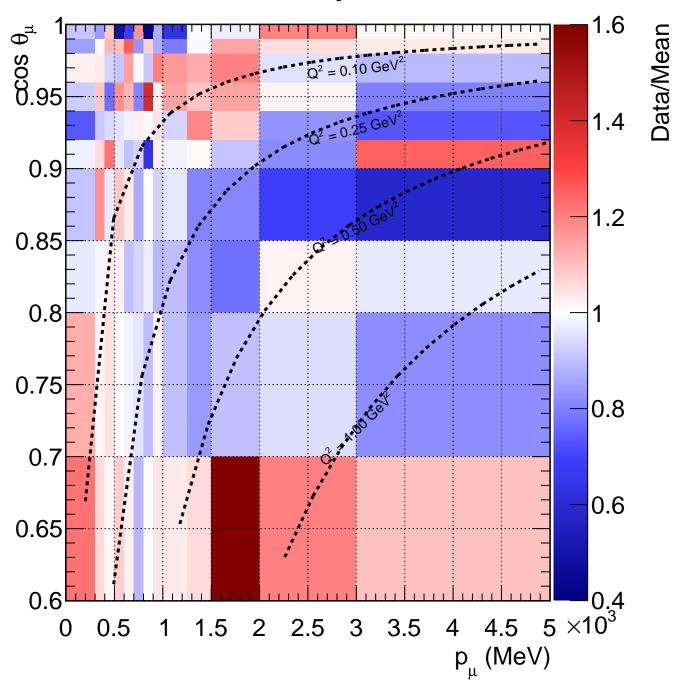
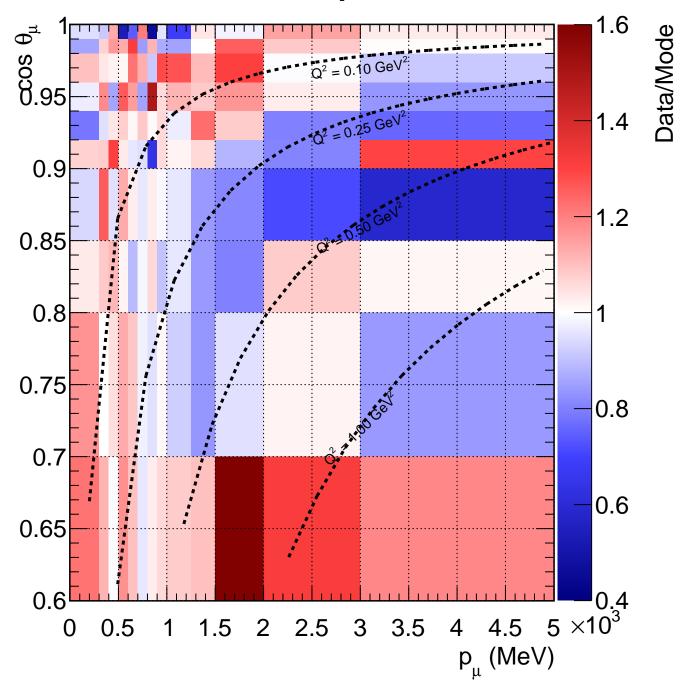


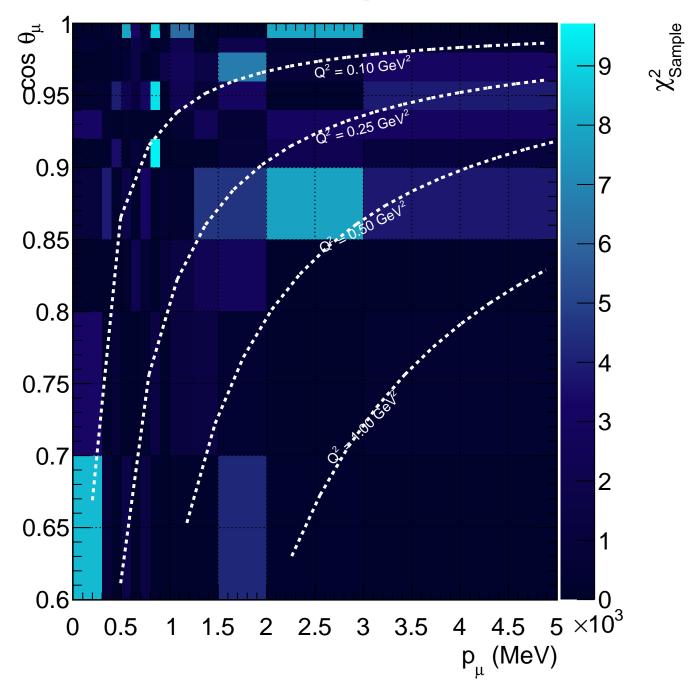
FGD1\_numuCC\_0pi\_mean\_ratio



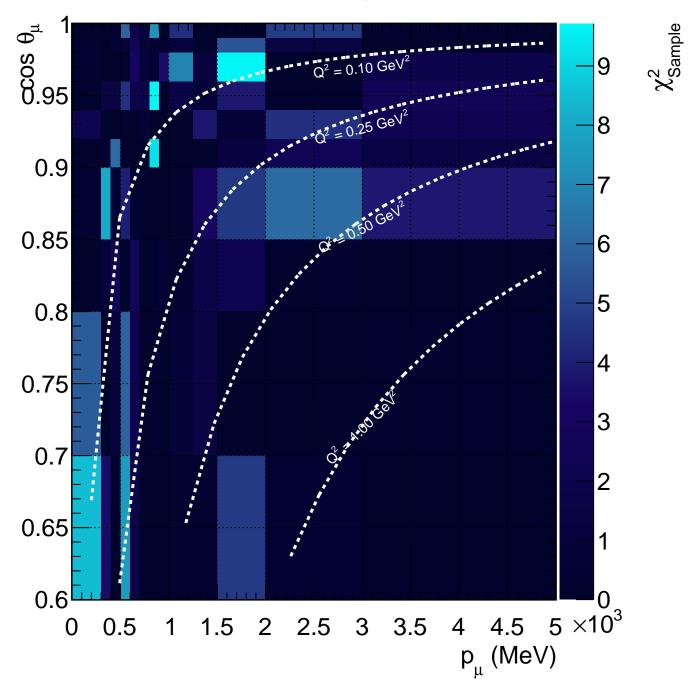
FGD1\_numuCC\_0pi\_mode\_ratio



# FGD1\_numuCC\_0pi\_MeanInL

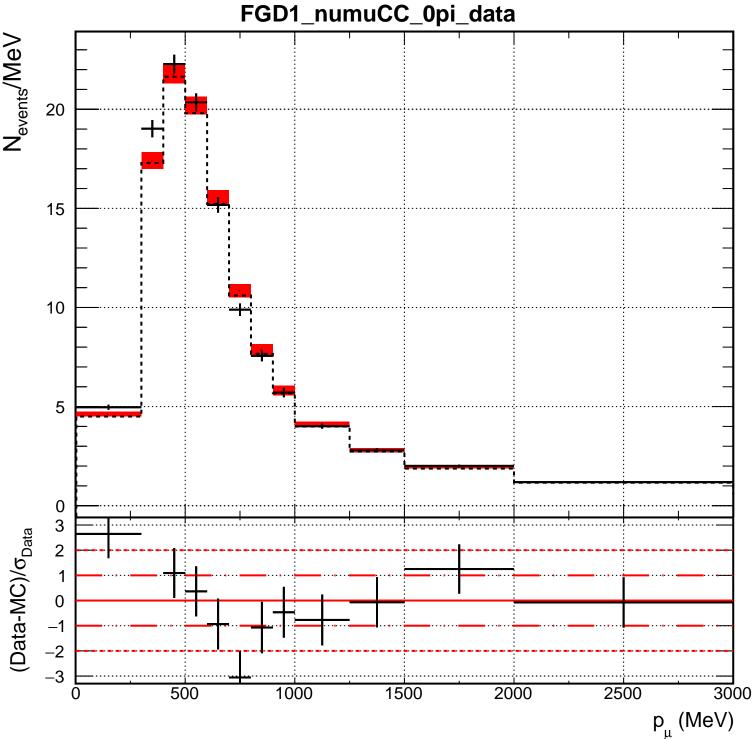


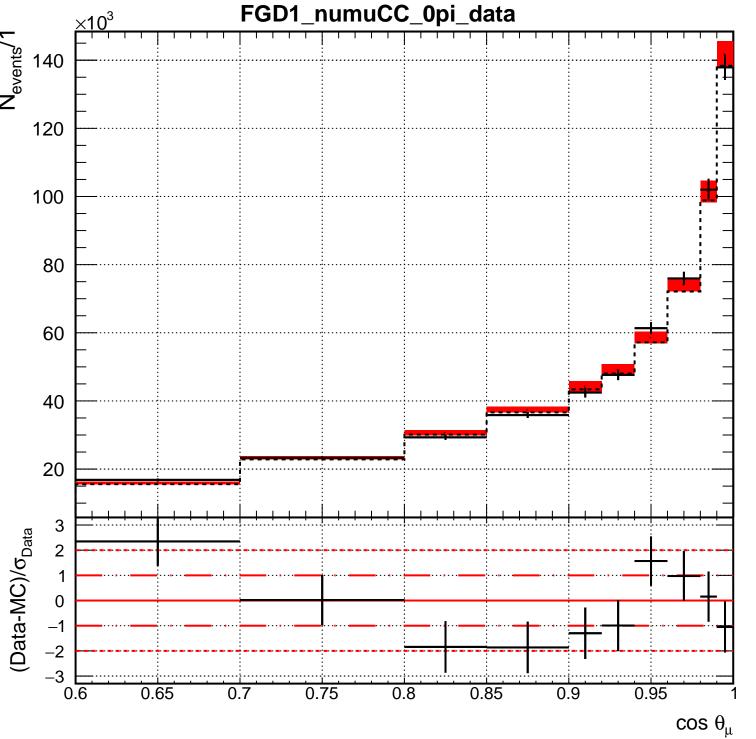
## FGD1\_numuCC\_0pi\_ModelnL

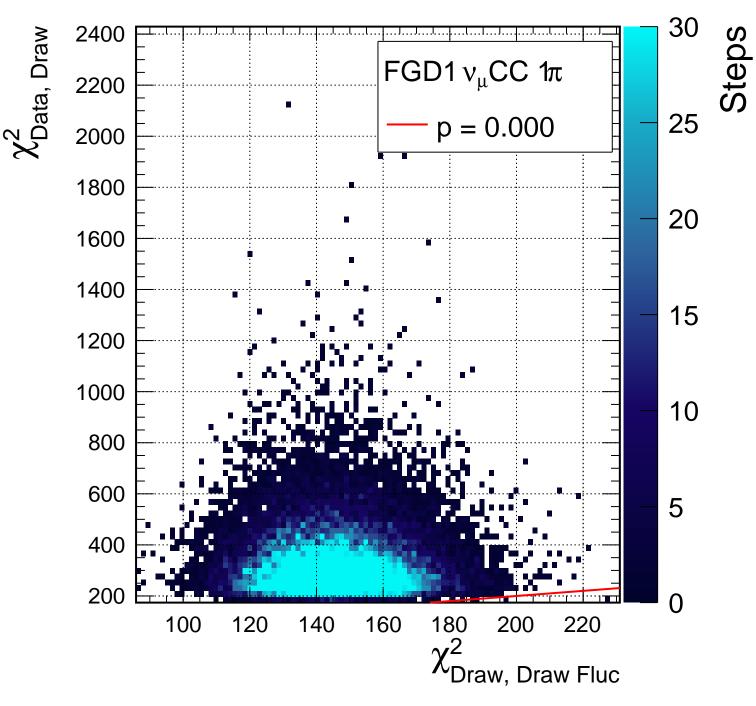


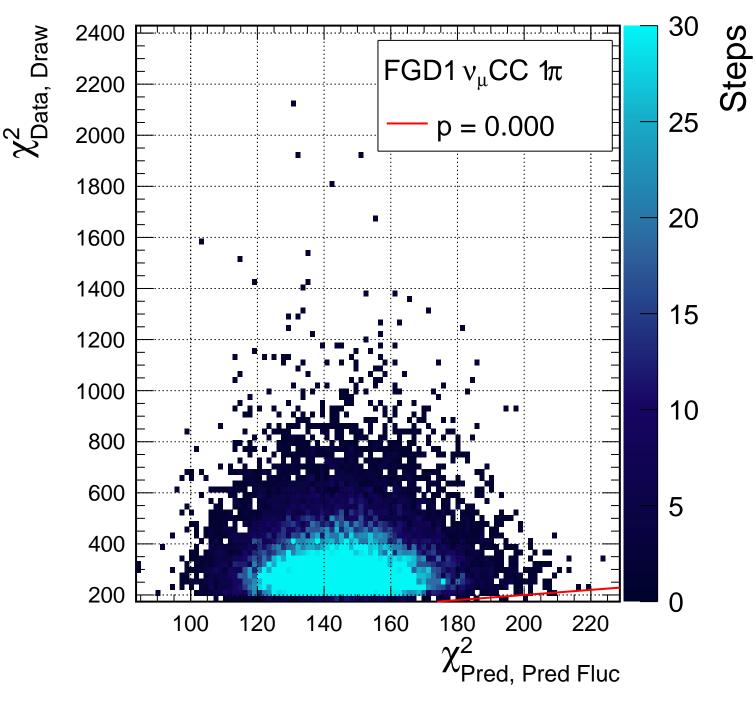
FGD1\_numuCC\_0pi\_sum\_17136 Data, 17136, p-value=0.45 MC,  $\mu$ =16837.5±2094.2 Gauss,  $\mu$ =16990.2±2208.1 

