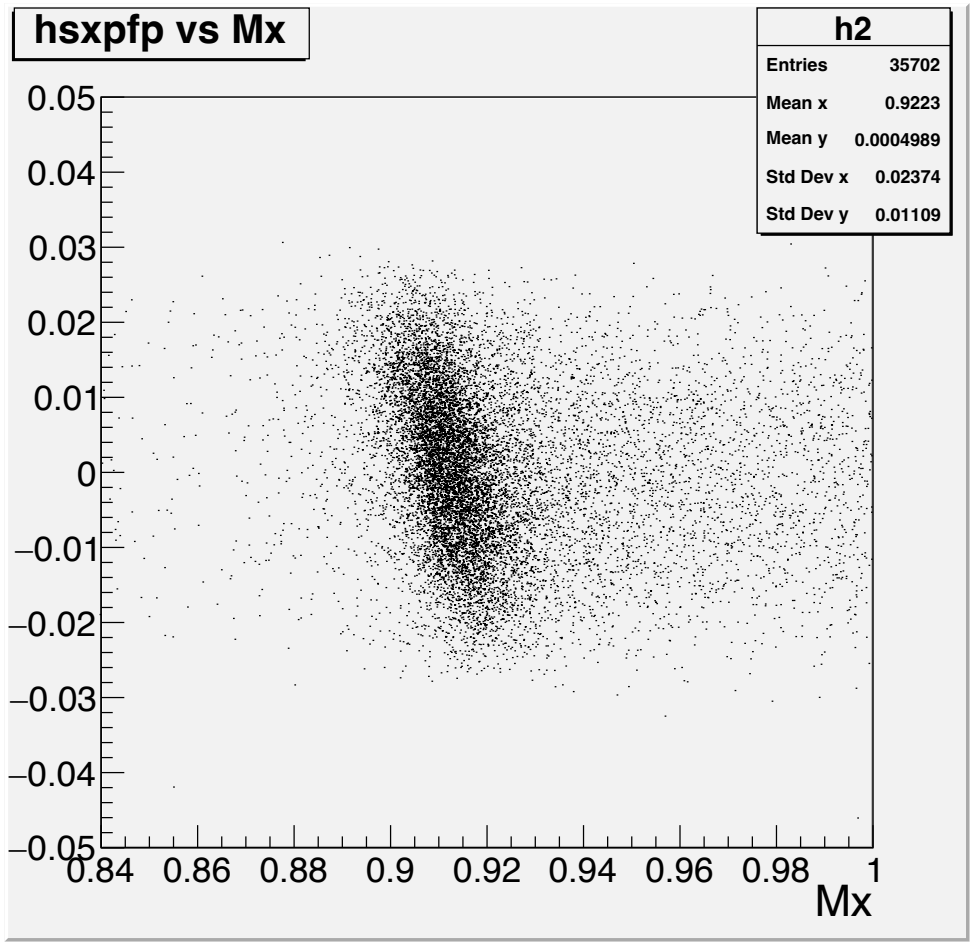
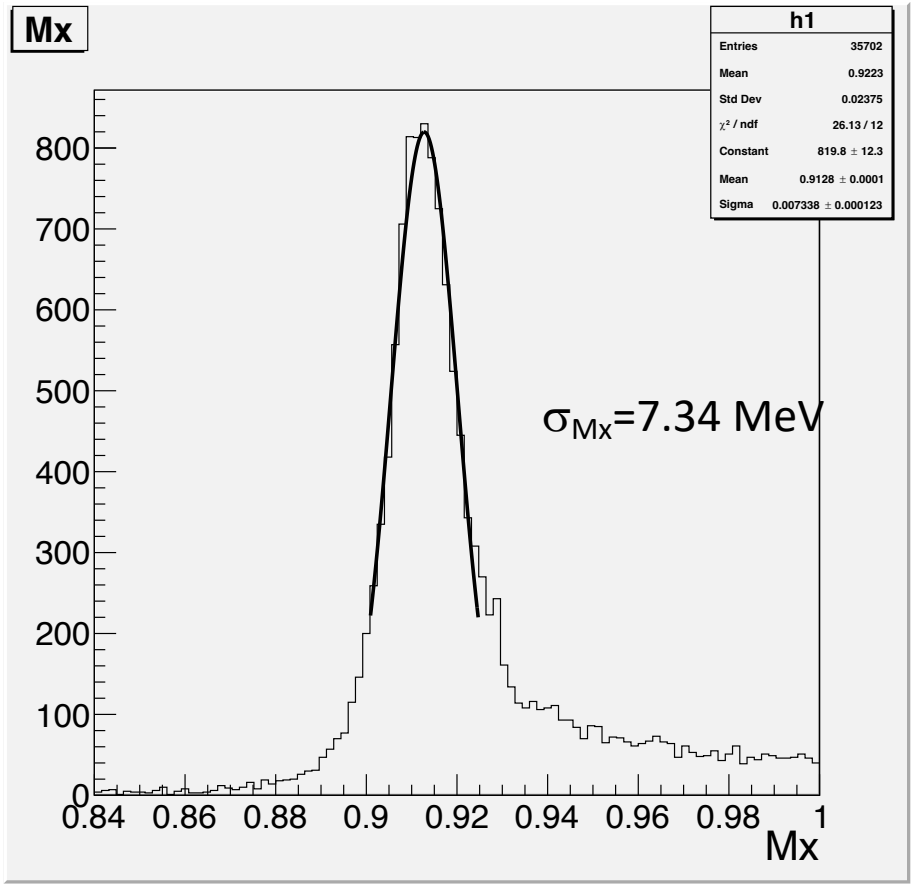
Run 4916, P_{HMS} = 5.292 GeV

