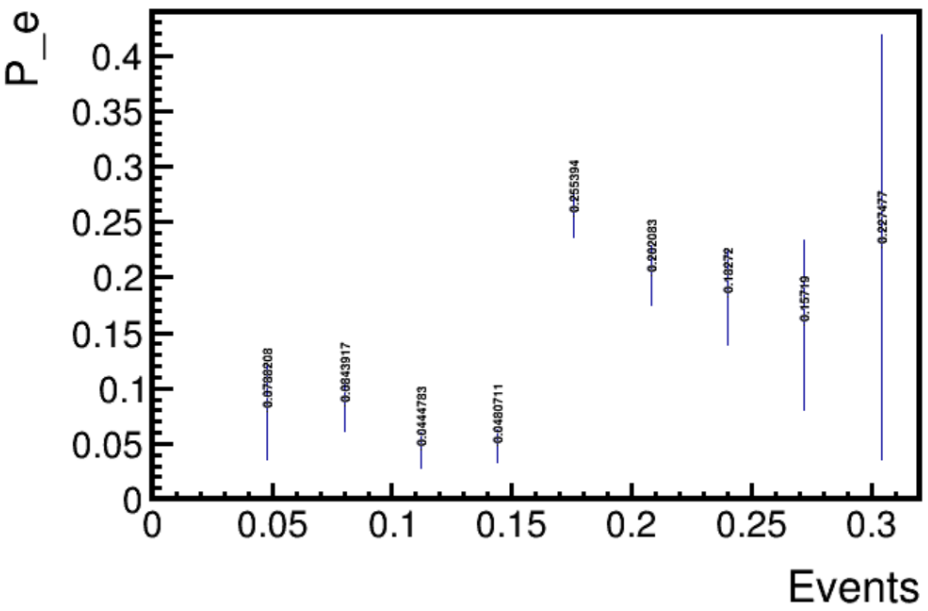
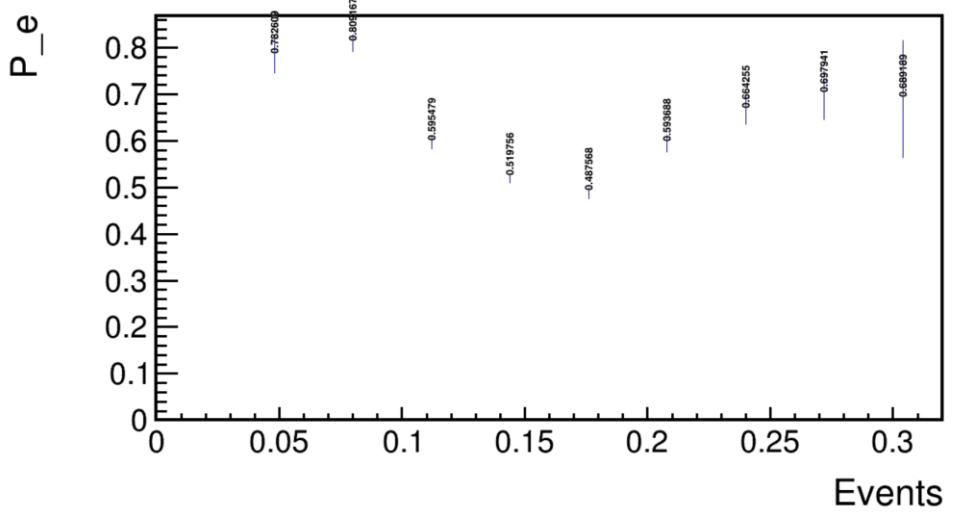
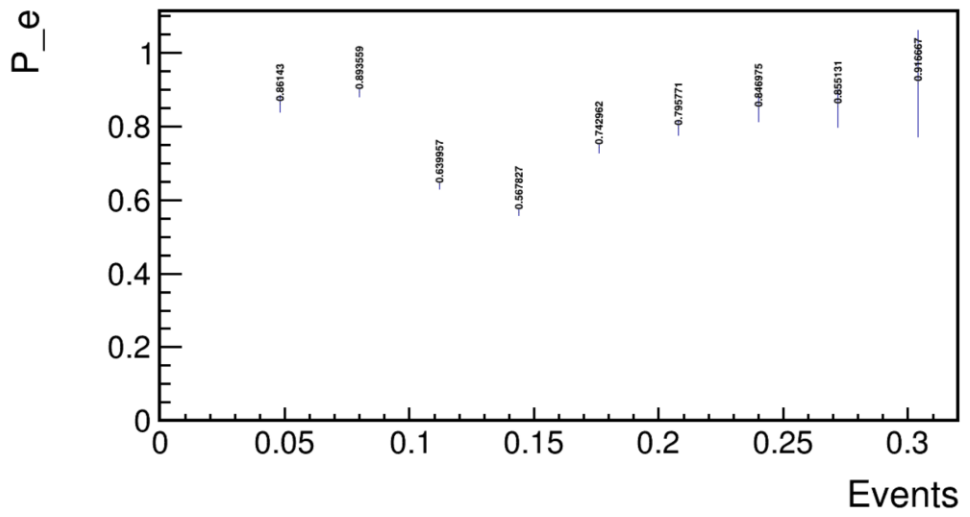
```
if(sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpointz*p4electron
genpointz)>10000||sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpo
intz*p4electrongenpointz)<5) continue;
```

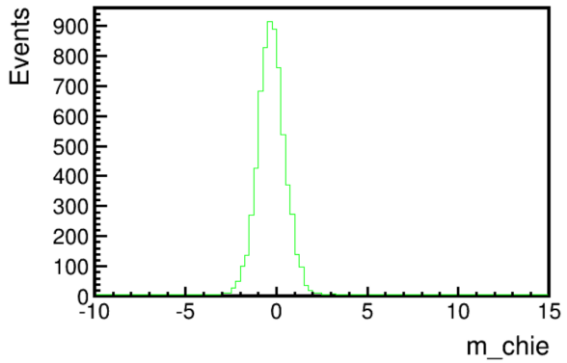
```
if(sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpointz*p4electrongenpointz
)<1&&sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpointz*p4electrongenpoin
tz)>0){
```

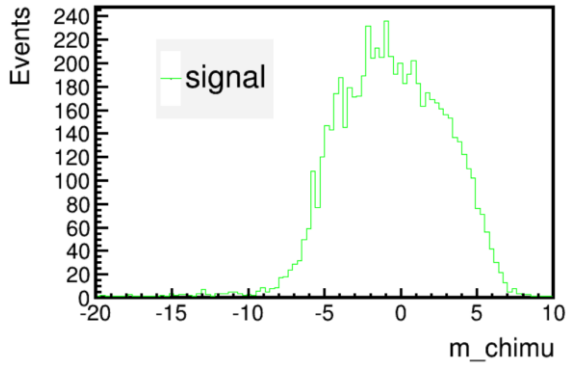


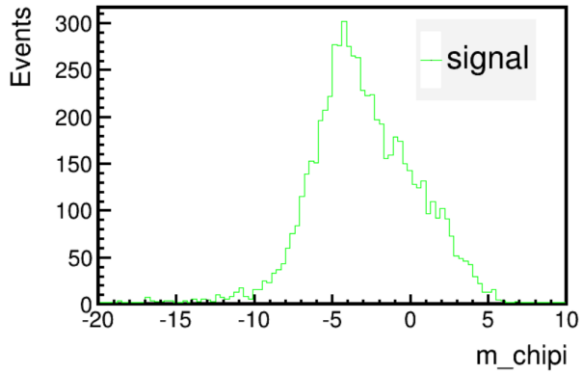


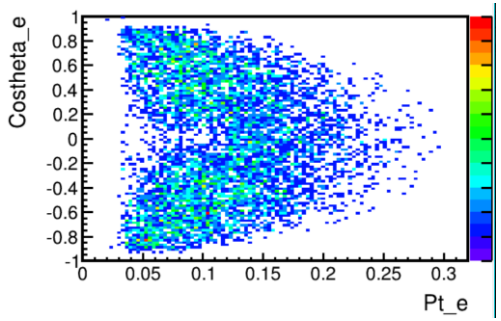


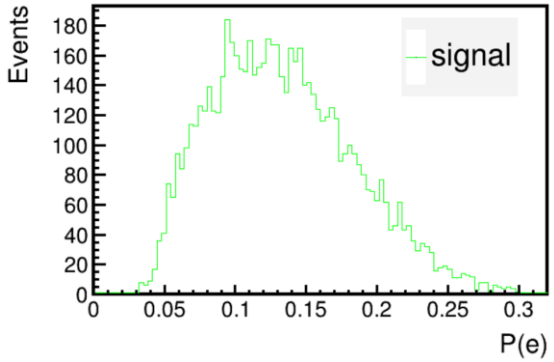
```
if(sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpointz*p4electron
genpointz)>1) continue;
```

