

Tritium weekly Meeting

03/14/2017

Comparison of simulation and Data for Delta scan Ar experiment data for Single foil C12

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Delta_ Scan run information for single C12:

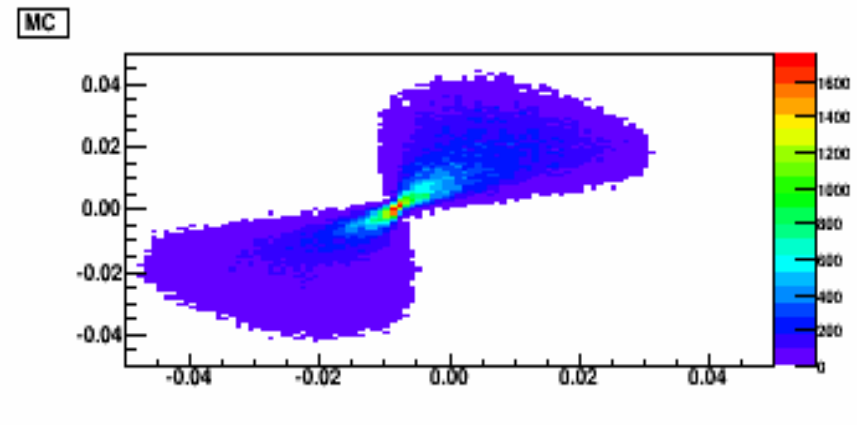
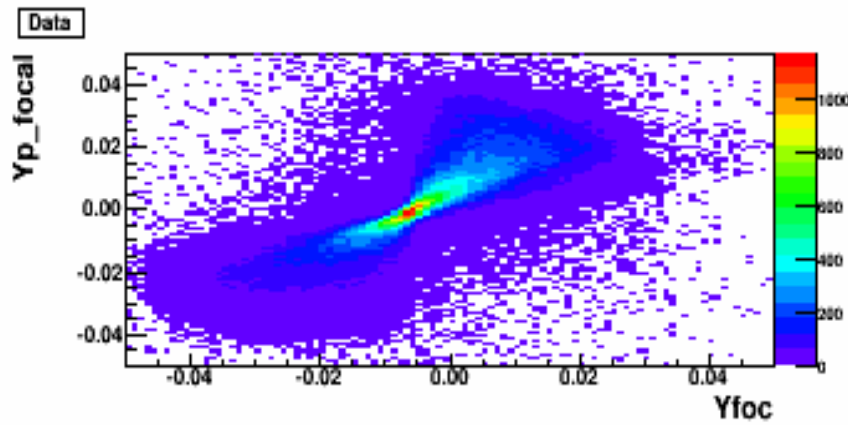
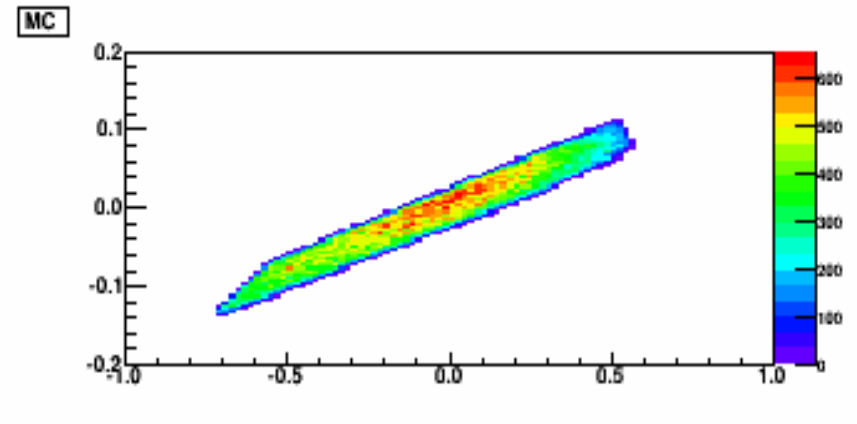
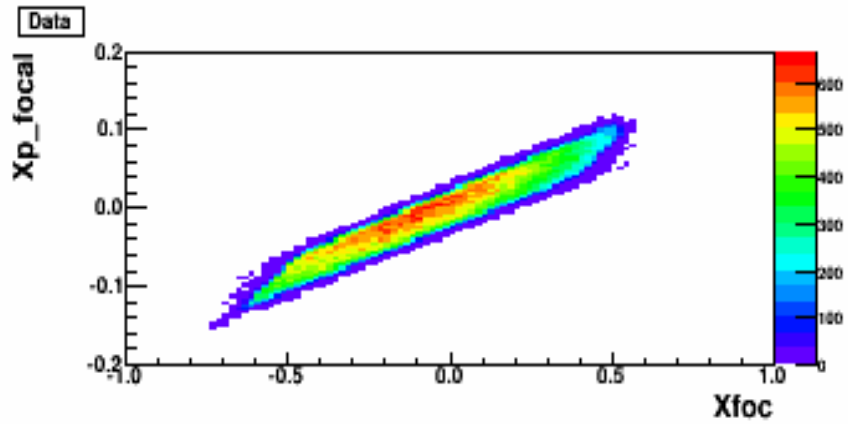
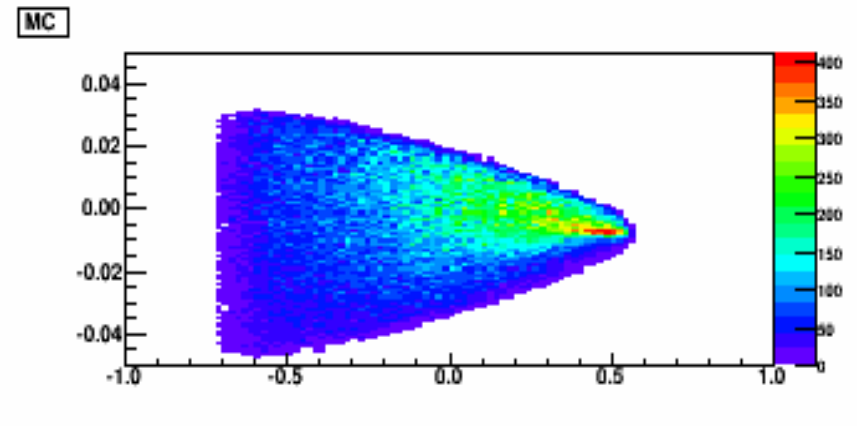
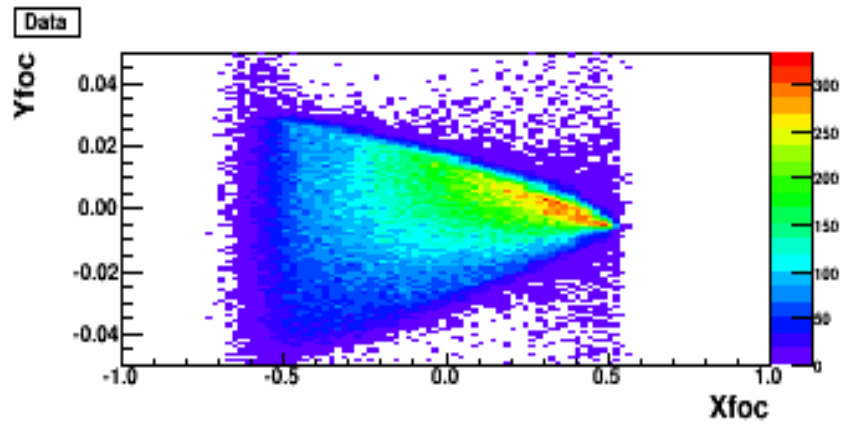
run	E	theta	target	p0
730	2.222	15.5	C	2160
731	2.222	15.5	C	2030
739	2.222	15.5	C	1909
740	2.222	15.5	C	1794
747	2.222	15.5	C	1686
748	2.222	15.5	C	1585
755	2.222	15.5	C	1490
756	2.222	15.5	C	1401
763	2.222	15.5	C	1317

Cuts: applied on Data to compare the data and simulation.

