

Weekly Report

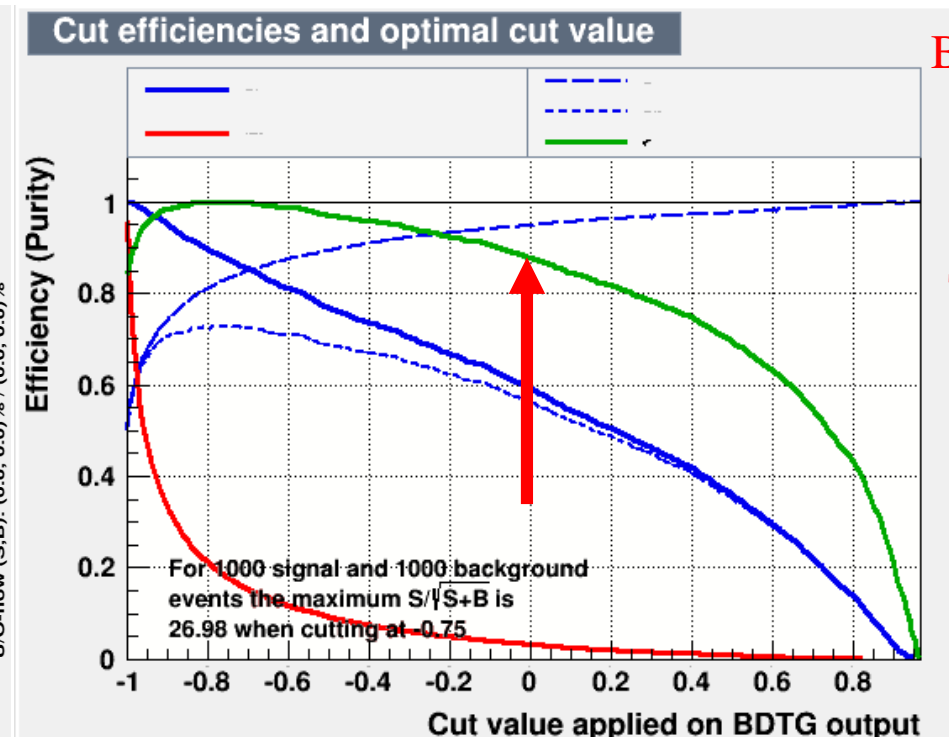
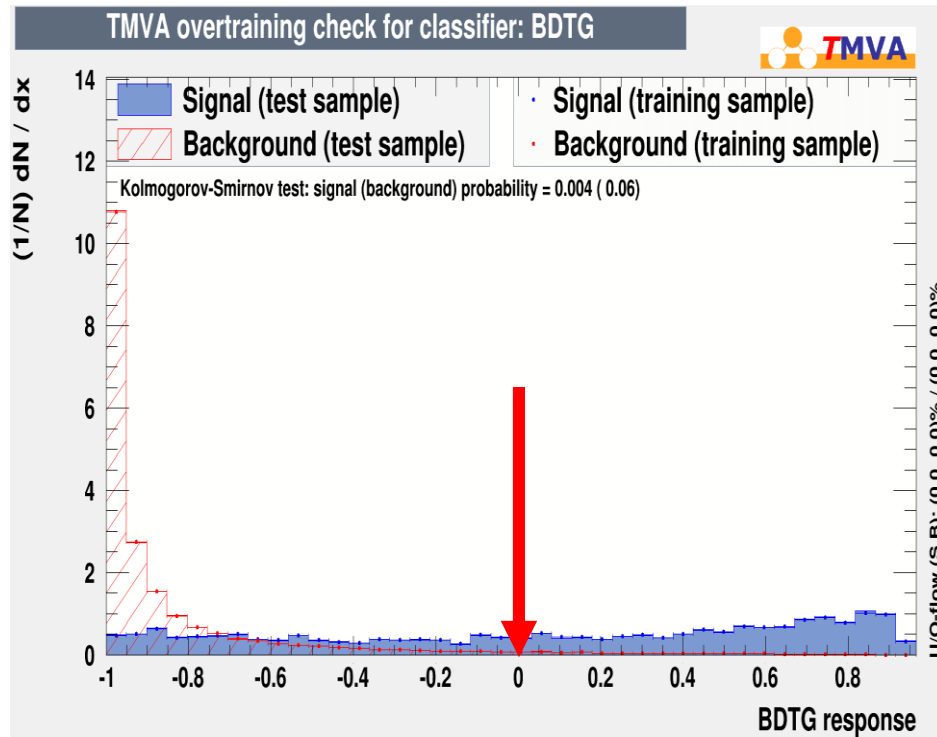
Maoqiang Jing