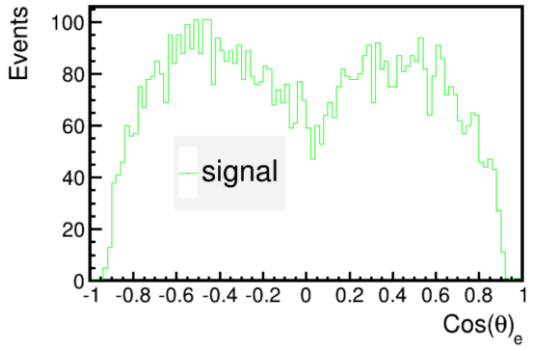


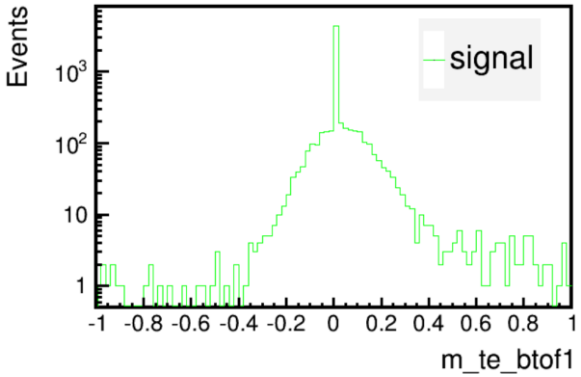


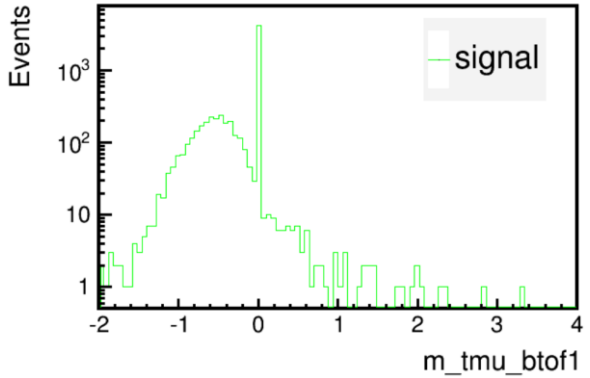


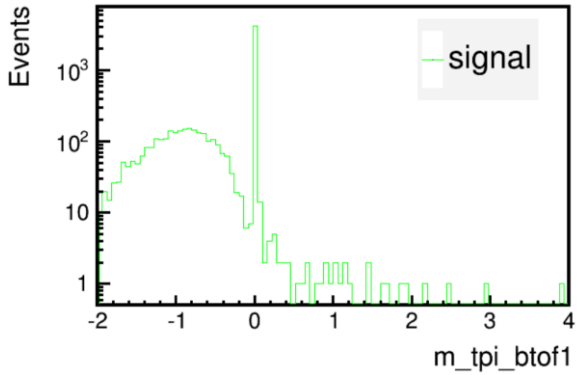


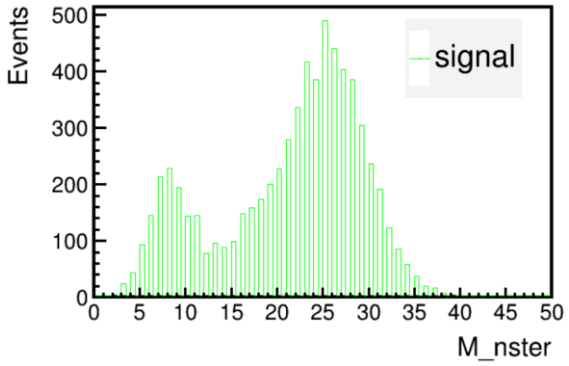


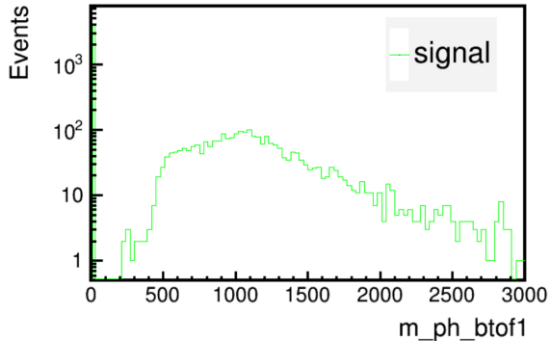


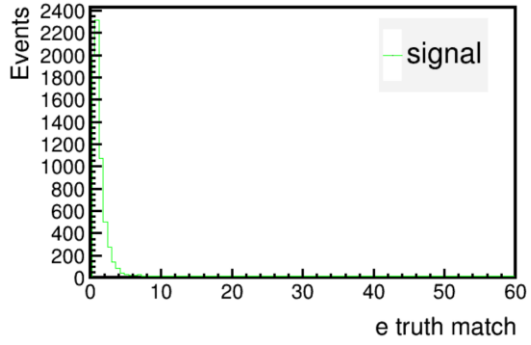




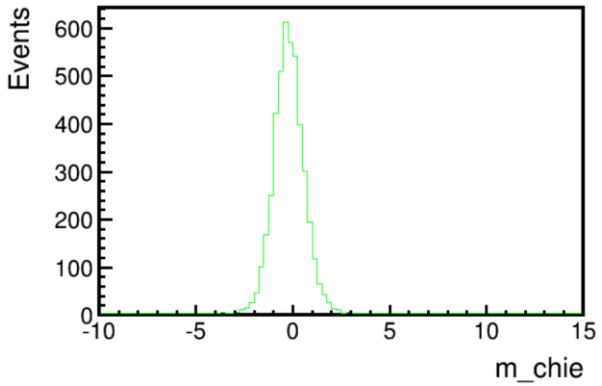


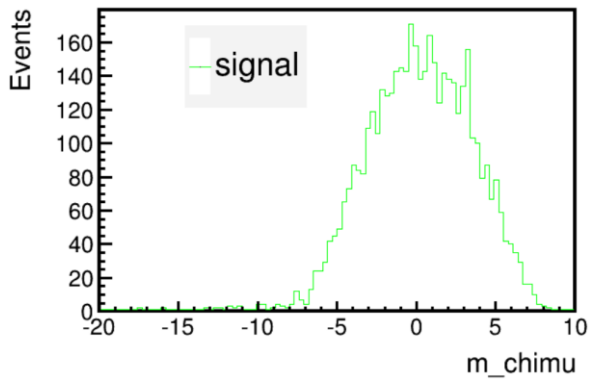


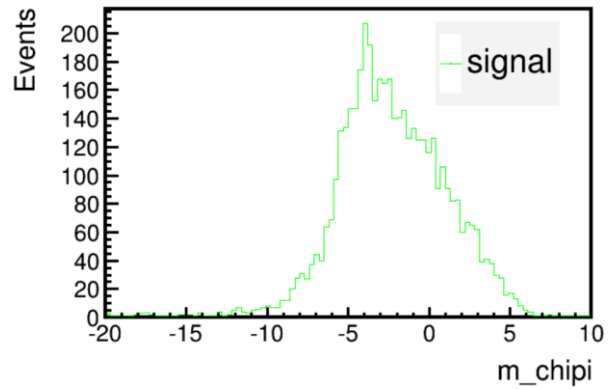


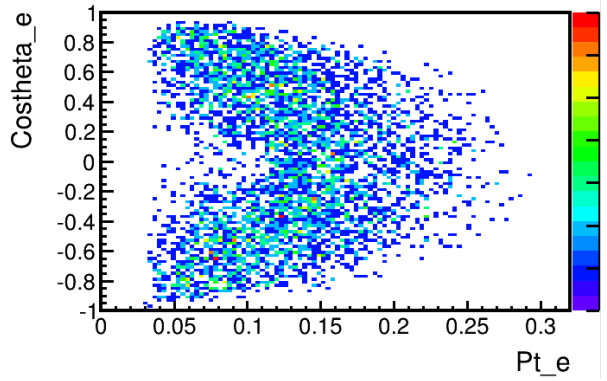


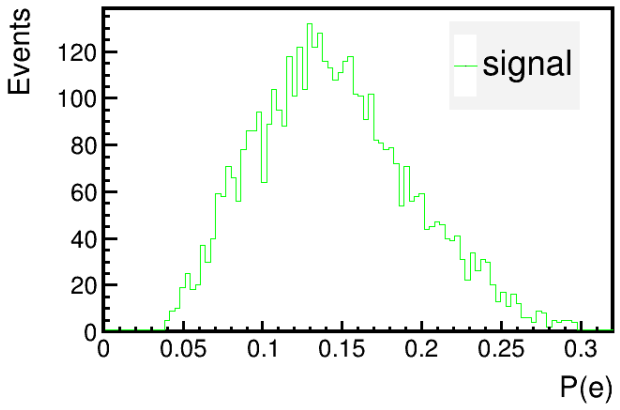
```
if(sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpointz*p4electron
genpointz)>100||sqrt(p4electrongenpointx*p4electrongenpointx+p4electrongenpointy*p4electrongenpointy+p4electrongenpoin
tz*p4electrongenpointz)<5) continue;
```

