Beam Charge Asymmetry

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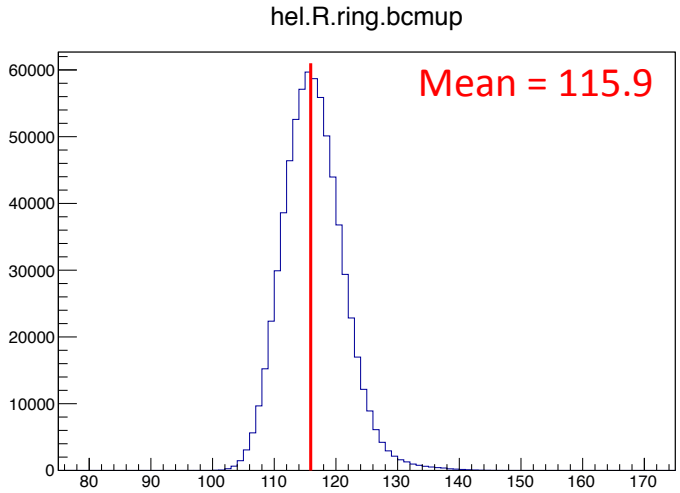
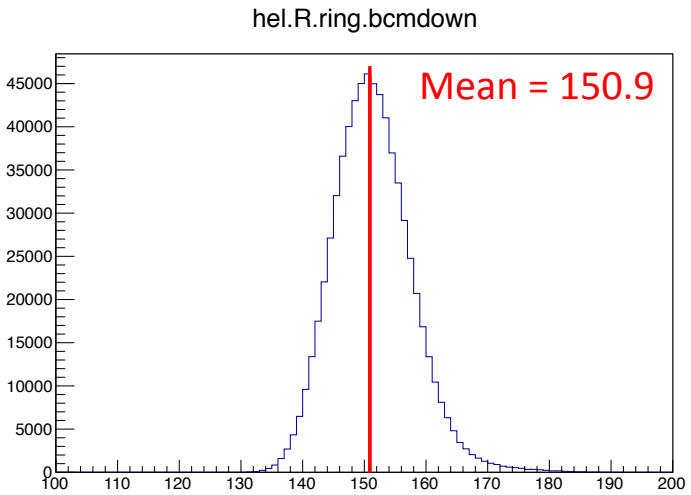
05/10/13

BCM Asymmetry





RHRS run #23498 (1.7 GeV)

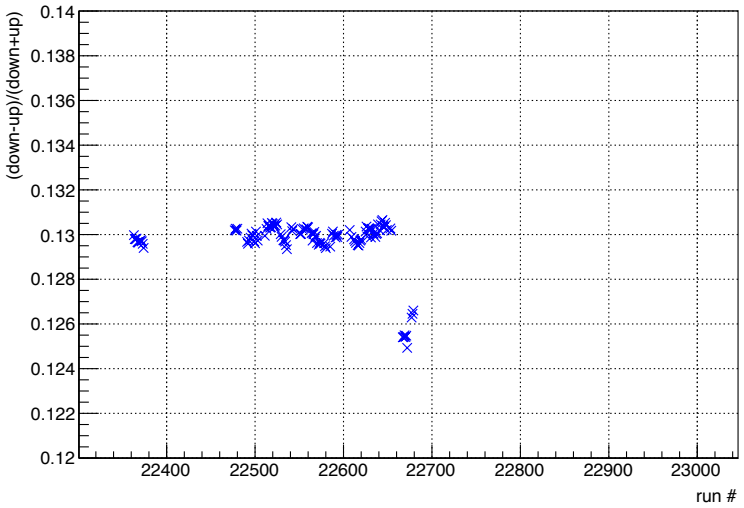
Check the stability of BCMs (using ring buffer data)

