

Alaa Weekly Update, August 24th

Last week's minutes

- Keep testing and troubleshooting your efficiency application to leptons
- Check whether there are uncertainties on the acceptance histogram from the paper
- Look into what kind of uncertainties on the efficiency TH2F you get out -- can you preserve these?

This week:

- “Fixed” the code that samples and applies efficiencies BUT...
- The code was not matching each muon to its reconstruction efficiency (P_{t,d_0}) correctly
- Using the paper original code to create the efficiency histogram with the correct binning and uncertainty
- Modifying my code to be more efficient
- After acceptance and efficiency selection cuts, we get the number of surviving events N_{survive}
To go from N_{survive} to the expected number of observed events in the actual experiment N_{obs} :

$$N_{\text{expected}} = \frac{N_{\text{survive}} \cdot \sigma \cdot L}{N_{\text{total}}}$$

Where N_{total} is the total number of the generated events we started with in our MC simulation (i.e. MadGraph)