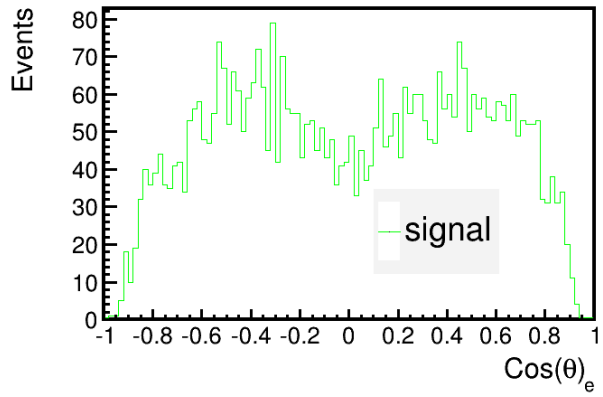


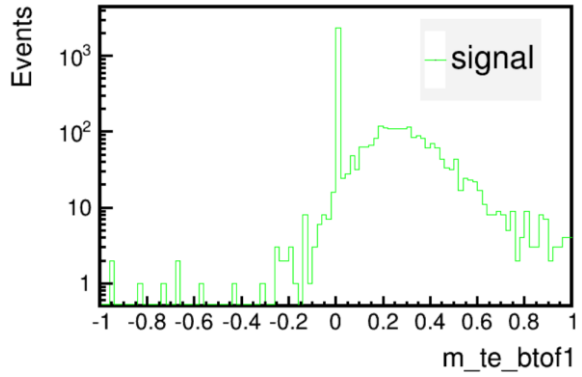


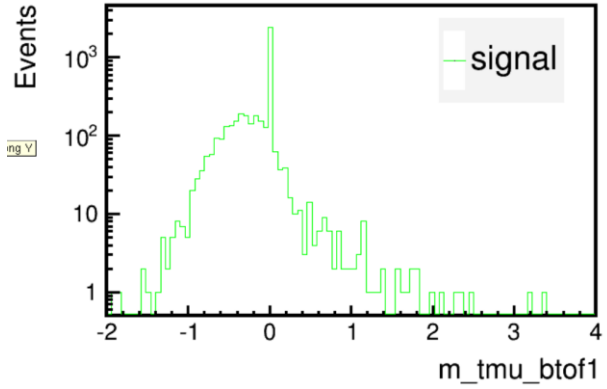


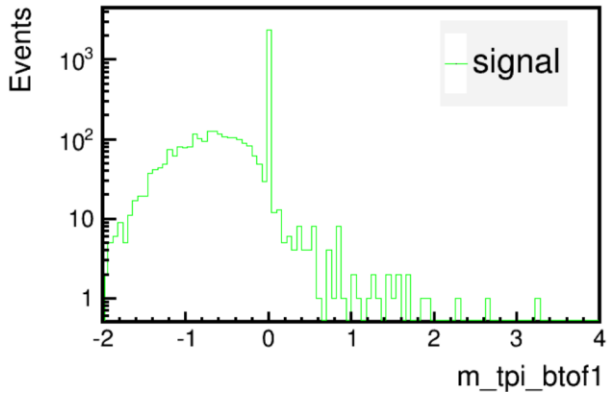


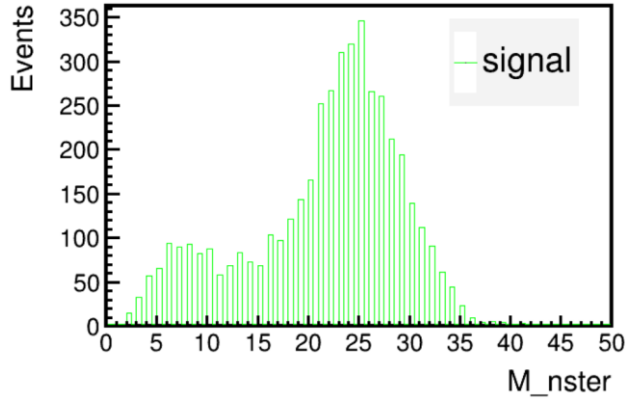


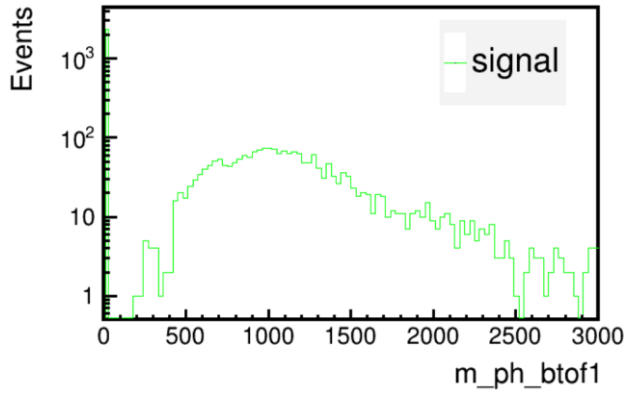


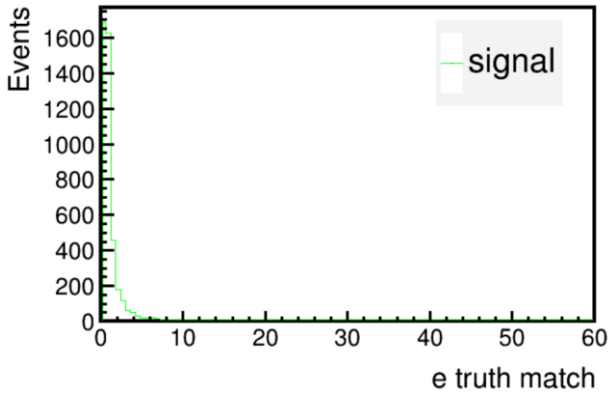




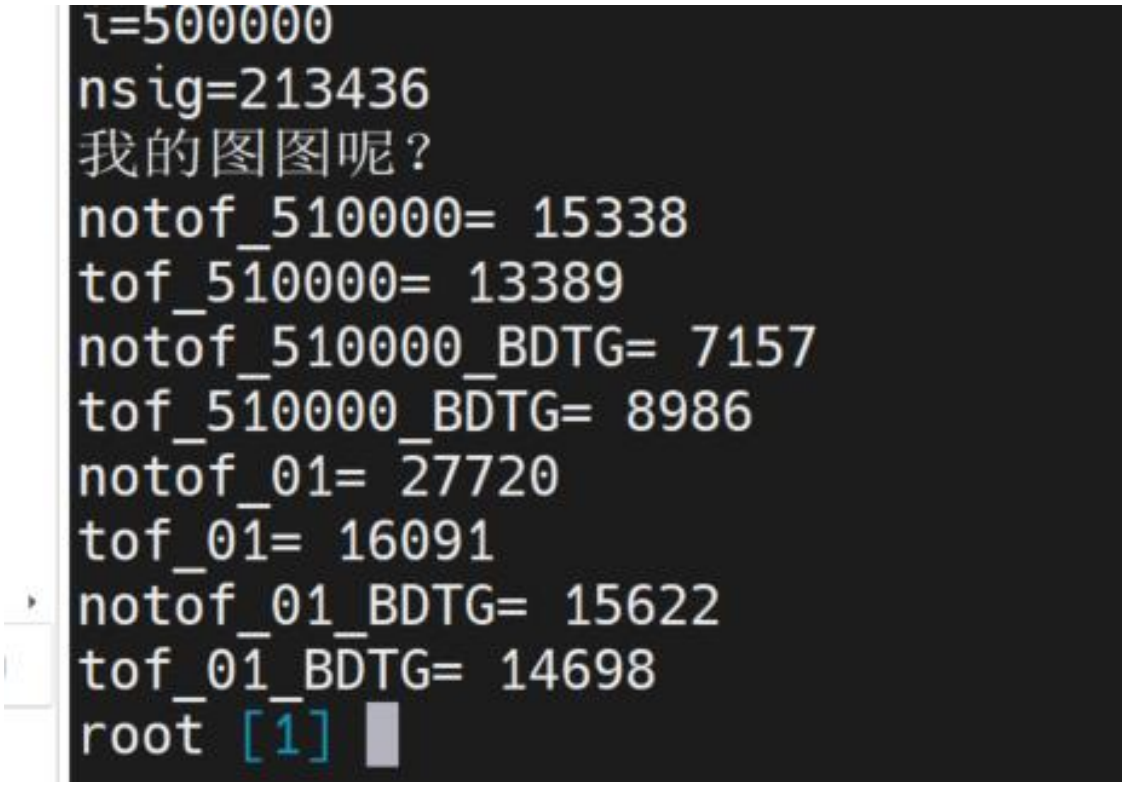




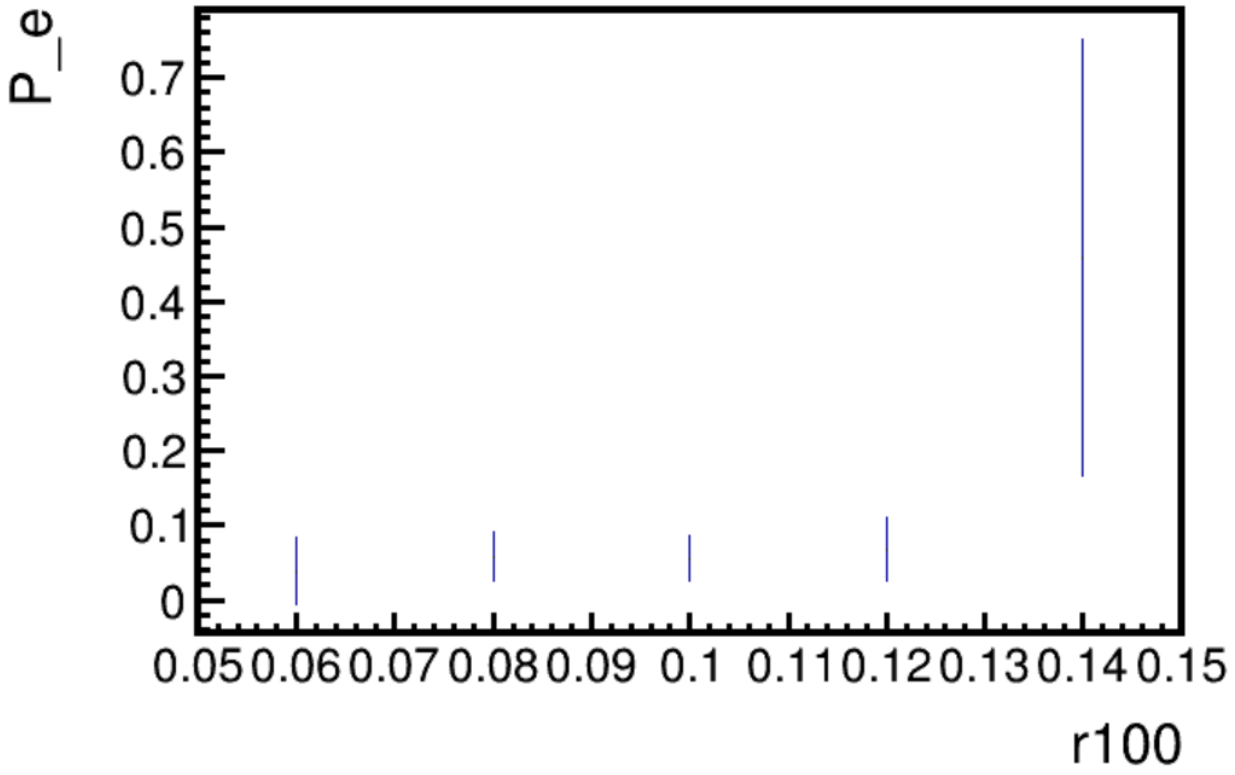


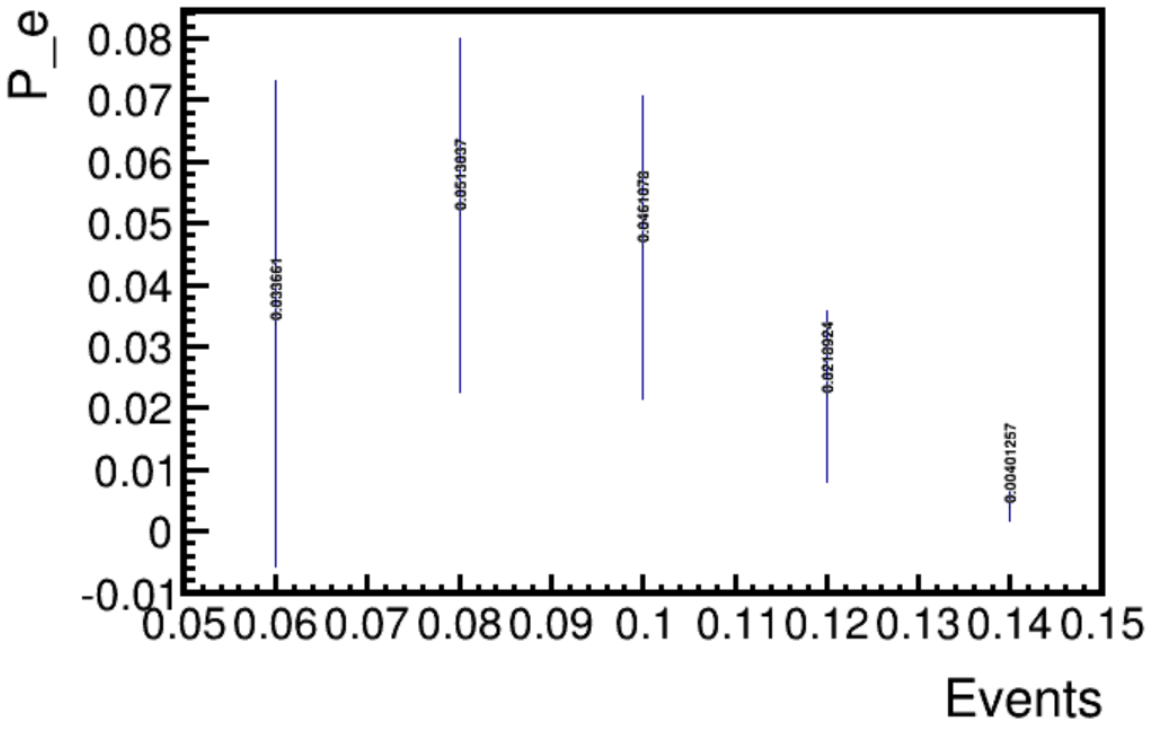


不同decay length下的tof notof比例

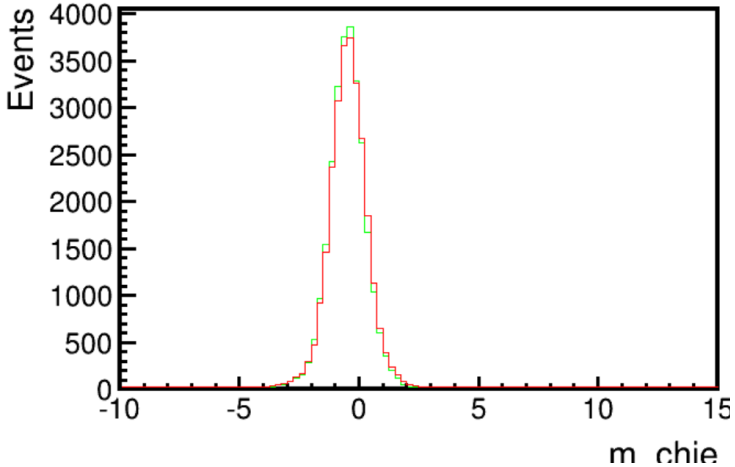


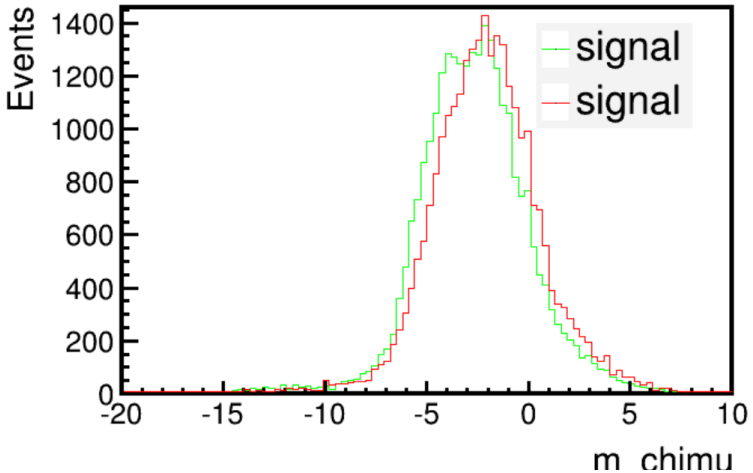
这里我们直接先把tof信息剔除，只要没有tof信息事例进行训练

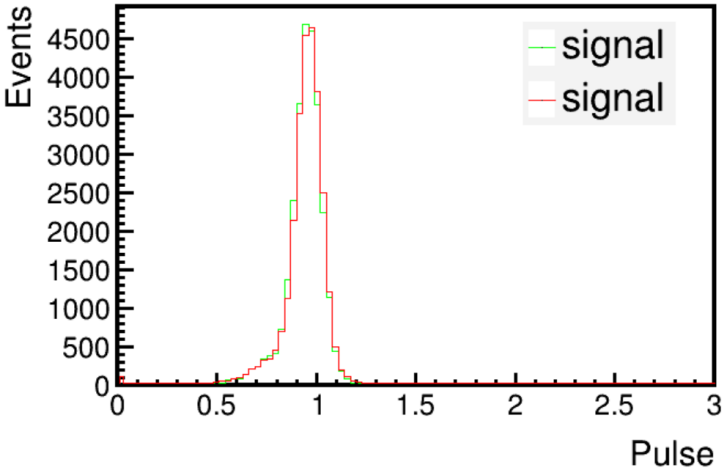


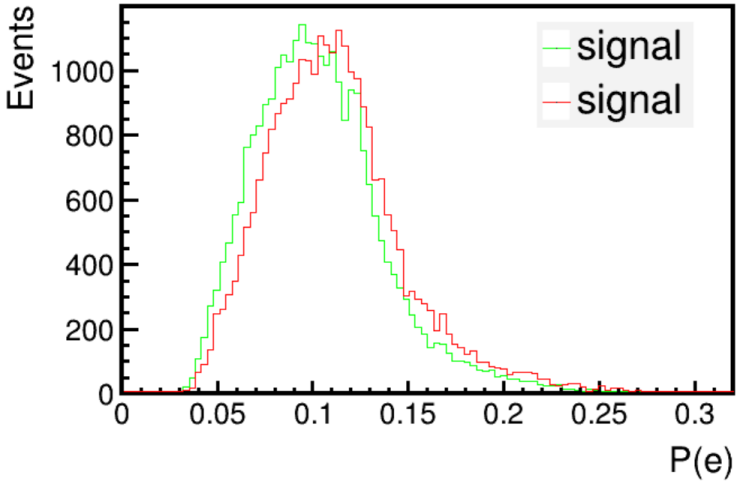


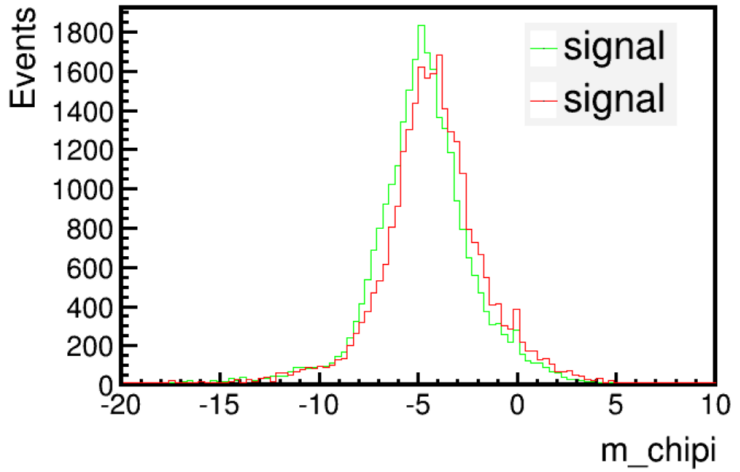
