

With loosen up the proton PID, we separate data into fullhit and parthit where the background are differ in each case.

The fullhit have the deuteron mix in the background. The parthit have the unknown section which we believe is the pion.

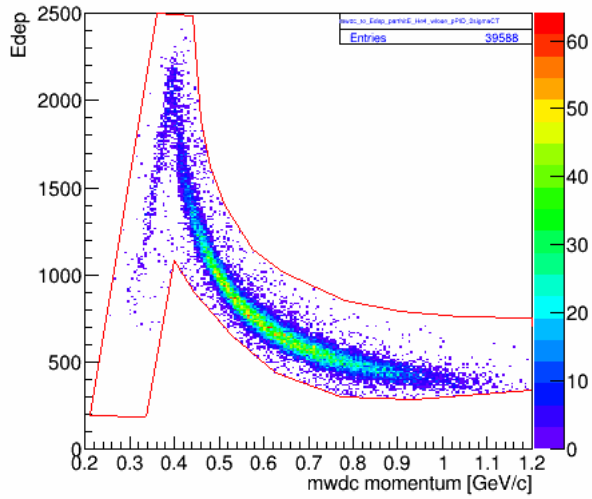
The parthitE data require: $E_{dep} \geq 1000 - 1000 * p_mwdc$

The fullhit data require: the region of $p = 0.4 - 0.6 \text{ GeV}/c$ for exclude the deuteron above $dE \geq -2000 * p_mwdc + 1600$

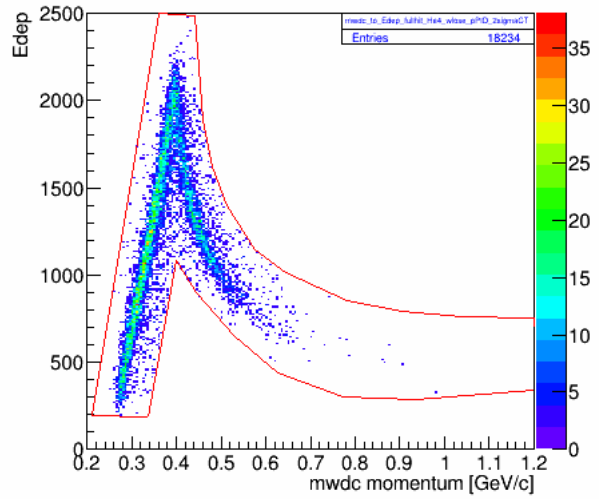
The very lose cut was make in term of proton PID in both CT peak and bg spectrum. With the lose cut the momentum distribution shown smooth distribution.

However, the same thing is not for the deuteron and carbon.

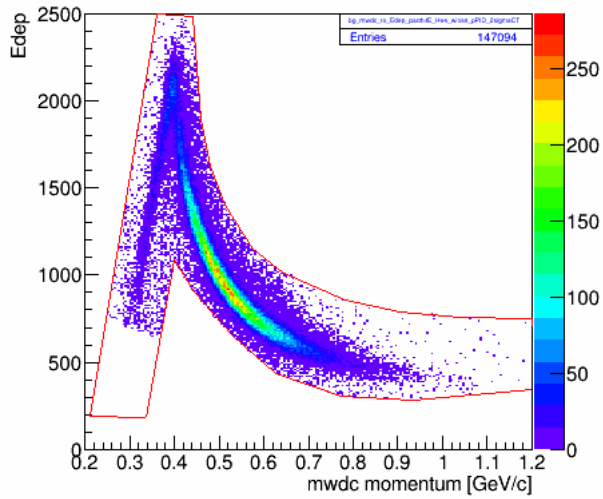
mwdc_to_Edep_parhitE_He4_wlose_pPID_2sigmaCT



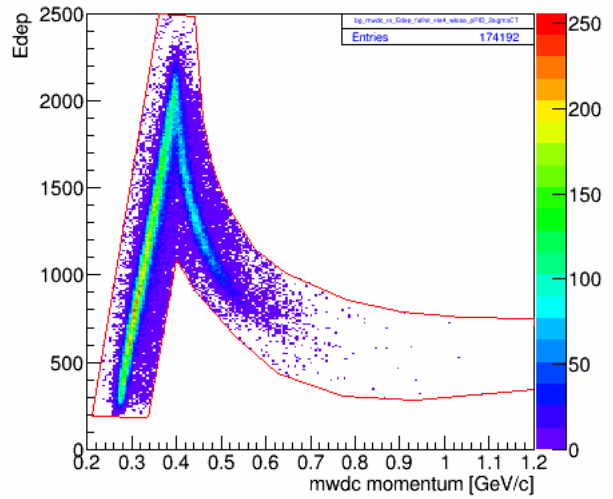
mwdc_to_Edep_fullhit_He4_wlose_pPID_2sigmaCT