Nevents

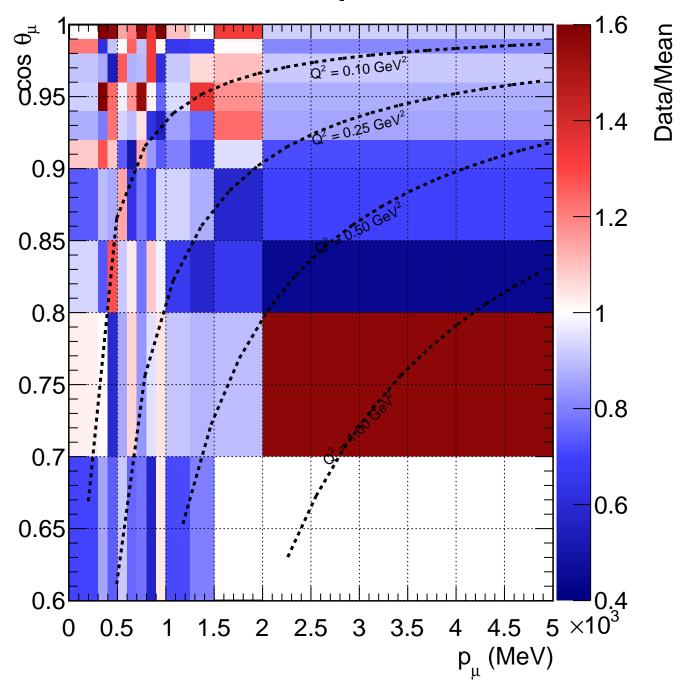




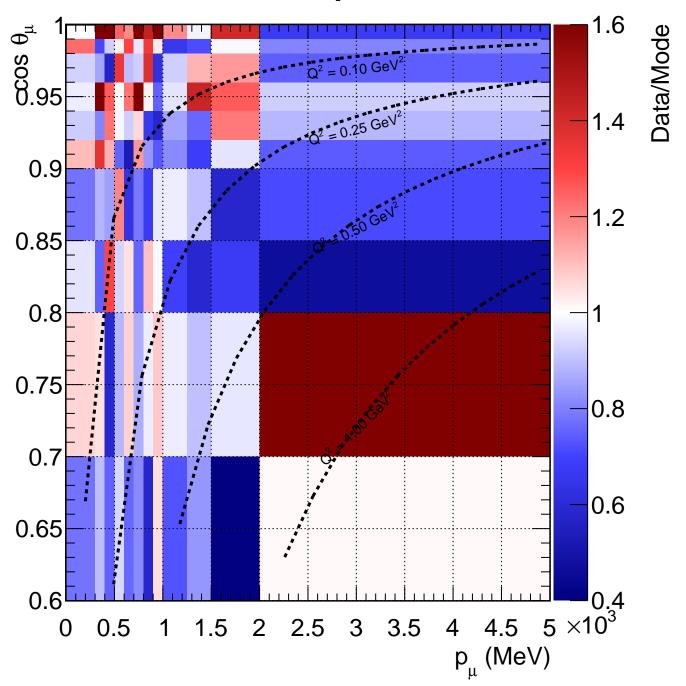




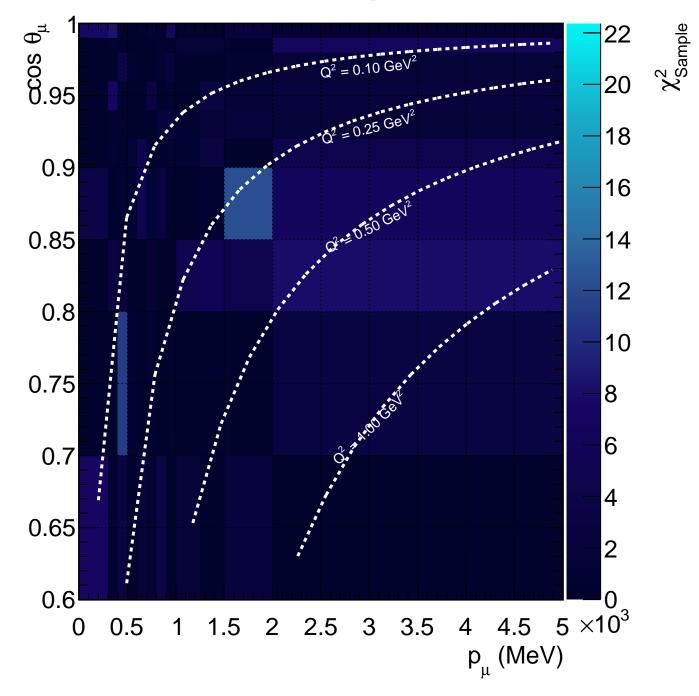
FGD1\_numuCC\_1pi\_mean\_ratio



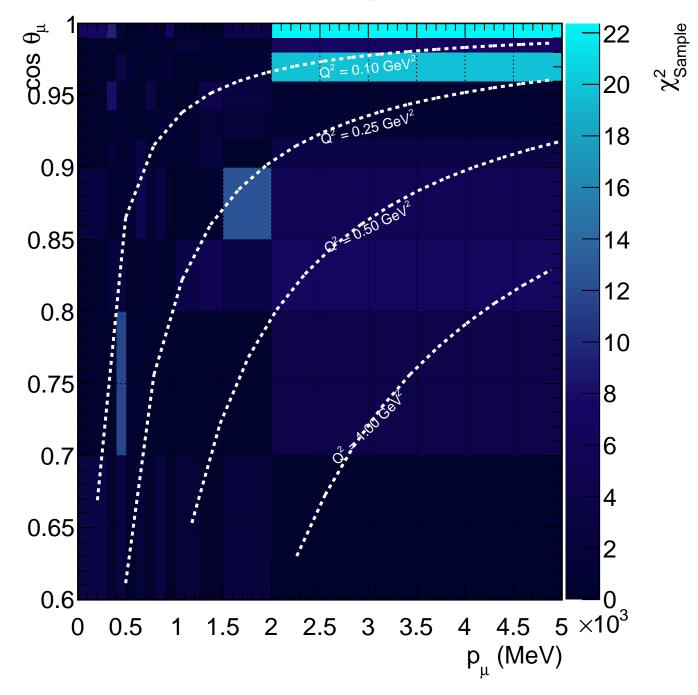
FGD1\_numuCC\_1pi\_mode\_ratio



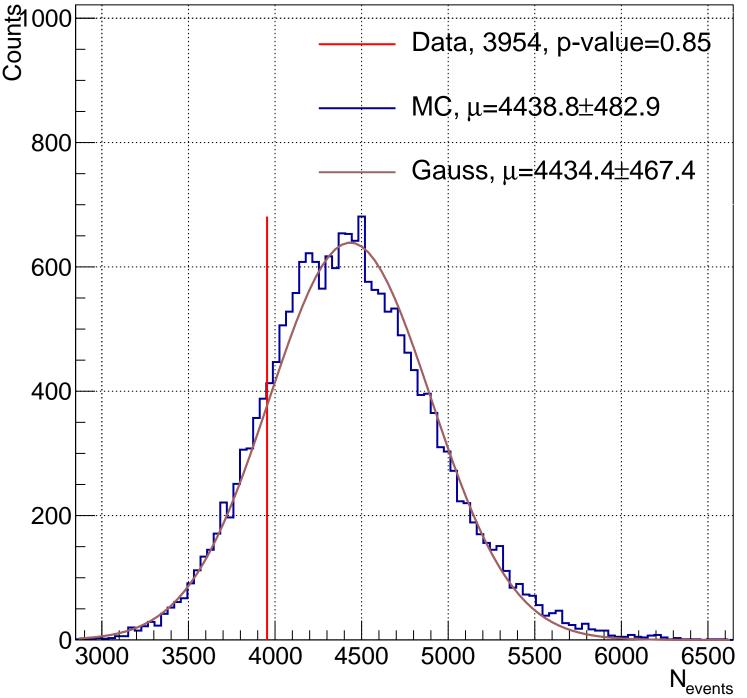
## FGD1\_numuCC\_1pi\_MeanInL

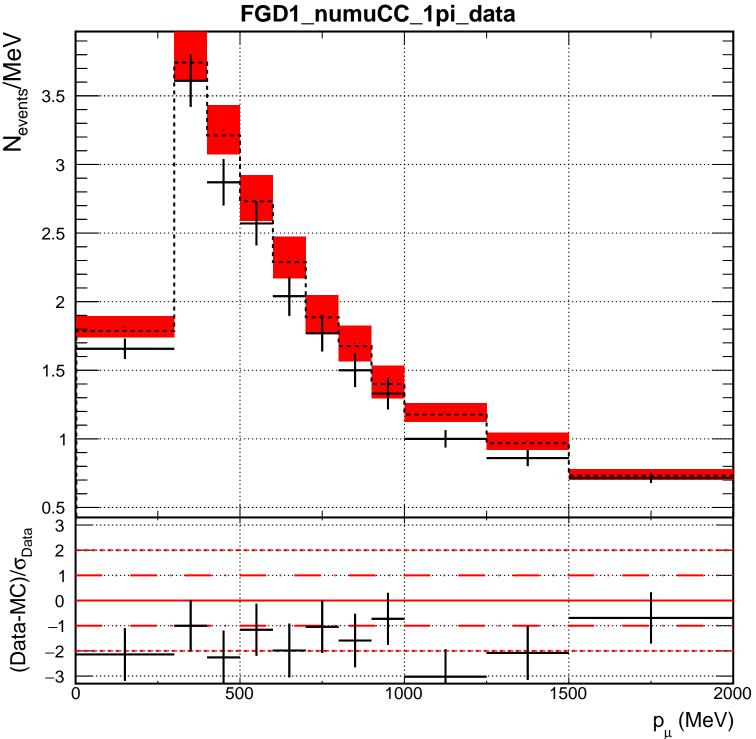


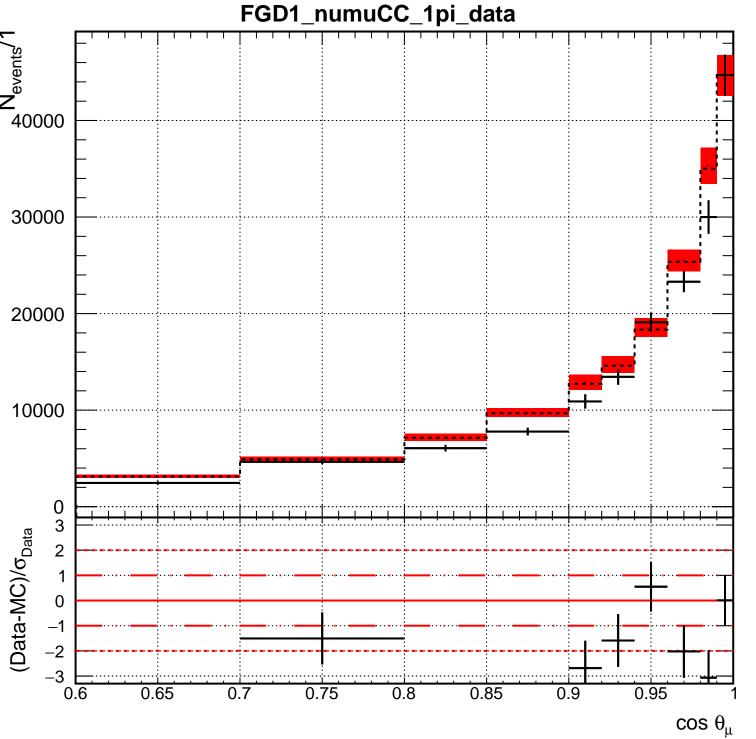
## FGD1\_numuCC\_1pi\_ModelnL

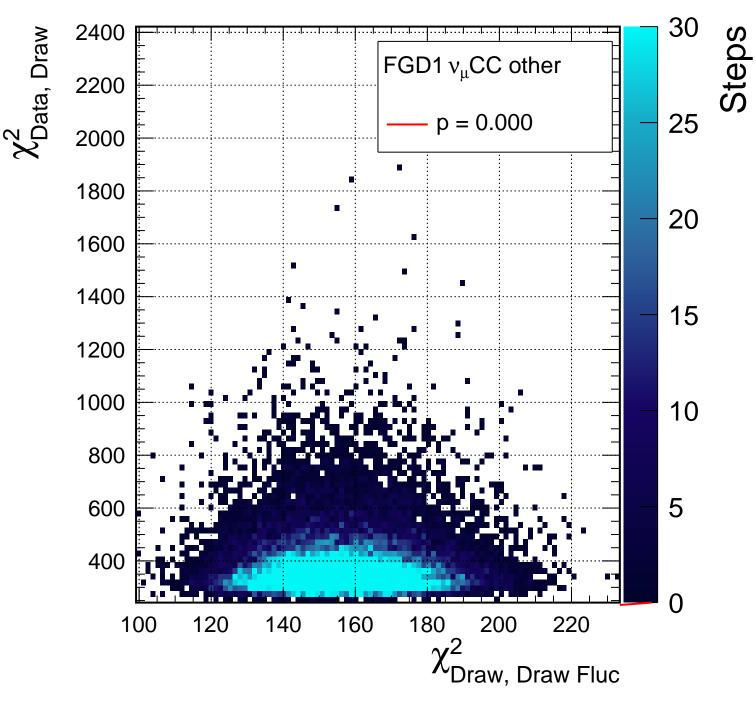


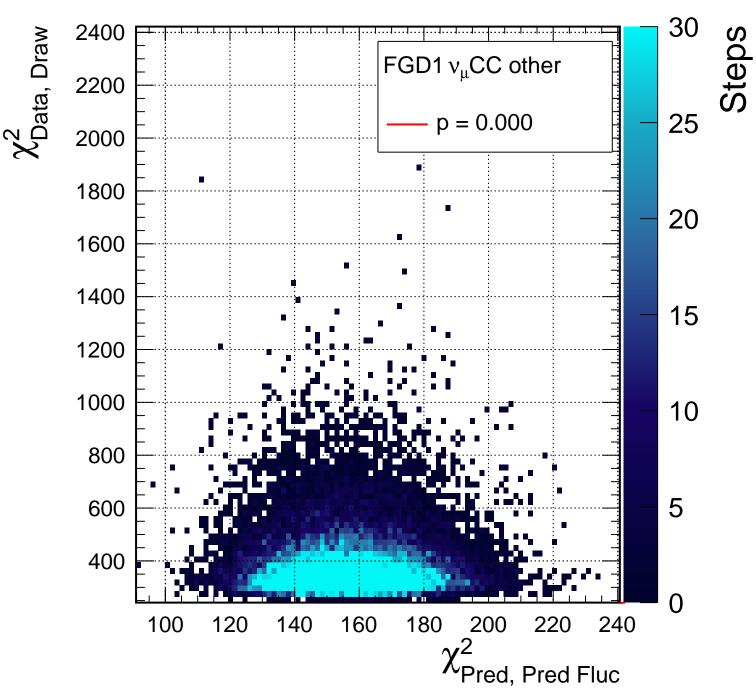
FGD1\_numuCC\_1pi\_sum\_3954



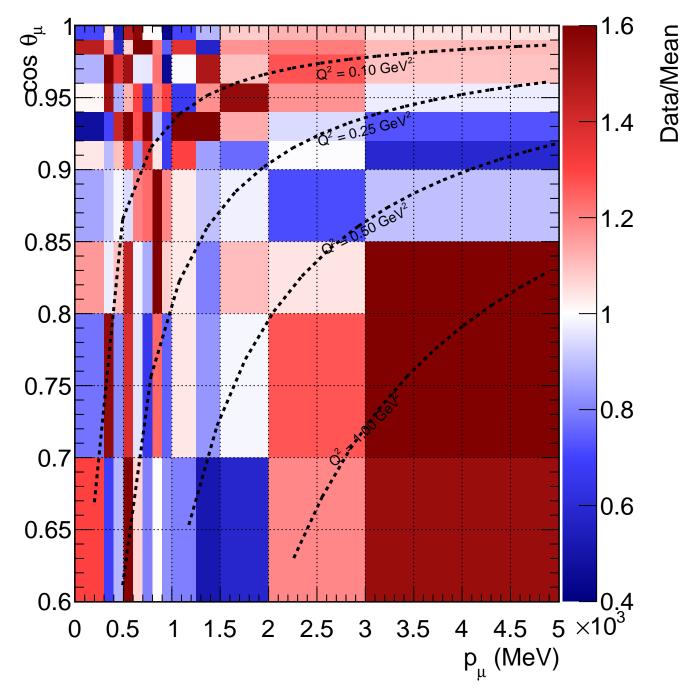




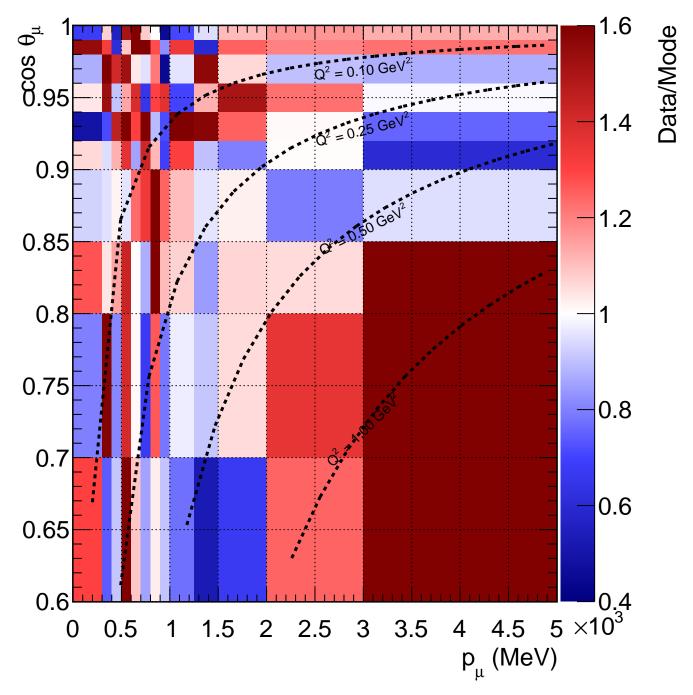




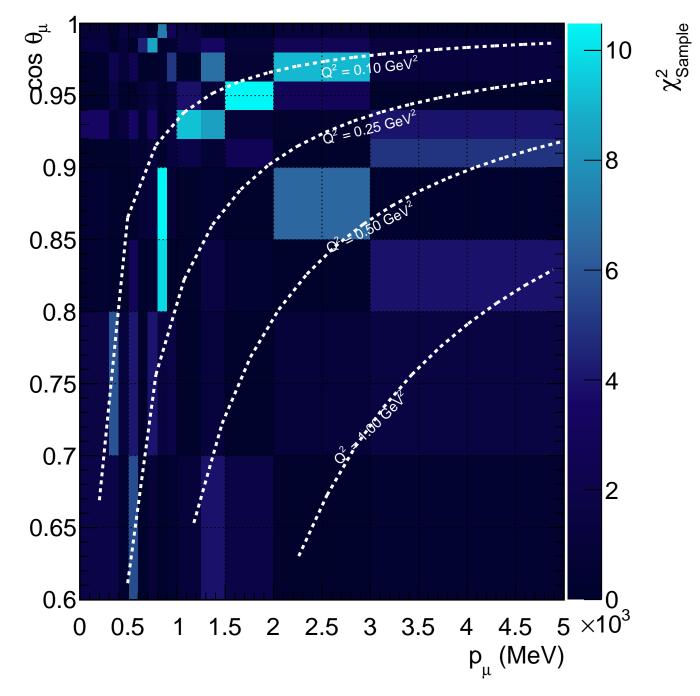
FGD1\_numuCC\_other\_mean\_ratio



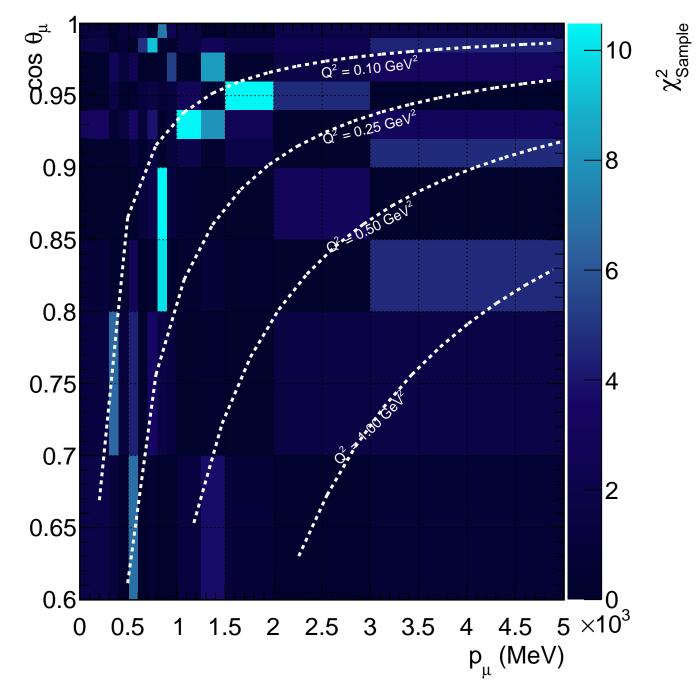
FGD1\_numuCC\_other\_mode\_ratio



### FGD1\_numuCC\_other\_MeanInL

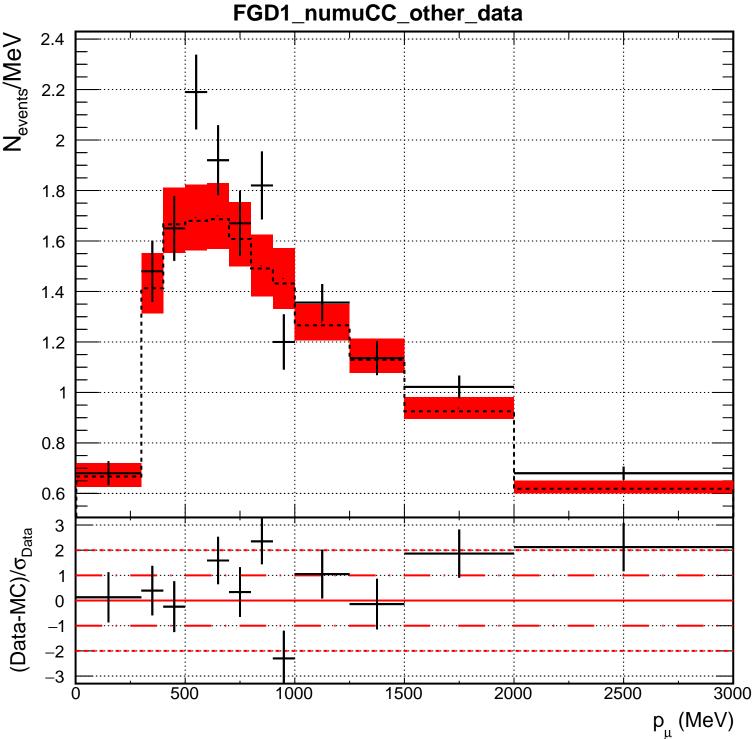


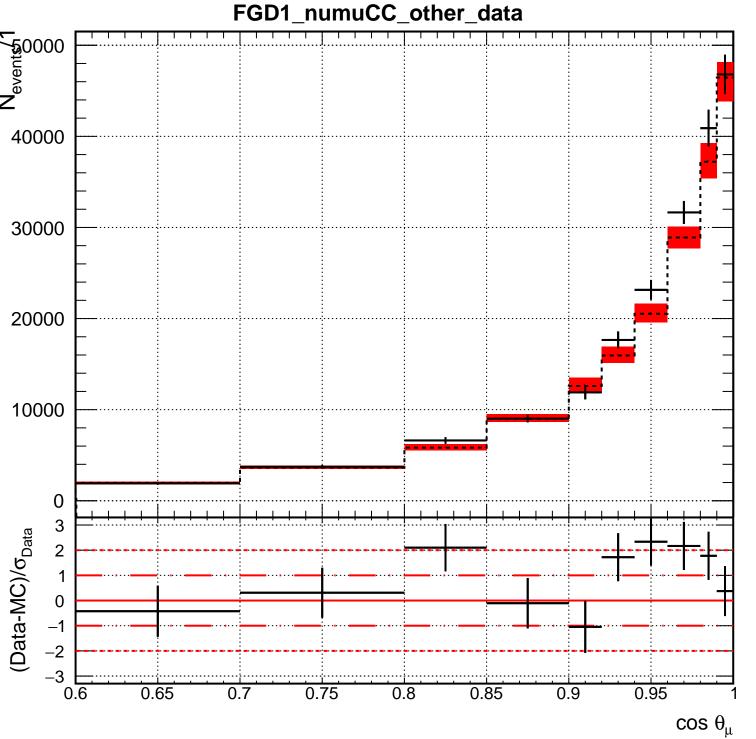
### FGD1\_numuCC\_other\_ModeInL

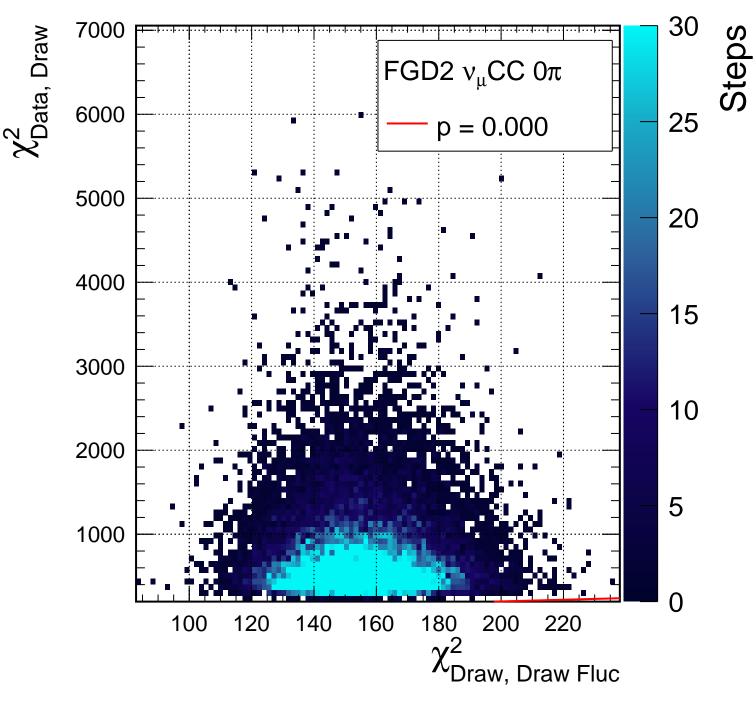


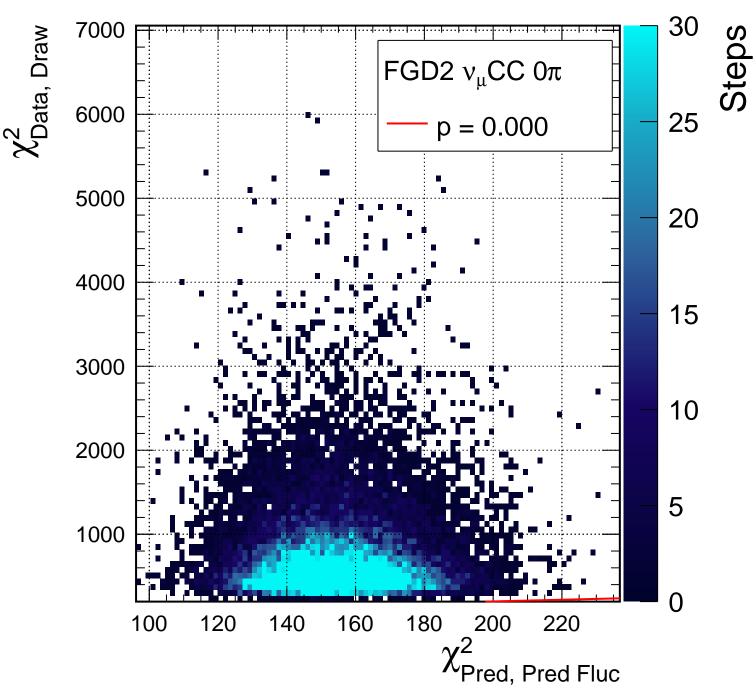
FGD1\_numuCC\_other\_sum\_4149 Counts Data, 4149, p-value=0.36 MC,  $\mu$ =3974.0±516.8 Gauss,  $\mu$ =3979.2±516.1 

