BDT update

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Strategy

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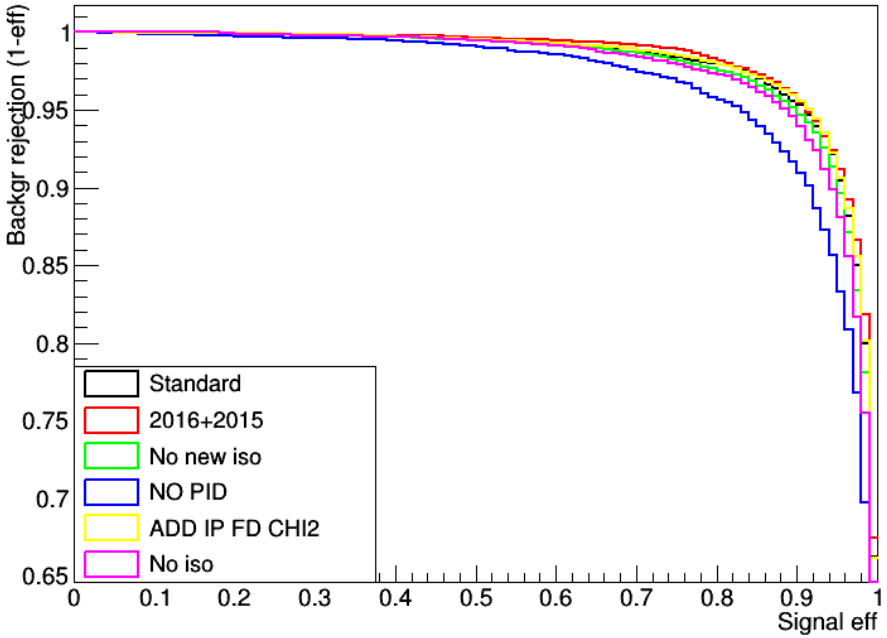
Keep things as close to Run1 as possible

Reminder

⇛ We decided to use the old isolation and 2016 data for training only.

⇛ See previous slides: https://indico.cern.ch/event/675



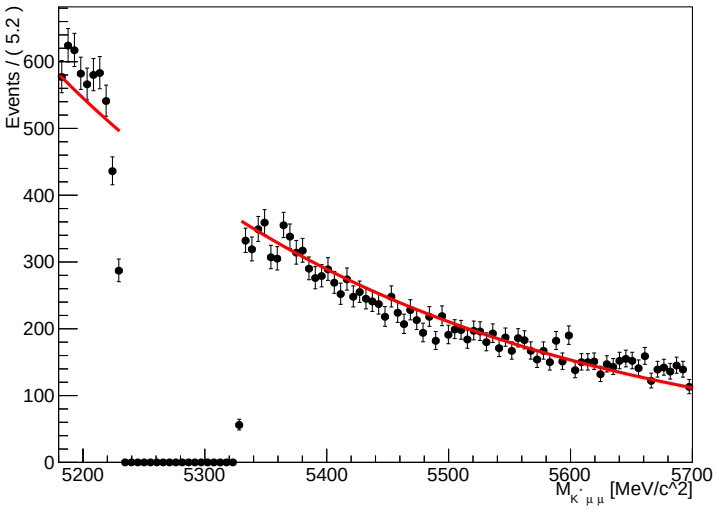
BDT optimization

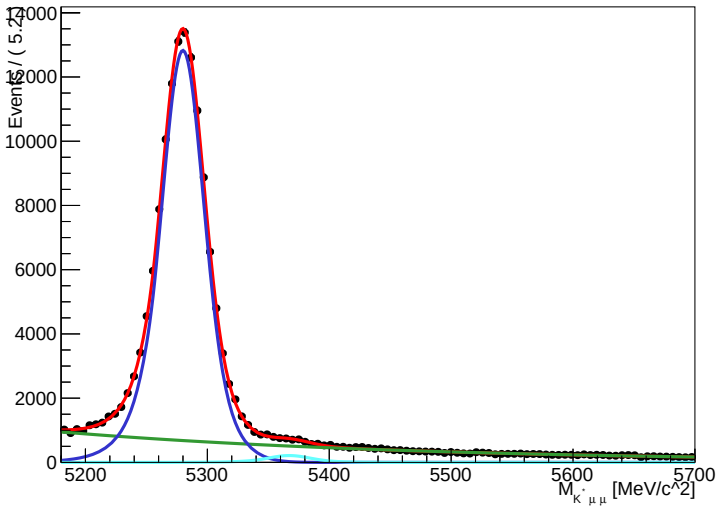
⇛ Let's follow the last year procedure:

$$s_{\mathrm{non-rez}} = s_{\mathrm{J}/\psi} * \epsilon_{\mathrm{non-rez}} / \epsilon_{\mathrm{J}/\psi}$$

⇛ For now let's assume the $\frac{\epsilon_{\mathrm{non-rez}}}{\epsilon_{\mathrm{J}/\psi}} = 1$.