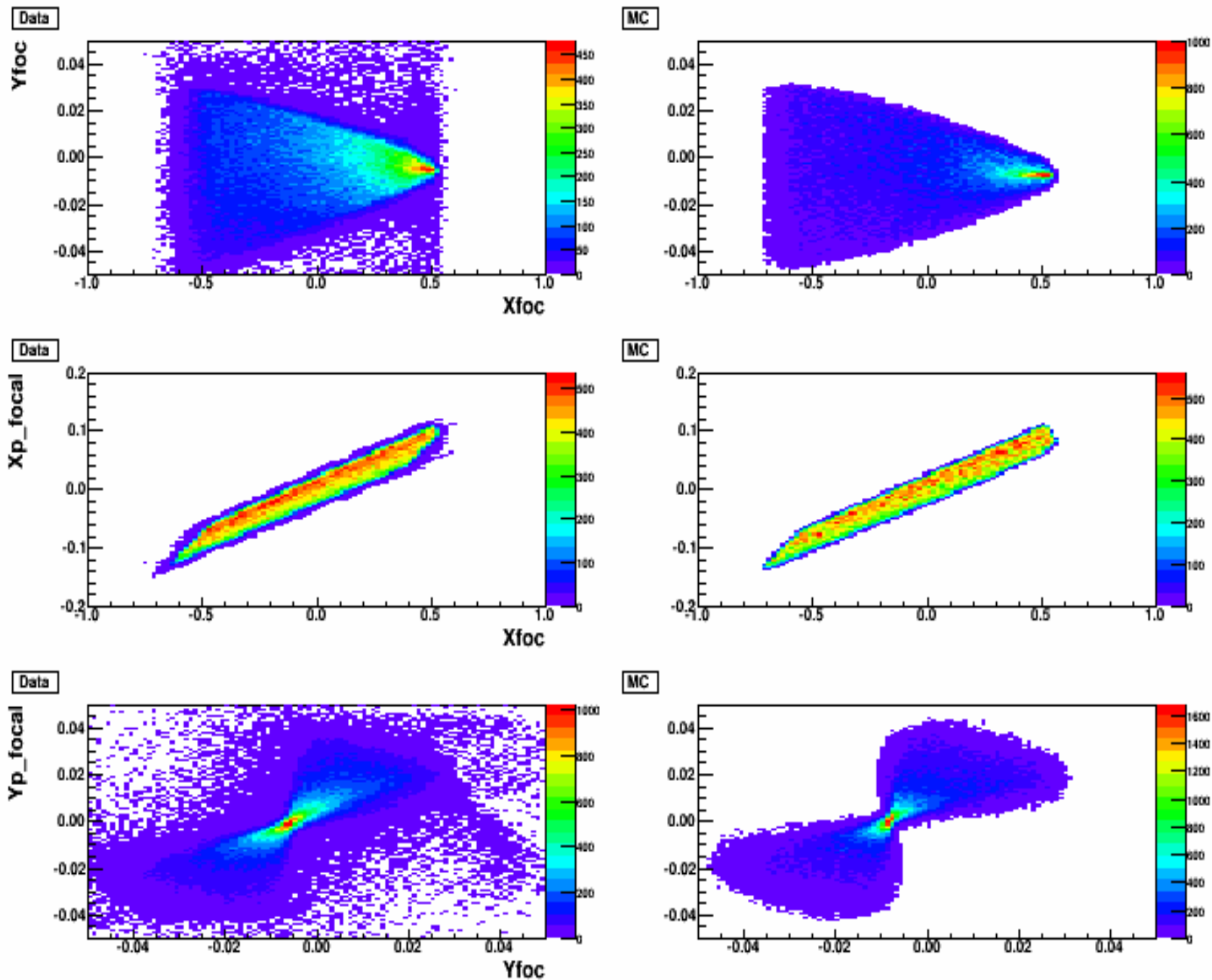
1. Tracking =1
2. PID cuts: $cer > 600$, $(ps+sh)/p > 0.8$
3. Acceptance cuts:
 - Dp : +/- 4%
 - Th_{tg} : +/- 80 mrad
 - Ph_{tg} : +/- 50 mrad
4. Trigger cuts: Trigger 3 for single arm Left

Focal plan comparison:

Run 731

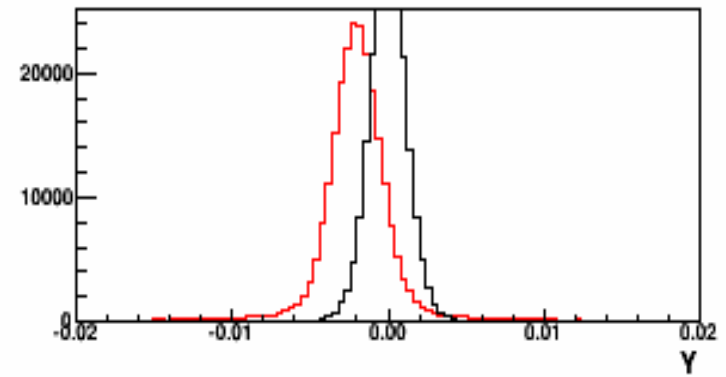
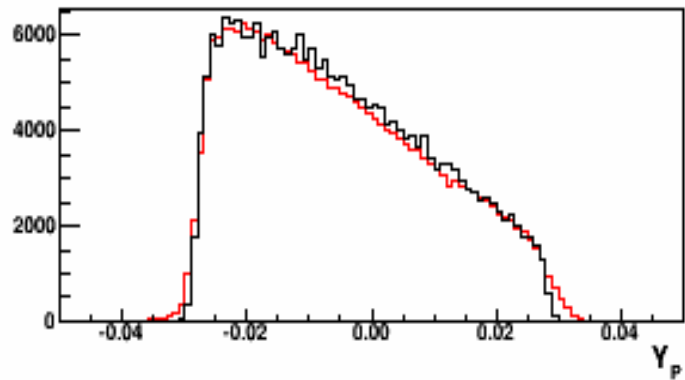
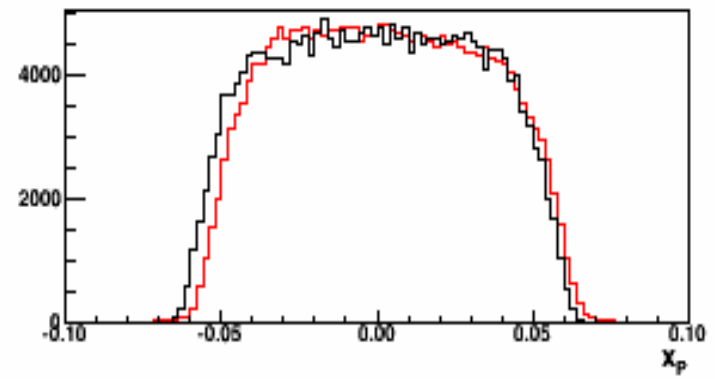
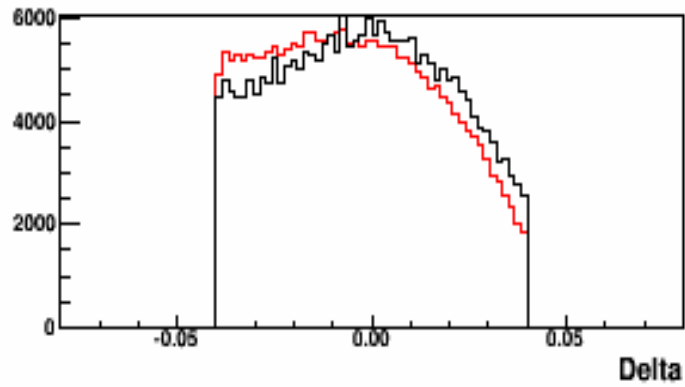


Run 763



Target variable comparison:

Run 731



E = 2.222 GeV, $\theta = 15.5$
— Data
— MC

Data_delta = 238363.00 MC_delta=241680.87

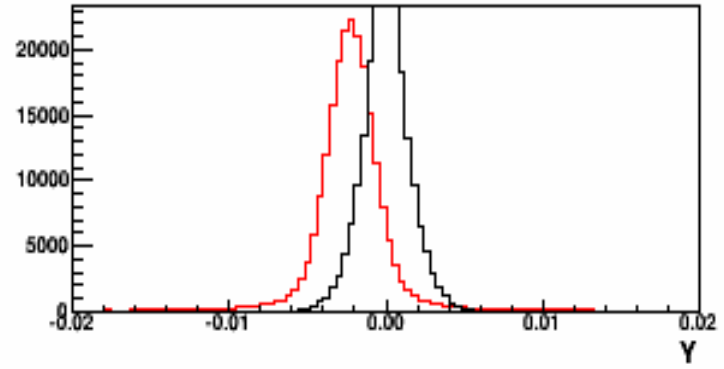
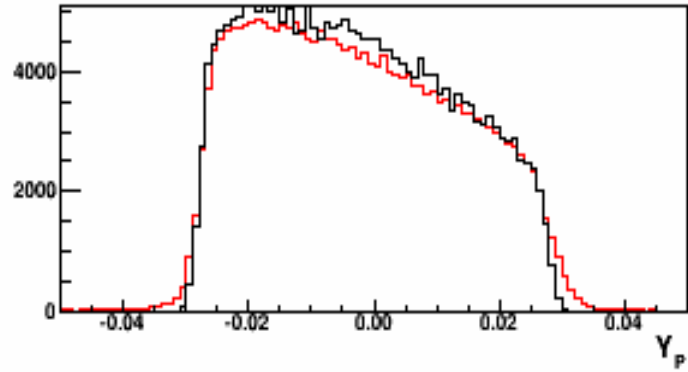
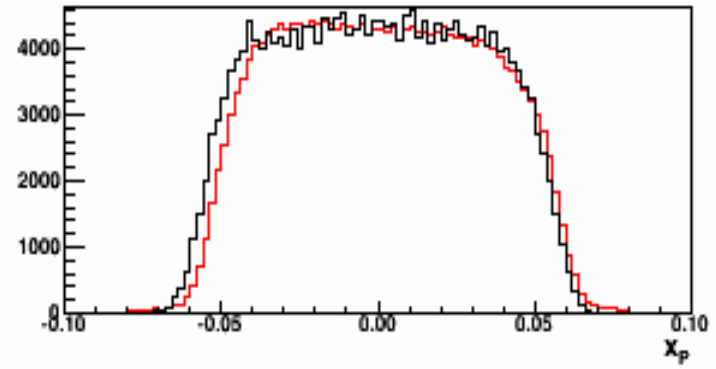
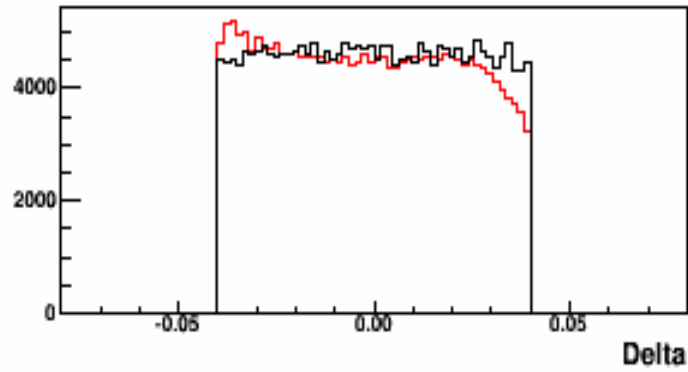
Data_xp = 238363.00 MC_xp=241680.88

Data_yp = 238363.00 MC_yp=241680.90

Data_y = 238363.00 MC_y=241680.82

Data/MC = 0.9863

Run 763

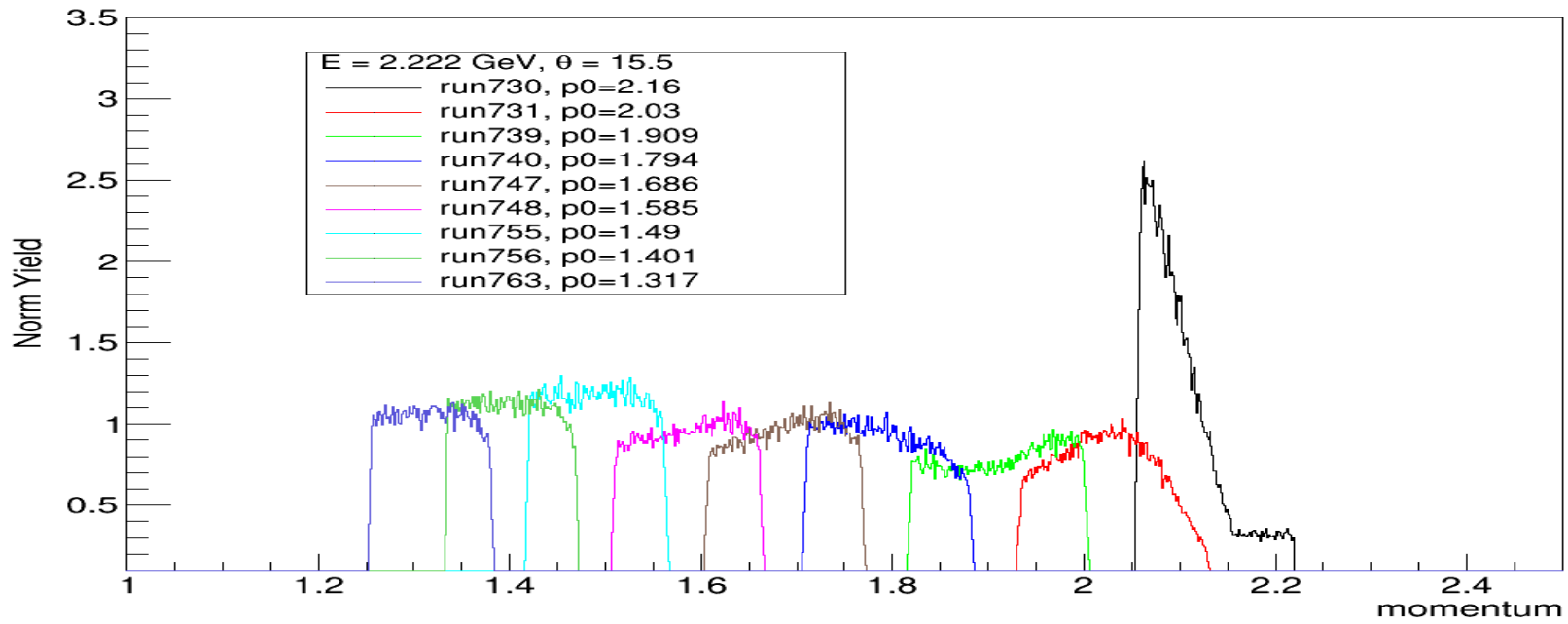


E = 2.222 GeV, $\theta = 15.5$
— Data
— MC

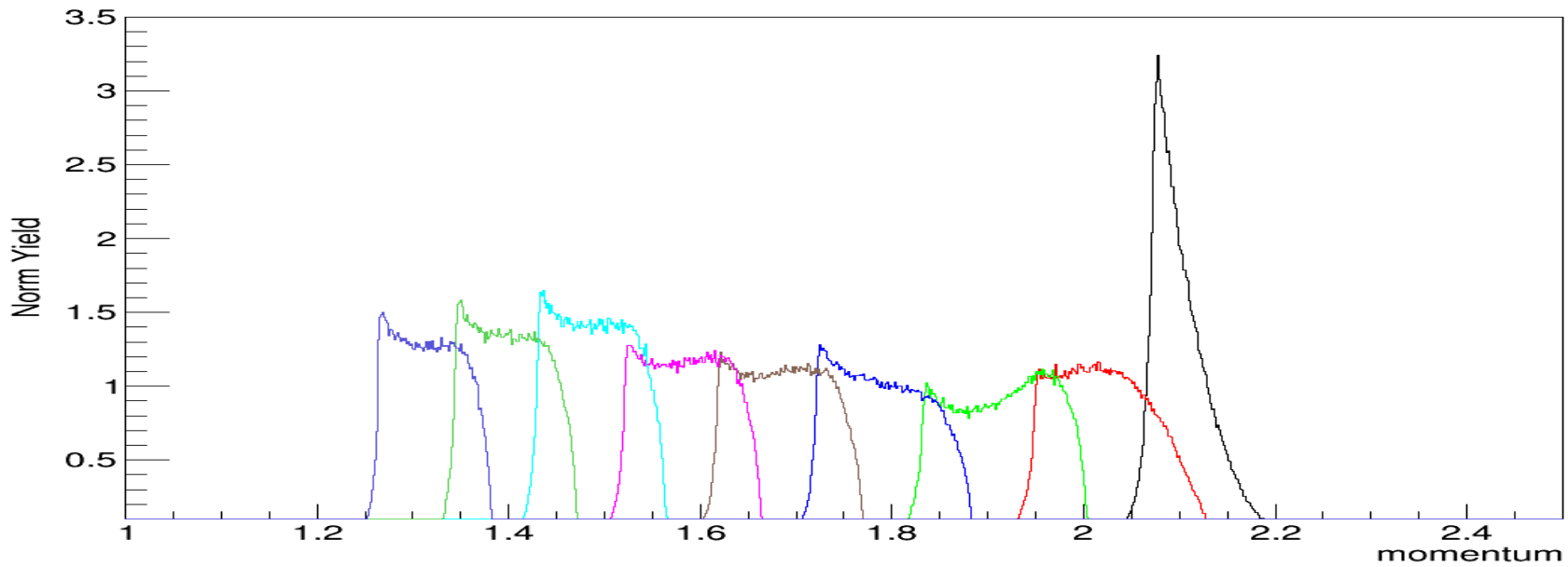
Data_delta = 224673.00 MC_delta=230488.30
Data_xp = 224673.00 MC_xp=230488.28
Data_yp = 224673.00 MC_yp=230488.30
Data_y = 220398.00 MC_y=230488.17
Data/MC = 0.9748