events

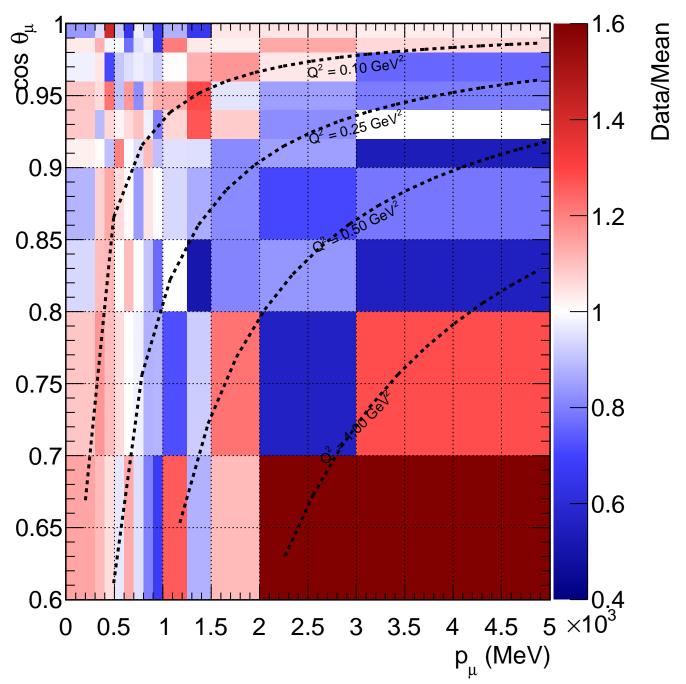




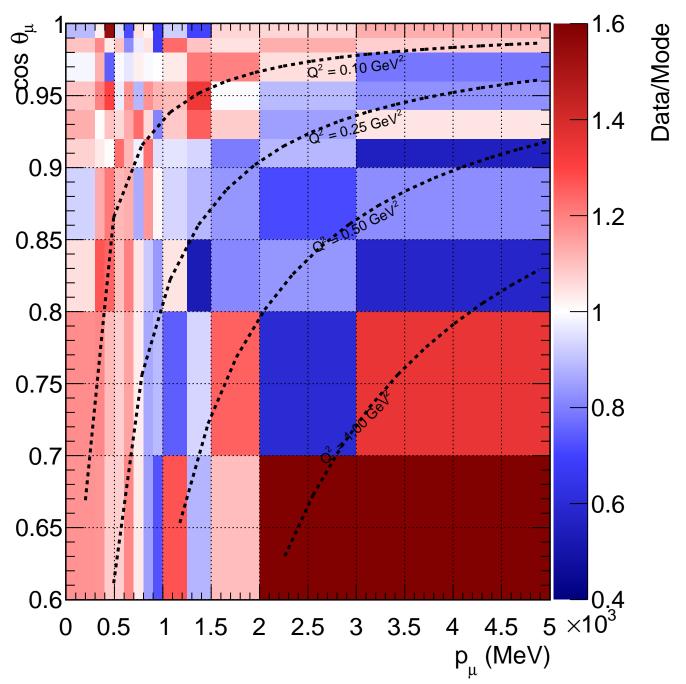




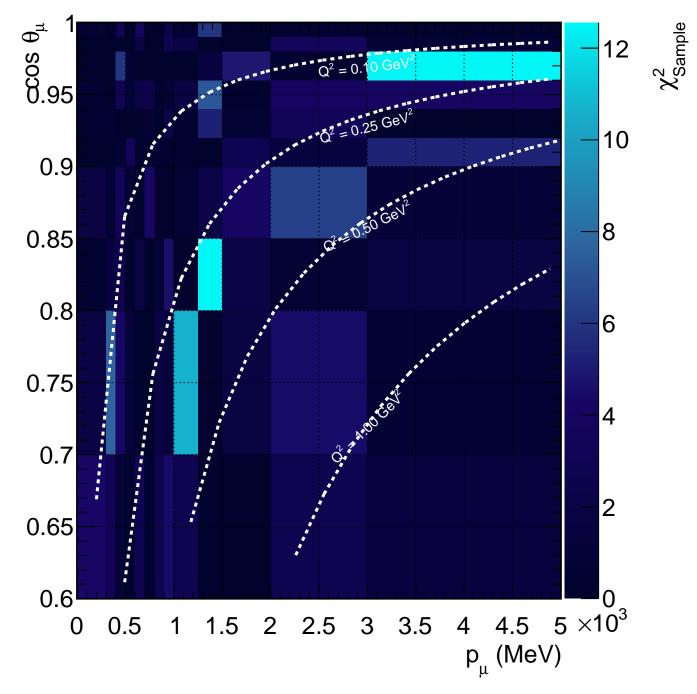
# FGD2\_numuCC\_0pi\_mean\_ratio



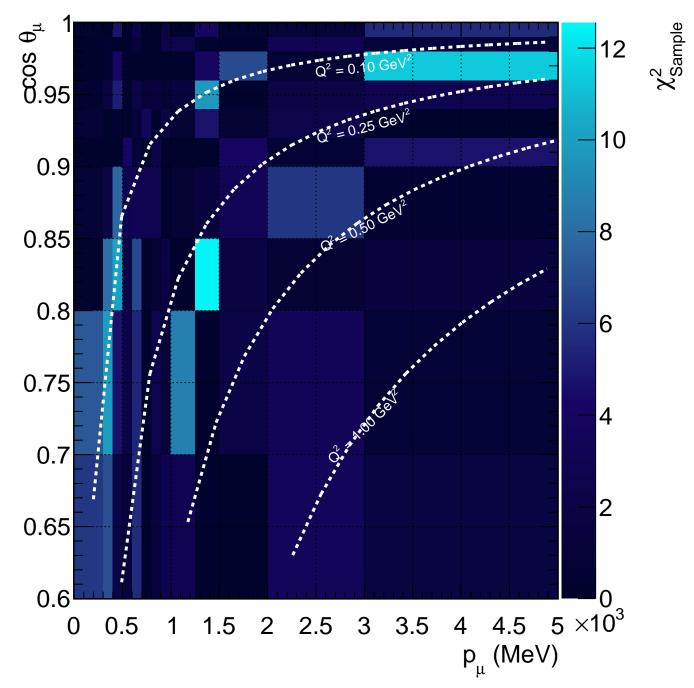
FGD2\_numuCC\_0pi\_mode\_ratio



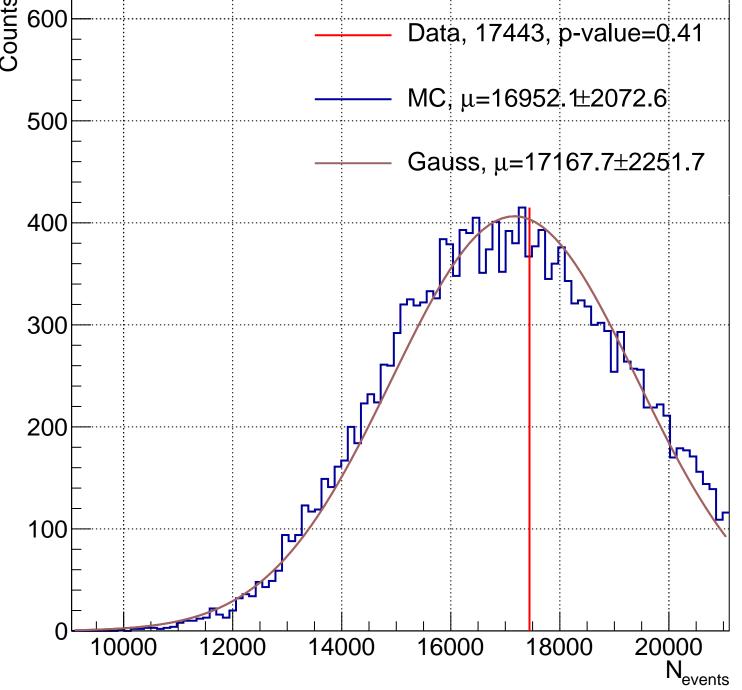
# FGD2\_numuCC\_0pi\_MeanInL

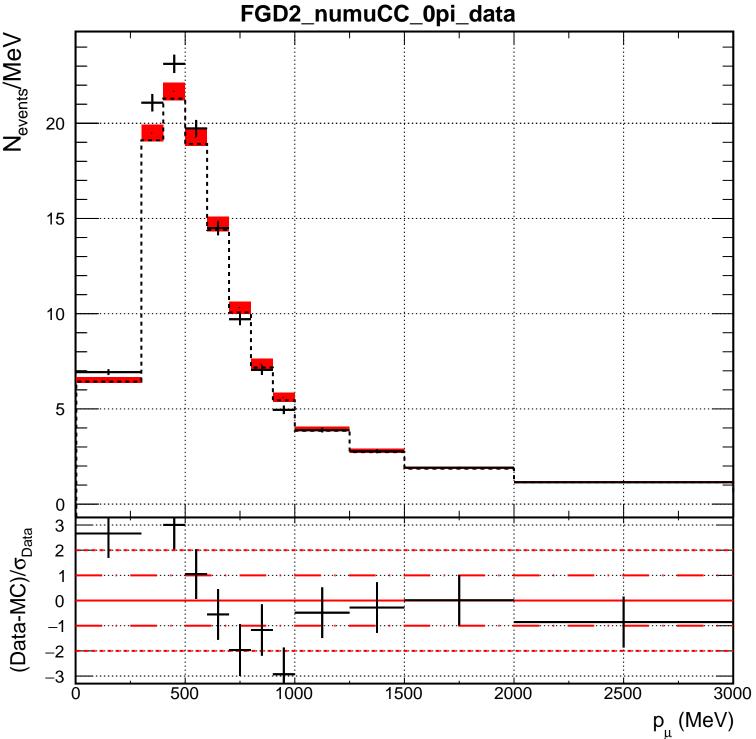


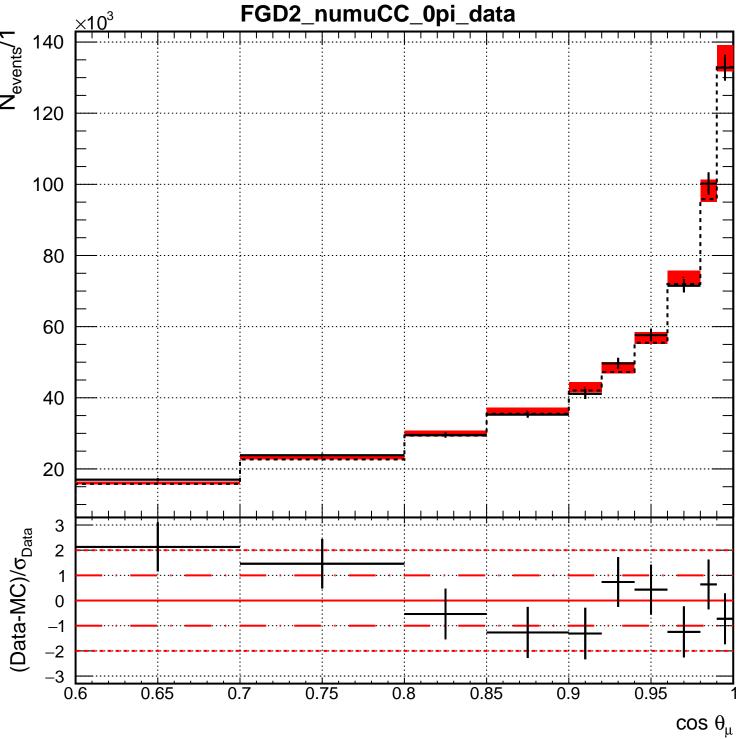
# FGD2\_numuCC\_0pi\_ModelnL

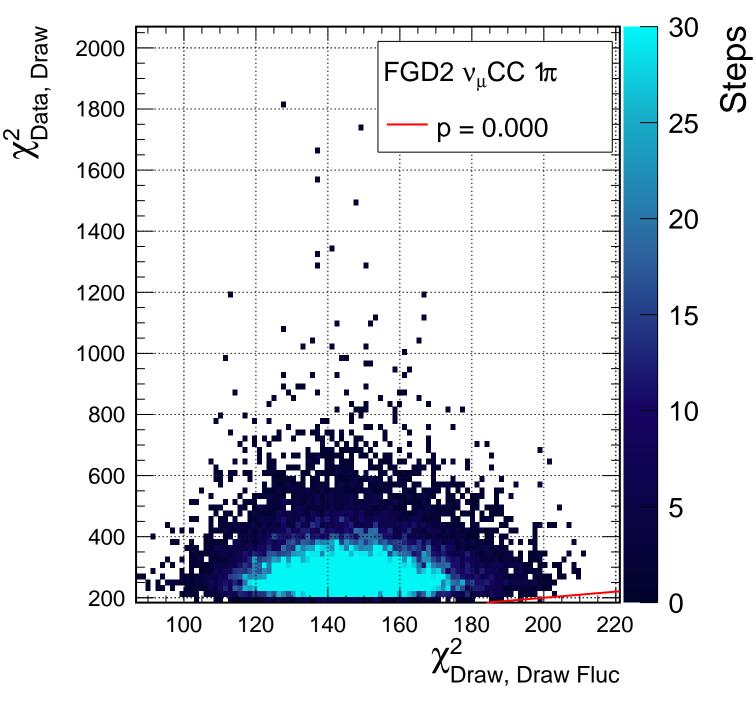


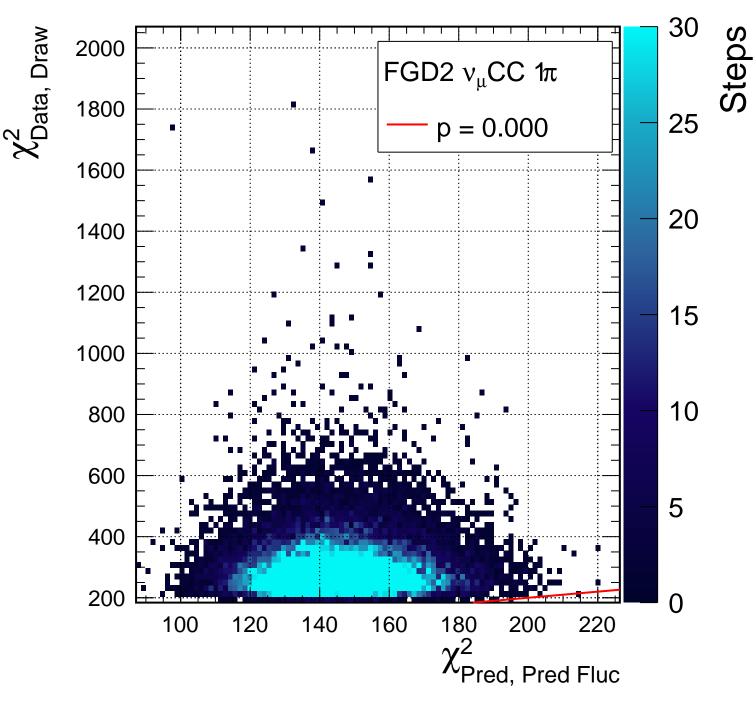
FGD2\_numuCC\_0pi\_sum\_17443



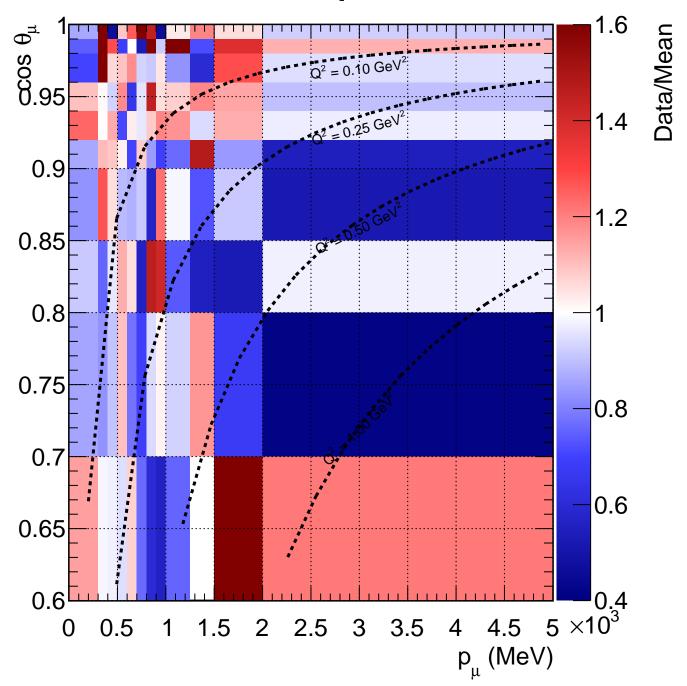




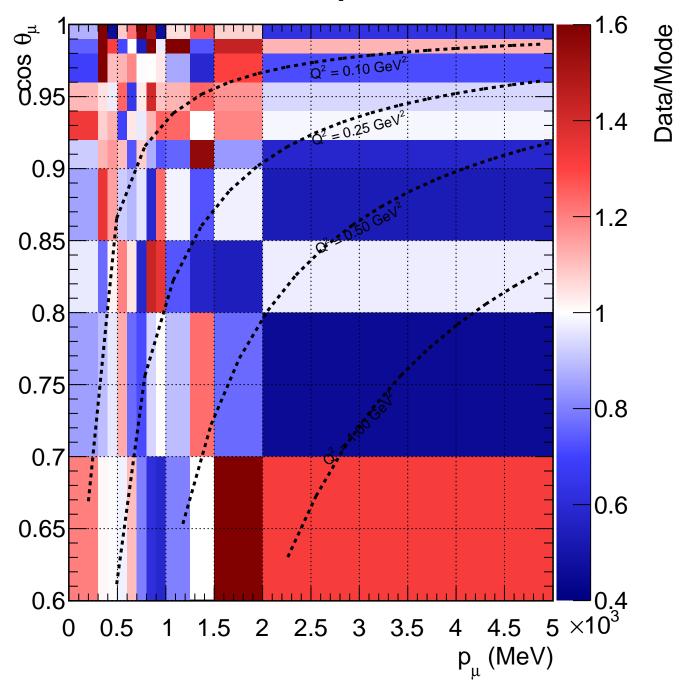




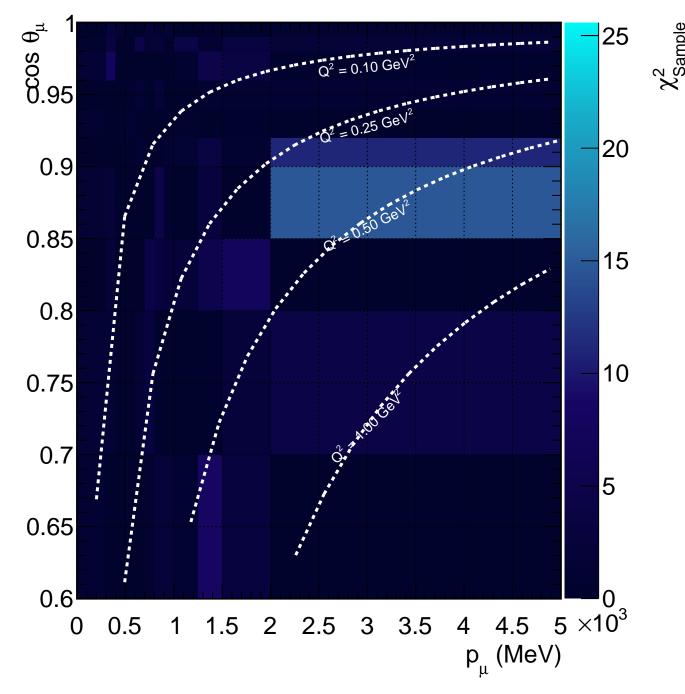
# FGD2\_numuCC\_1pi\_mean\_ratio



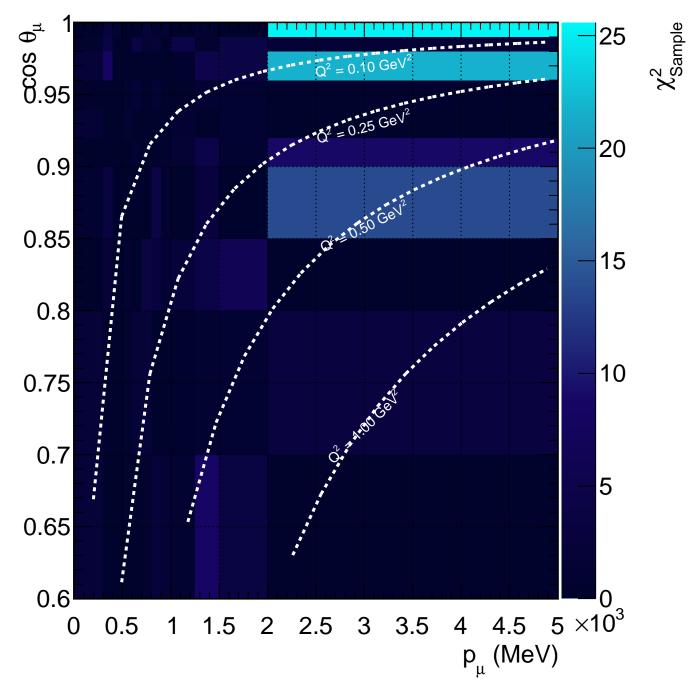
FGD2\_numuCC\_1pi\_mode\_ratio



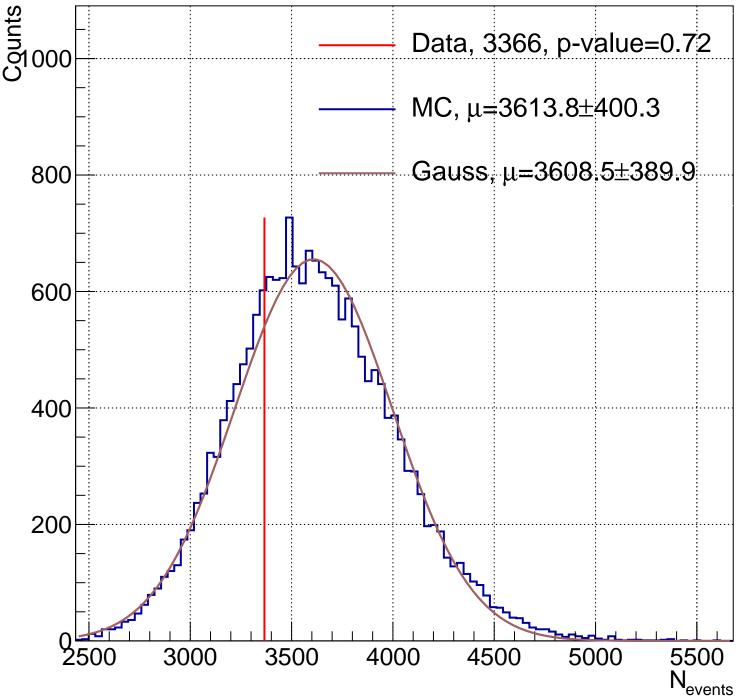
## FGD2\_numuCC\_1pi\_MeanInL

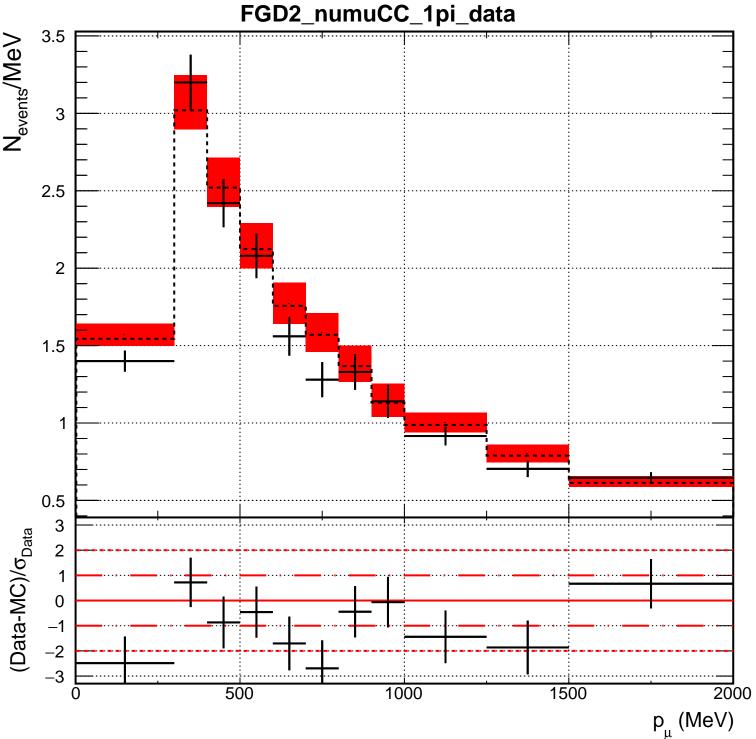


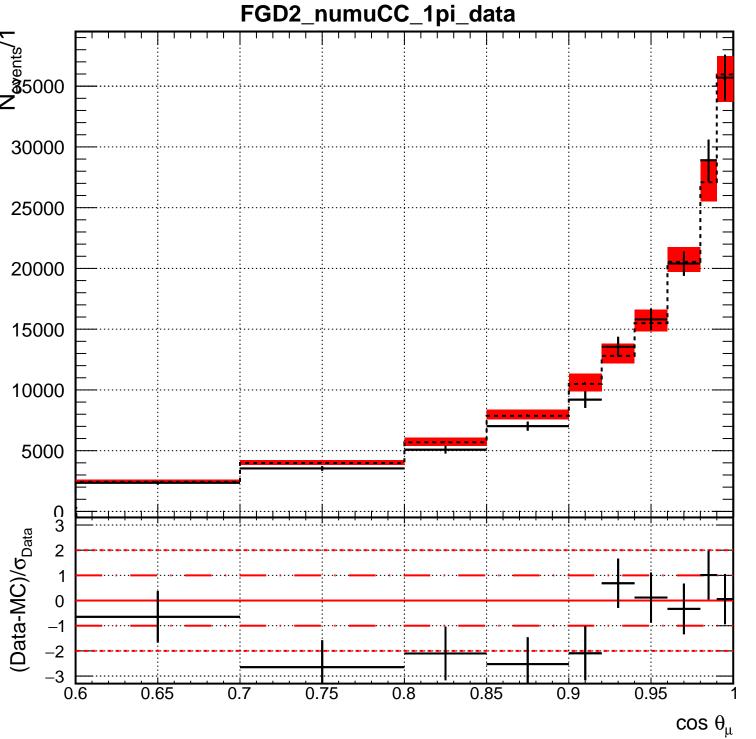
# FGD2\_numuCC\_1pi\_ModelnL

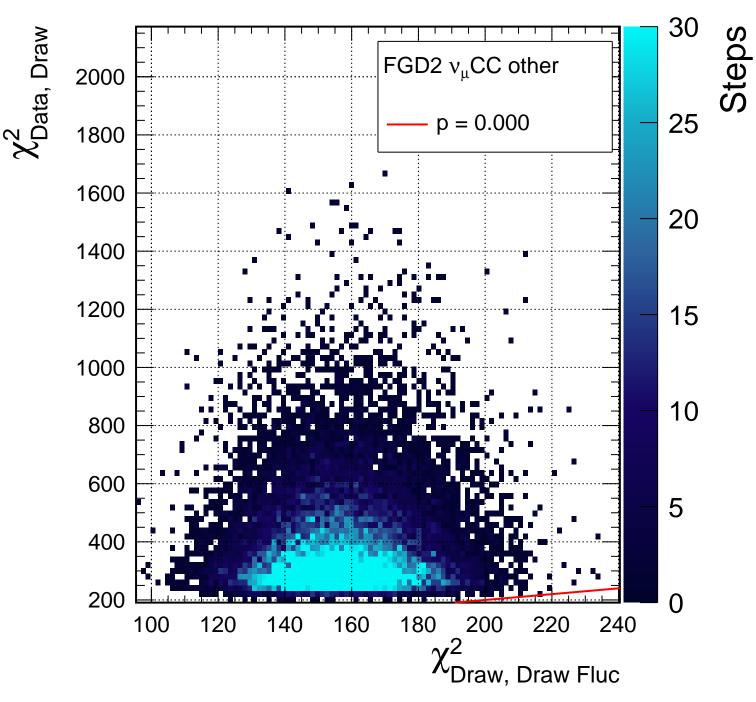


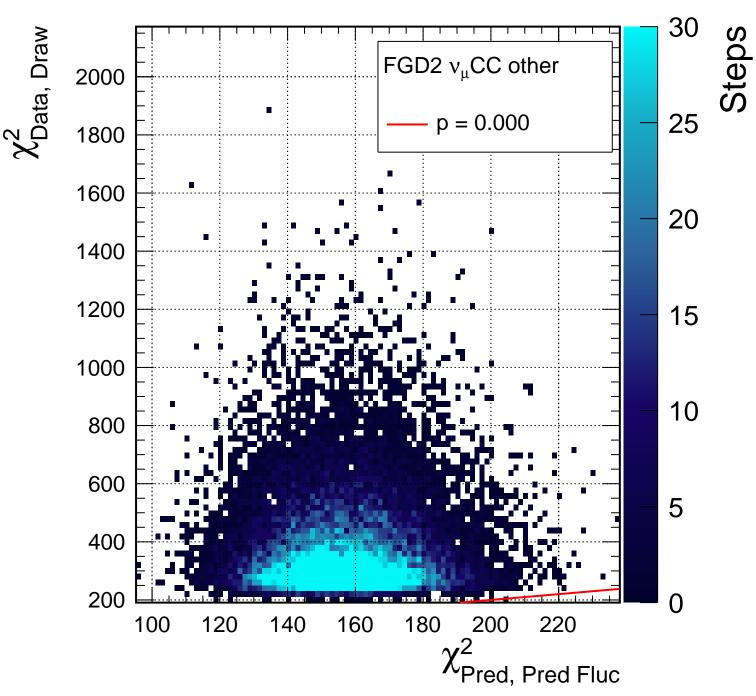
FGD2\_numuCC\_1pi\_sum\_3366 Data, 3366, p-value=0.72