还是看看基本变量有什么区别吧

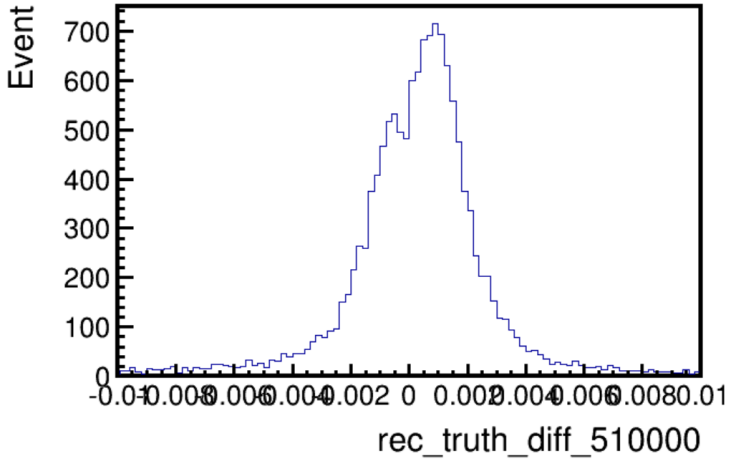


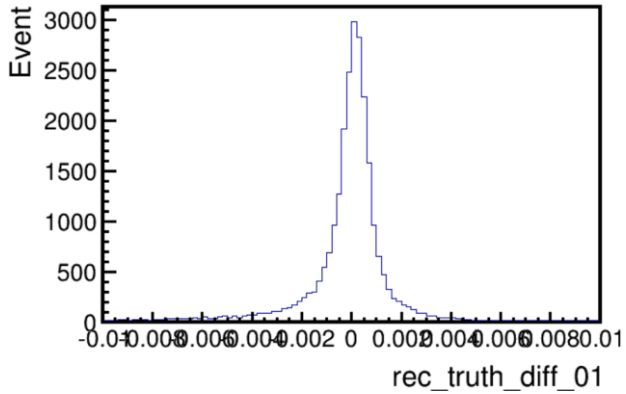




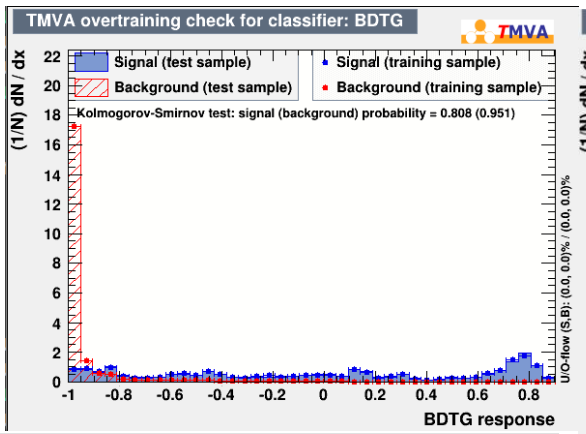


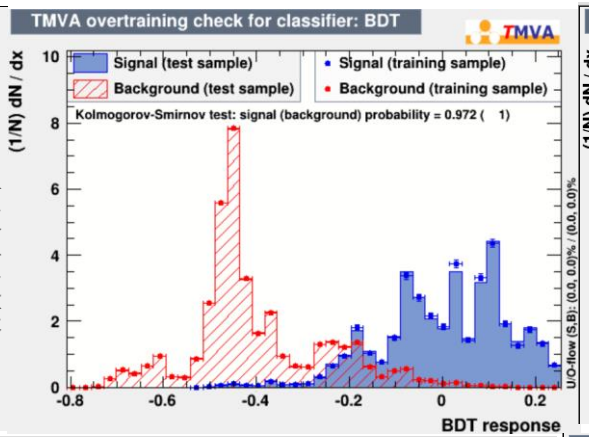


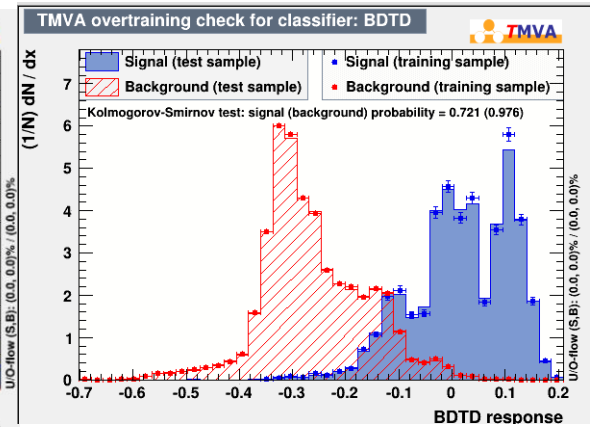


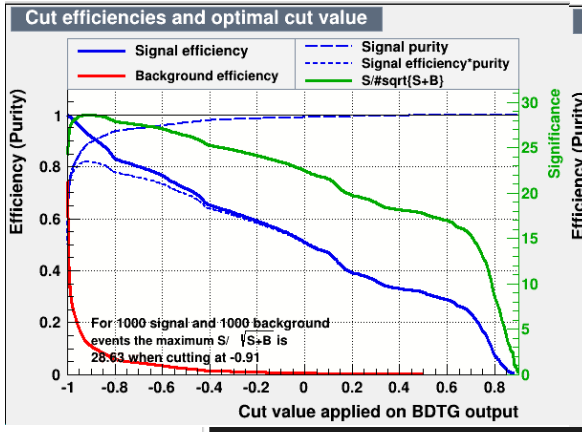


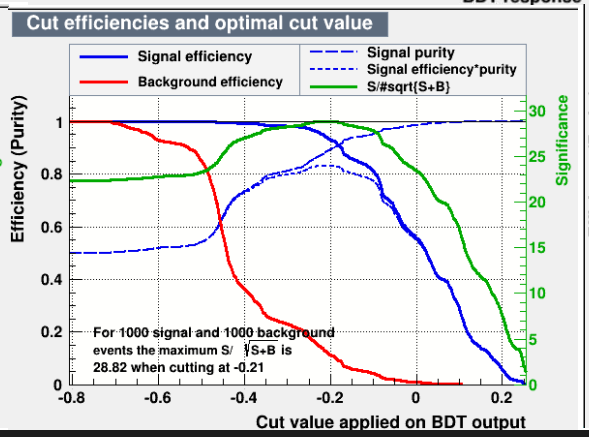
现在检查一下边缘事例对bdt的影响，下面是没有去除边缘事例的

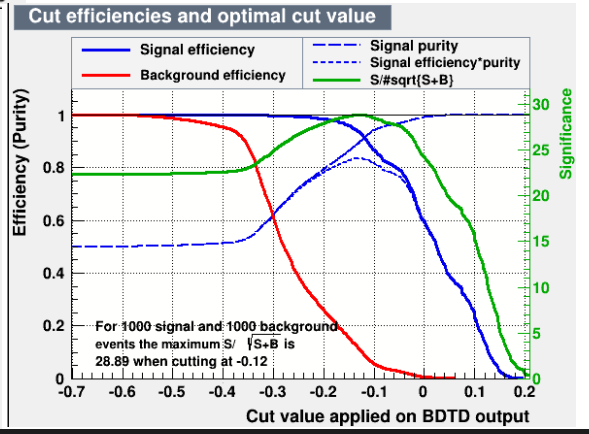






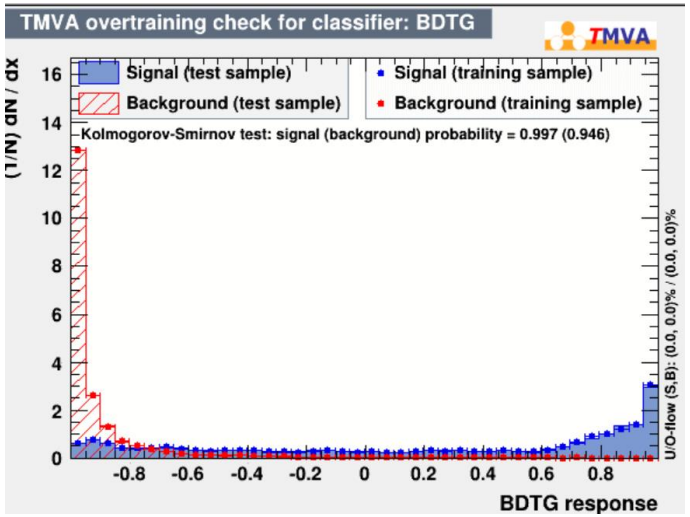


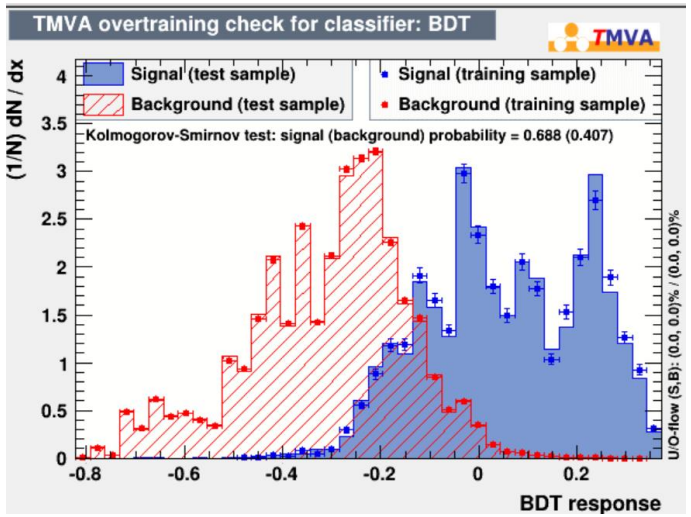


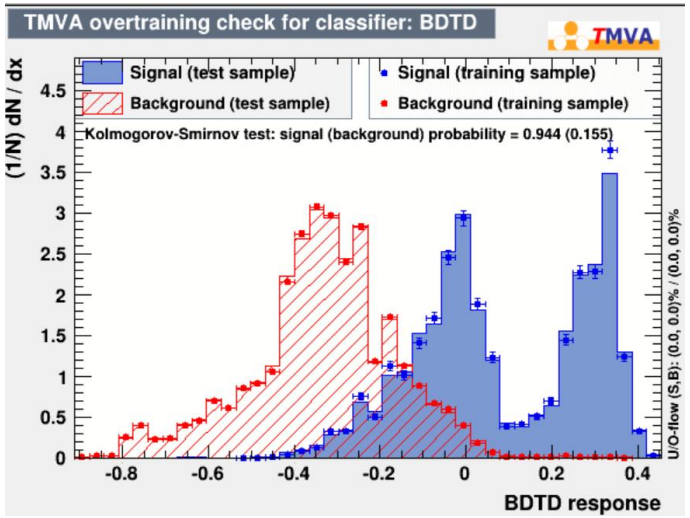


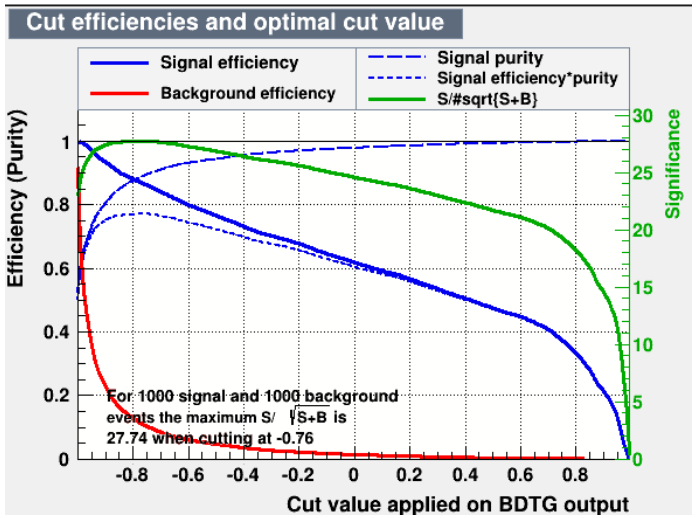

```
---  ==========================================================================================
---  Classifier   (  #signal, #backgr.)  Optimal-cut  S/sqrt(S+B)      NSig      NBkg   EffSig   EffBkg
---  ------------------------------------------------------------------------------------------
---       BDTG:  (     1000,     1000)      -0.9140      28.6258  924.5016  118.5374   0.9245   0.1185
---        BDT:  (     1000,     1000)      -0.2063       28.821   935.368  117.9171   0.9354   0.1179
---       BDTB:  (     1000,     1000)      -1.0000      22.3607      1000      1000        1        1
---       BDTD:  (     1000,     1000)      -0.1234      28.8942  924.1236  98.78796   0.9241  0.09879
---  ------------------------------------------------------------------------------------------
```

