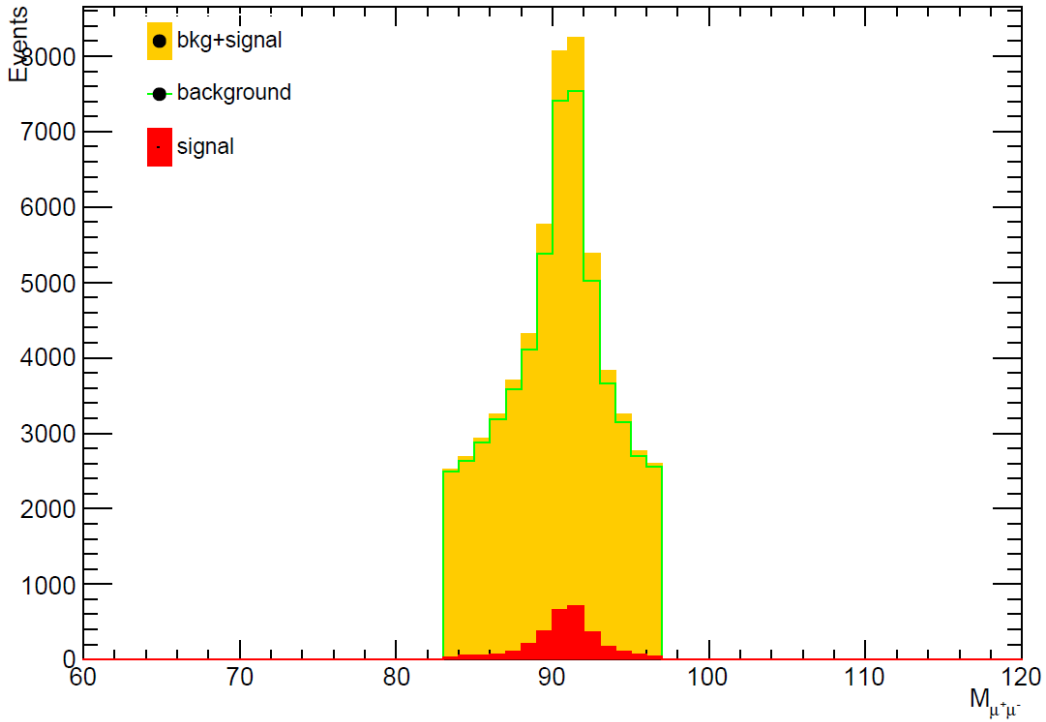


Our cut about the invariance mass is 83Gev < invariance mass < 97Gev.

Before cut



After cut



From these pictures, we can know our cut is roughly reasonable. Next, maybe we can learn how to calculate branch ratio and confidence level upper limit to get roughly result firstly. Then we can optimize the details.

Next Month Plan

1. System learning python

2. Further improve the code to solve the remaining problems

3. Learn how to calculate branch ratio and confidence level upper limit

4. Straighten out the whole experiment