Clearest correlation observed with hsxpfp → similar correlation observed during 6 GeV era
→ Correction to δ derived and implemented in 6 GeV analyzer → exists in hcana (hsatcorr = 2000)
→ Not turned on for analysis of this run



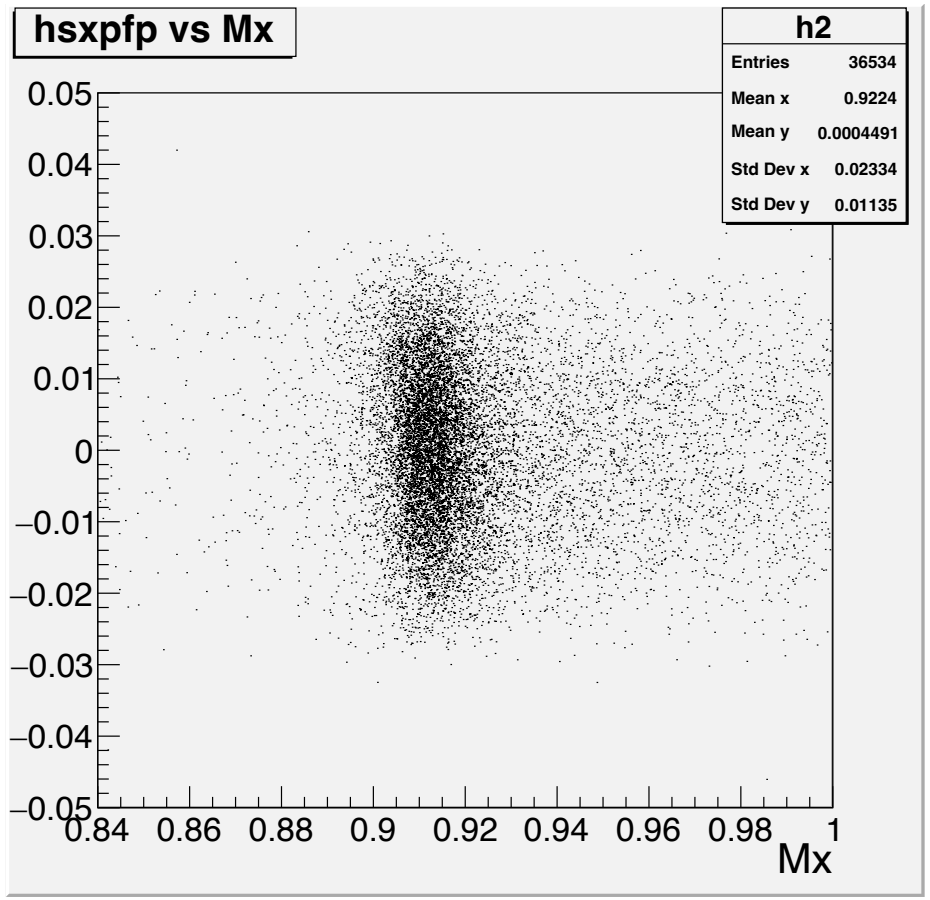


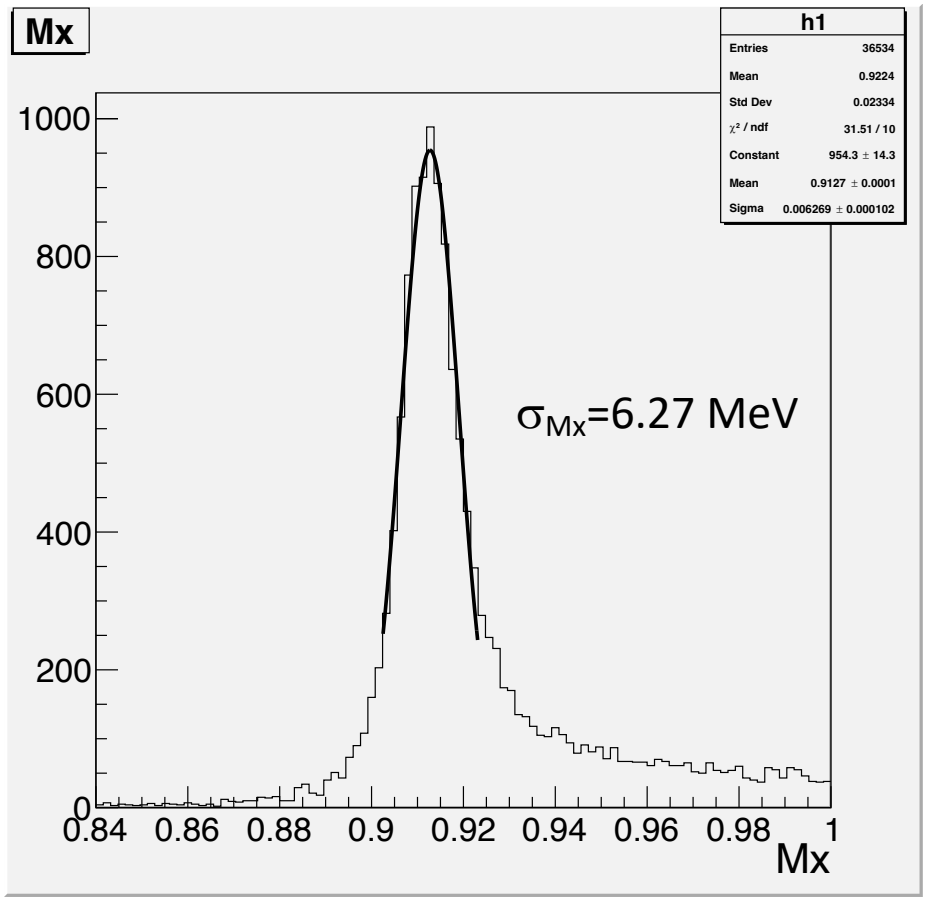
Applied corrected to δ, determined “by eye”

→ Correction will be momentum dependent – need to look at the remaining data

→ Can’t use old correction because we are using matrix elements fit at different momentum than 6 GeV era

$$\delta_{corrected} = \delta - 6.0 * hsxpfp$$





Effect comes from current offset in Q3 power supply. Got new power supplies in 2021 – not an issue anymore.

Used Kaon-LT root trees to determine correction to δ

→ Did not use all settings. Below ~2 GeV, effect looks pretty constant

→ Error bars smaller at larger momenta smaller since effect is larger – easier to see/correct

At P=6.59 GeV, effect is not totally linear

→ Are high momentum matrix elements used here?