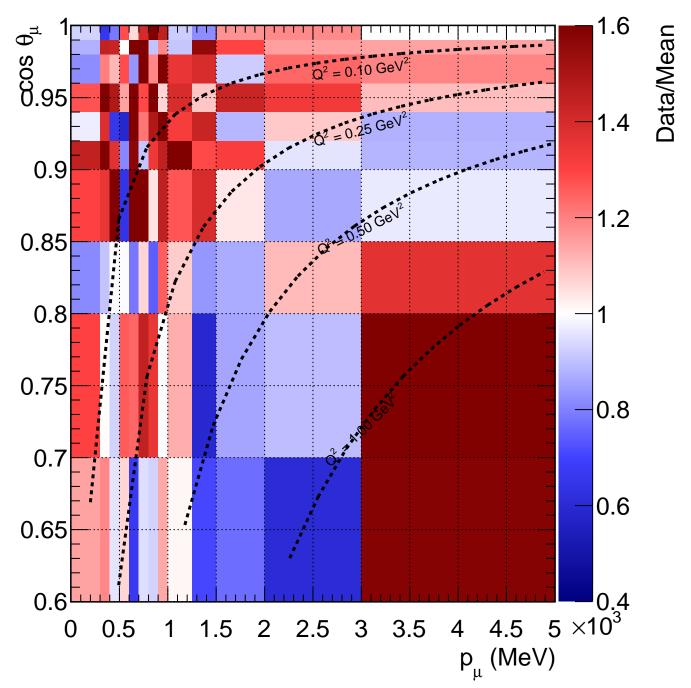




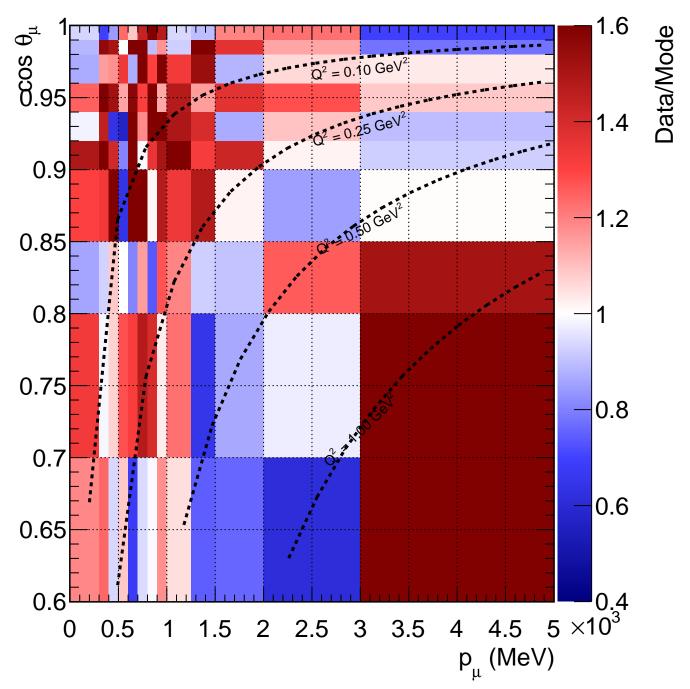




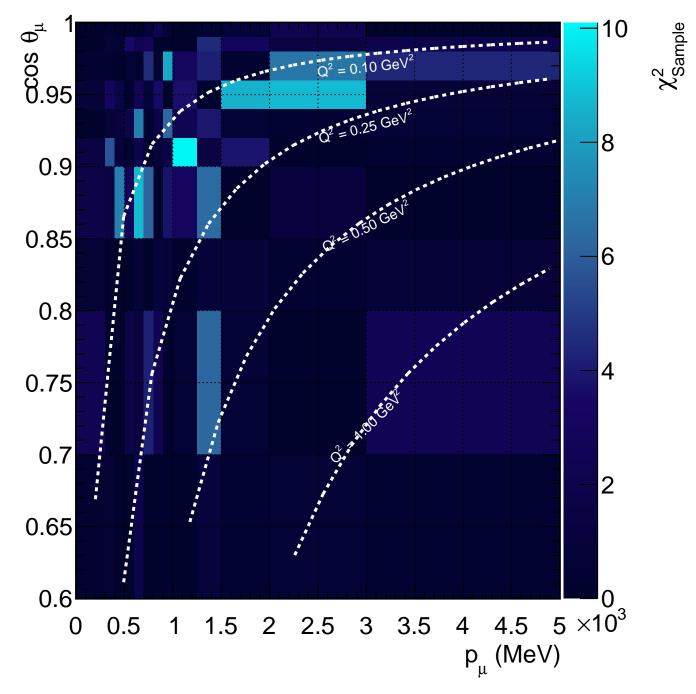
FGD2\_numuCC\_other\_mean\_ratio



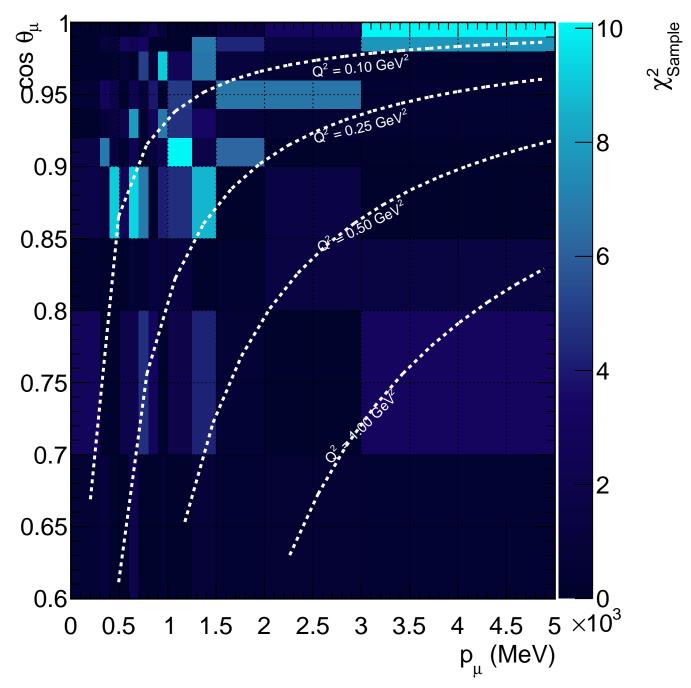
FGD2\_numuCC\_other\_mode\_ratio



### FGD2\_numuCC\_other\_MeanInL

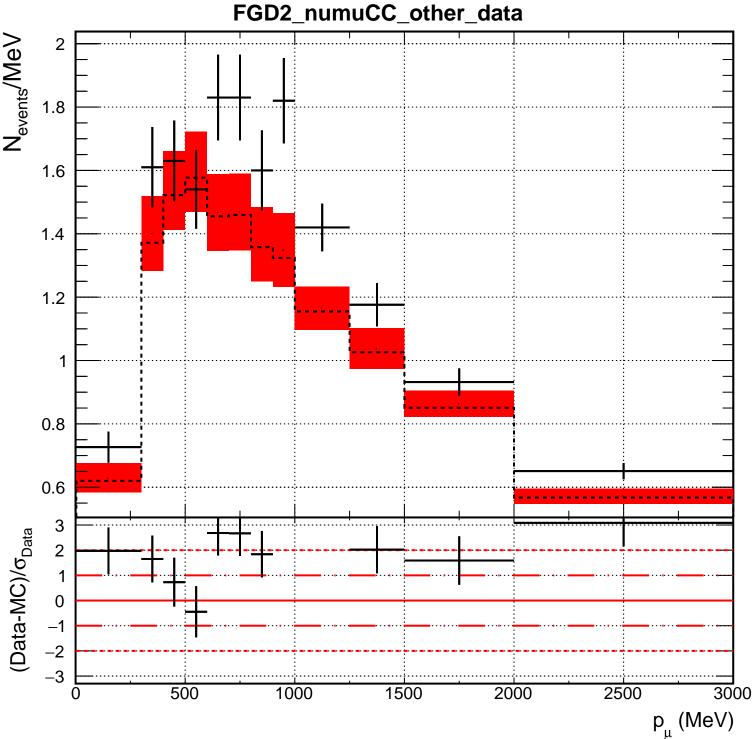


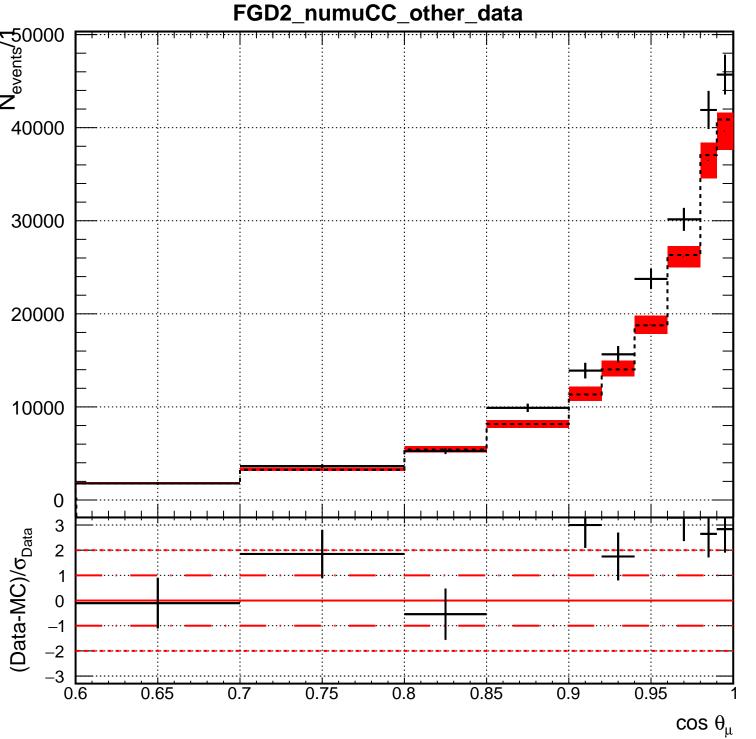
### FGD2\_numuCC\_other\_ModeInL

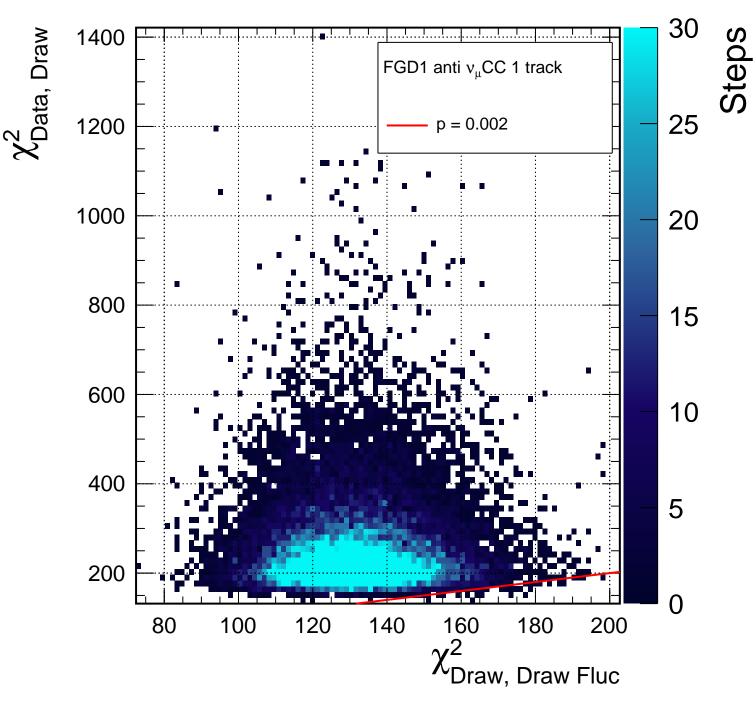


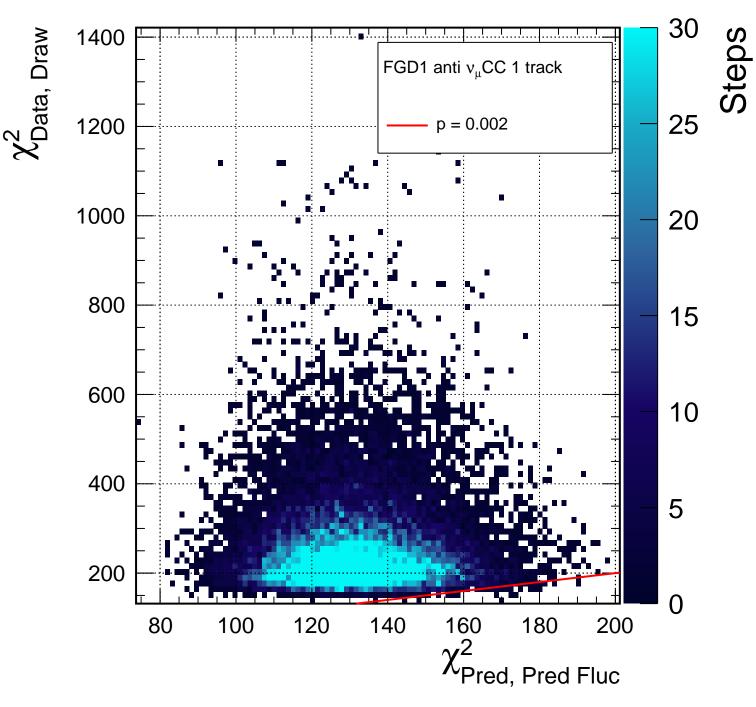
FGD2\_numuCC\_other\_sum\_4075 Data, 4075, p-value=0.16 MC,  $\mu$ =3602.5 $\pm$ 463.1 Gauss,  $\mu$ =3604.9±457.0 

<sup>l</sup>events

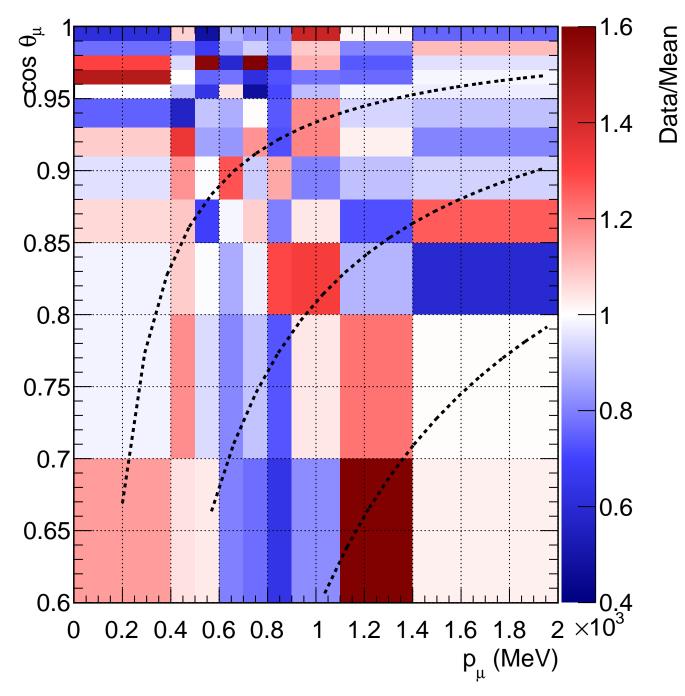




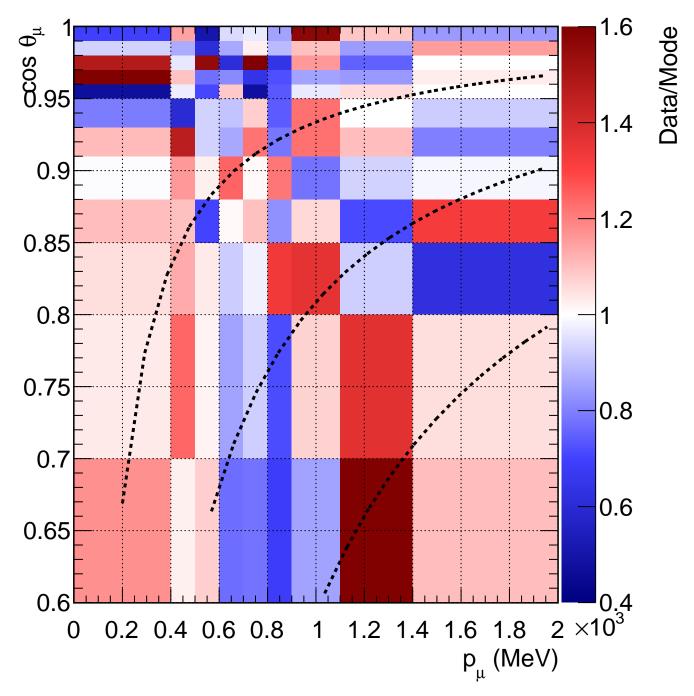




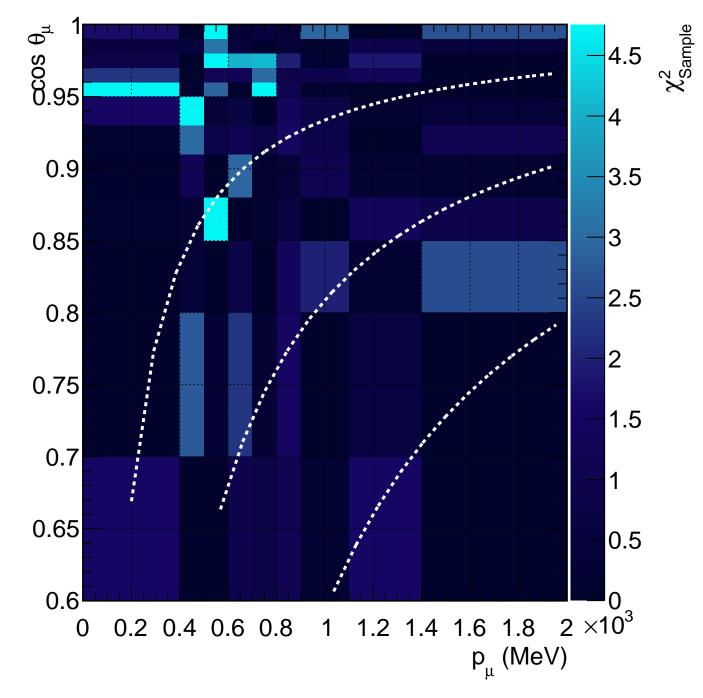
FGD1\_anti-numuCC\_QE\_mean\_ratio



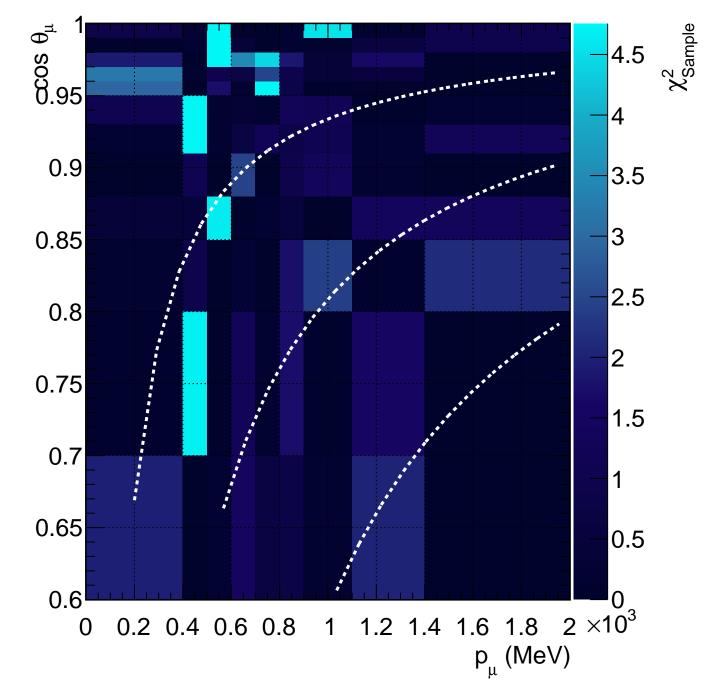
FGD1\_anti-numuCC\_QE\_mode\_ratio



FGD1\_anti-numuCC\_QE\_MeanInL

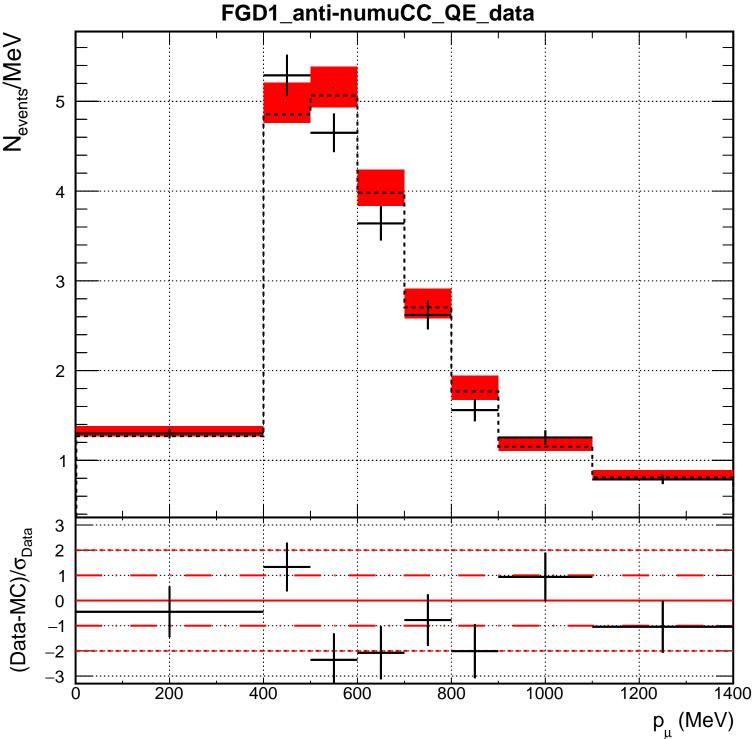


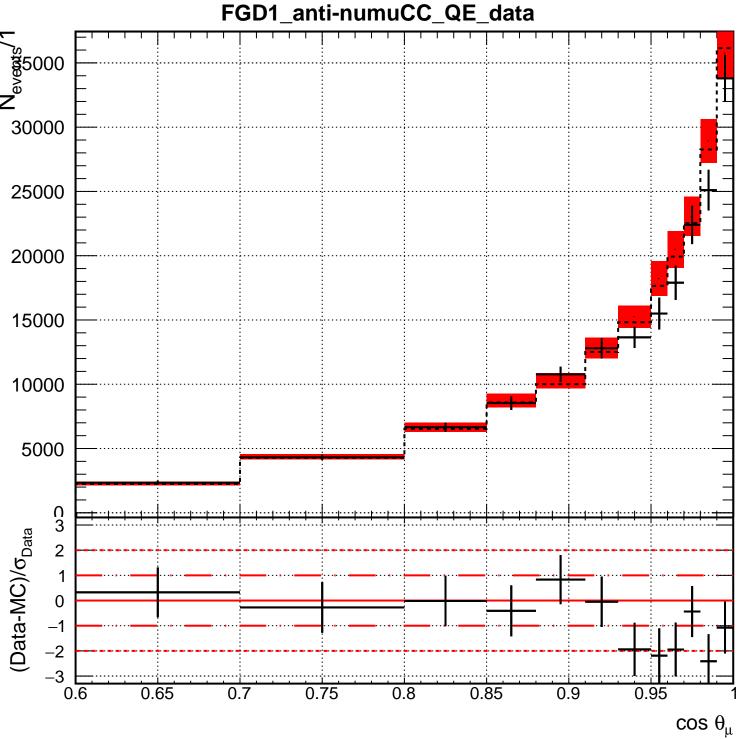
FGD1\_anti-numuCC\_QE\_ModeInL

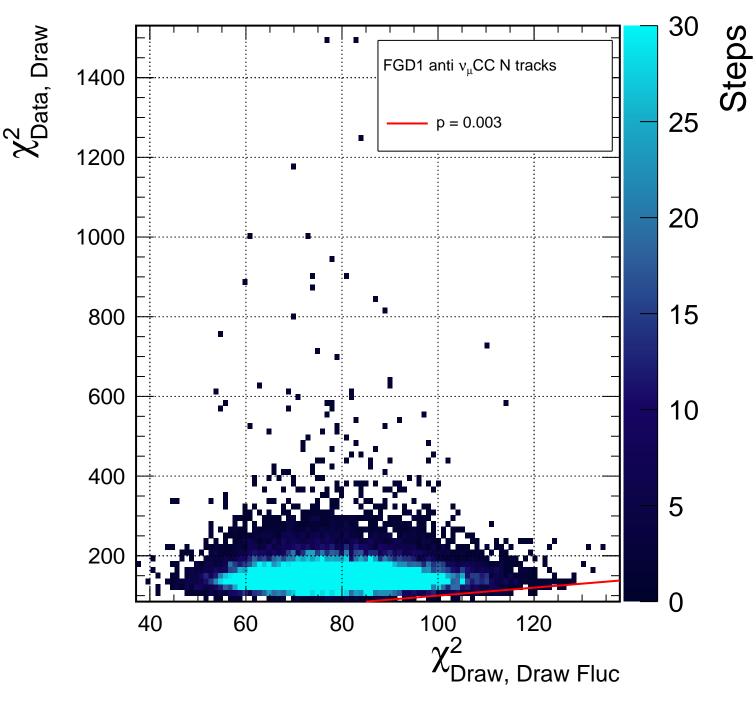


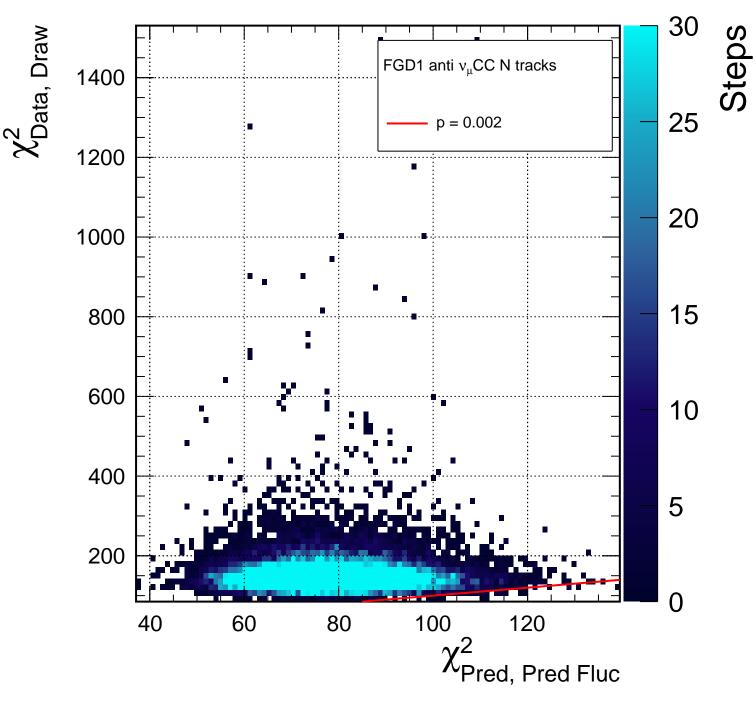
FGD1\_anti-numuCC\_QE\_sum\_3527 Counts Data, 3527, p-value=0.61 MC,  $\mu$ =3688.8±477.3 Gauss,  $\mu$ =3676.9±475.6 