Plots all the runs together: Data and simulation:

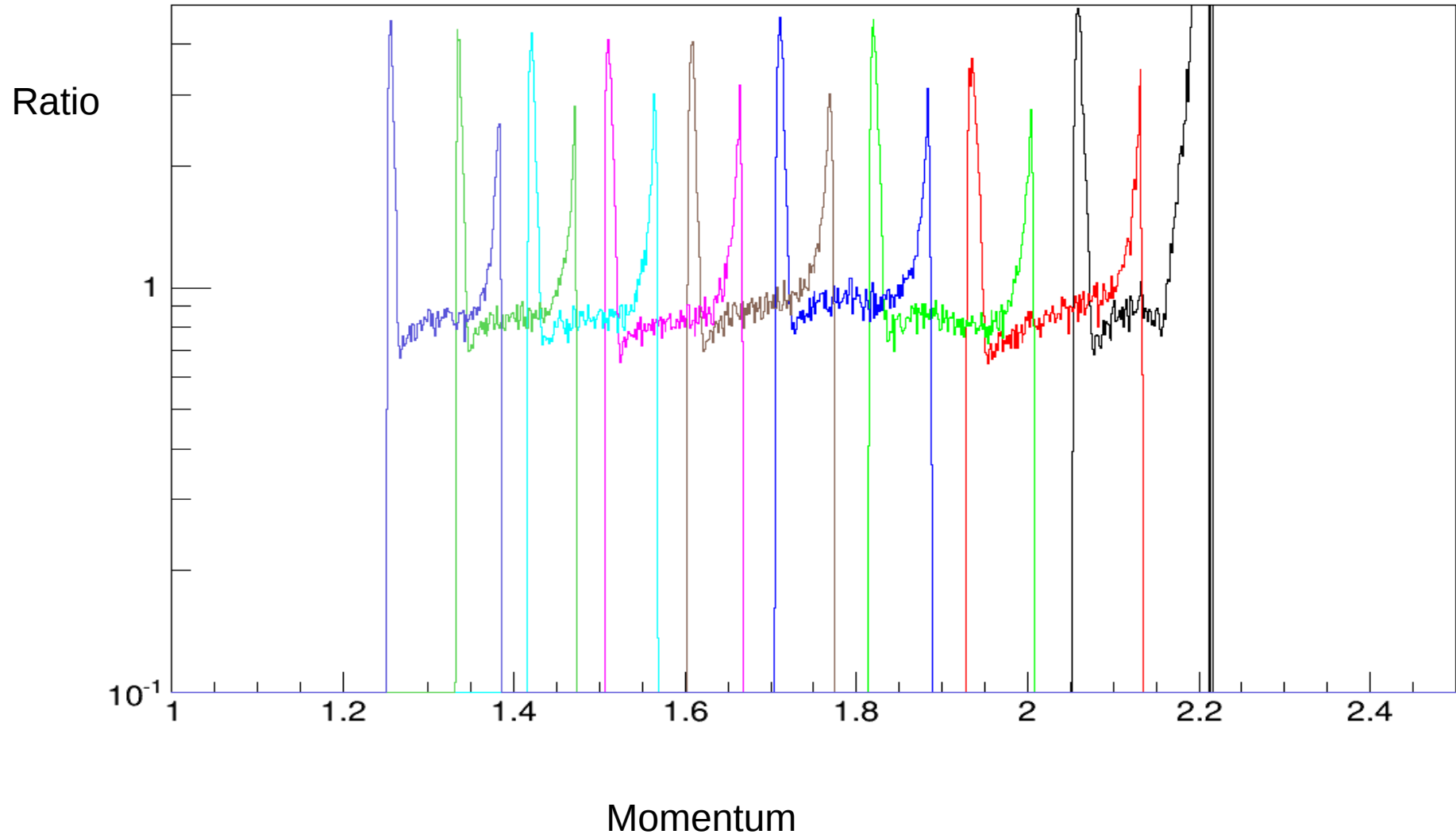
Yield vs momentum, MC



Yield vs momentum, data



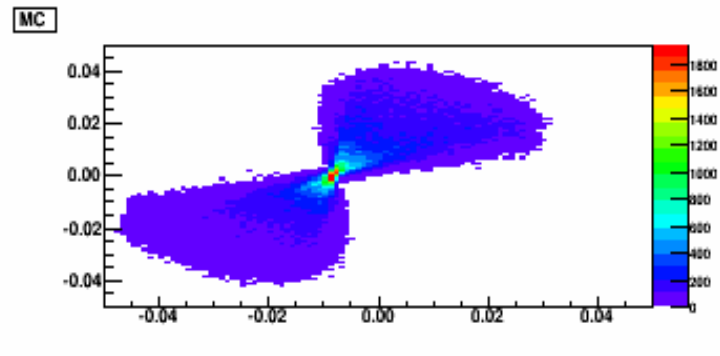
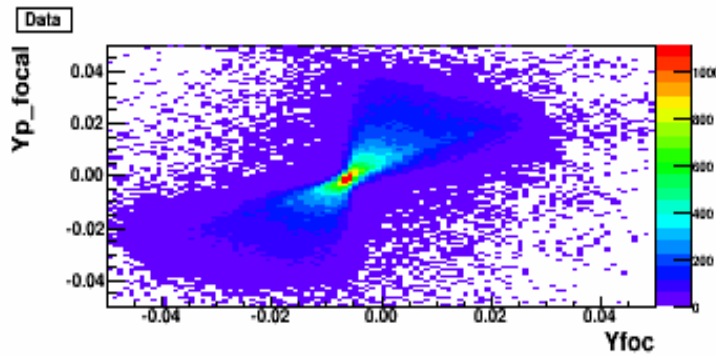
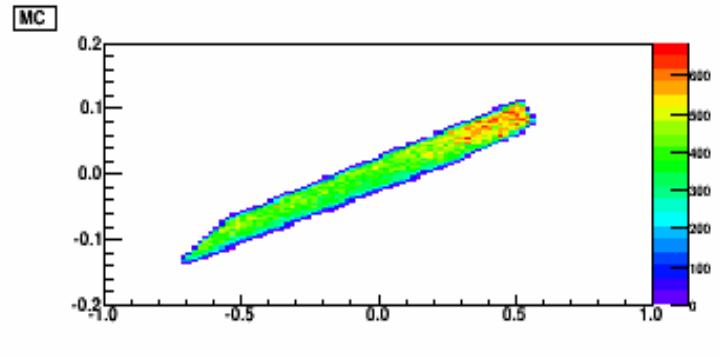
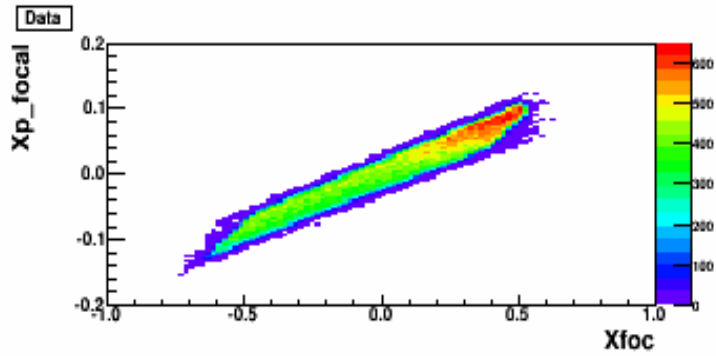
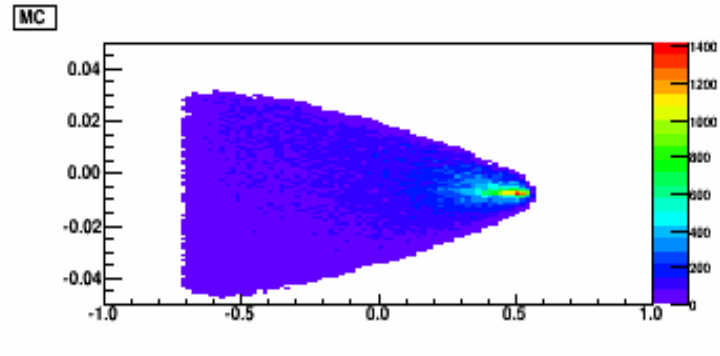
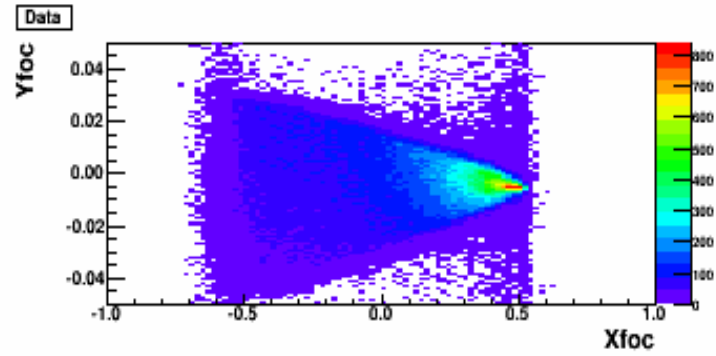
Ratio: Norm Yields MC/Data