$$A^{ud} = \frac{\text{down - up}}{\text{down + up}}$$

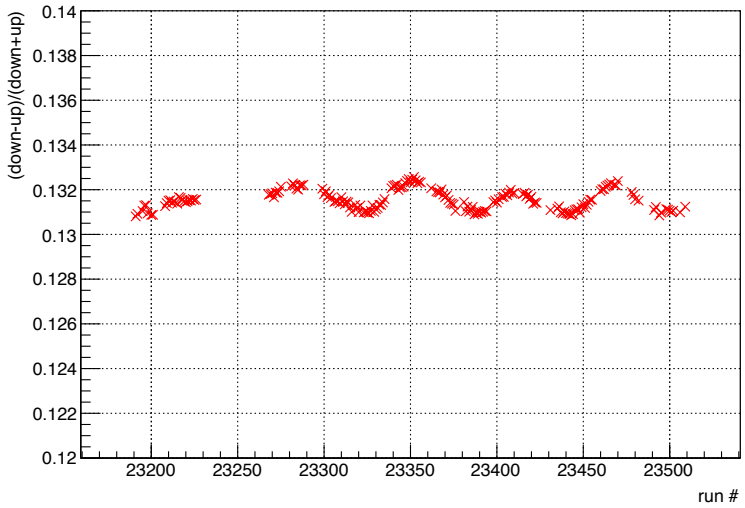
$A^{ud} = 0.1312$

BCM Asymmetry

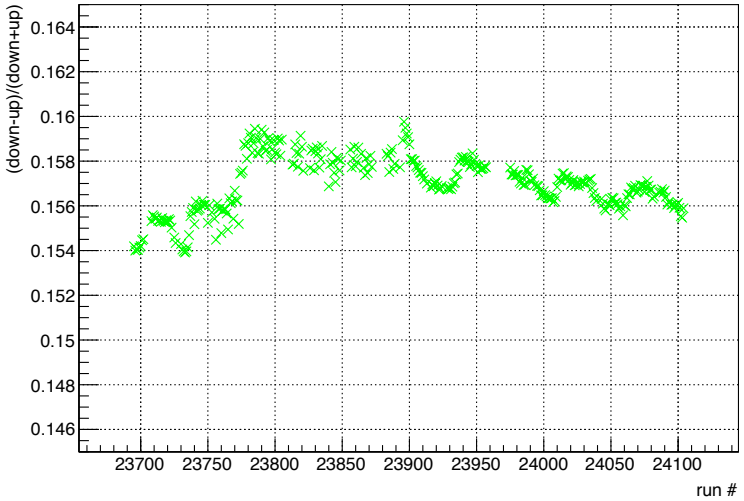
RHRS BCM Asymmetry for 2.2 GeV, 2.5T, 90deg



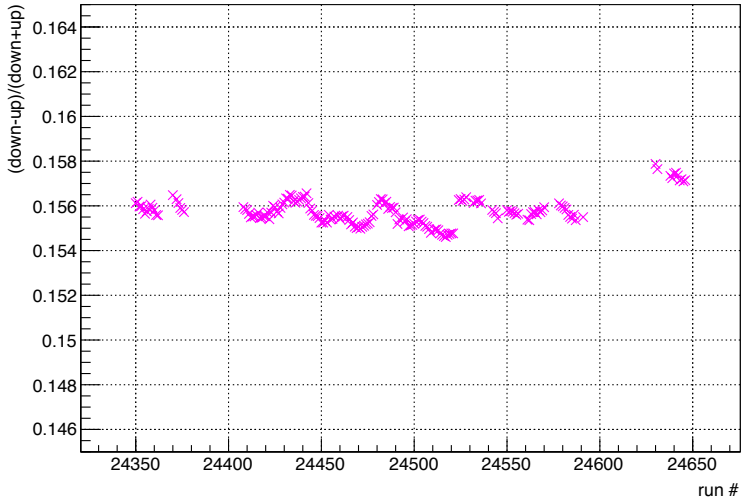
RHRS BCM Asymmetry for 1.7 GeV, 2.5T, 90deg