<sup>l</sup>events

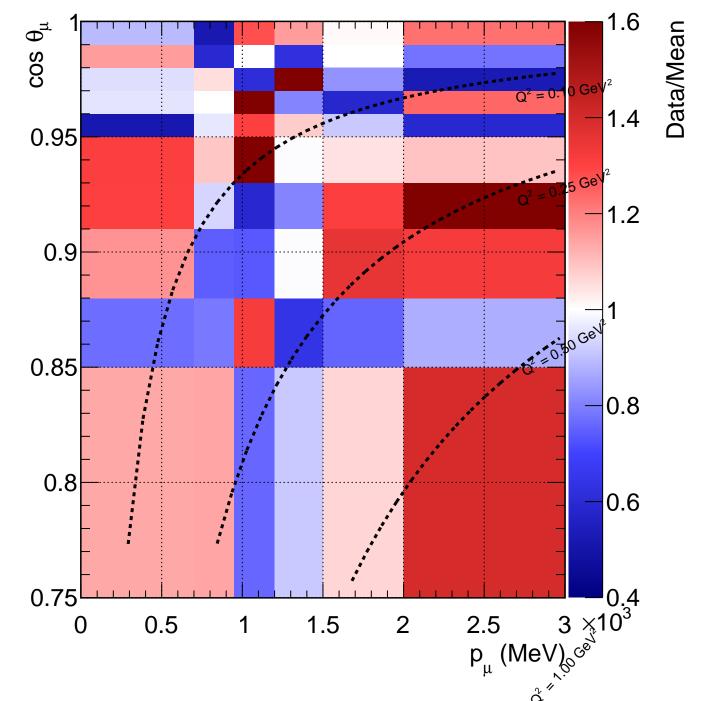




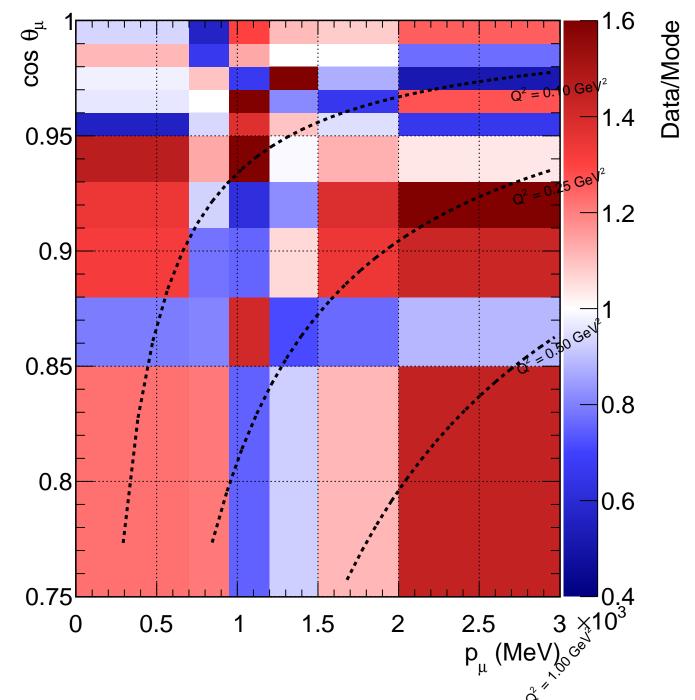




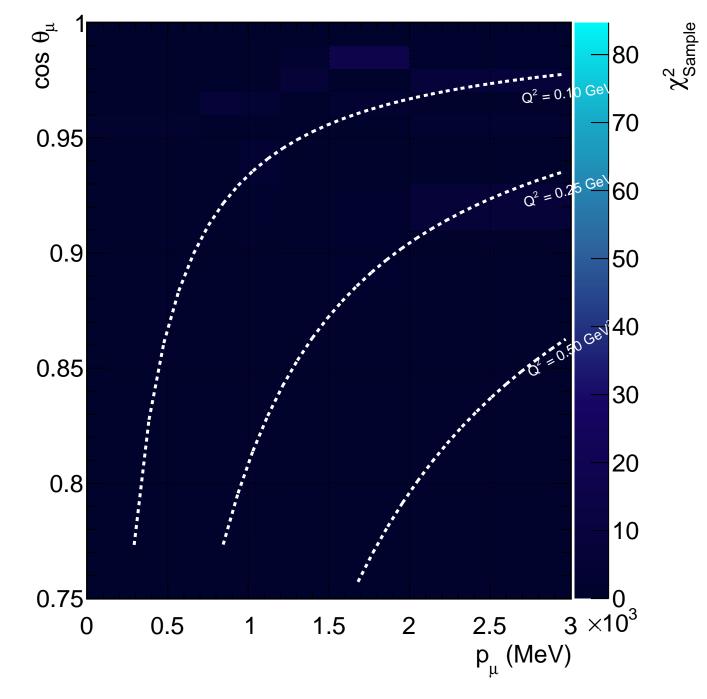
FGD1\_anti-numuCC\_nQE\_mean\_ratio



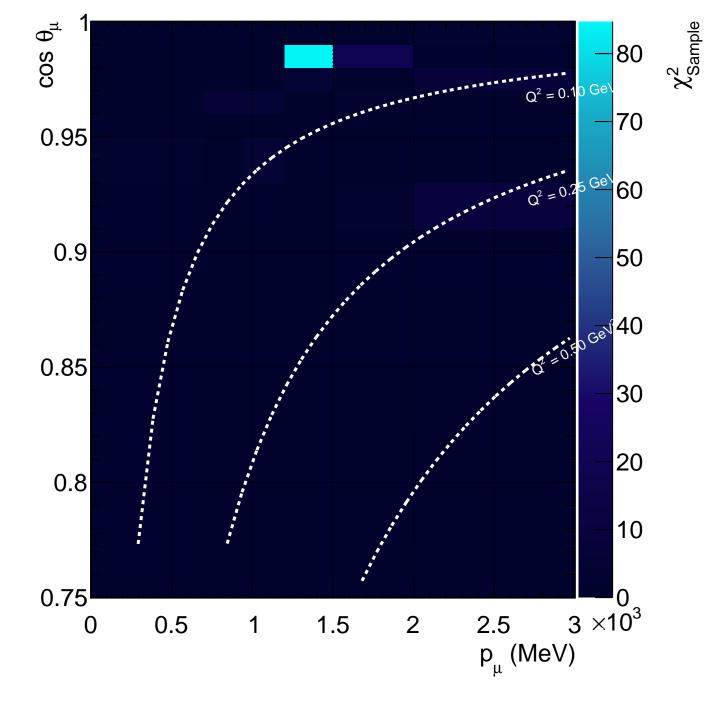
FGD1\_anti-numuCC\_nQE\_mode\_ratio

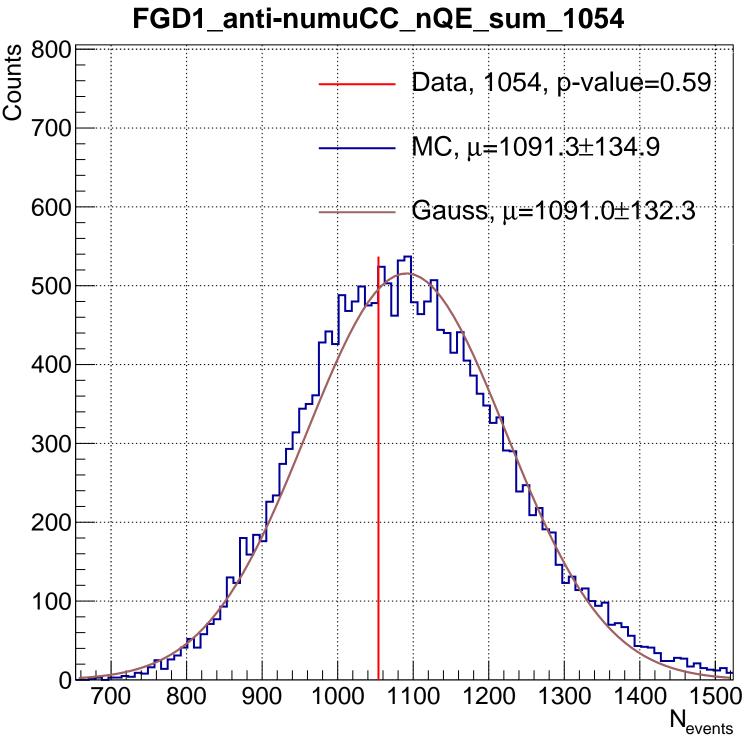


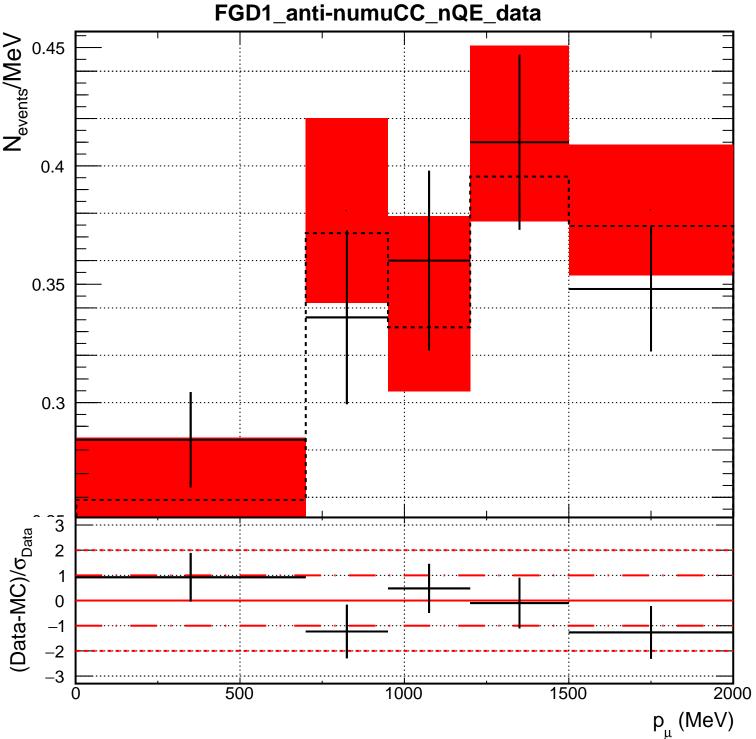
## FGD1\_anti-numuCC\_nQE\_MeanInL

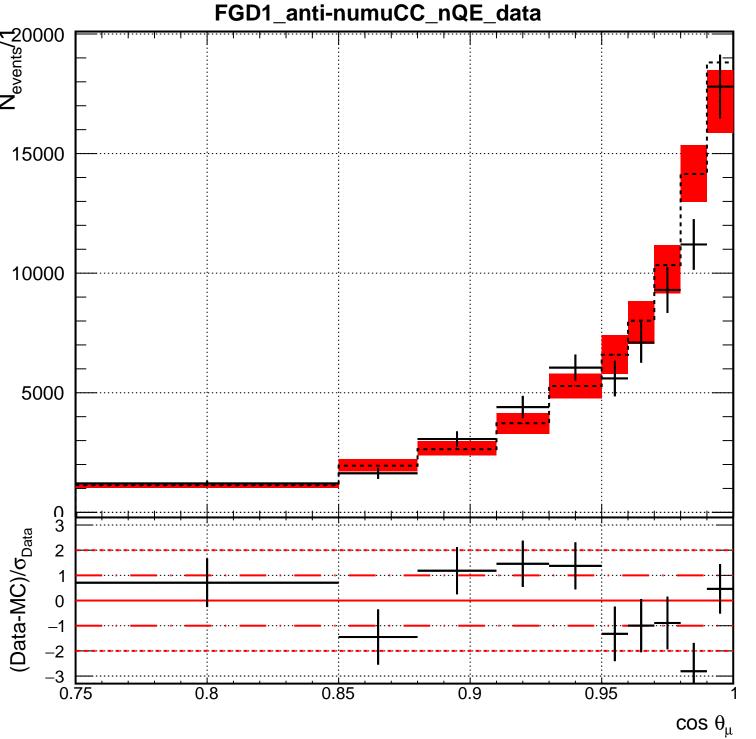


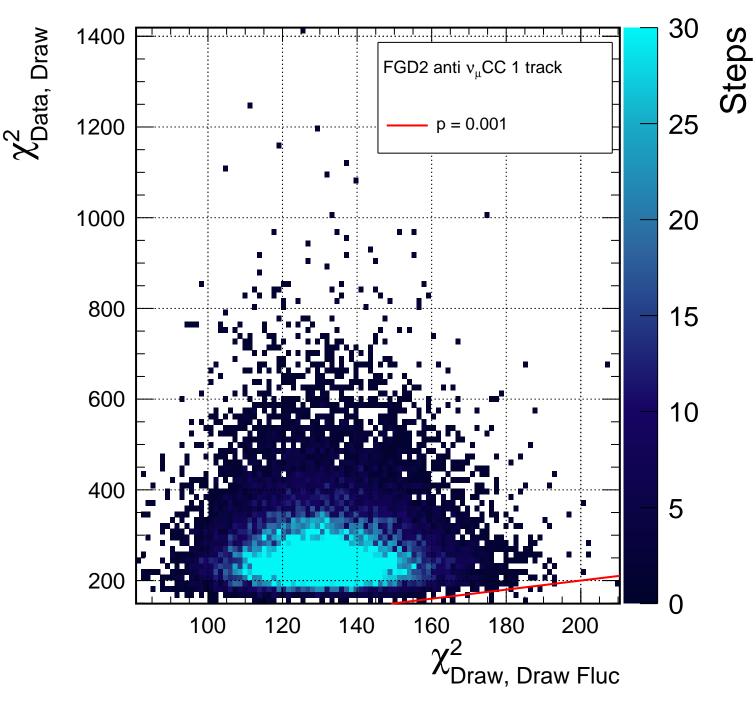
FGD1\_anti-numuCC\_nQE\_ModeInL

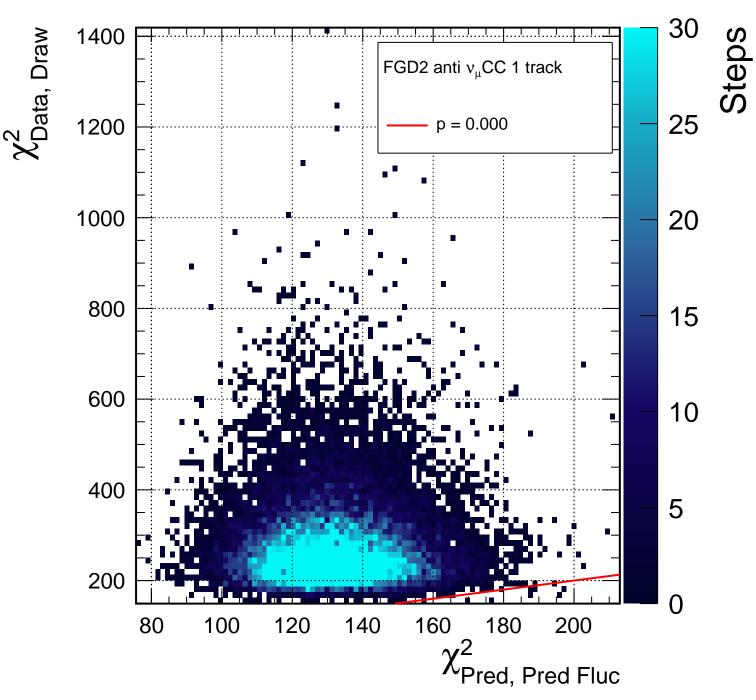




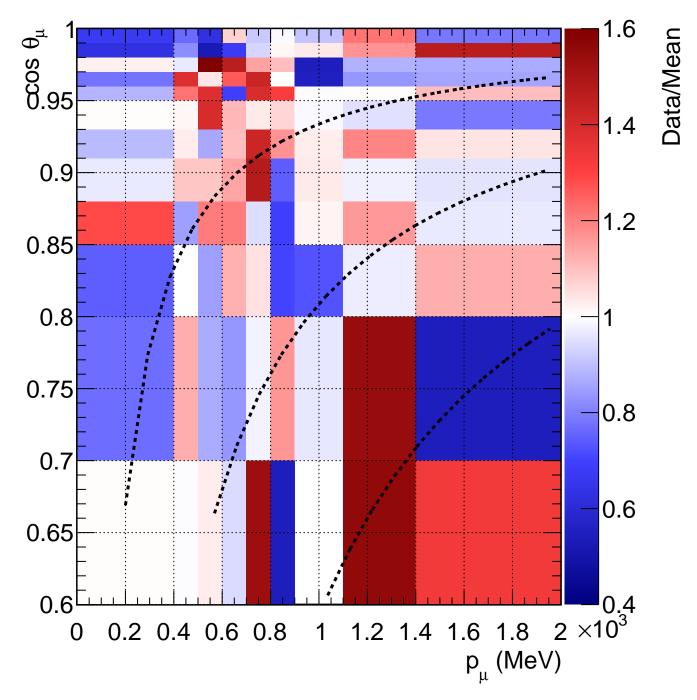




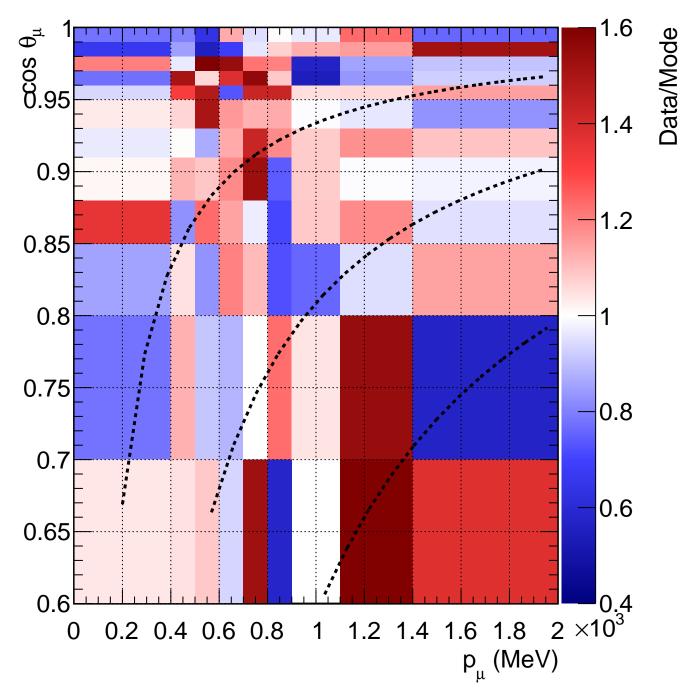




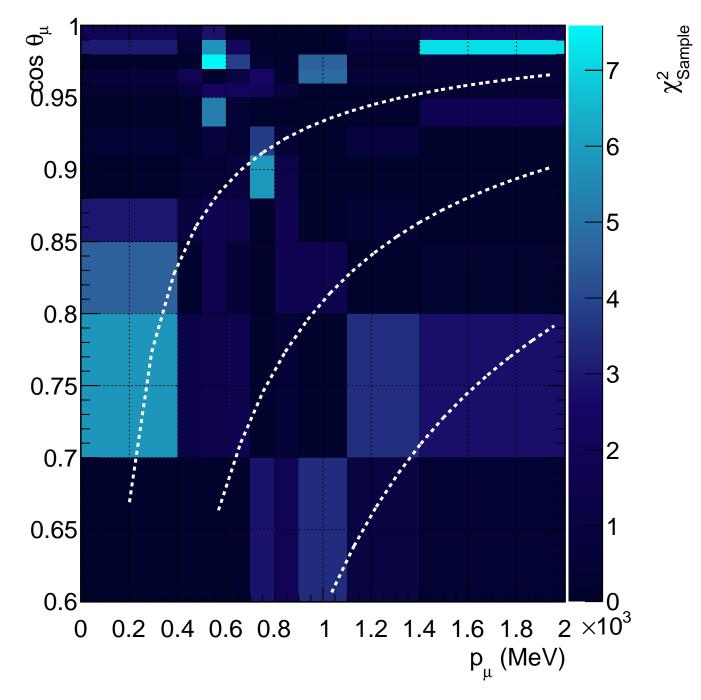
FGD2\_anti-numuCC\_1\_track\_mean\_ratio



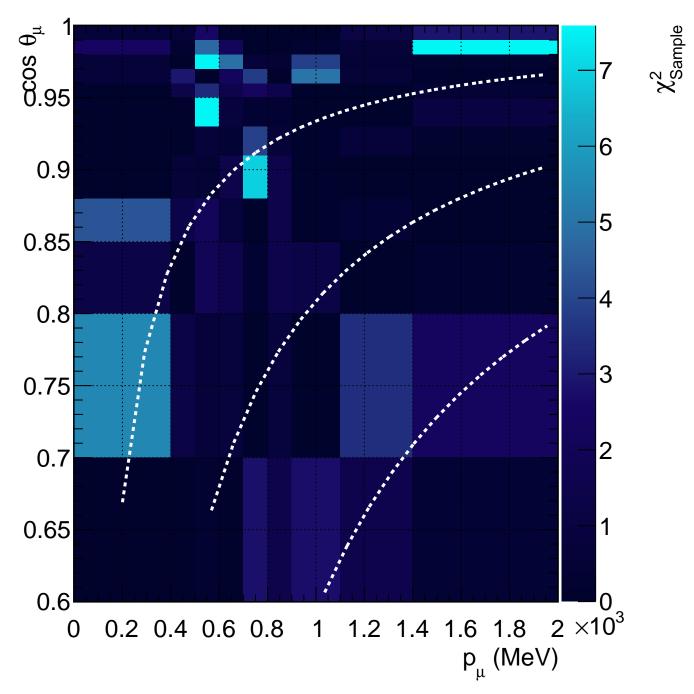
FGD2\_anti-numuCC\_1\_track\_mode\_ratio