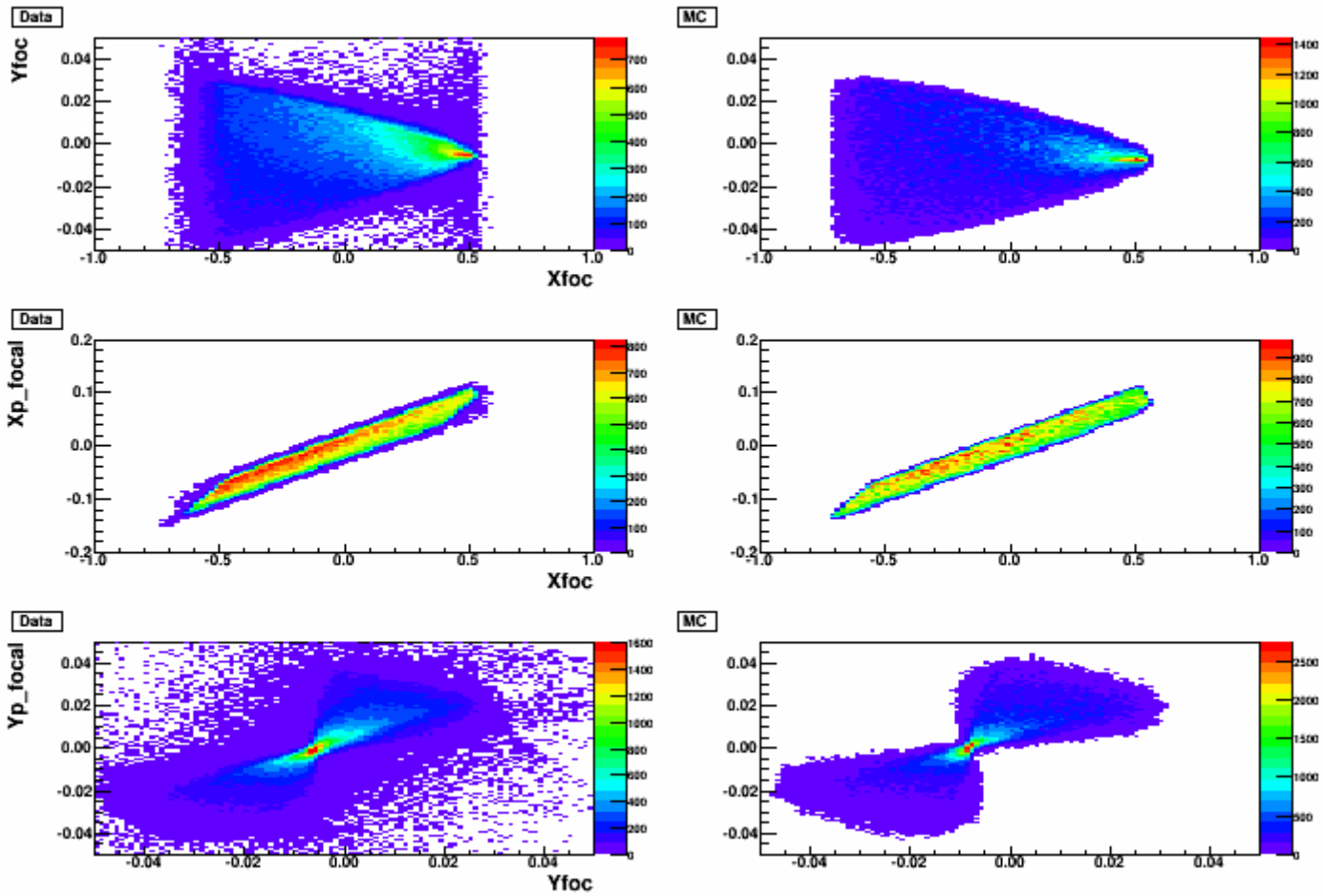
Backup slides for other runs in the list

Focal:

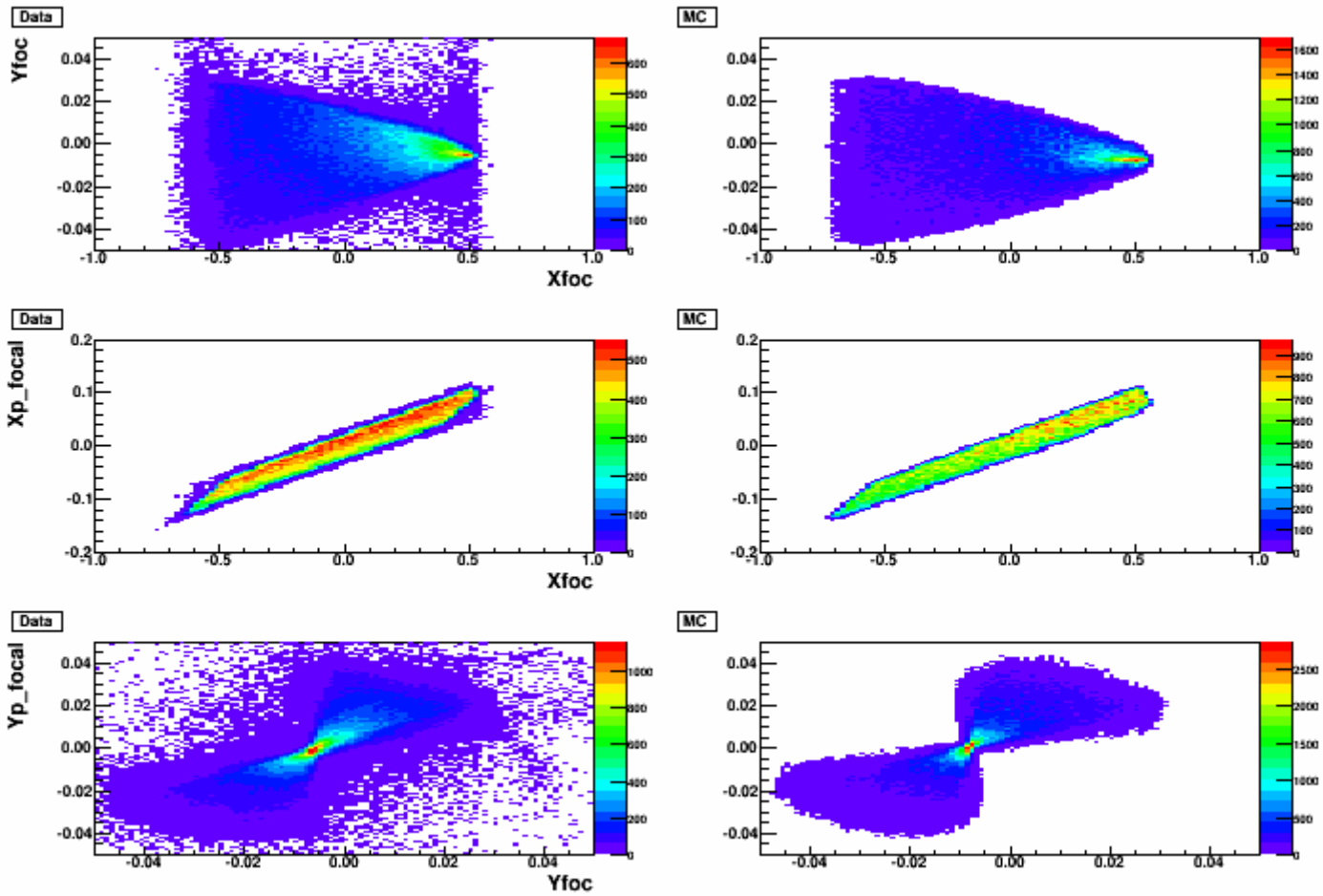
739



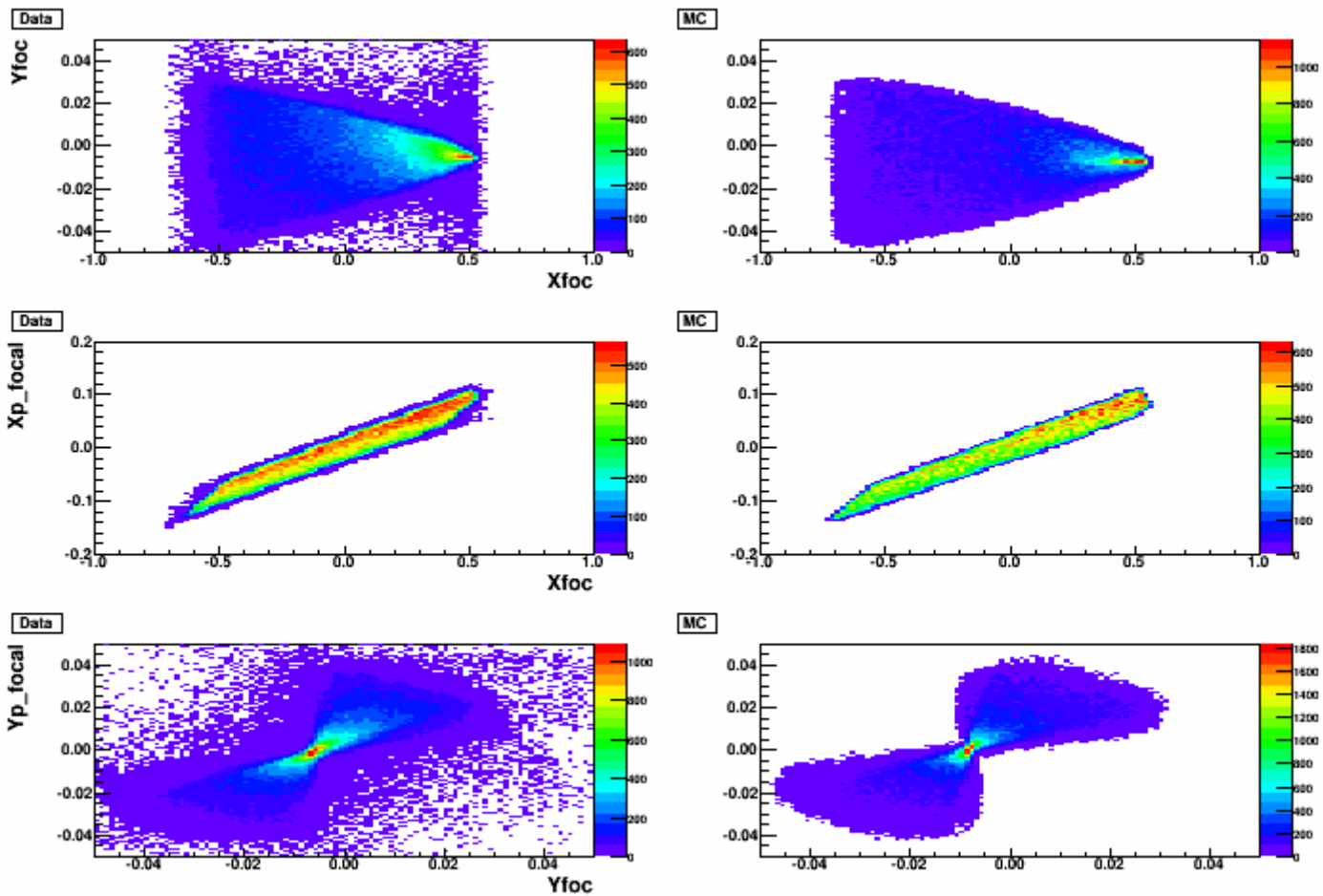
740



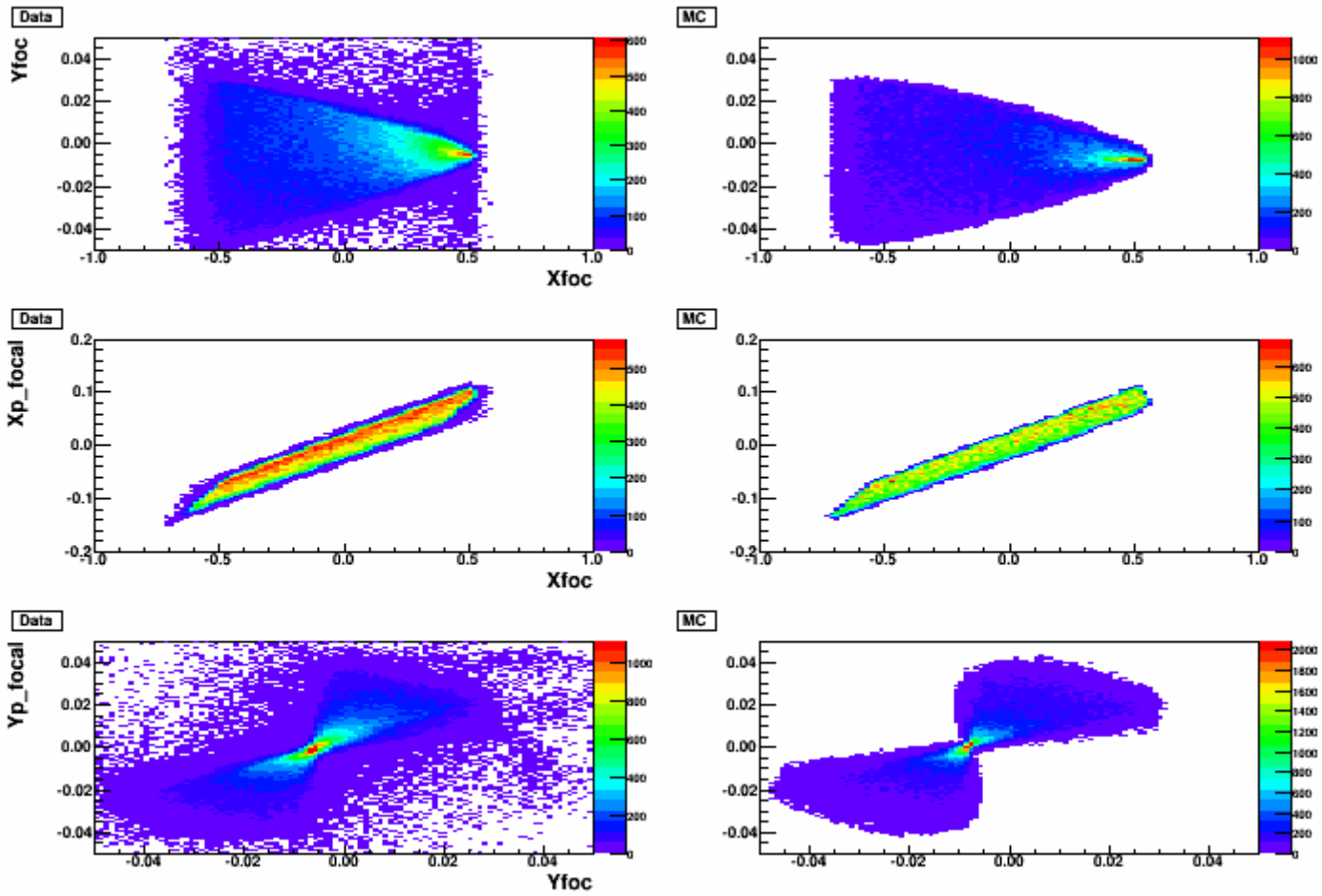
747



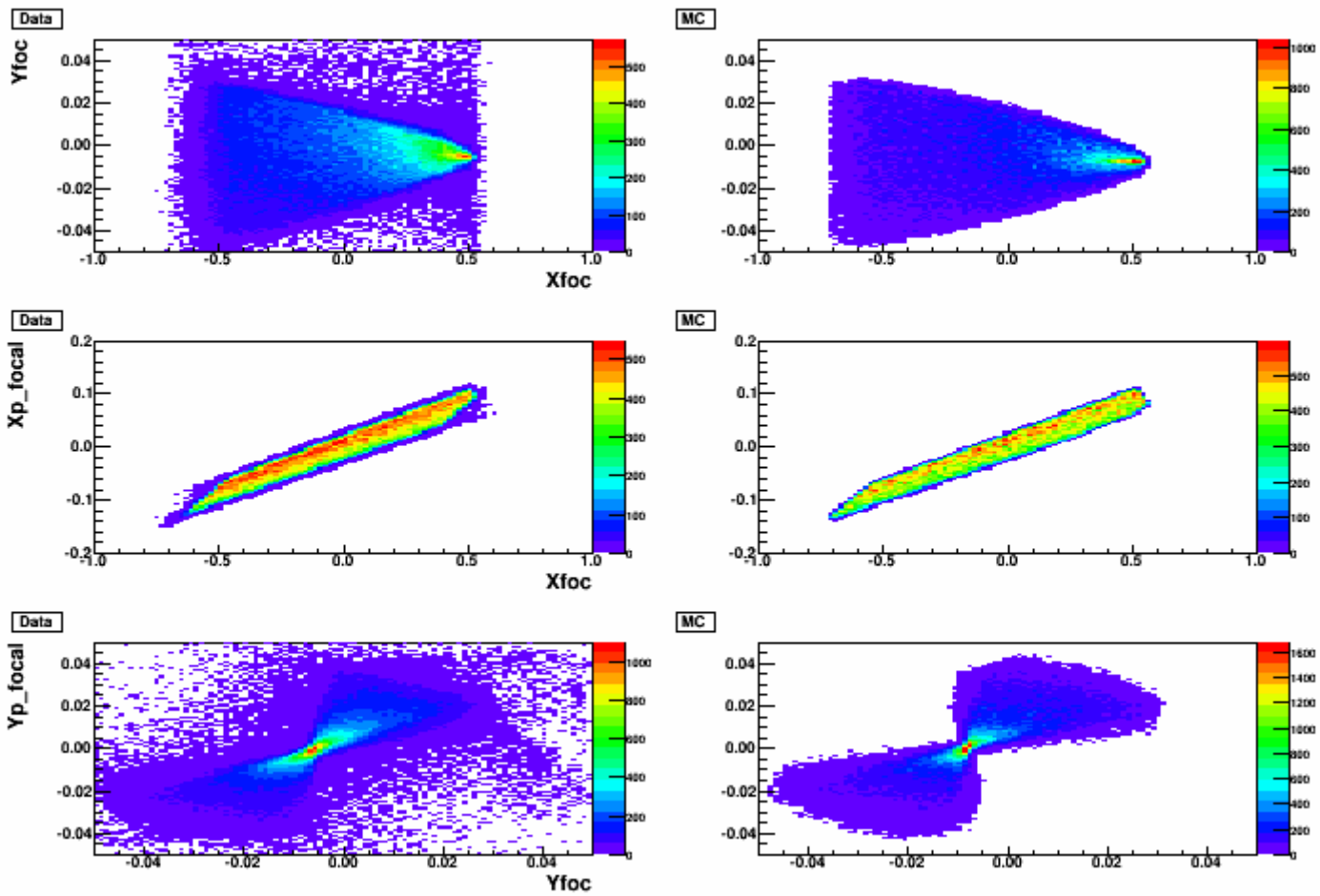
748



755

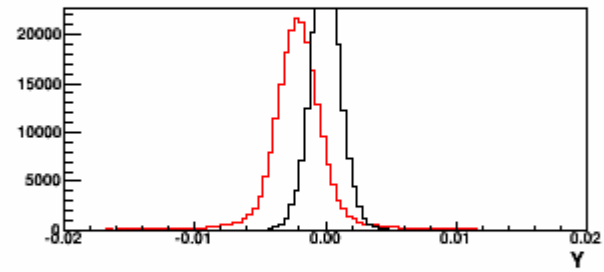
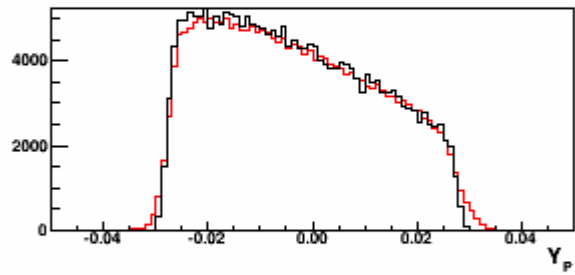
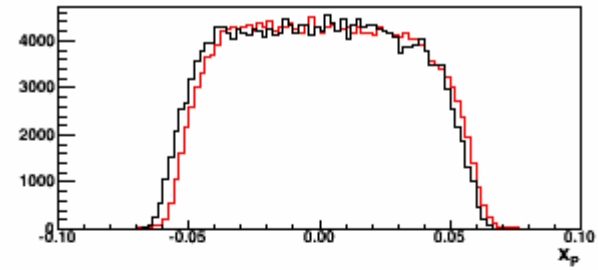
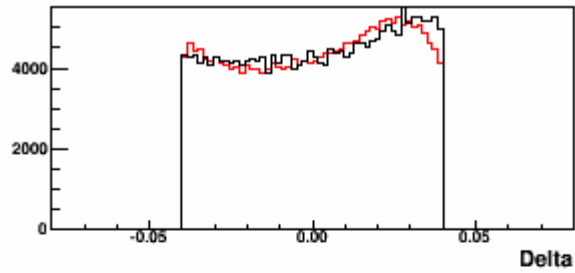


756



Target plots

