

MICE VC

15:00 BST 5/5/2021

All presenters – please distribute revised plots by Monday 10th May

Solenoid mode emittance – Tom Lord

Tom showed a plot of change in canonical angular momentum between TKU and TKD in solenoid mode. There was discussion on the overall shape of the distribution, the use of a stats box and ROOT calculation of stats. Conclusions:

1. Do not show the stats box
2. Tidy up axis labels and use the proper branding
3. Add comment “stats errors only”

Flip mode emittance – Paul Jurj

Paul showed angular momentum plots. There was discussion about the vertical normalisation and the overall change in angular momentum which was slightly negative. Conclusions:

1. Agree on a vertical axis/normalisation with Tom.
2. Do not show the stats box
3. It may be useful to describe nominal values for kinetic angular momentum and/or canonical angular momentum at e.g. TKU and the absorber

Paul showed emittance evolution plots. These are an update to old plots including new data and MC. Two versions were shown with/without a theory line showing the “linear optics” emittance calculation.

1. We agreed that the theory line should be included if it can be adequately described in the slides/talk. Otherwise just drop it.
2. We agreed to plot the empty – full and see how it looks.

Scattering – Gavriil Chatzitheodoridis

Gavriil showed selection plots and finally a scattering plot. There was some discussion of MC vs data discrepancies. Conclusions:

1. When showing selection plots – apply all cuts except for the one that is being shown. This can be achieved, for example, by iterating over the data and flagging for each data that passes a given cut, rather than just rejecting it outright; then when plotting, choose the appropriate sample.
2. In the TOF plot, normalise to the muon peak. It is probably not necessary to show the pion and electron peaks as they are well away from the data.
3. If the data and MC discrepancy is still significant, plot the data only.
4. Add “statistical errors only” to the legend on the scattering plots.