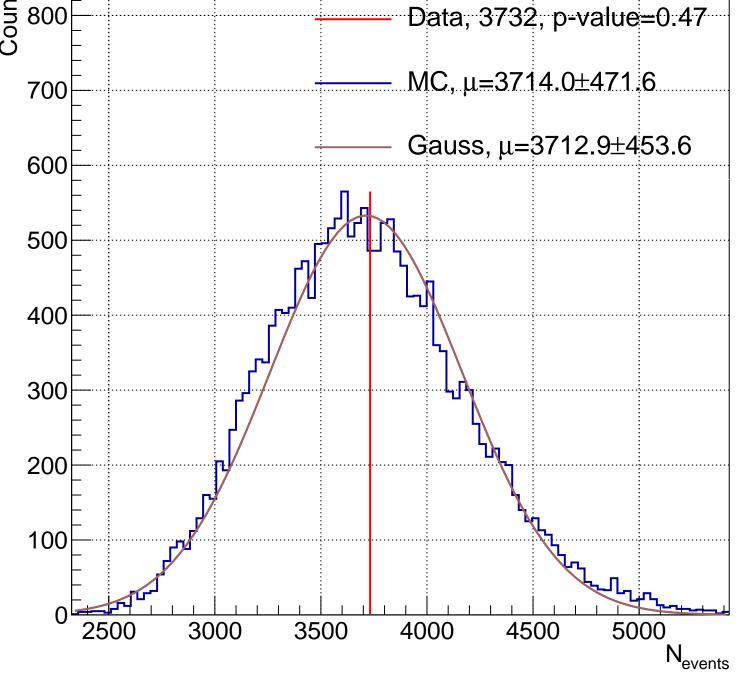
FGD2\_anti-numuCC\_1\_track\_MeanInL

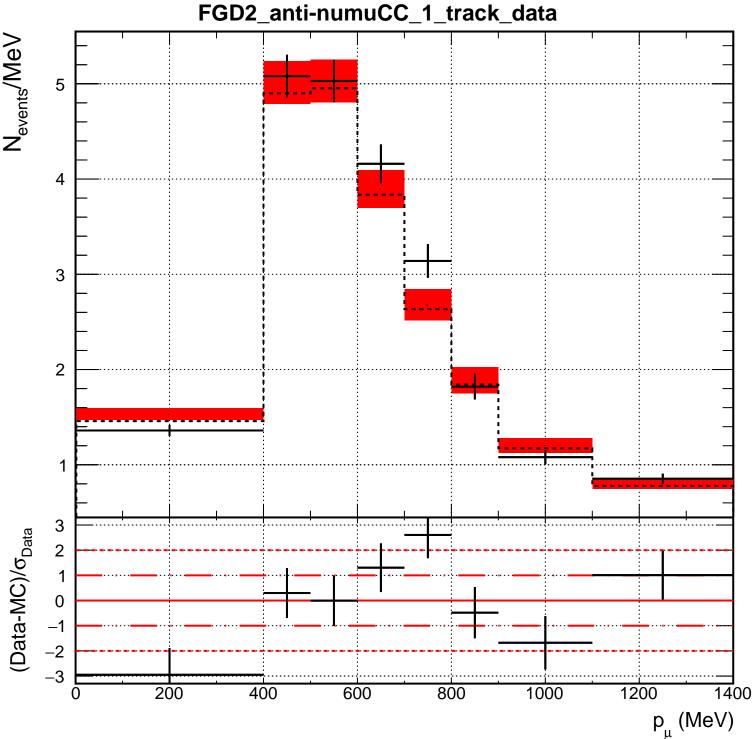


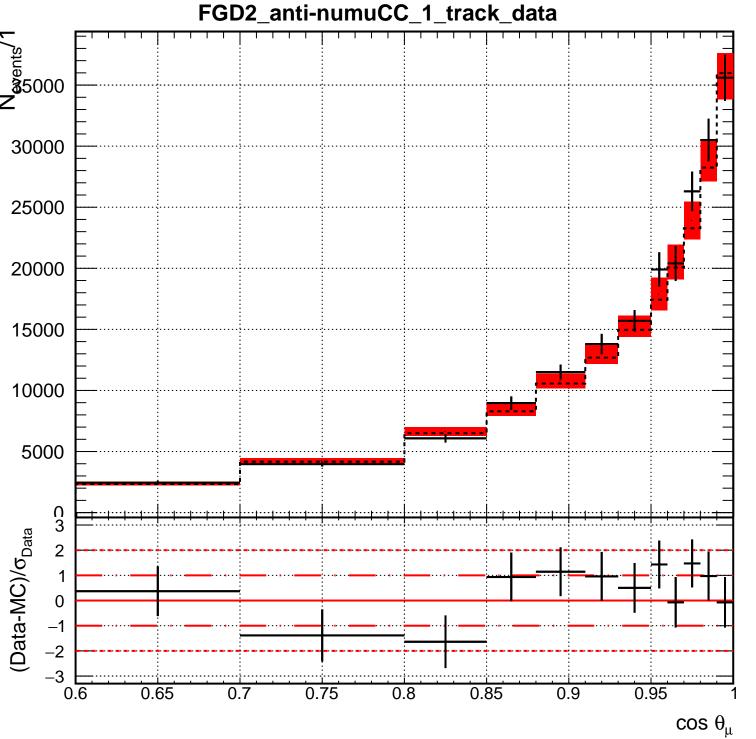
FGD2\_anti-numuCC\_1\_track\_ModelnL

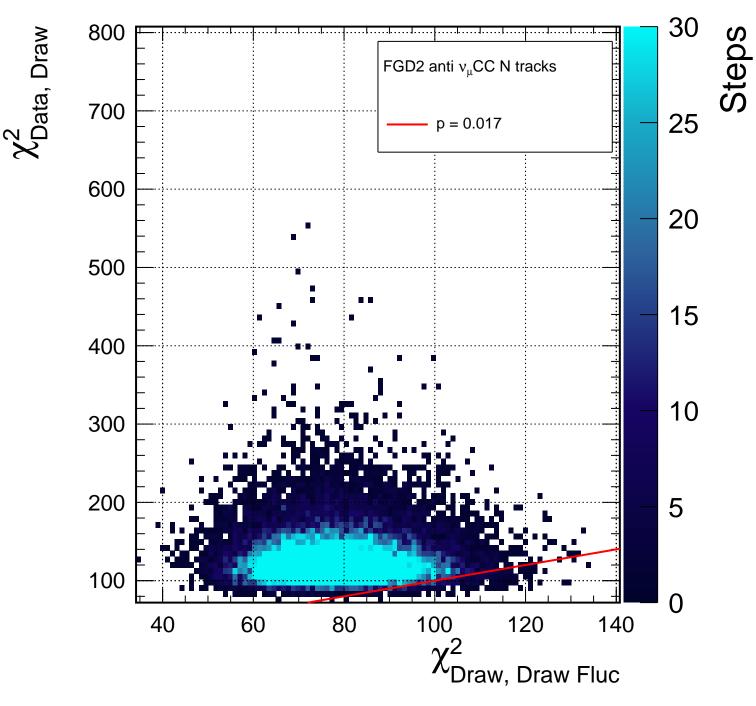


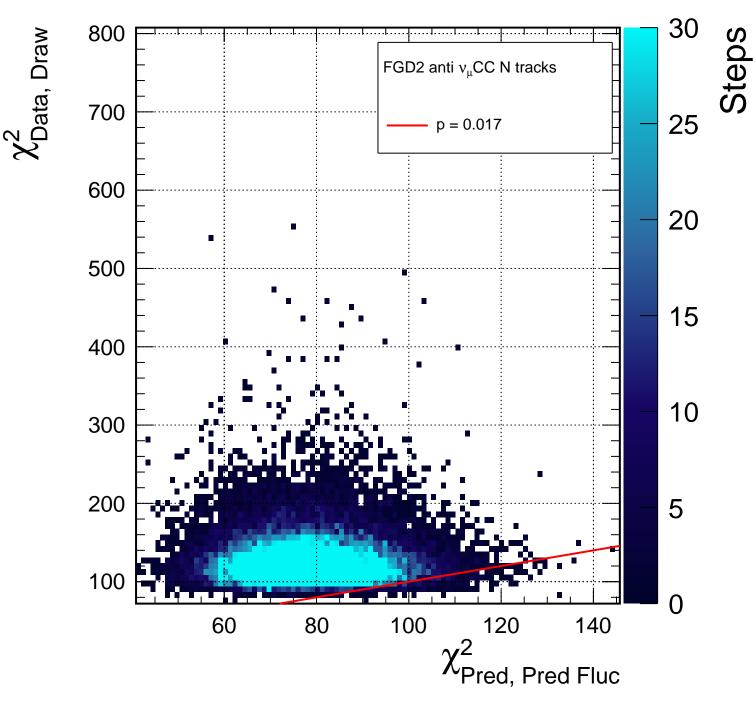
FGD2\_anti-numuCC\_1\_track\_sum\_3732



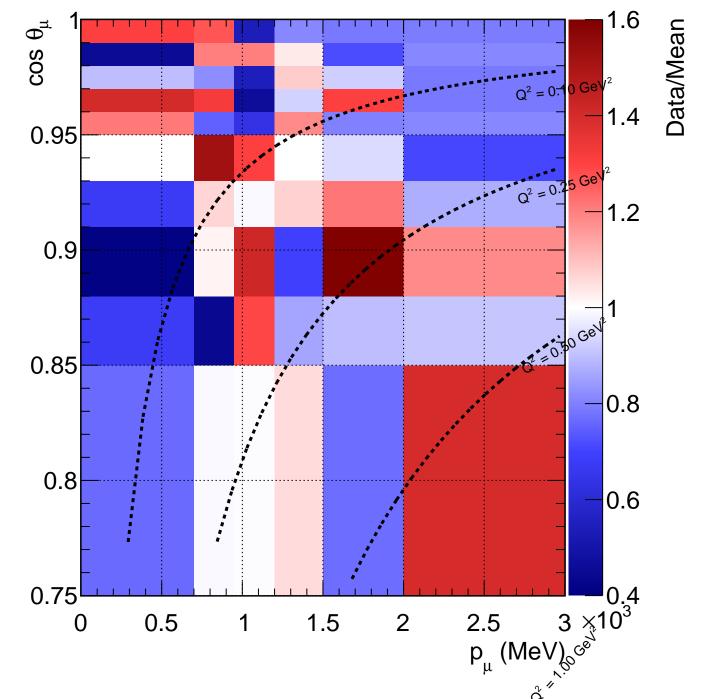




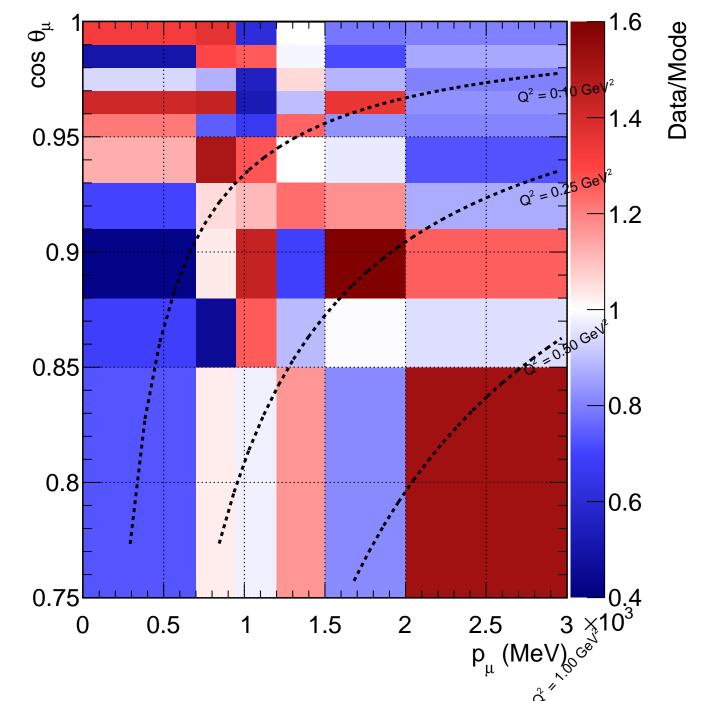




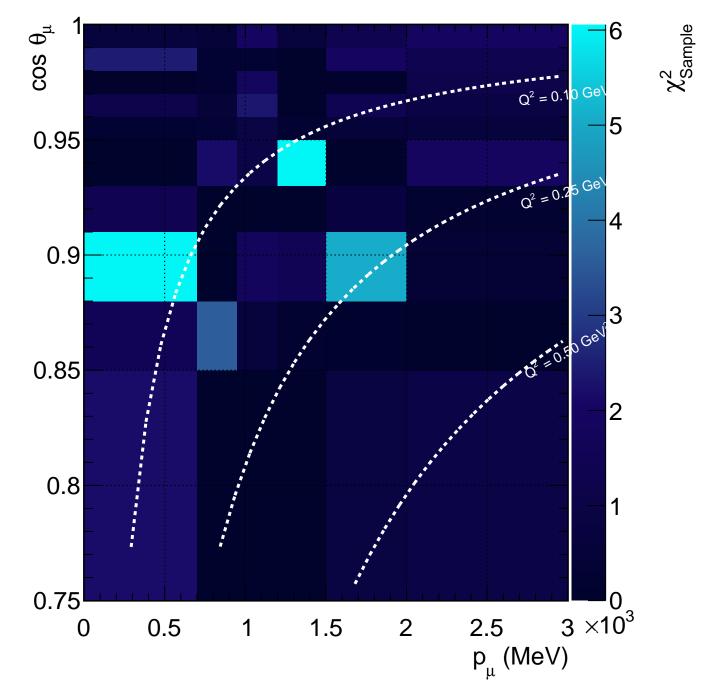
FGD2\_anti-numuCC\_N\_tracks\_mean\_ratio



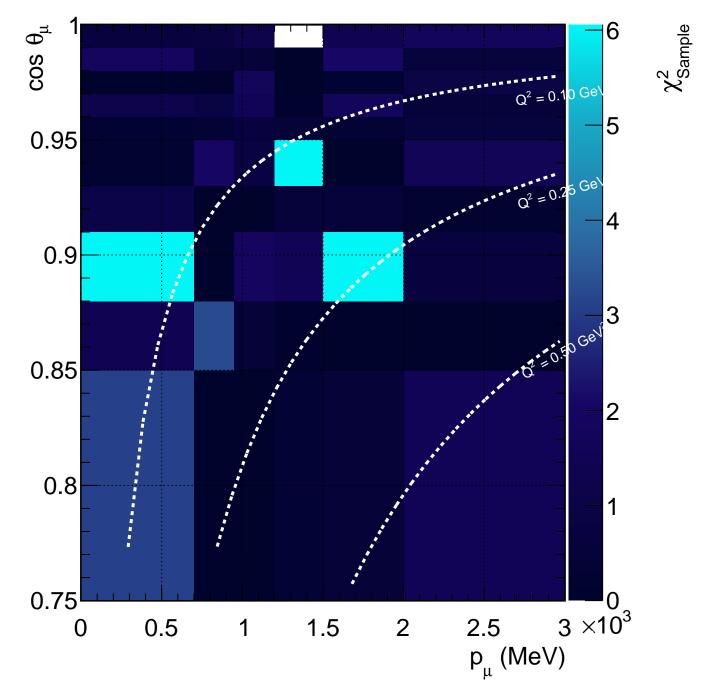
FGD2\_anti-numuCC\_N\_tracks\_mode\_ratio



FGD2\_anti-numuCC\_N\_tracks\_MeanInL

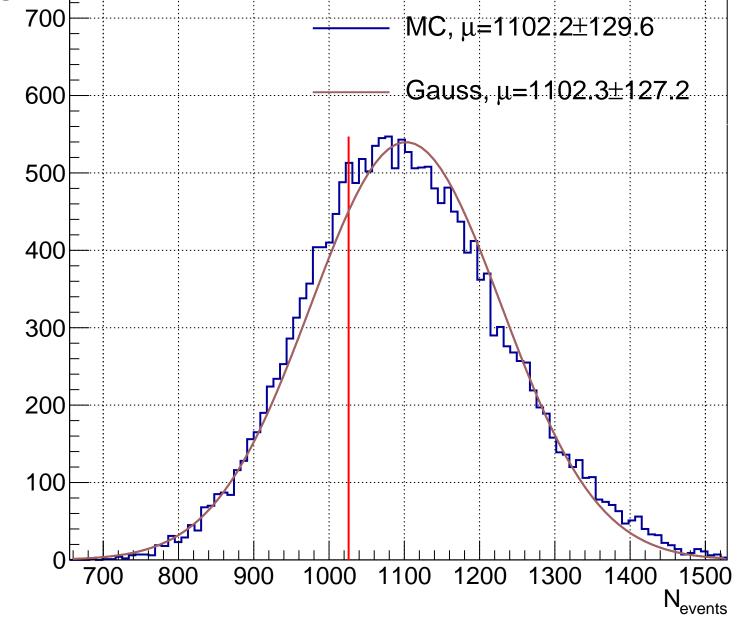


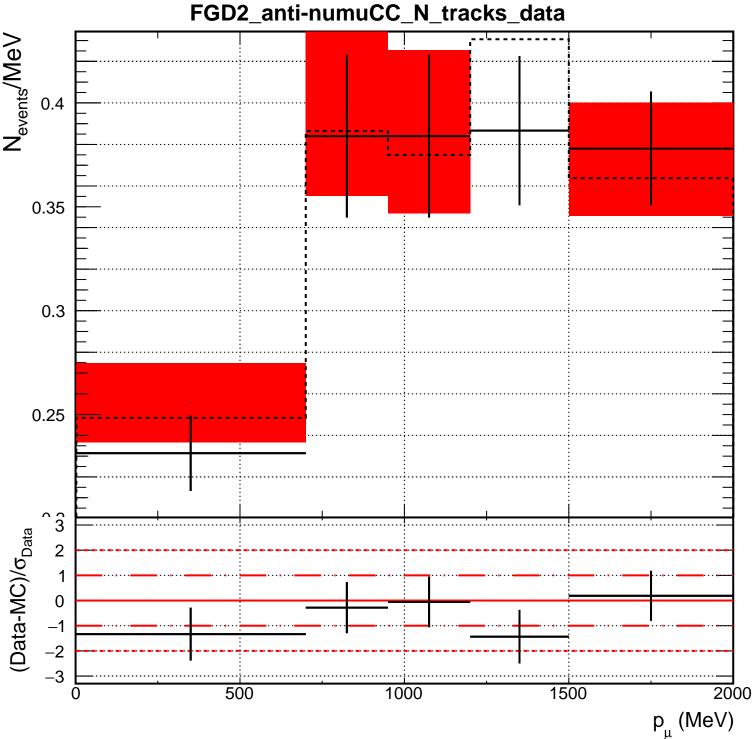
FGD2\_anti-numuCC\_N\_tracks\_ModeInL

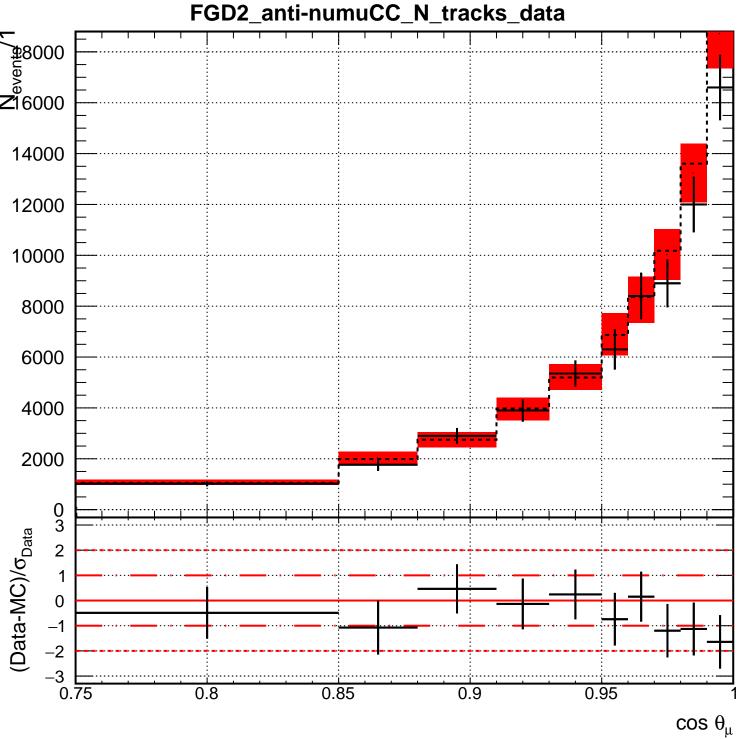


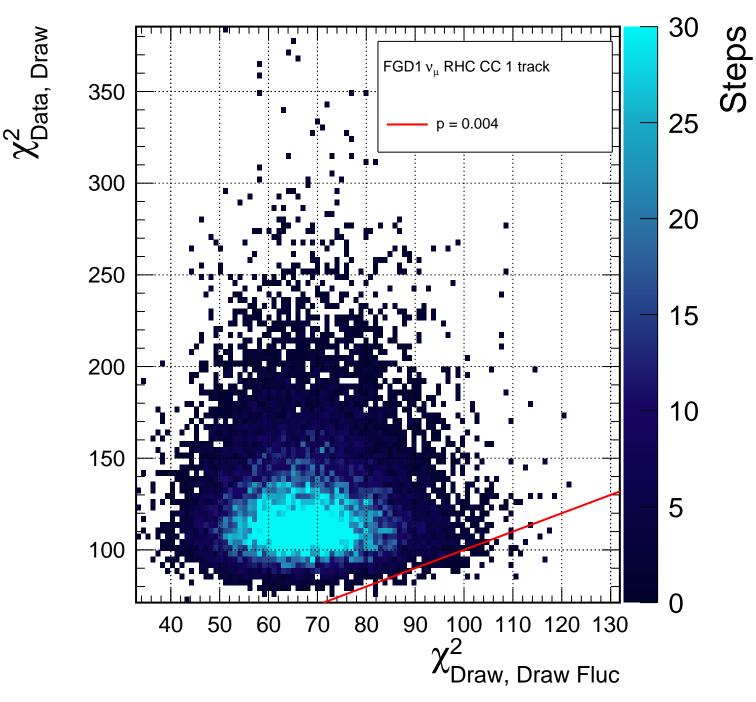
FGD2\_anti-numuCC\_N\_tracks\_sum\_1026 Data, 1026, p-value=0.72 MC,  $\mu$ =1102.2±129.6 Gauss, μ=1102.3±127.2

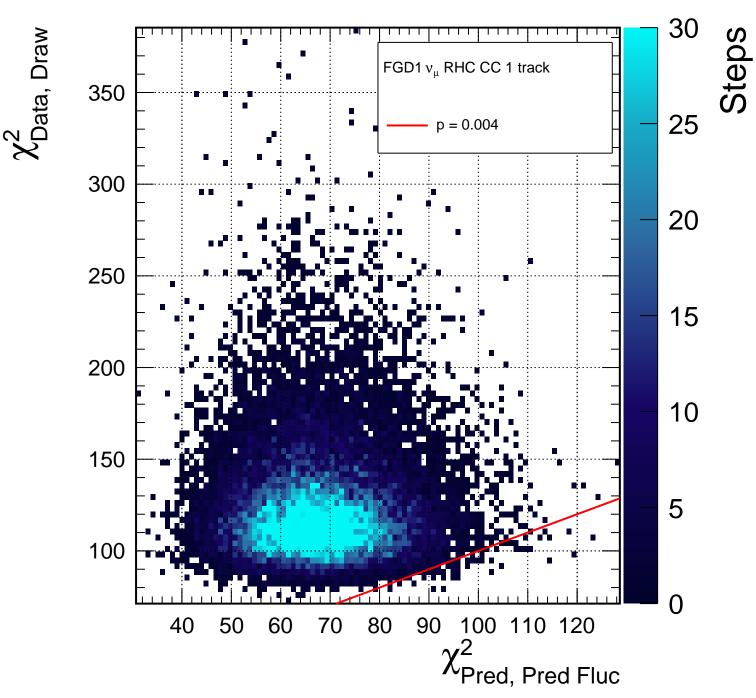
800



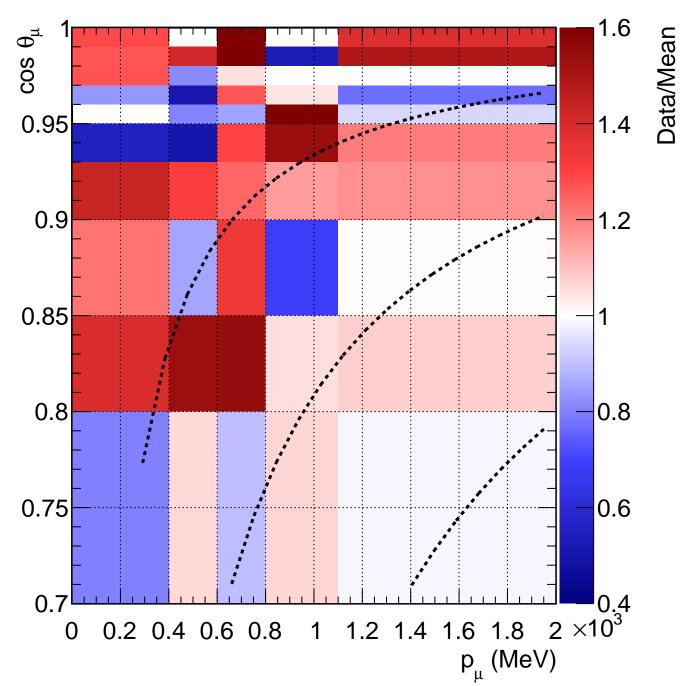




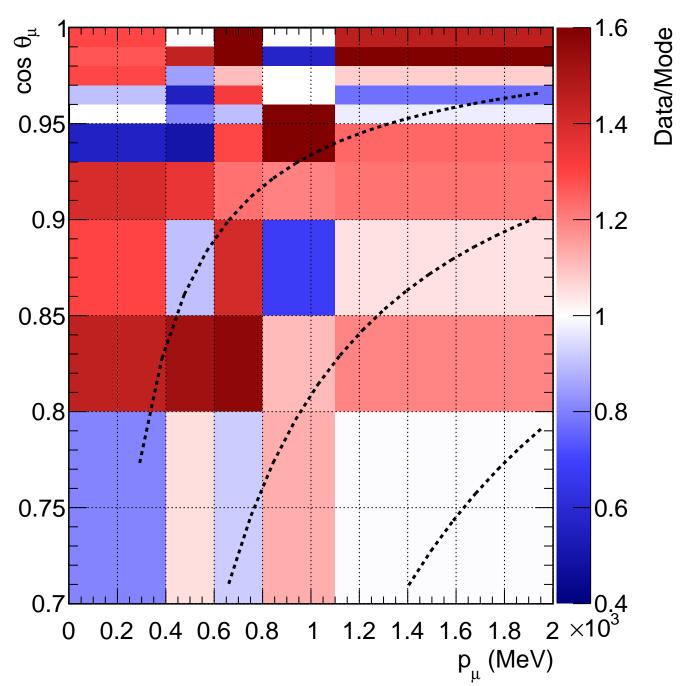




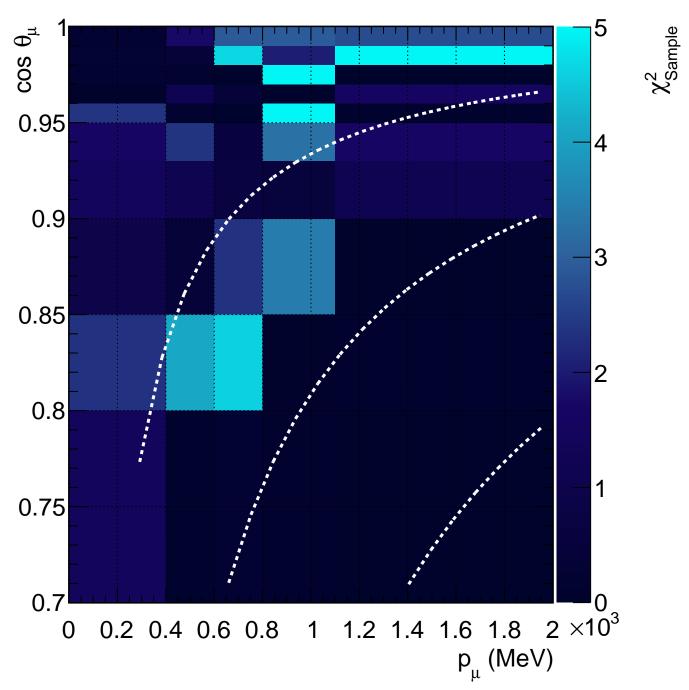
FGD1\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_mean\_ratio