bg_mwdc_to_Edep_parhitE_He4_wlose_pPID_2sigmaCT



bg_mwdc_to_Edep_fullhit_He4_wlose_pPID_2sigmaCT



F1. He data

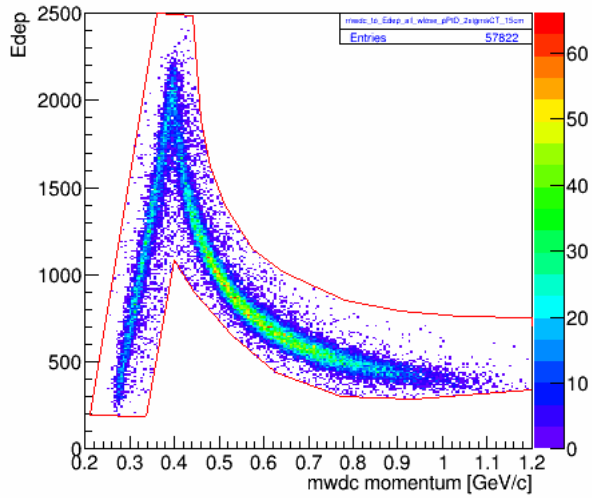
Top Left: CT peak for parhit

Bottom Left: background spectrum for parhit

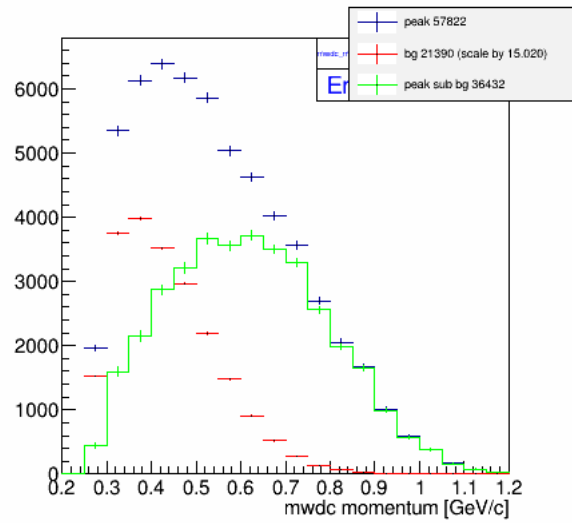
Top Right: CT peak for fullhit

Bottom Right: background spectrum for fullhit

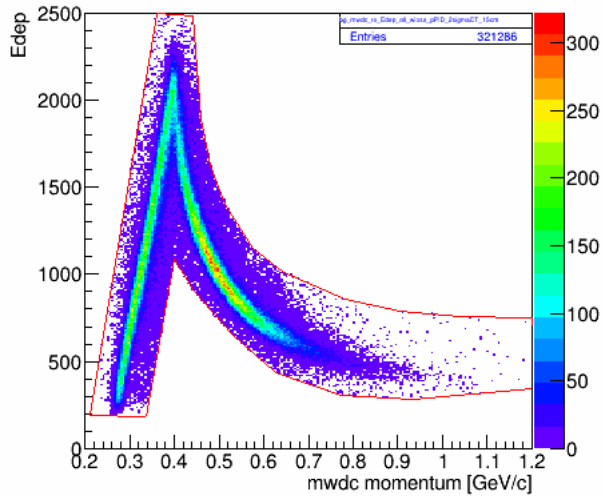
mwdc_to_Edep_all_wlose_pPID_2sigmaCT_15cm



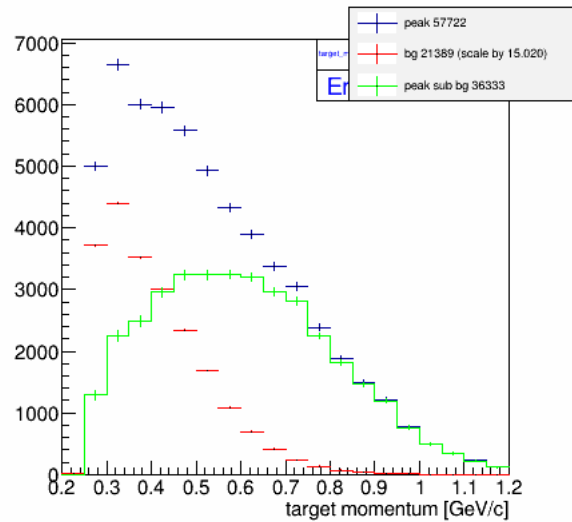
mwdc_momentum_all_wlose_pPID_2sigmaCT_15cm



bg_mwdc_to_Edep_all_wlose_pPID_2sigmaCT_15cm



target_momentum_all_wlose_pPID_2sigmaCT_15cm



F2. He data

With the loose proton PID and with the maximum cut of vertex :15 cm in 2 sigma: He4