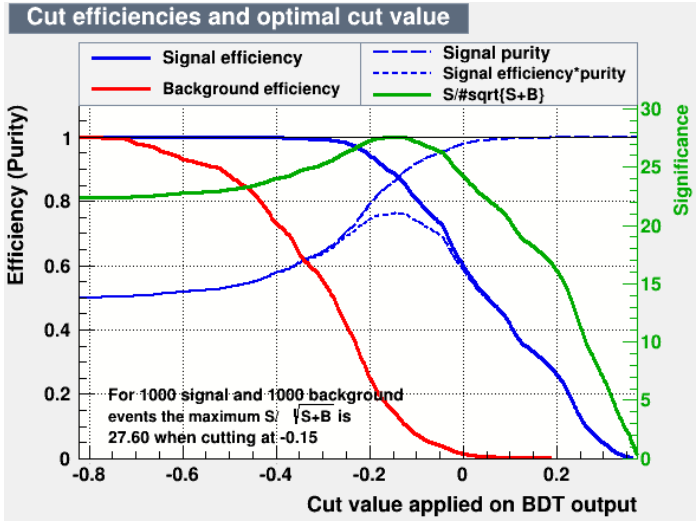
下面是去除的边缘事例的

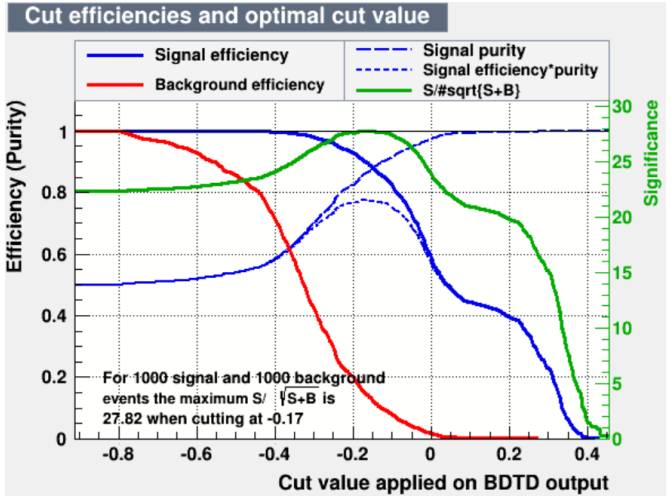




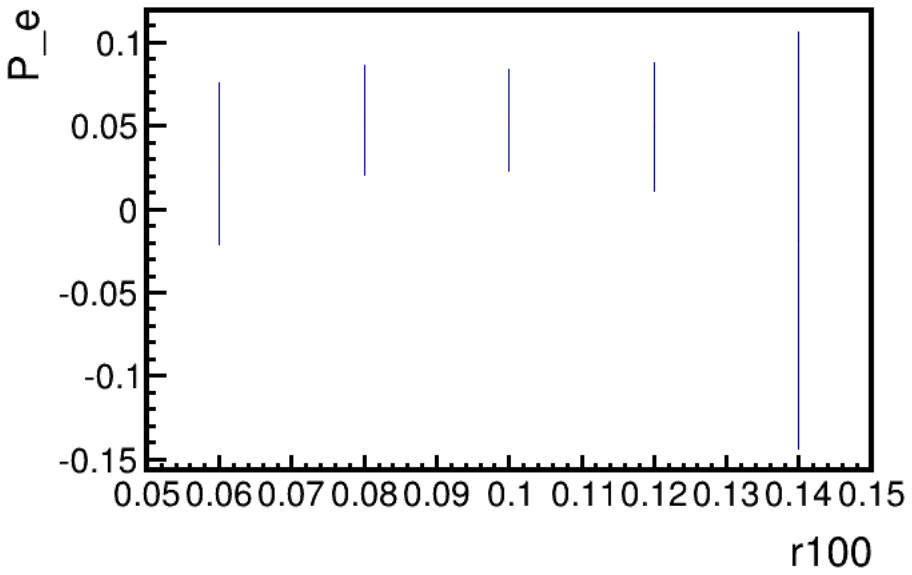


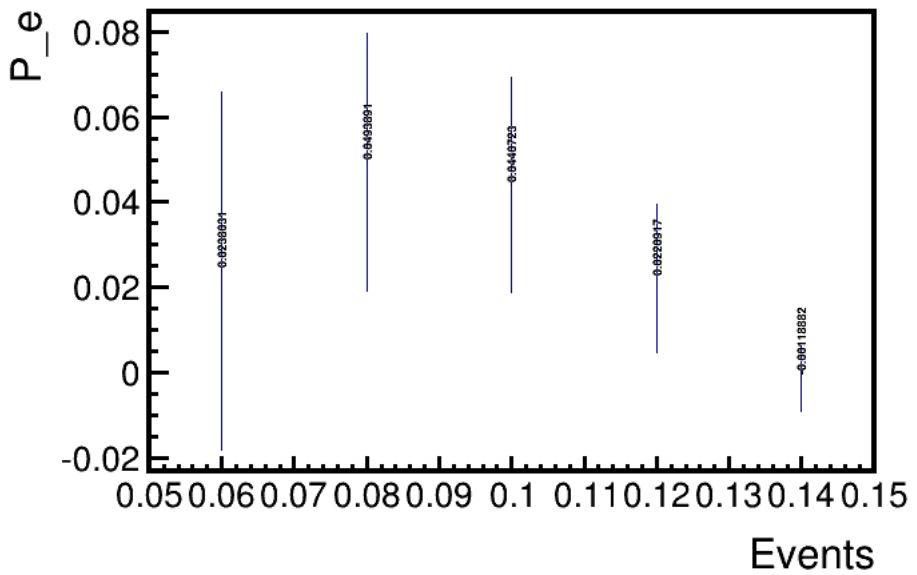




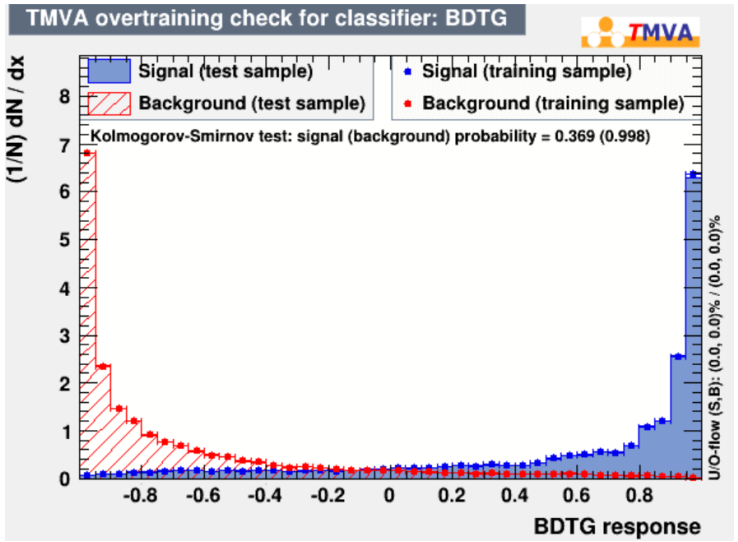


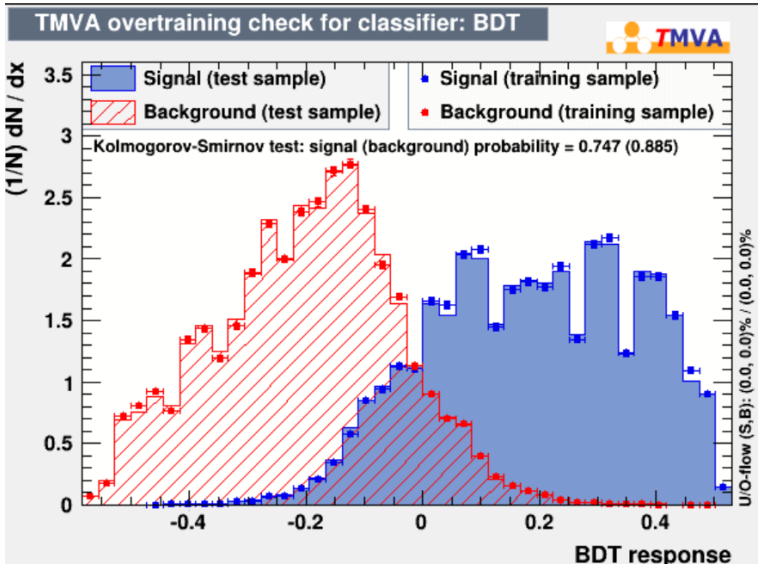
用这些去除边缘事例的训练结果再看，发现还是没什么作用

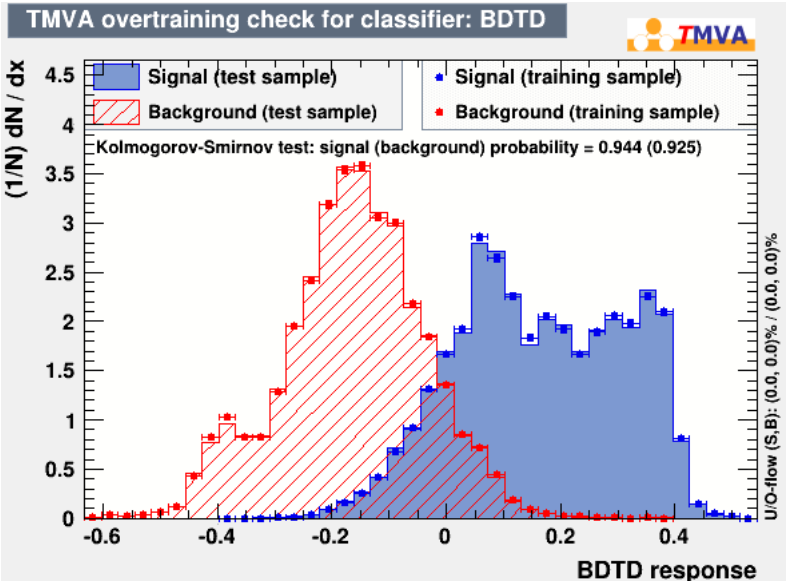


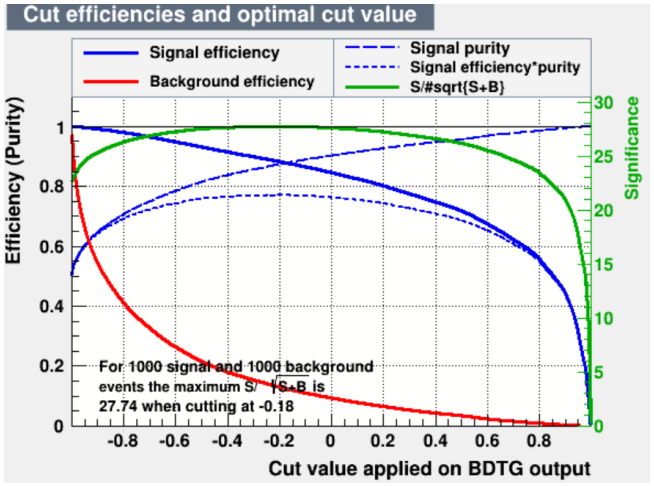


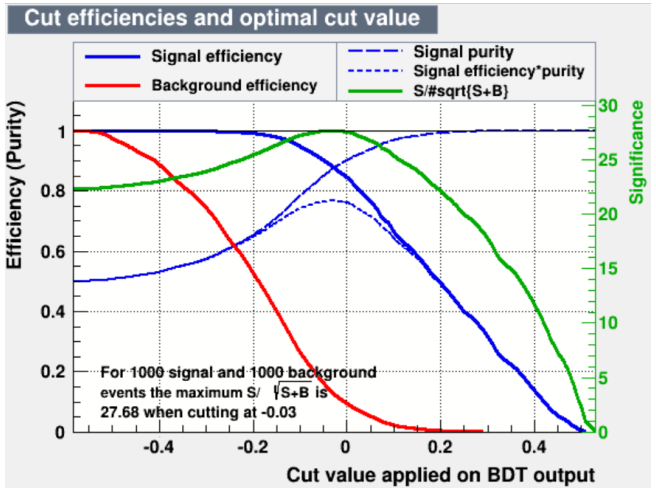
虽然与效率问题可能无关但是，还是检查一下训练样本的统计量不同有什么差别

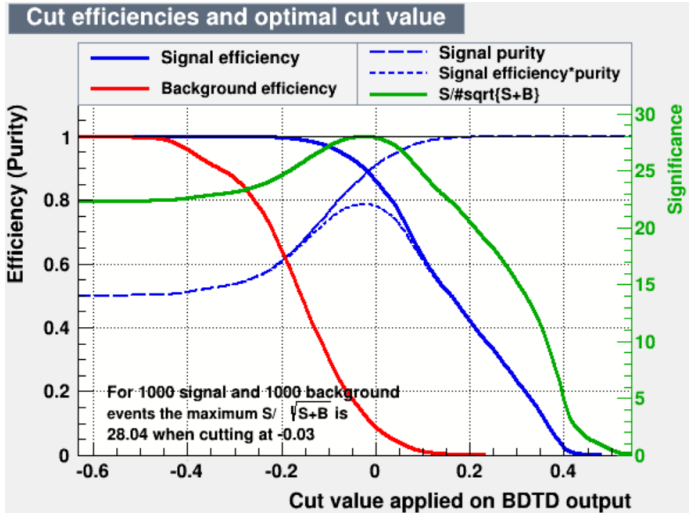