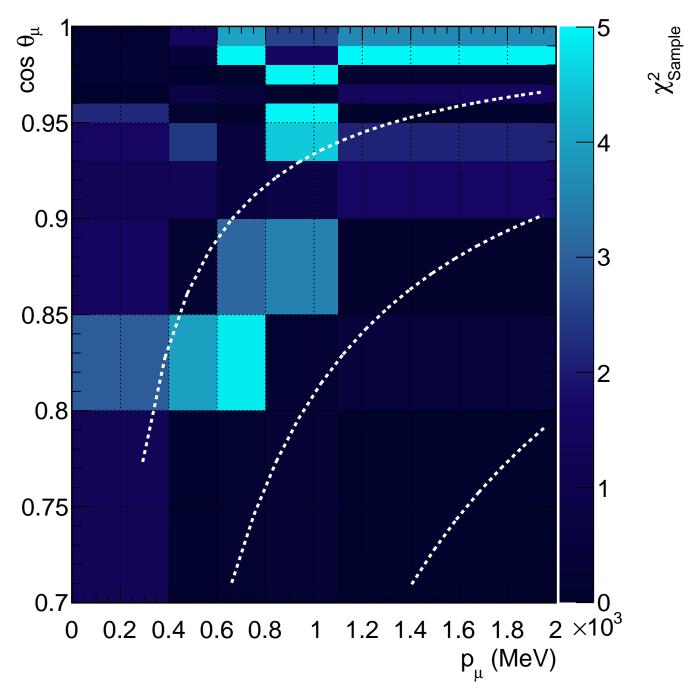
 ${\bf FGD1\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_mode\_ratio}$ 

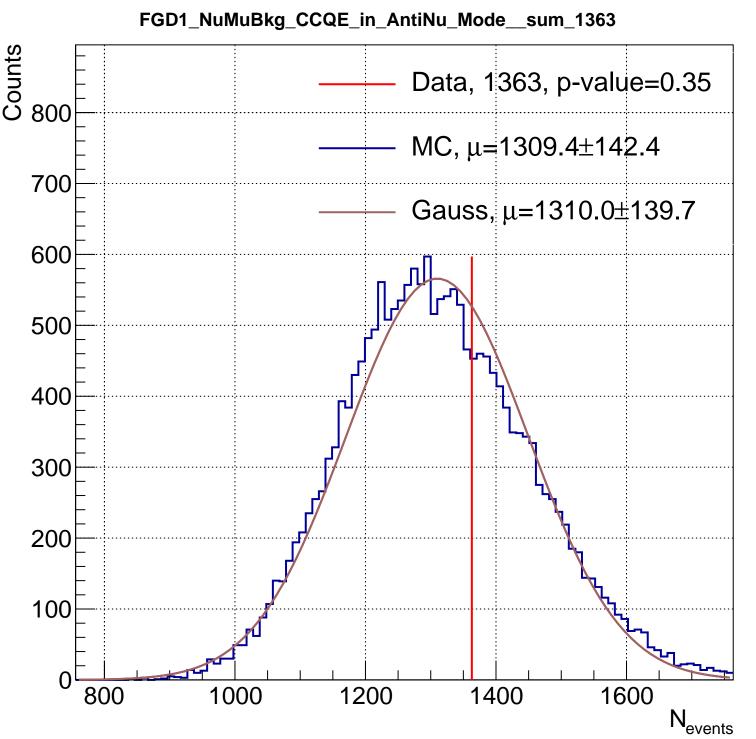


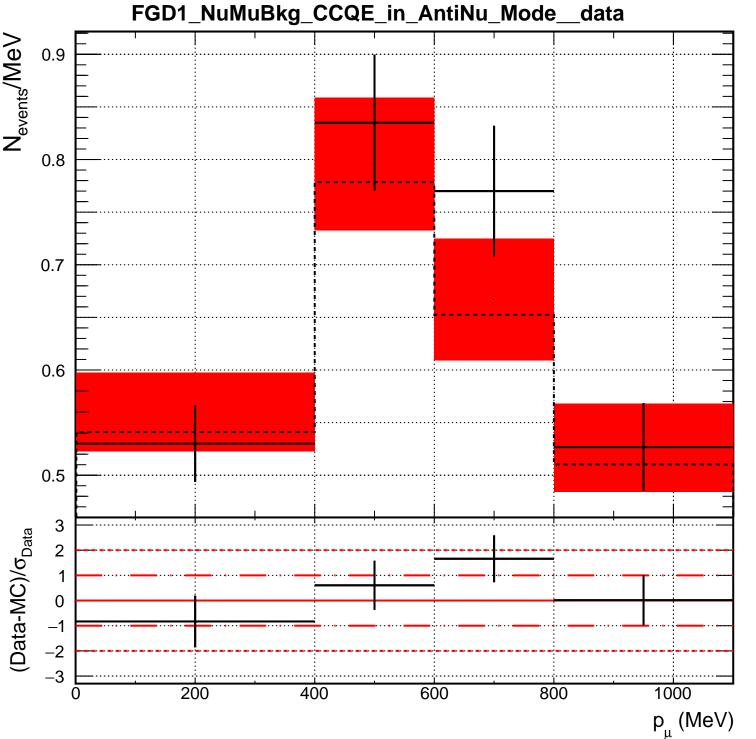
FGD1\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_MeanInL

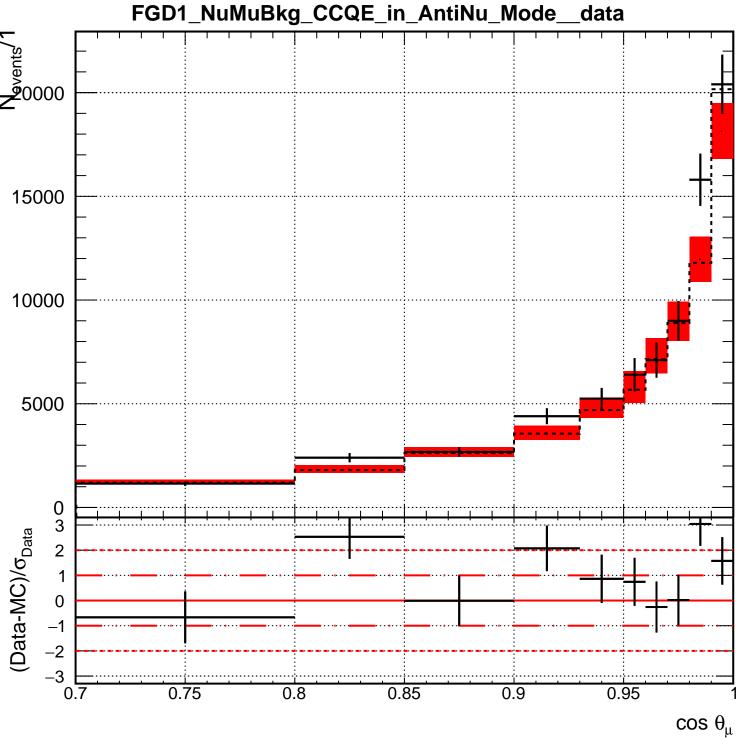


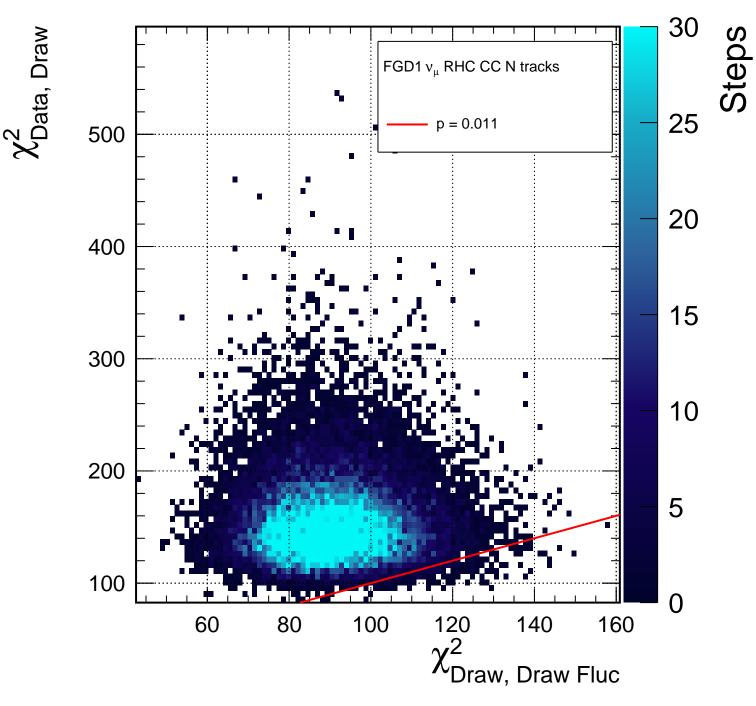
 ${\bf FGD1\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_ModelnL}$ 

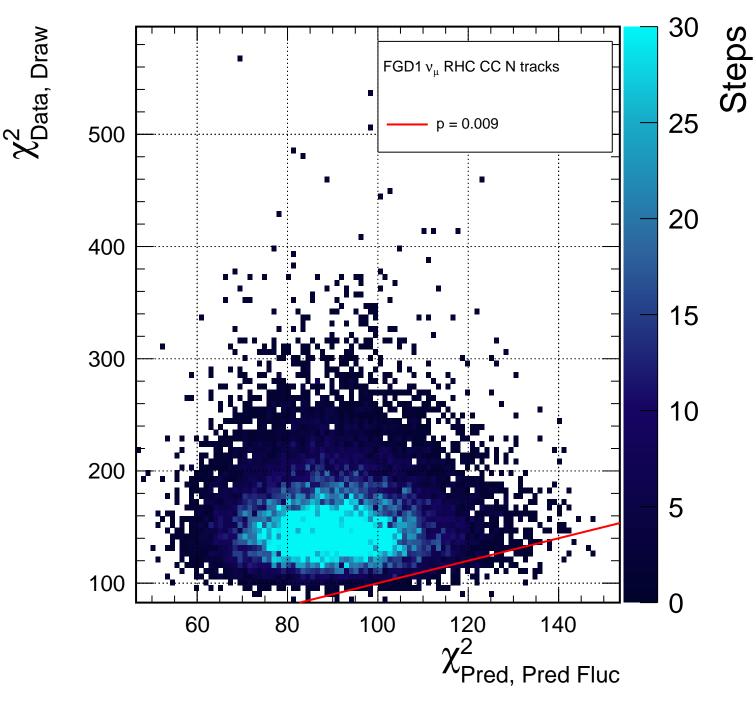




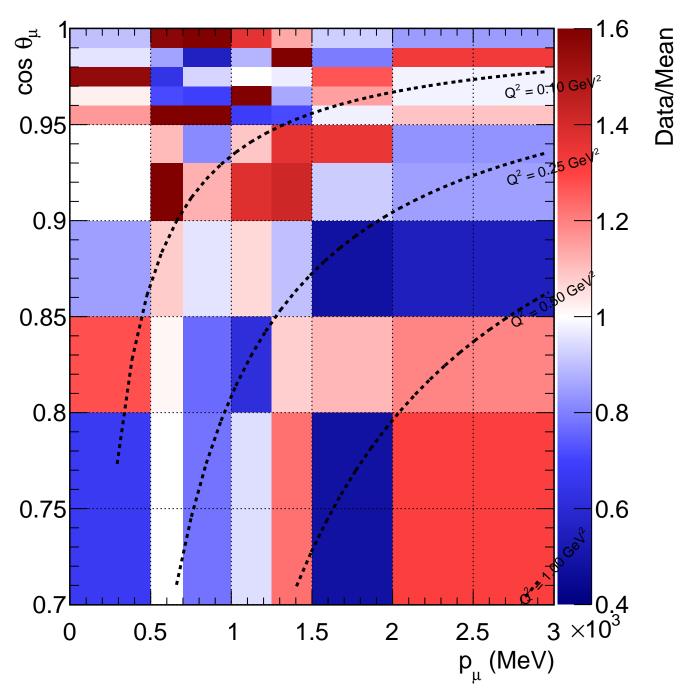




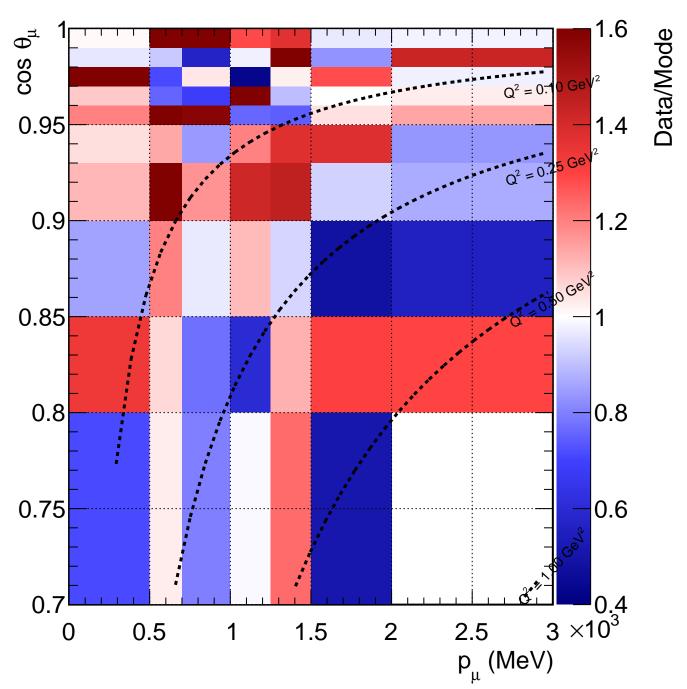




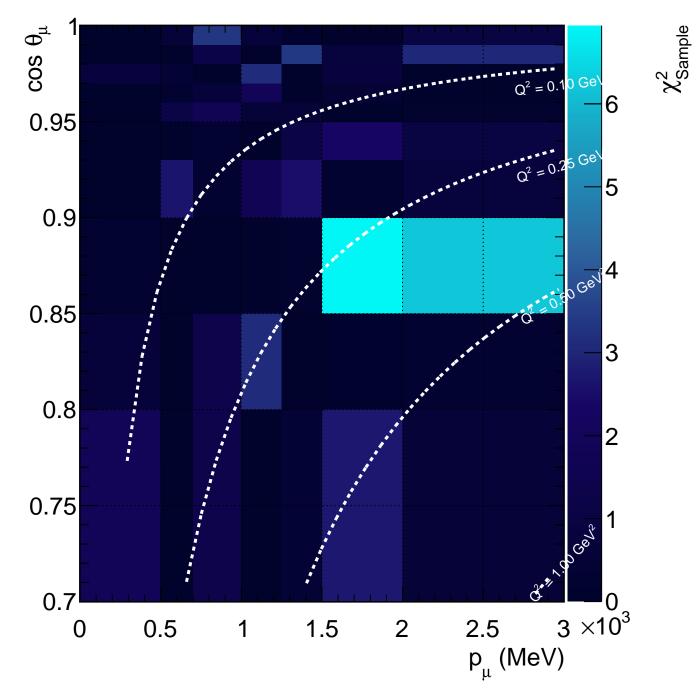
FGD1\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_mean\_ratio



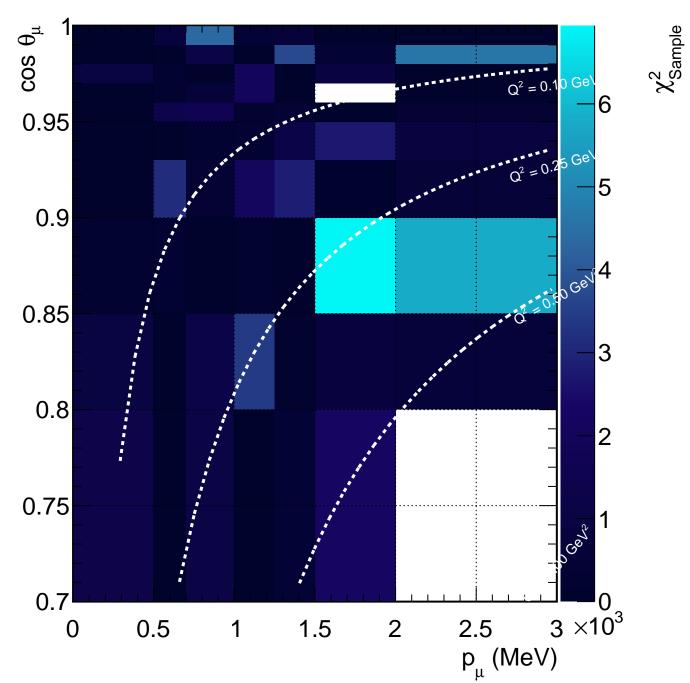
FGD1\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_mode\_ratio



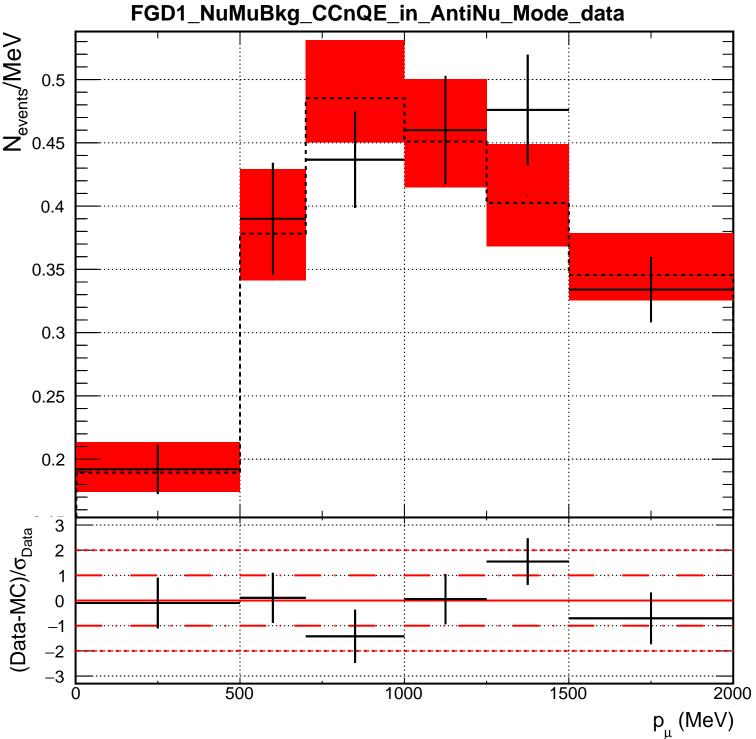
FGD1\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_MeanInL

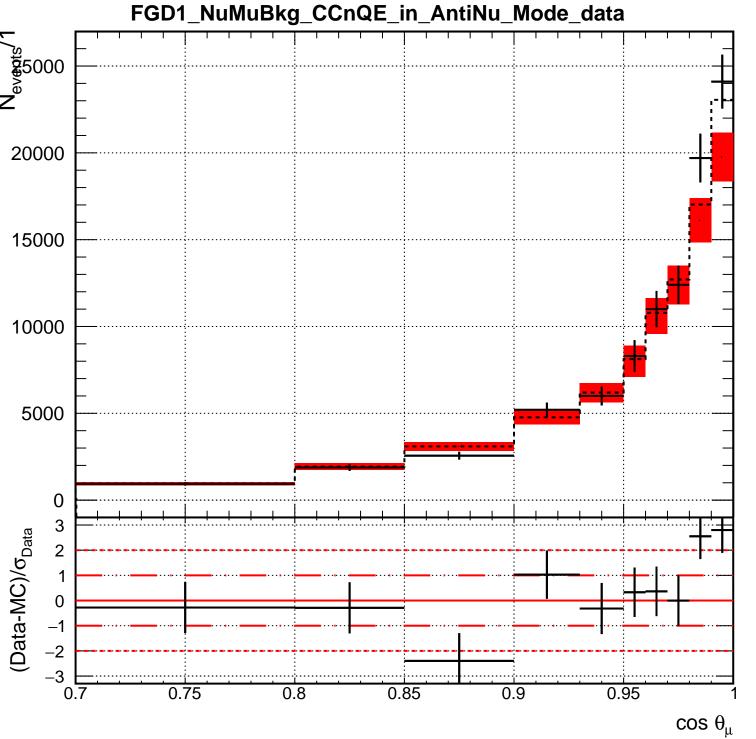


 ${\bf FGD1\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_ModeInL}$ 

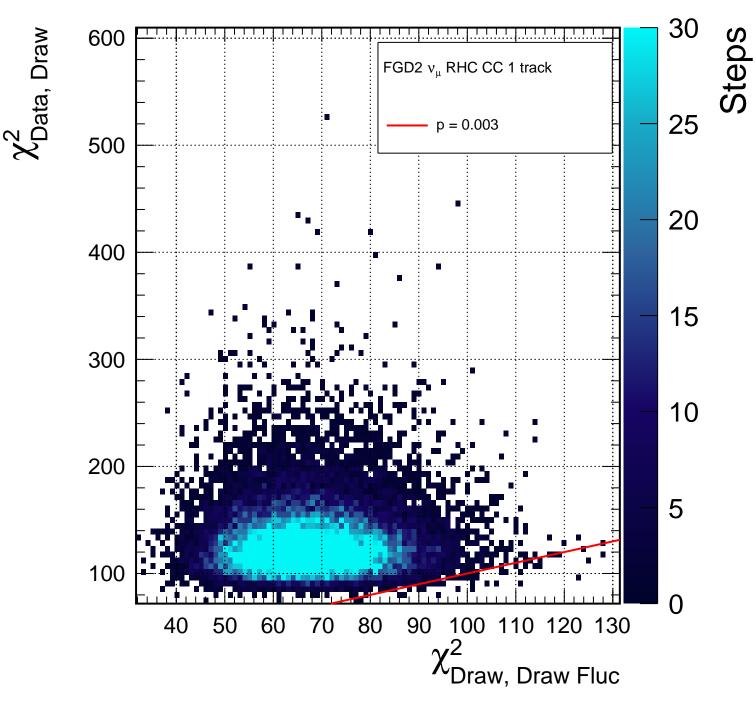


FGD1\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_sum\_1370 Counts Data, 1370, p-value=0.50 MC,  $\mu$ =1376.8 $\pm$ 153.9 Gauss,  $\mu$ =1377.1±151.2 levents