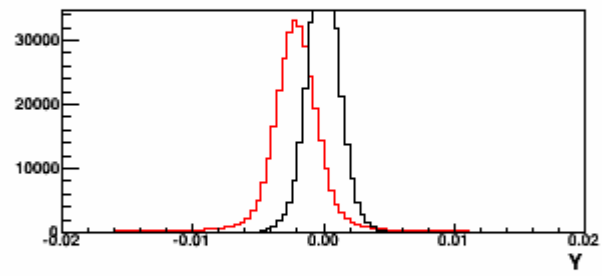
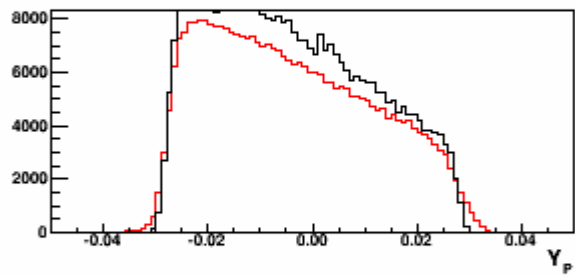
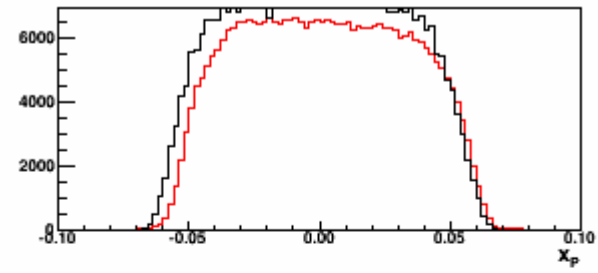
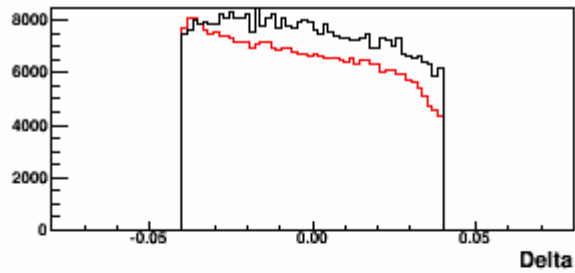
739



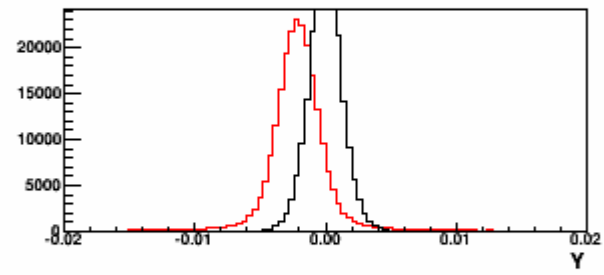
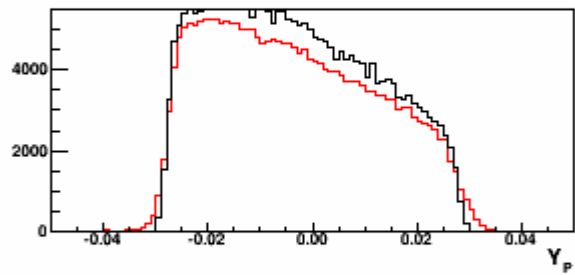
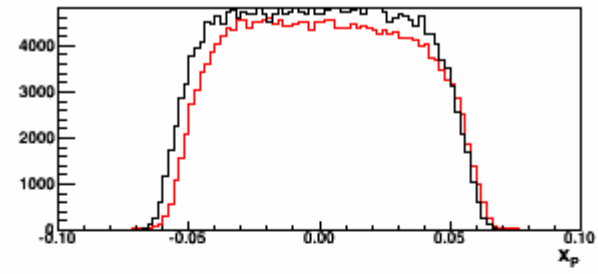
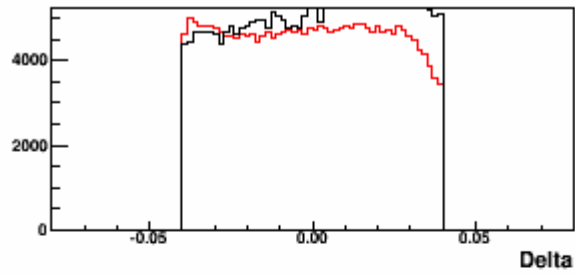
E = 2.222 GeV, $\theta = 15.5$
— Data
— MC