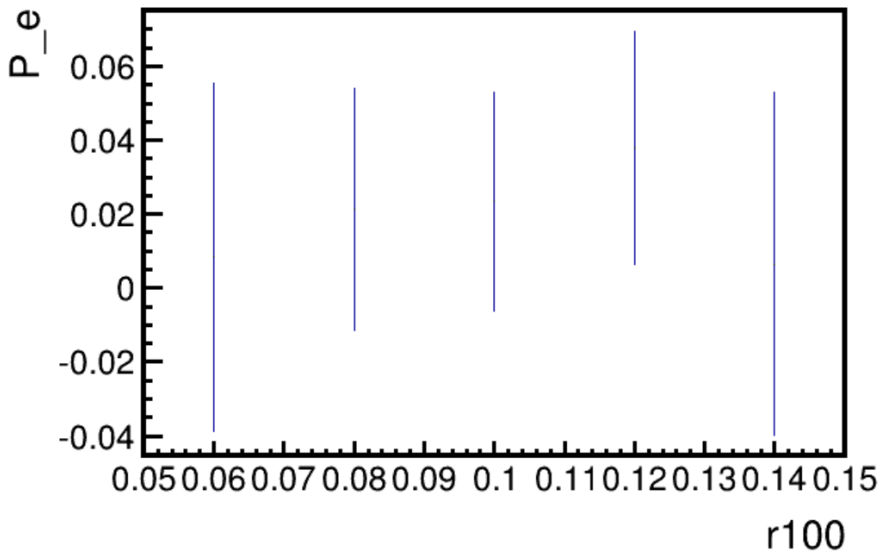


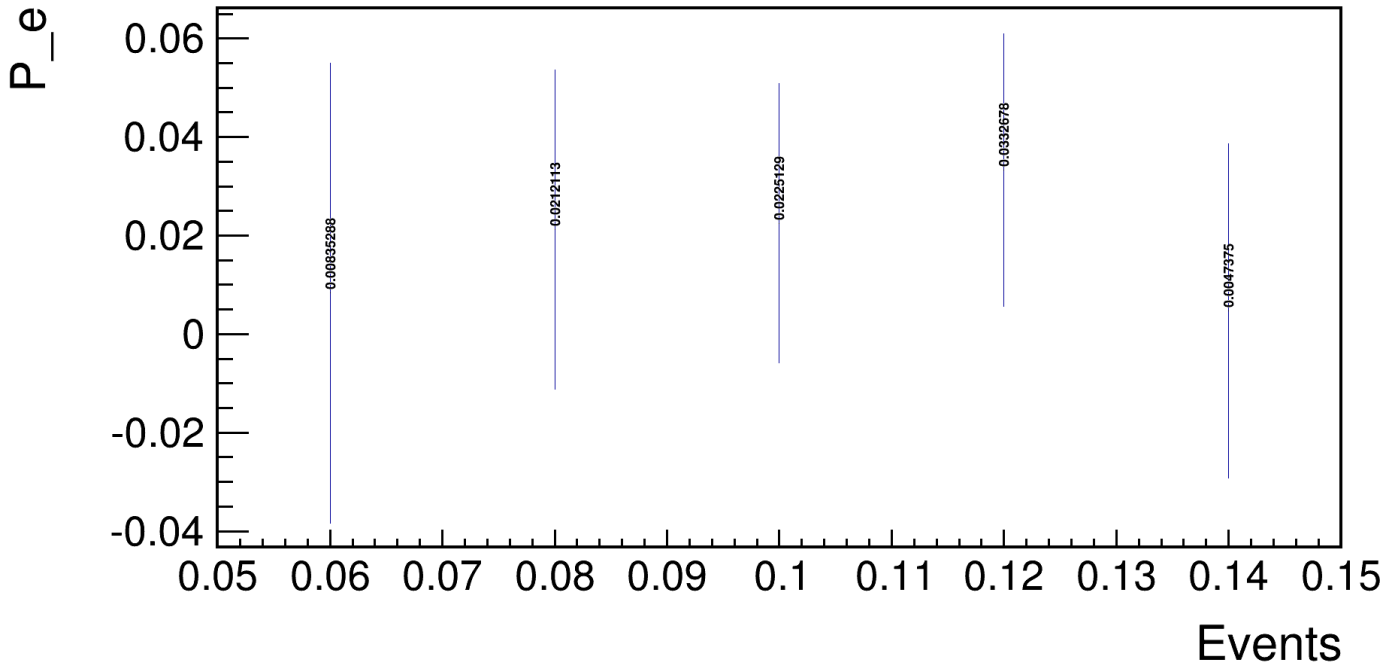




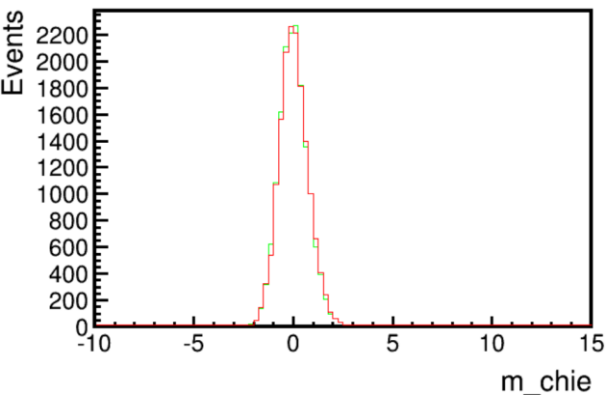


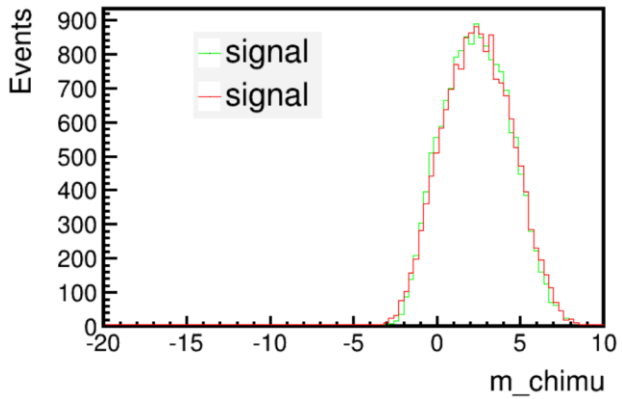
然后发现有改善

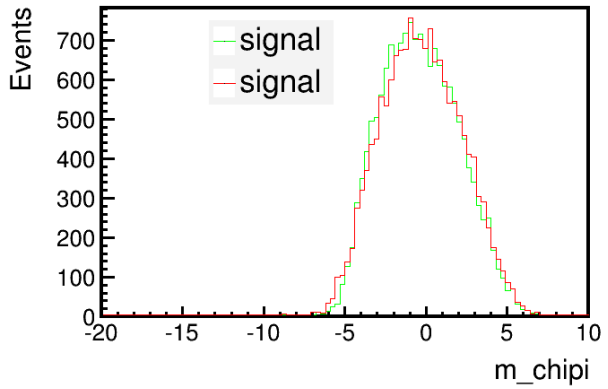

P_e
0.06
0.04
0.02
0
-0.02
-0.04
0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15
r100

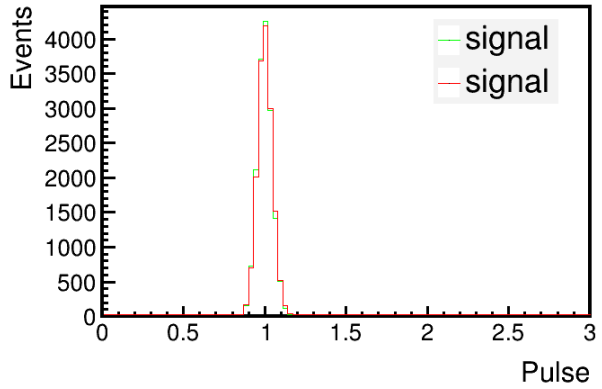

P_e
0.06
0.04
0.02
0
-0.02
-0.04
0.00835288
0.0212113
0.0225129
0.0332678
0.0047375
0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15
Events