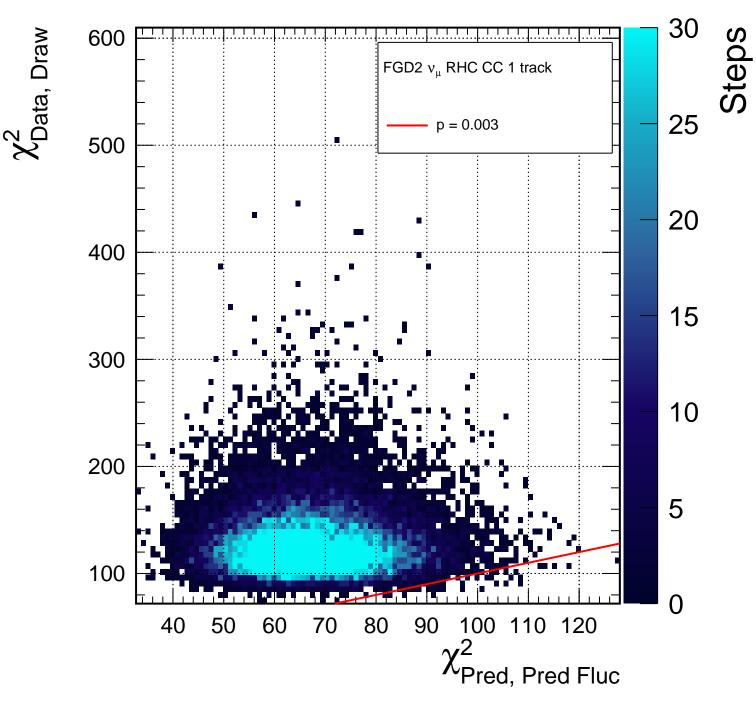




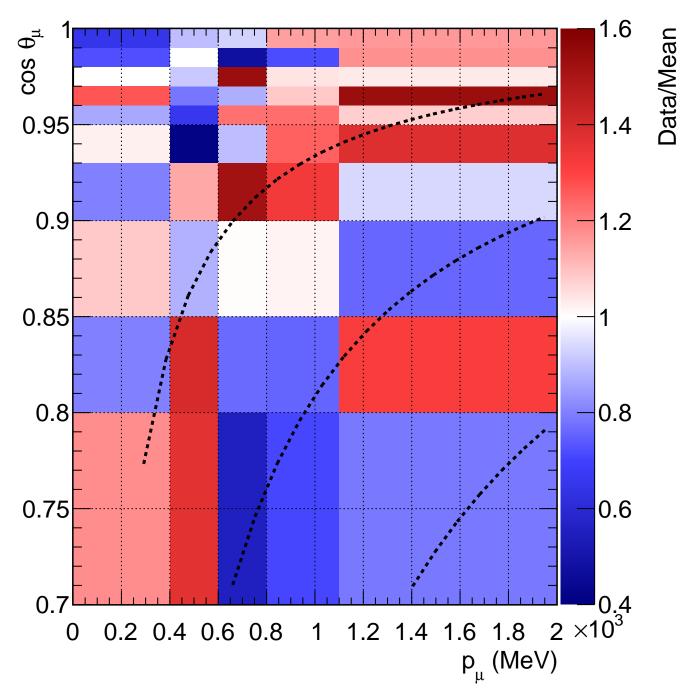
## **DataDrawFluc**



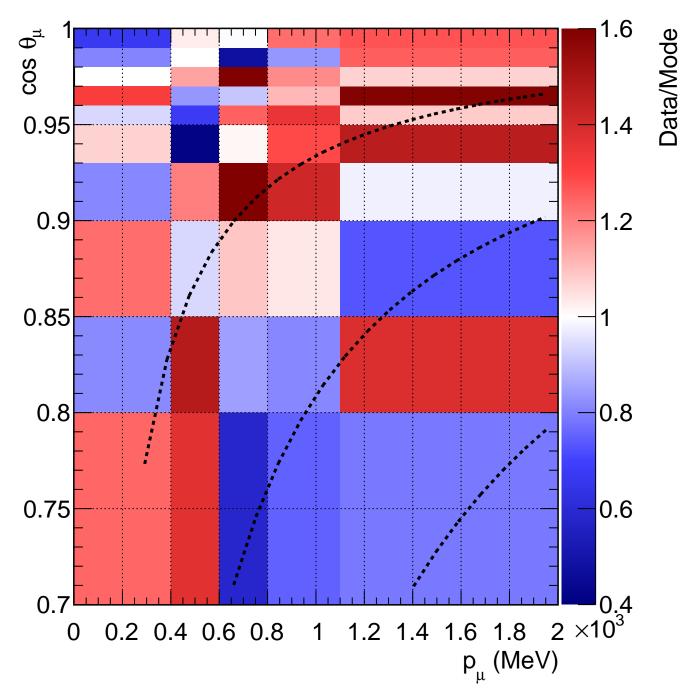
## **DataPredFluc**



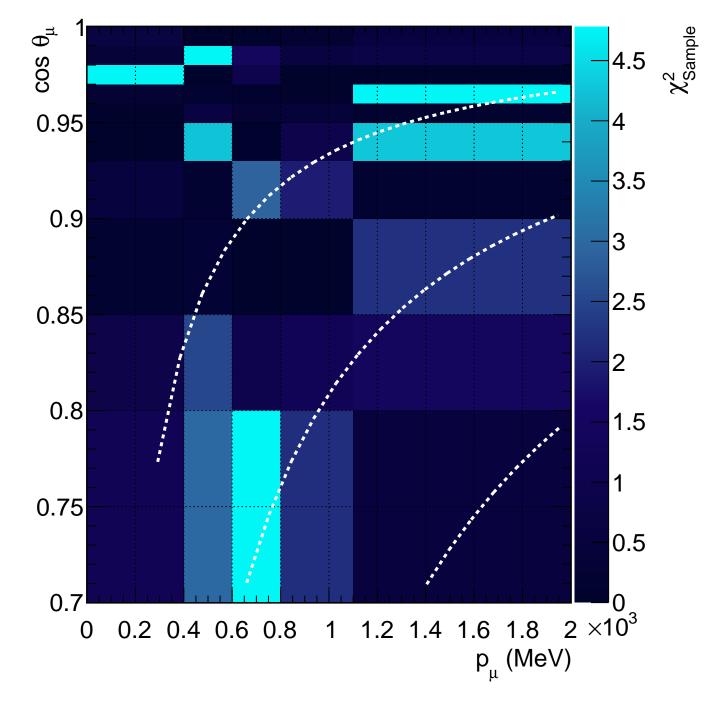
FGD2\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_mean\_ratio



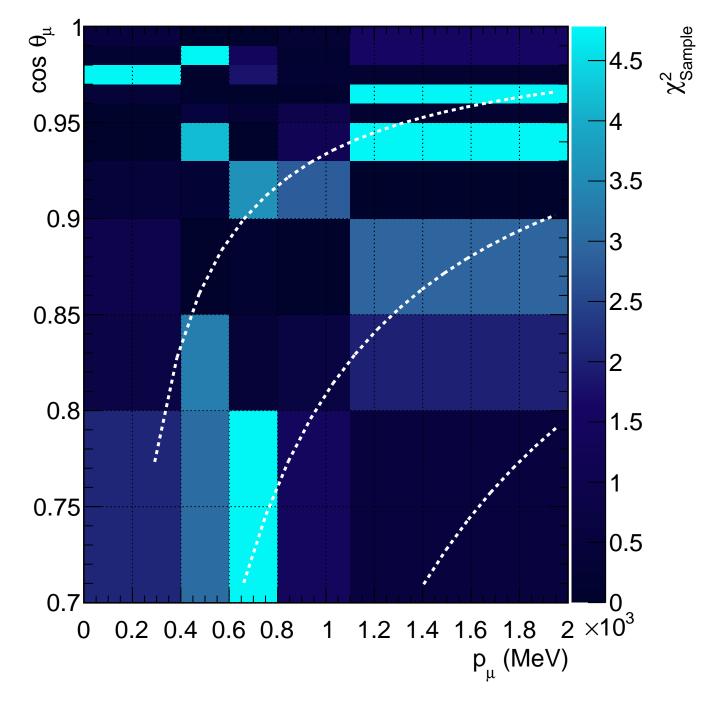
FGD2\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_mode\_ratio

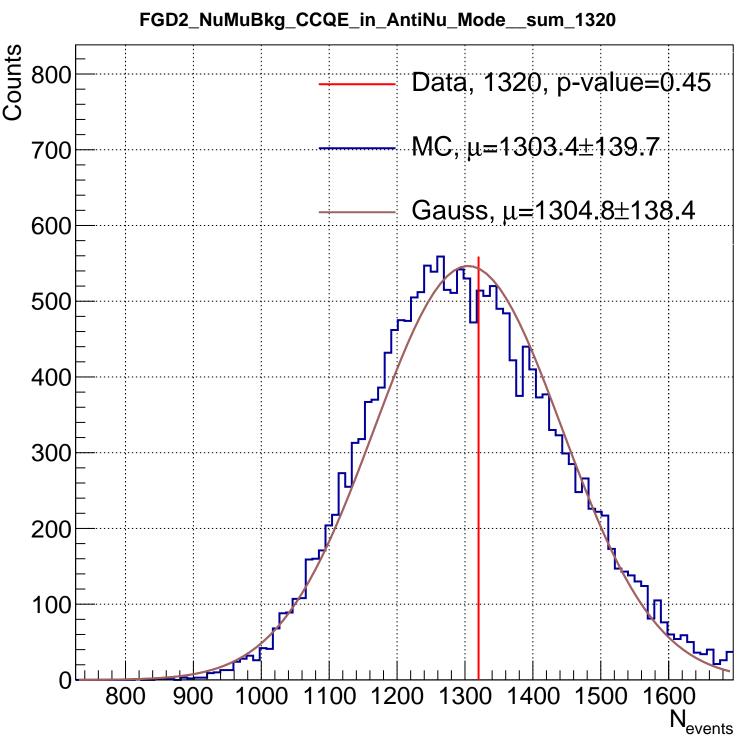


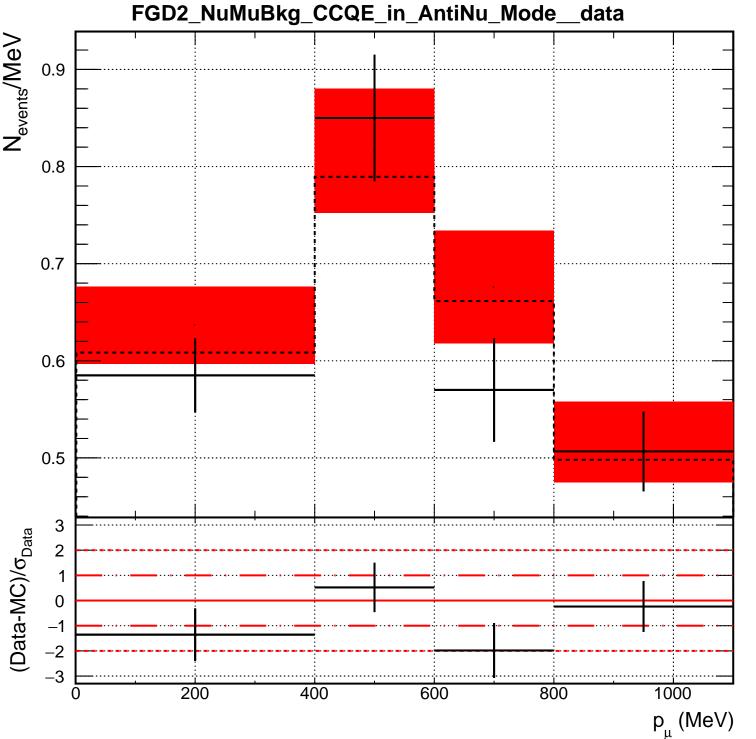
 ${\bf FGD2\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_MeanInL}$ 

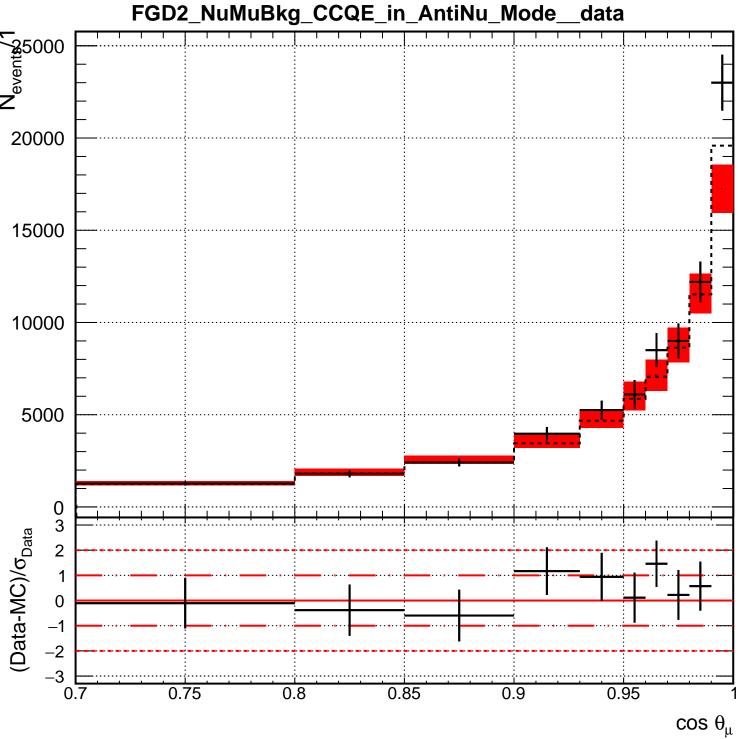


 $FGD2\_NuMuBkg\_CCQE\_in\_AntiNu\_Mode\_\_ModelnL$ 

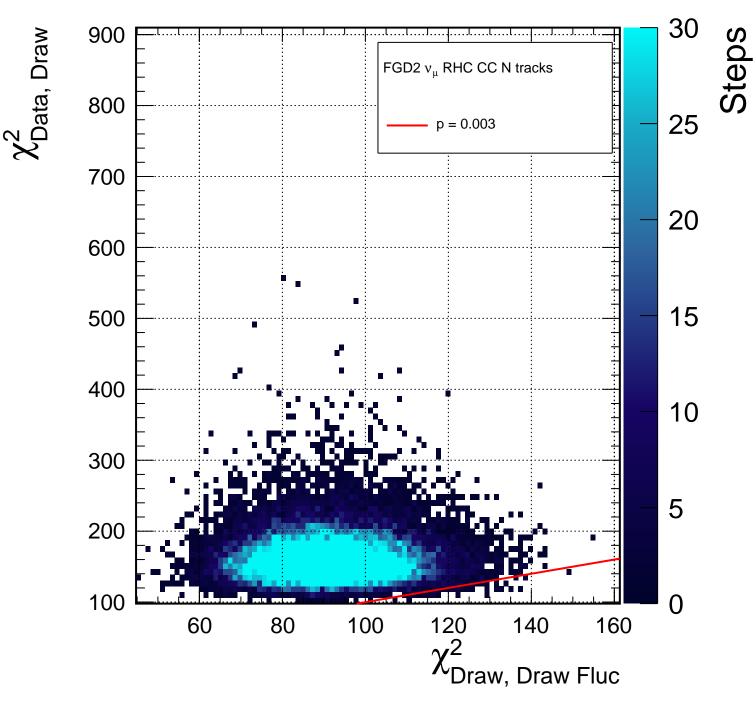




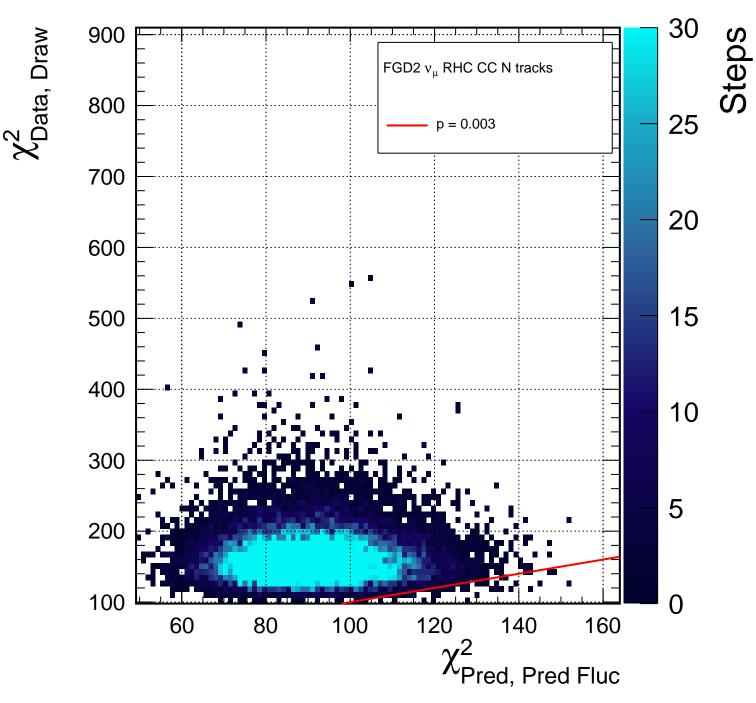




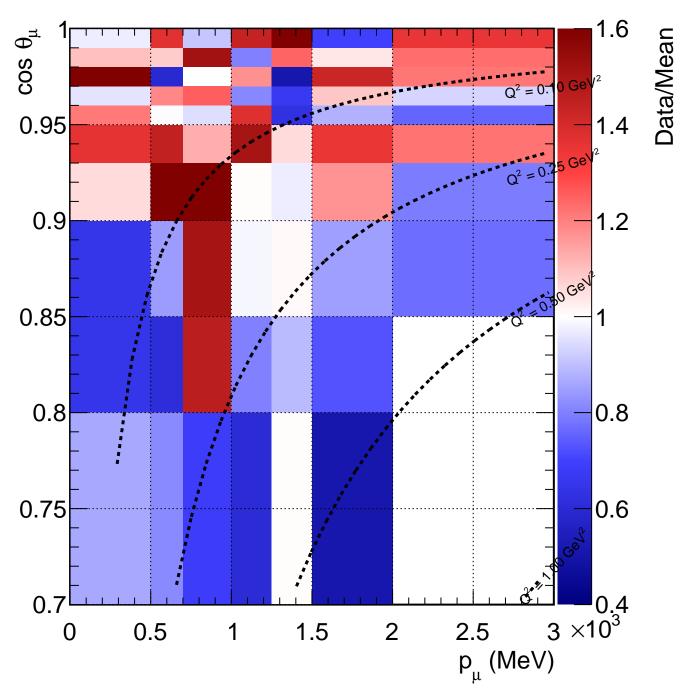
## **DataDrawFluc**



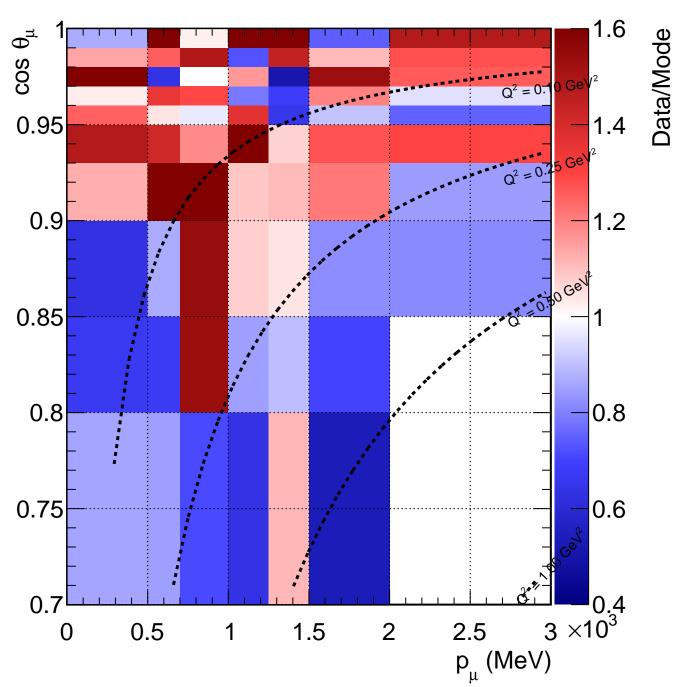
## **DataPredFluc**



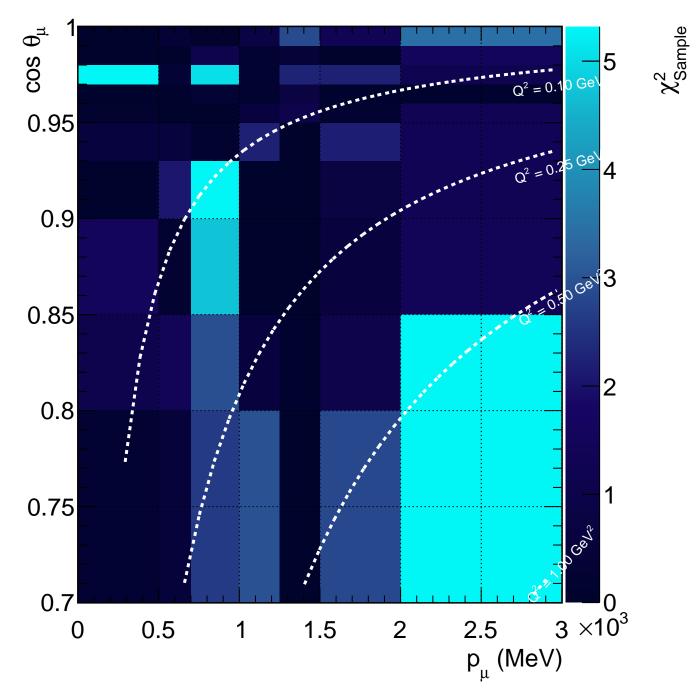
FGD2\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_mean\_ratio



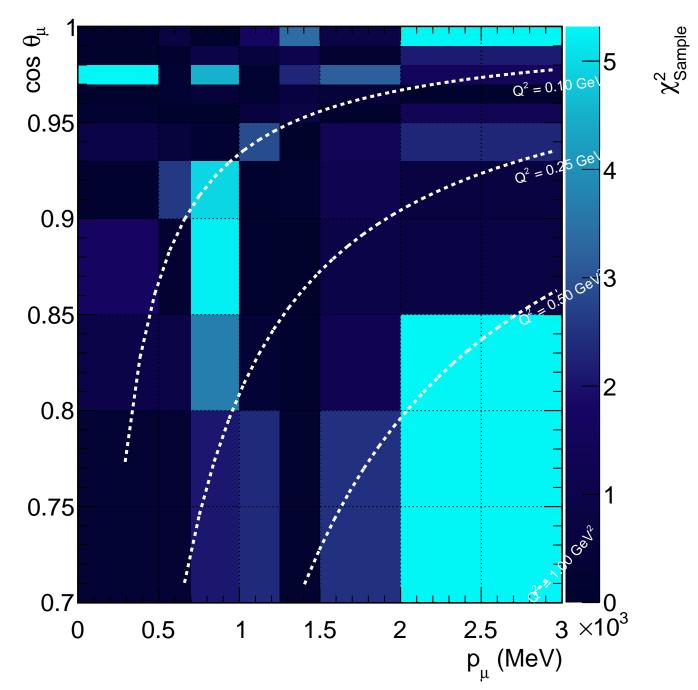
FGD2\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_mode\_ratio



 $FGD2\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_MeanInL$ 



 $FGD2\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_ModelnL$ 



FGD2\_NuMuBkg\_CCnQE\_in\_AntiNu\_Mode\_sum\_1253 Data, 1253, p-value=0.52 MC,  $\mu$ =1263.1±139.7 Gauss,  $\mu$ =1263.2±137.9 <sup>l</sup>events