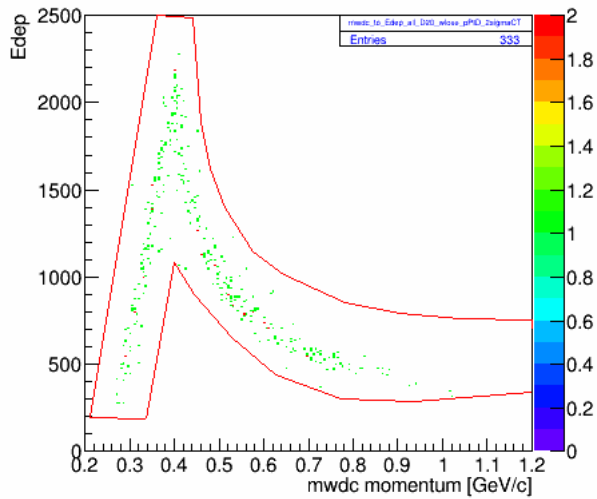
Top Left: with CT for both data

Bottom Left: Bg (from CT spectrum)

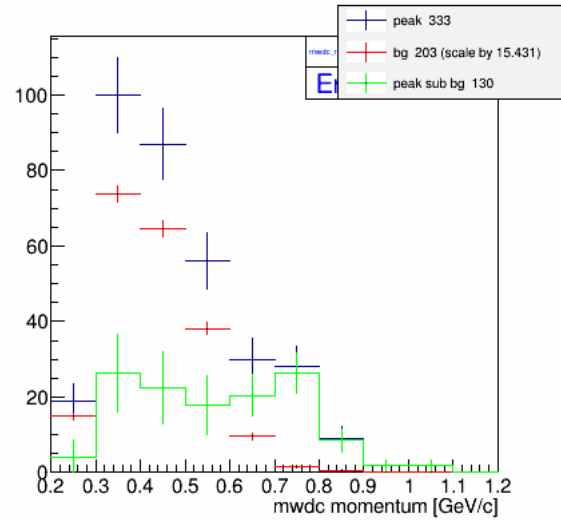
Top Right: momentum at MWDC

Bottom Right: the target momentum

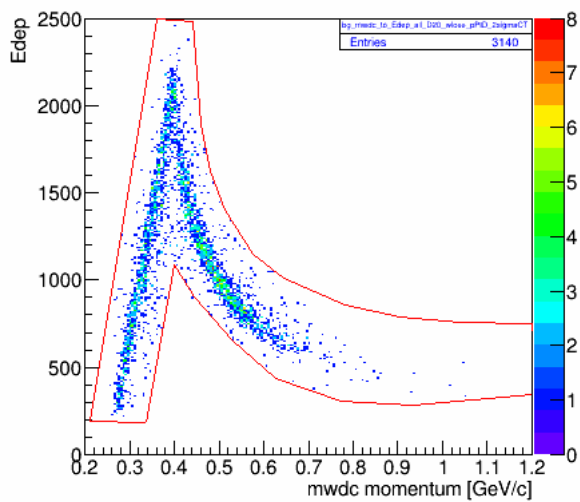
mwdc_to_Edep_all_D20_wlose_pPID_2sigmaCT



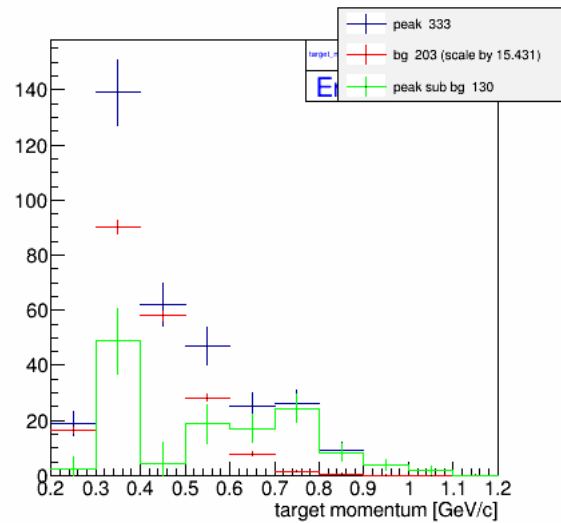
mwdc_momentum_all_D20_wlose_pPID_2sigmaCT