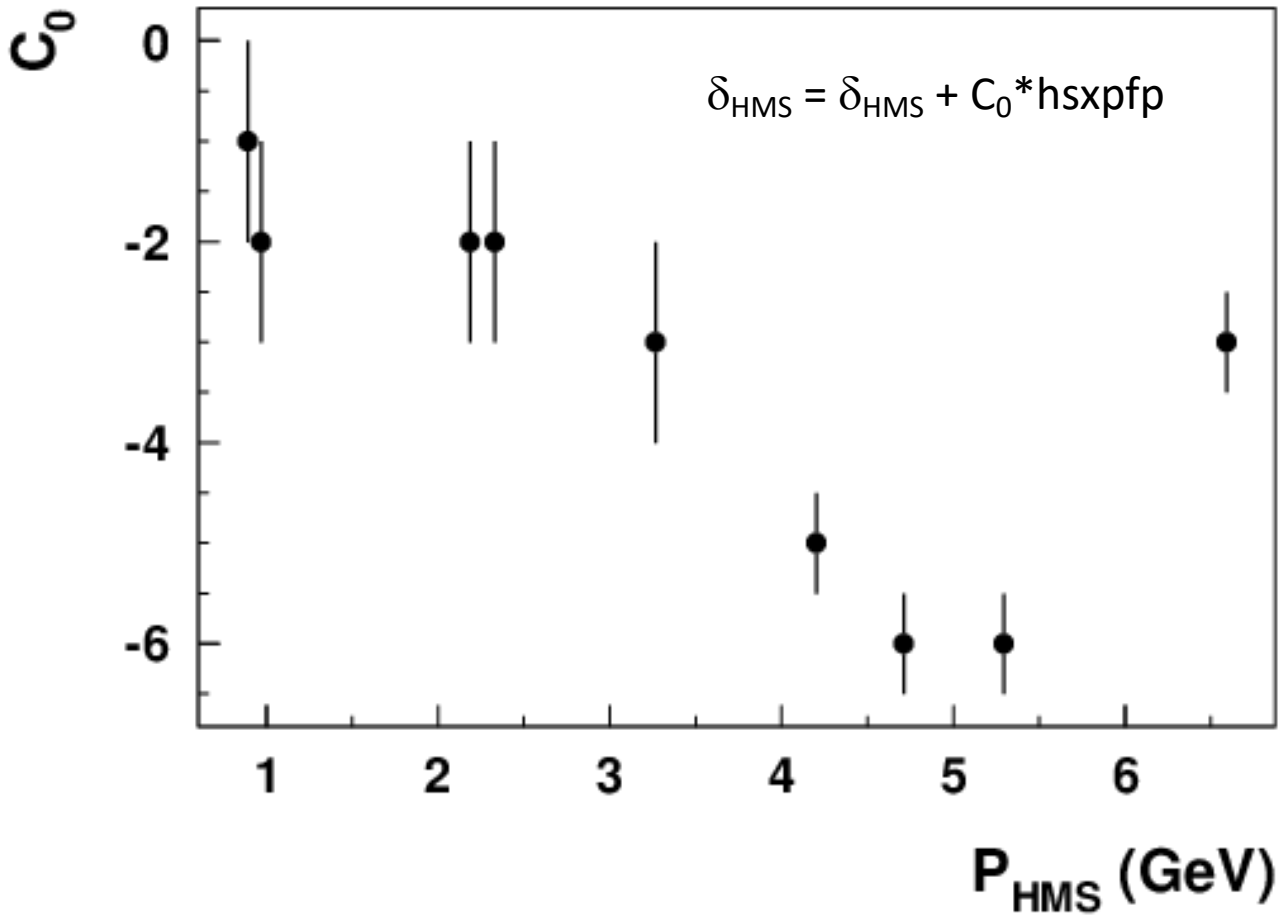


Table of values in plot on previous slide

P_{HMS}	C0	Unc.
0.889	-1.0	1.0
0.968	-2.0	1.0
2.185	-2.0	1.0
2.328	-2.0	1.0
3.266	-3.0	1.0
4.2	-5.0	0.5
4.712	-6.0	0.5
5.292	-6.0	0.5
6.59	-3.0	1.0

$$\delta_{HMS} = \delta_{HMS} + C_0 * \text{hsxpfp}$$