⇛ We scan the BDT cut fitting both the side-band and the resonant region:



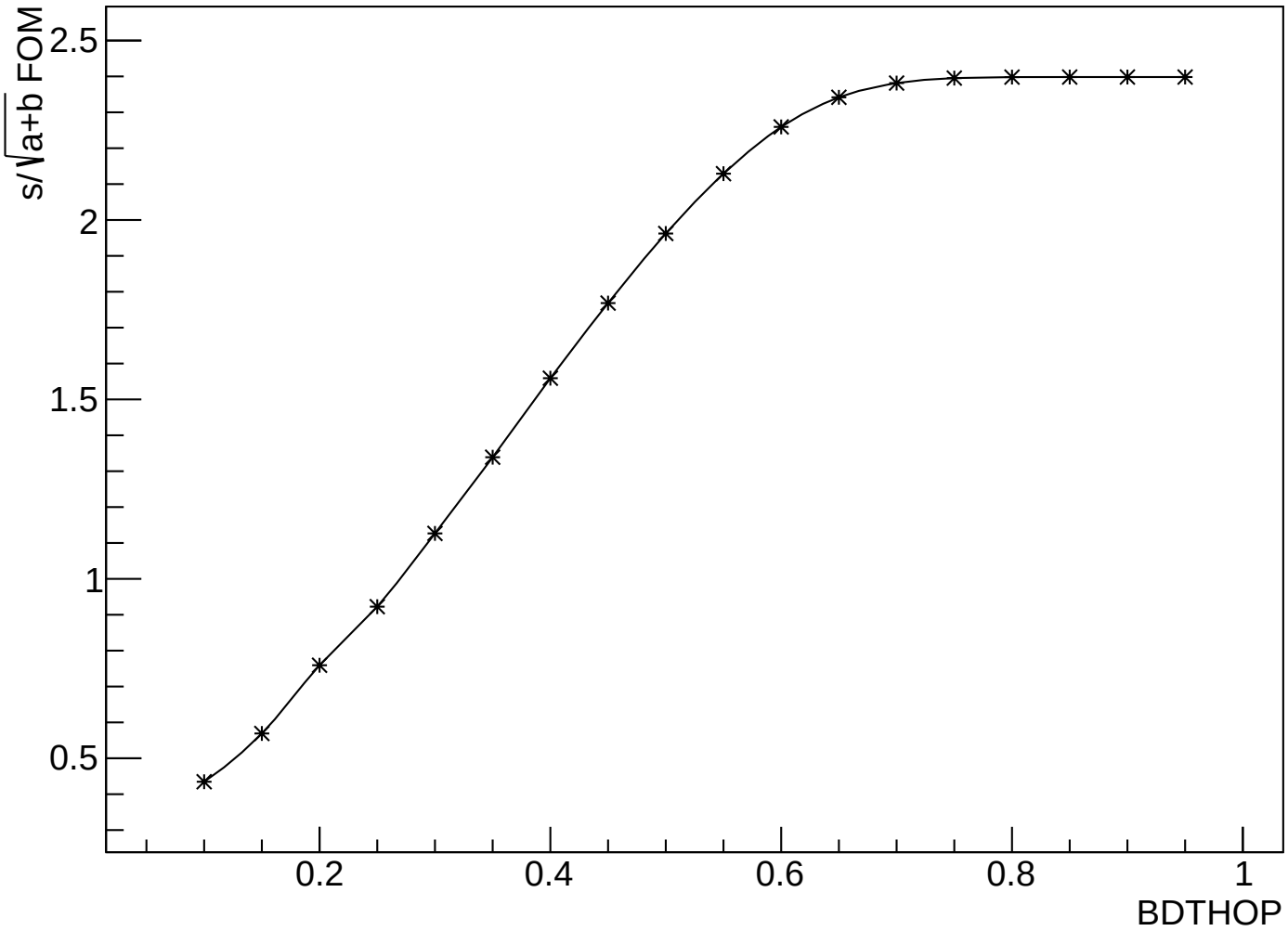


⇛ From this we know $s_{\mathrm{J}/\psi}$ and b and calculate:

$$\mathrm{FOM} = \frac{s}{\sqrt{s+b}} \quad (1)$$

BDT optimization

⇒ Something is wrong:



Conclusions

- Now I need to debug my code and update the efficiency calculations to see if this makes a difference.
- For now please us the old cut: $\mathrm{BDT} > 0.2$ as it has similar $\frac{s}{b}$ ratio on the new tuples.
- Tuples are here: `/eos/lhcb/wg/RD/Bd2Kstmumu/BDT`

Backup