

Trigger impact on MVA, weighting problem?

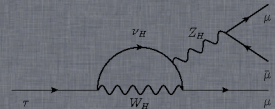
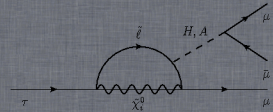
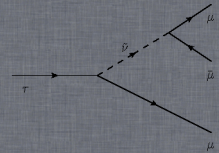
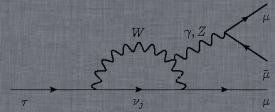
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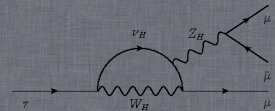
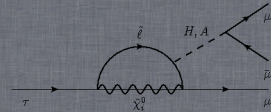
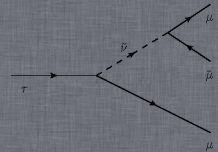
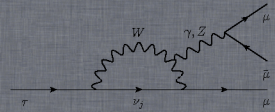


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Impact of the trigger for the distributions

MC Mixing



Reminder

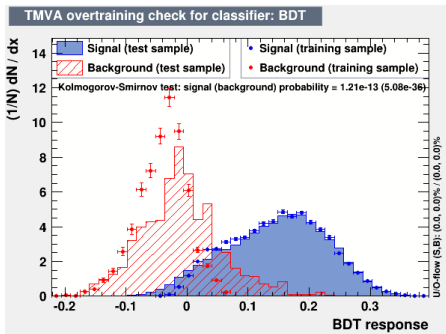
- Selecting trigger suggested by Paul kills $\frac{1}{3}$ of our training sample.
- Investigated distributions and correlations of this events to see if they can change our classifier output.
- Didn't find any significant difference.
- Final test was to apply it to data and see the effect.

Data test details

- Training done with the same variables.
- Each training was optimised for specific cuts.
- Tested several classifiers: BDT, BDTG, MLP, MATRIXNET
- Tested on inersidebands, lardge sidebands, whole sample

Results

- All test point out that it's better to keep the nontriggered events for training.
- Not a bis surprised, we are on the downside in terms of statistics.
- Easy to over train:



Conclusions

- Strongly suggest to keep the nontriggered events for training.
- Can't afford to lose 1/3 of data.
- Very small difference between triggered events and non-triggered events.

MC Mixing

Last week Jon reported that that we have a discrepancy between the number of events in the MC. I decided to rerun whole simulation from scratch for the most relevant channel: $D_s \rightarrow \tau X$

Previous time:

- Generator Efficiency: 63.111 ± 0.0766
- Generator Efficiency Cut: 11.9557 ± 0.022

This time:

- Generator Efficiency: 63.142 ± 0.0857
- Generator Efficiency Cut: 11.971 ± 0.0178

Conclusion

Need to sit down with Jon to understand what is the difference of what we compute