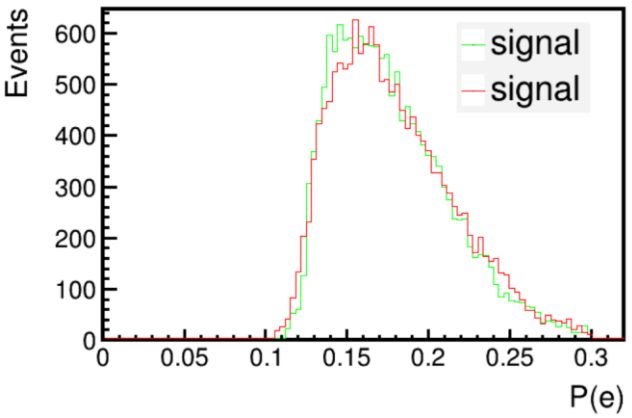
现在看看有tof的怎么说

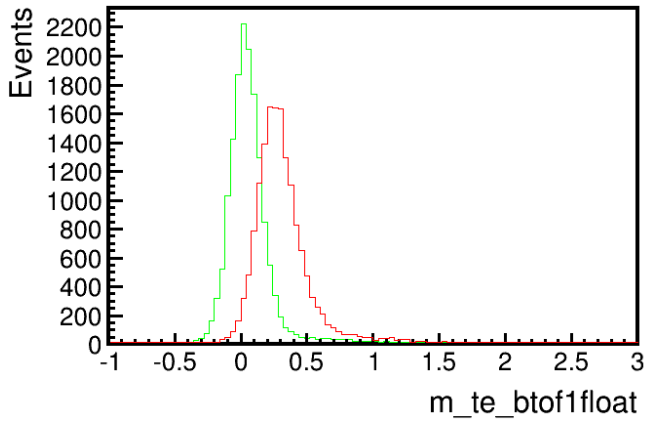


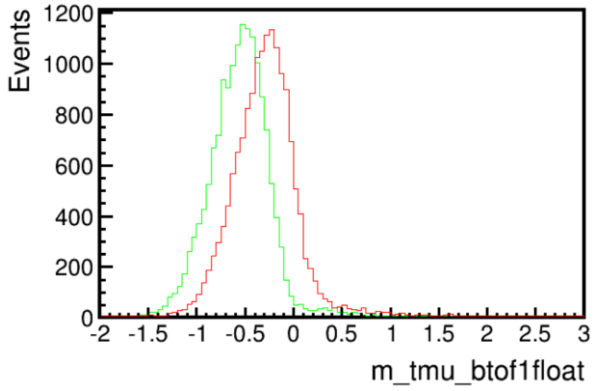


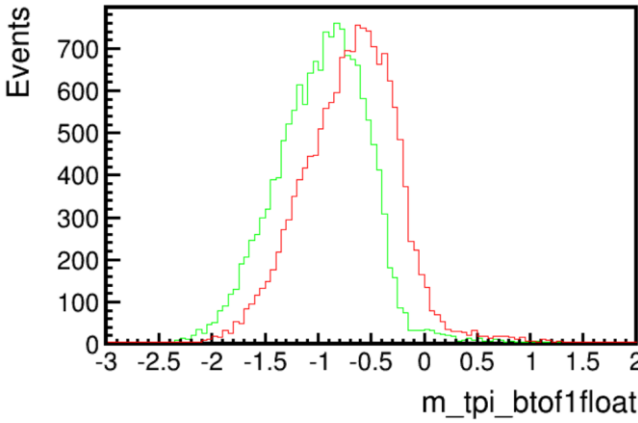




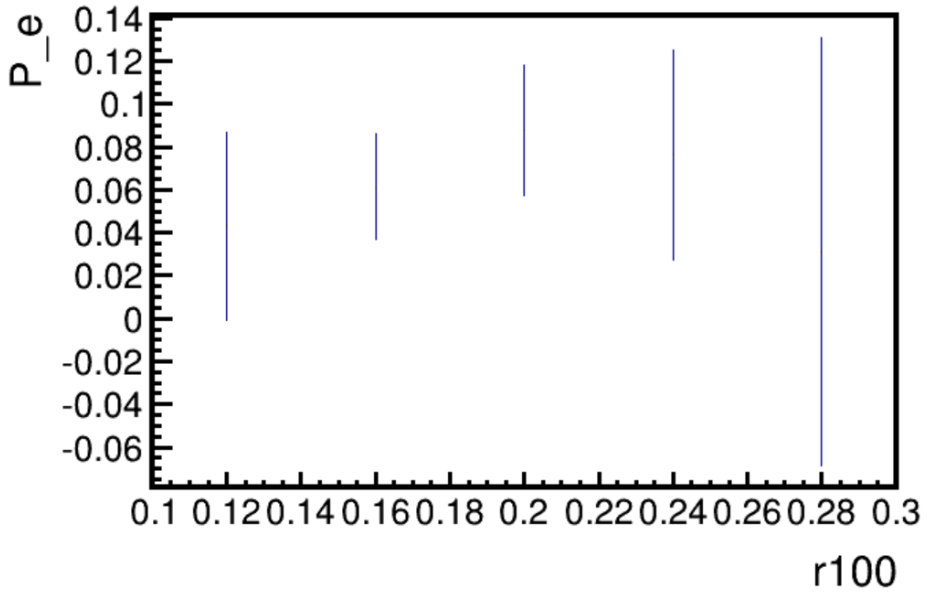


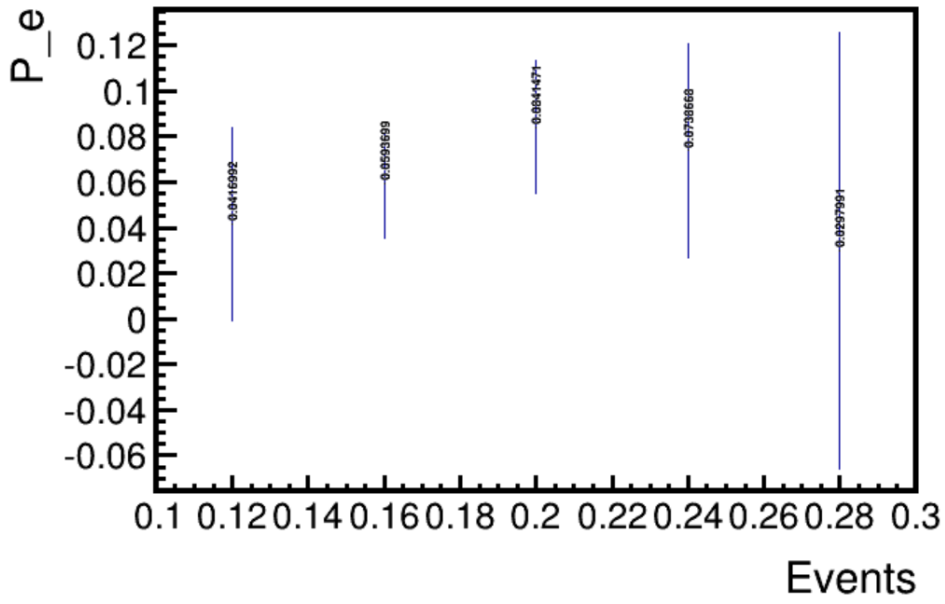


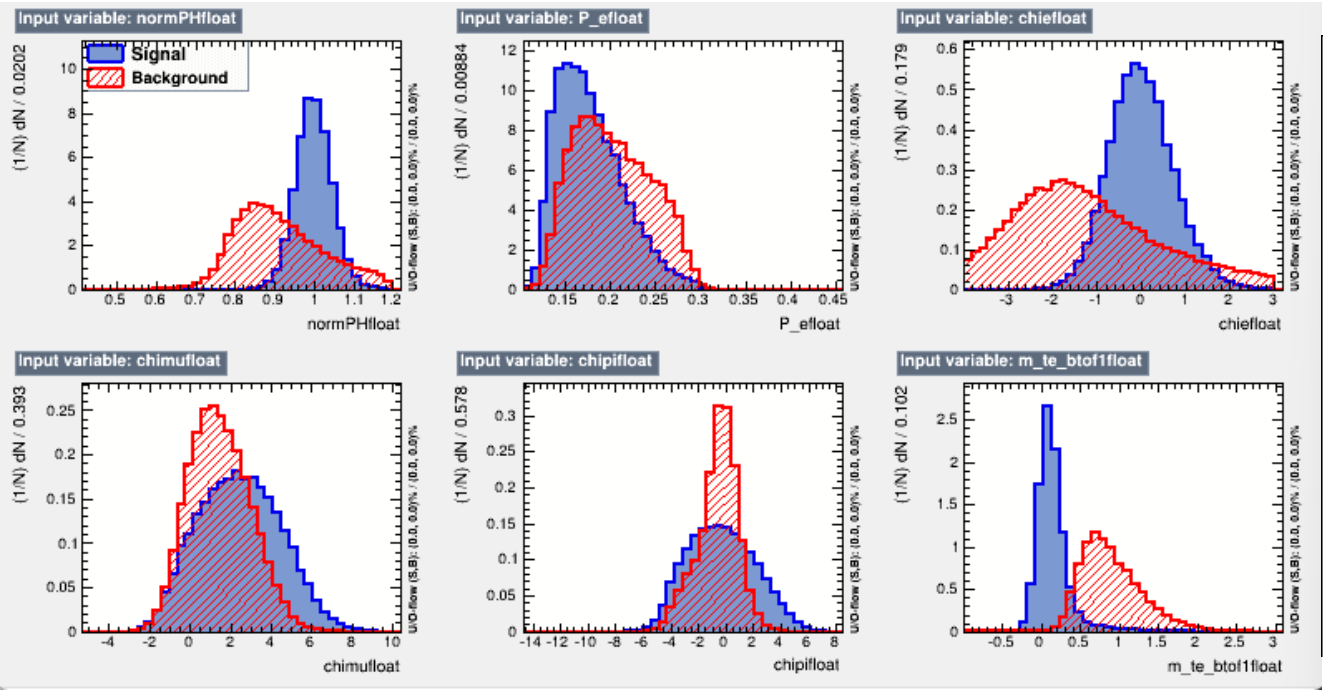


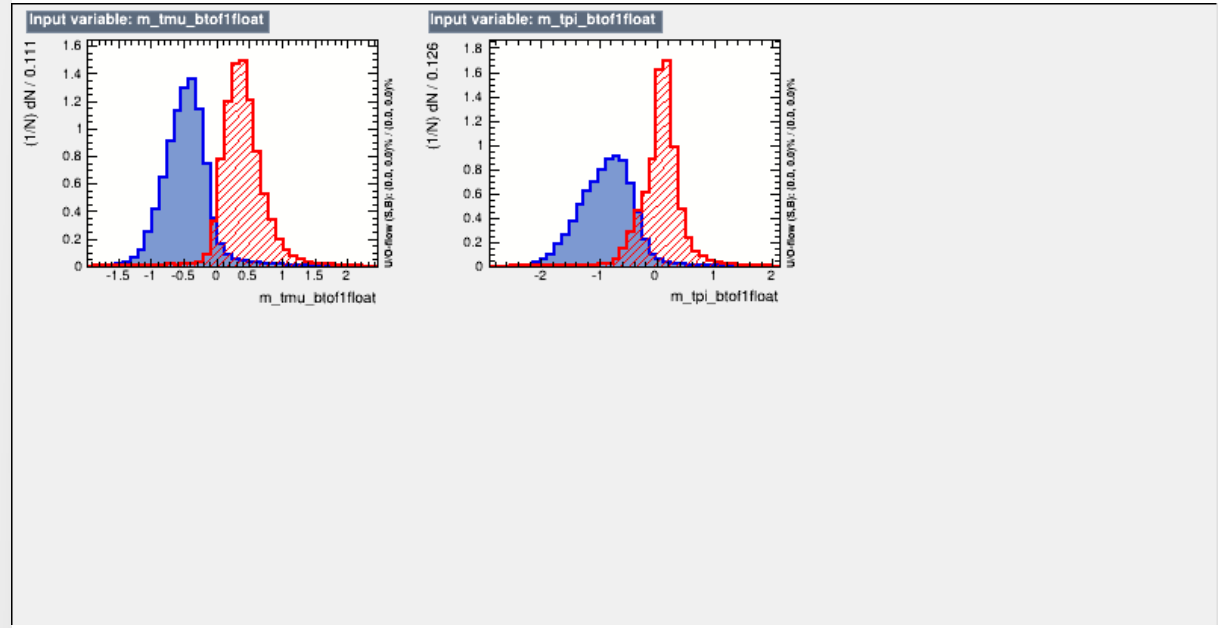


Tof有信息的事例


P_e
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3
r100


P_e
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3
Events


Input variable: normPHfloat
Signal
Background
(1/N) dN / 0.0202
normPHfloat
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: P_efloat
(1/N) dN / 0.00884
P_efloat
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: chiefloat
(1/N) dN / 0.179
chiefloat
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: chimufloat
(1/N) dN / 0.393
chimufloat
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: chipifloat
(1/N) dN / 0.578
chipifloat
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: m_te_btof1float
(1/N) dN / 0.102
m_te_btof1float
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%


Input variable: m_tmu_btof1float
(1/N) dN / 0.111
m_tmu_btof1float
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%
Input variable: m_tpi_btof1float
(1/N) dN / 0.126
m_tpi_btof1float
U/O-flow (S,B): (0.0, 0.0)% / (0.0, 0.0)%