2018.07.20

Higgs → Invisible Analysis

□ Run on 3 Tesla samples

- ✓ Solve the conflict in pull request “Polish naming method” with the help of Xin and Ryuta
- ✓ Correct an error when applying BDT cut (mistaken signal tree and background tree)
- ✓ Reapply BDT cut and get a better result



$$B/S: 844763/150049=5.630$$

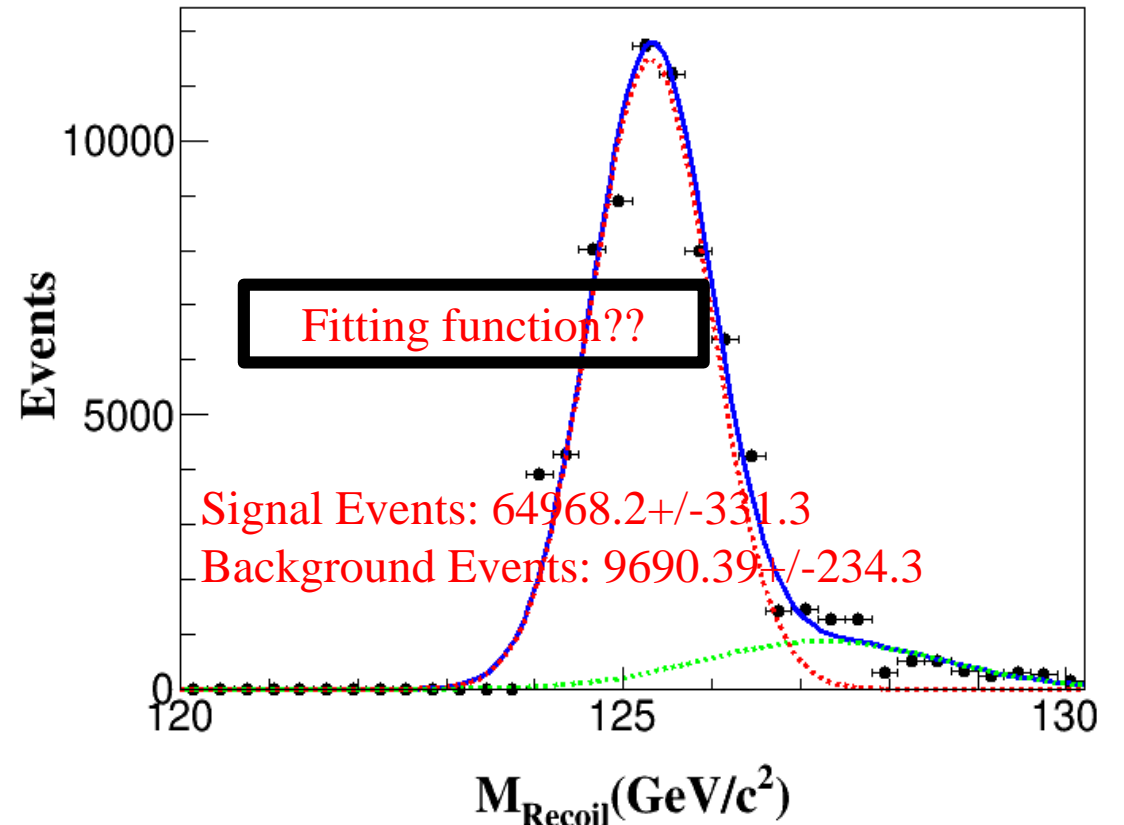
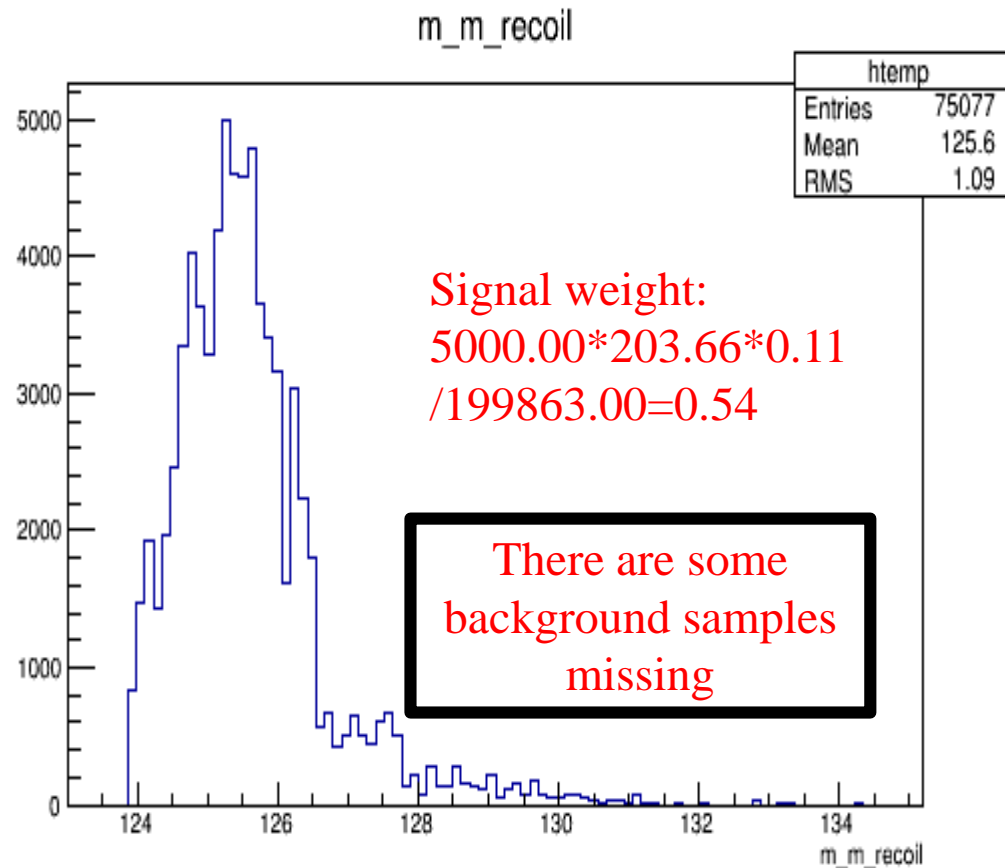
The BDT cut value tmva gives may not be very reasonable

$$B/S: 27269/88435=0.3$$

Higgs \rightarrow Invisible Analysis

□ Run on 3 Tesla samples

- ✓ Synthesize signal and background samples
- ✓ Fit The recoiling mass spectra using Double Gaussian(One for signal and one for background)



Higgs → Invisible Analysis

□ Run on 3 Tesla samples

- ✓ Calculate upper limit of branch ratio

$$\begin{aligned} \text{Branch Ratio} &= \frac{N^{\text{sig}} / \text{efficiency}}{N^{\text{tot}}} \\ &= \frac{N^{\text{sig}} / \text{efficiency}}{\int \text{luminosity} dt * \sigma^{\text{tot}}} \\ &= \frac{64968.20}{88435.00} * \frac{199863.00}{5000.00 * 203.66} \\ &= 14.42\% \end{aligned}$$

Plan of next week??

Kaili said he had finished 240GeV results, I don't know how he can do that with some samples missing (Maybe we misunderstand something?)

