

Stuff made at midnight

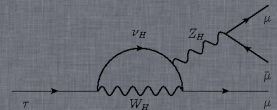
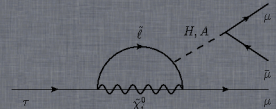
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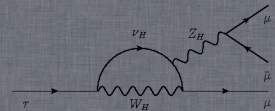
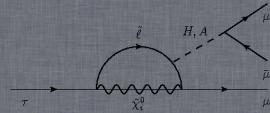
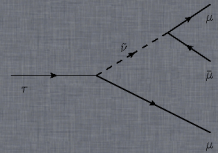
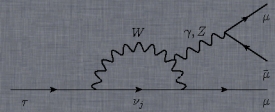
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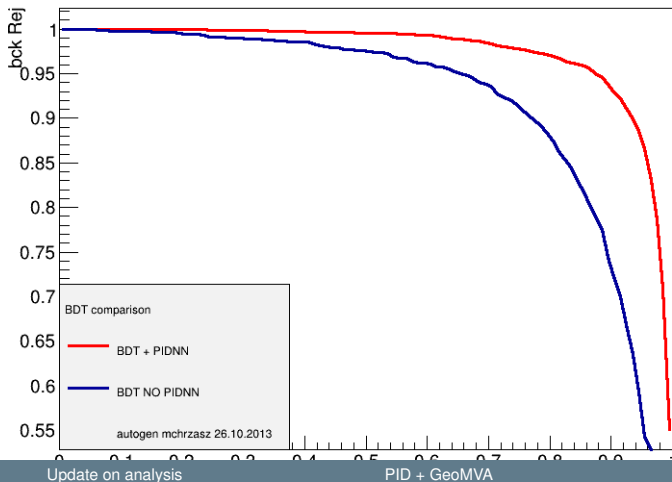
PID + GeoMVA



PID + GeoMVA

Let's make a rough estimate using MC. This looks promising but doesn't tell the whole story.

MVA_BDT

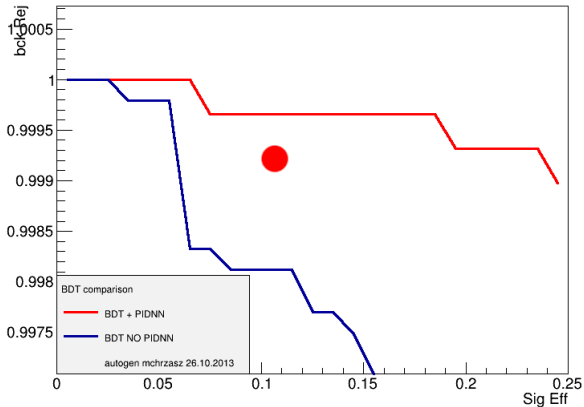


PID + GeoMVA

- Since doing this on data is beyond one week let's make a rule of thumb on MC.
- Let's say we are sensitive to bins: $PID > 0.43 + GeoMVA > 0.35$
- On MC signal efficiency is around 11%.
- Lets see what happens there.
- What is the date for MVA to be finish?

PID + GeoMVA

MVA_BDT



Looks like at least 10% is achievable. Calibration is also doable(need to check statistics).

PID + GeoMVA Conclusions

- MC bck statistics are not enough to give a definite answer.
- Need to look at data =(
- The plan is to have two MVA with and without PID.
- The extra work is minimal and we can easily gain.

$\tau \rightarrow 3\mu$ specifics

In case of $\tau \rightarrow 3\mu$ we want different isolation parameters for different kinds of decays:

- $D \rightarrow \tau$
- $Ds \rightarrow \tau$
- $B \rightarrow D \rightarrow \tau$
- $B \rightarrow Ds \rightarrow \tau$
- $B \rightarrow \tau$

$\tau \rightarrow 3\mu$ specifics

- 1 Does it make any sense to make my life so complicated?
- 2 YES!
- 3 Example: $B \rightarrow \tau$ is in 99% $B \rightarrow D_{\tau} X$.
- 4 This means we if you have D and tau close to each other track from D can go to τ etc.
- 5 In their approach this truck would be considered non-isolating which is nonsense because it forms a bck candidate!
- 6 From first looks the problem can be reduced to 3 chains: $B \rightarrow \tau$, $B \rightarrow DX \rightarrow \tau$, $D \rightarrow \tau$.

$\tau \rightarrow 3\mu$ specifics