bg_mwdc_to_Edep_all_D20_wlose_pPID_2sigmaCT



target_momentum_all_D20_wlose_pPID_2sigmaCT



F3 Deuteron data

With the loose proton PID and with the maximum cut of vertex :15 cm in 2 sigma

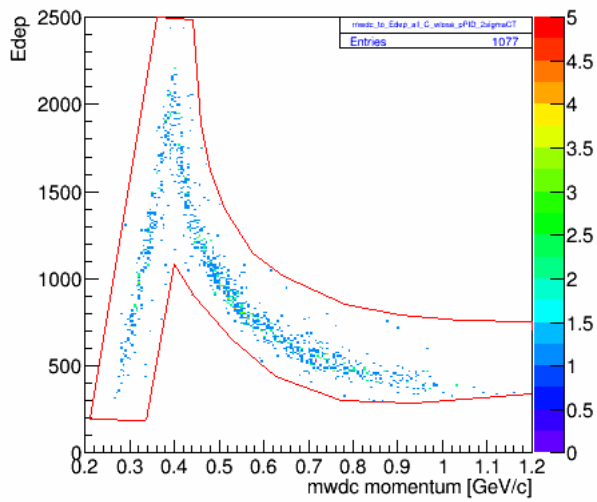
Top Left: with CT for both data

Bottom Left: Bg (from CT spectrum)

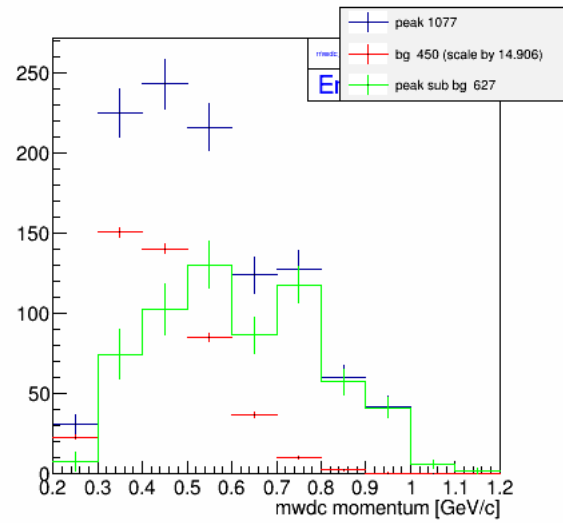
Top Right: momentum at MWDC

Bottom Right: the target momentum

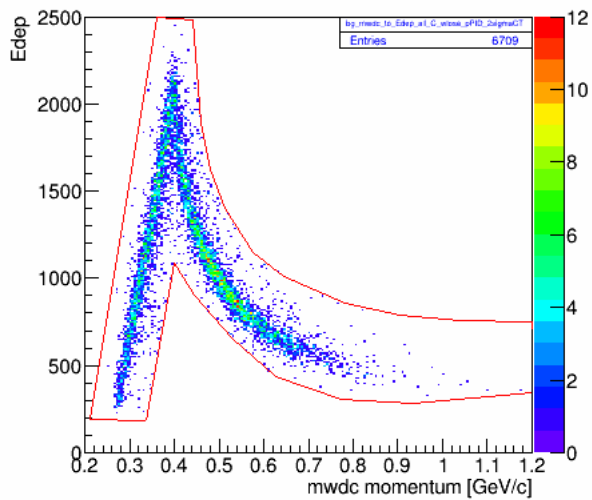
mwdc_to_Edep_all_C_wlose_pPID_2sigmaCT



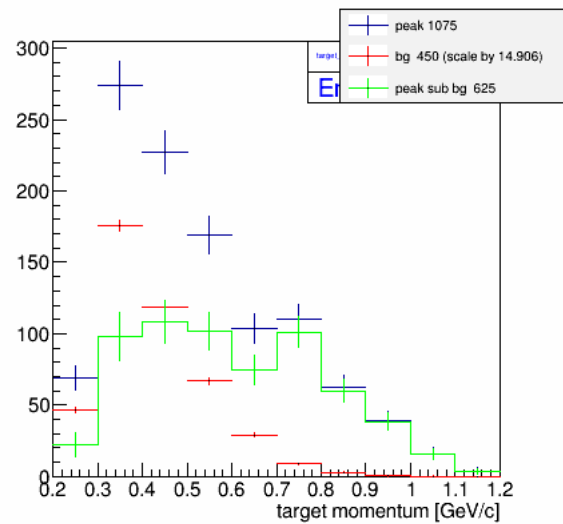
mwdc_momentum_all_C_wlose_pPID_2sigmaCT



bg_mwdc_to_Edep_all_C_wlose_pPID_2sigmaCT



target_momentum_all_C_wlose_pPID_2sigmaCT



F4 Carbon data

With the loose proton PID and in 2 sigma: Carbon

Top Left: with CT for both data

Bottom Left: Bg (from CT spectrum)

Top Right: momentum at MWDC

Bottom Right: the target momentum