Data_delta = 222149.00	MC_delta=224168.84
Data_xp = 222149.00	MC_xp=224168.84
Data_yp = 222149.00	MC_yp=224168.85
Data_y = 222149.00	MC_y=224168.66

Data/MC = 0.9910

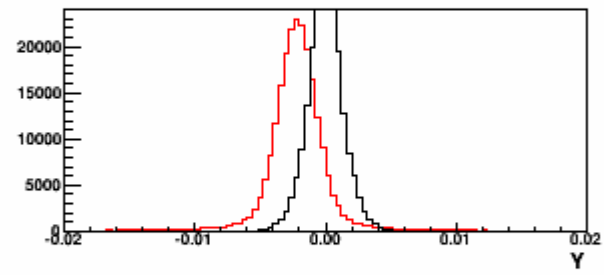
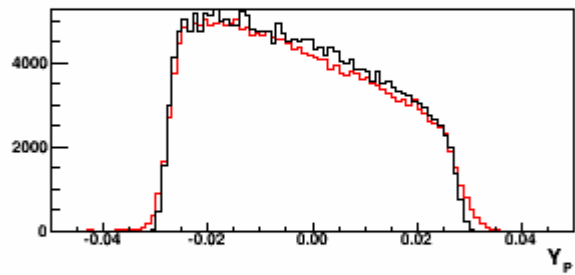
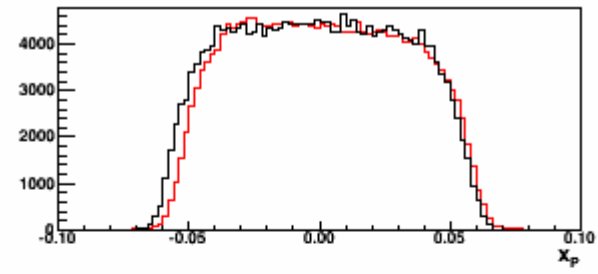
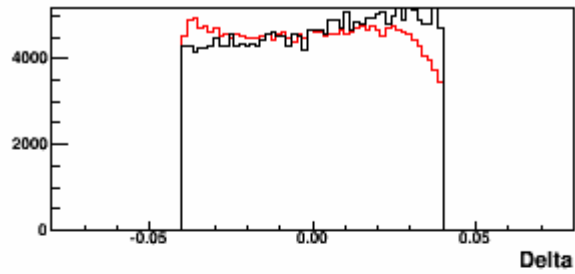


$E = 2.222 \text{ GeV}, \theta = 15.5$
 — Data
 — MC
 Data_delta = 331333.00 MC_delta=374998.75
 Data_xp = 331333.00 MC_xp=374998.77
 Data_yp = 331333.00 MC_yp=374998.77
 Data_y = 331333.00 MC_y=374998.75
 Data/MC = 0.8836



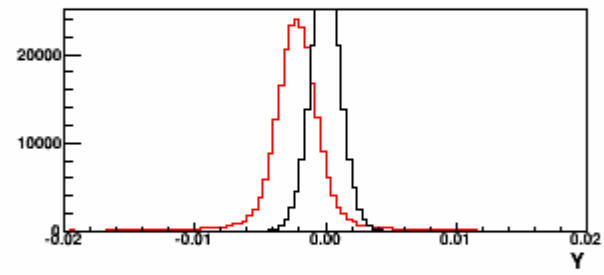
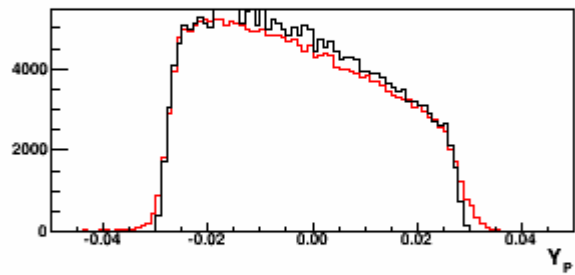
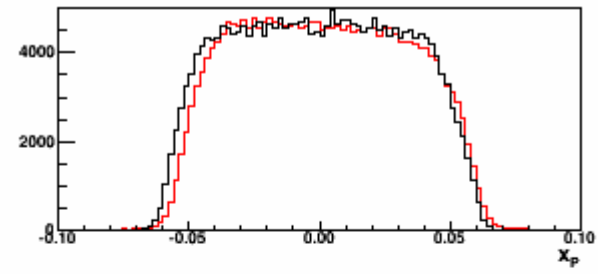
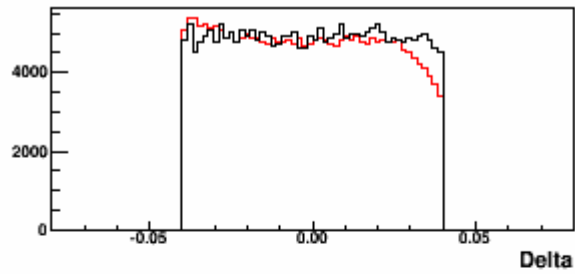
E = 2.222 GeV, $\theta = 15.5$
 — Data
 — MC

Data_delta = 230468.00	MC_delta=253520.90
Data_xp = 230468.00	MC_xp=253520.89
Data_yp = 230468.00	MC_yp=253520.89
Data_y = 230468.00	MC_y=253520.94
Data/MC = 0.9091	



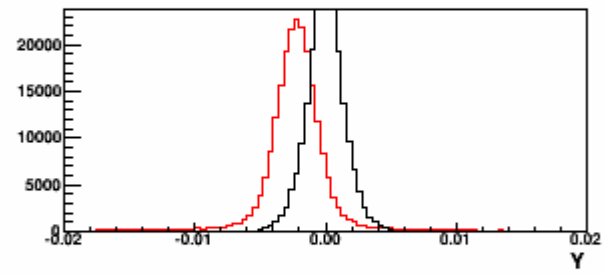
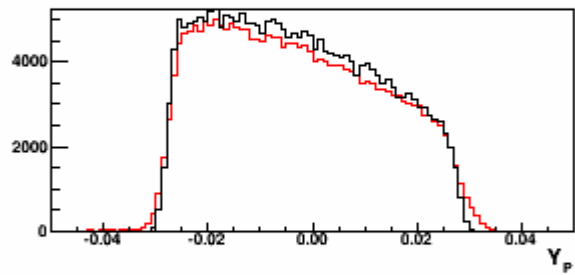
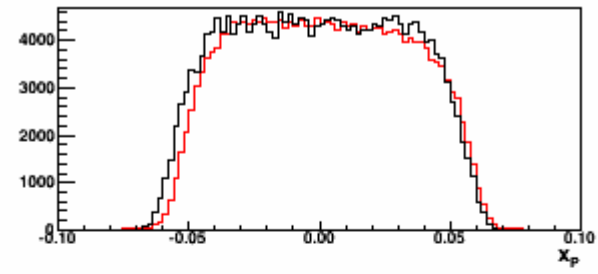
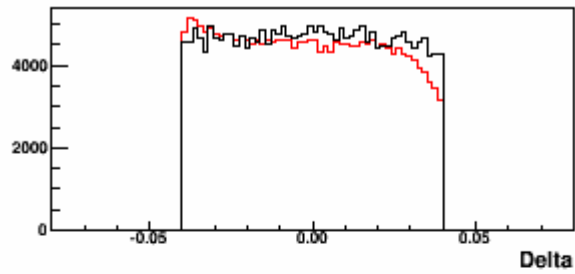
E = 2.222 GeV, $\theta = 15.5$
 — Data
 — MC

Data_delta = 226615.00	MC_delta=232366.28
Data_xp = 226615.00	MC_xp=232366.29
Data_yp = 226615.00	MC_yp=232366.29
Data_y = 226615.00	MC_y=232366.26
Data/MC = 0.9752	



E = 2.222 GeV, $\theta = 15.5$
 — Data
 — MC

Data_delta = 238188.00	MC_delta=245234.99
Data_xp = 238188.00	MC_xp=245234.98
Data_yp = 238188.00	MC_yp=245235.00
Data_y = 238188.00	MC_y=245234.96
Data/MC = 0.9713	



E = 2.222 GeV, $\theta = 15.5$
 — Data
 — MC

Data_delta = 224103.00	MC_delta=233141.58
Data_xp = 224103.00	MC_xp=233141.59
Data_yp = 224103.00	MC_yp=233141.57
Data_y = 224103.00	MC_y=233141.62
Data/MC = 0.9612	