RHRS BCM Asymmetry for 1.2 GeV, 2.5T, 90deg

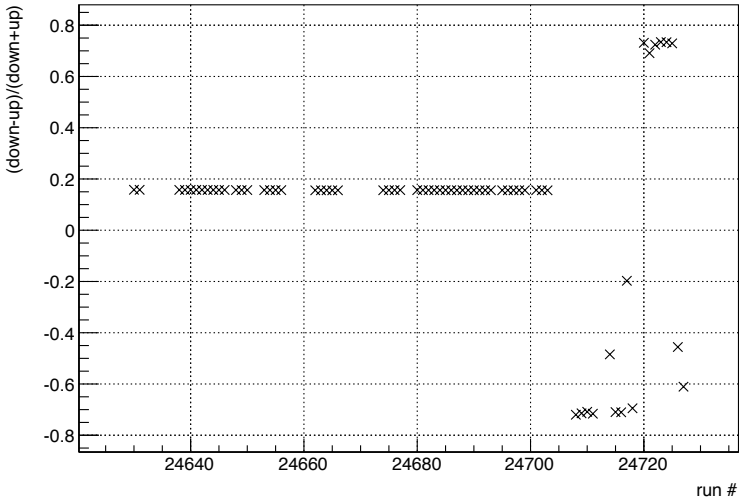


RHRS BCM Asymmetry for 2.2 GeV, 5.0T, 0deg

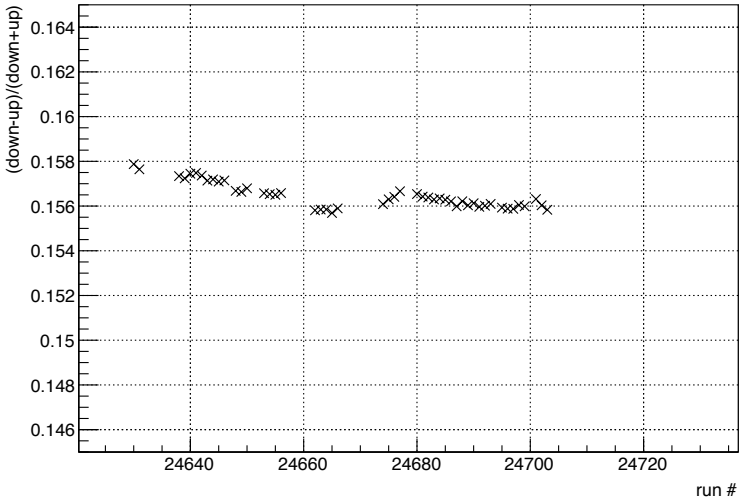


BCM Asymmetry

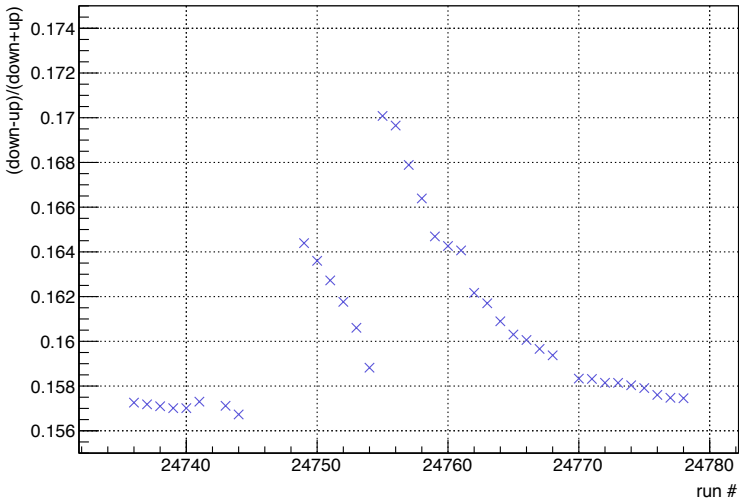
RHRS BCM Asymmetry for 2.2 GeV, 5.0T, 90deg



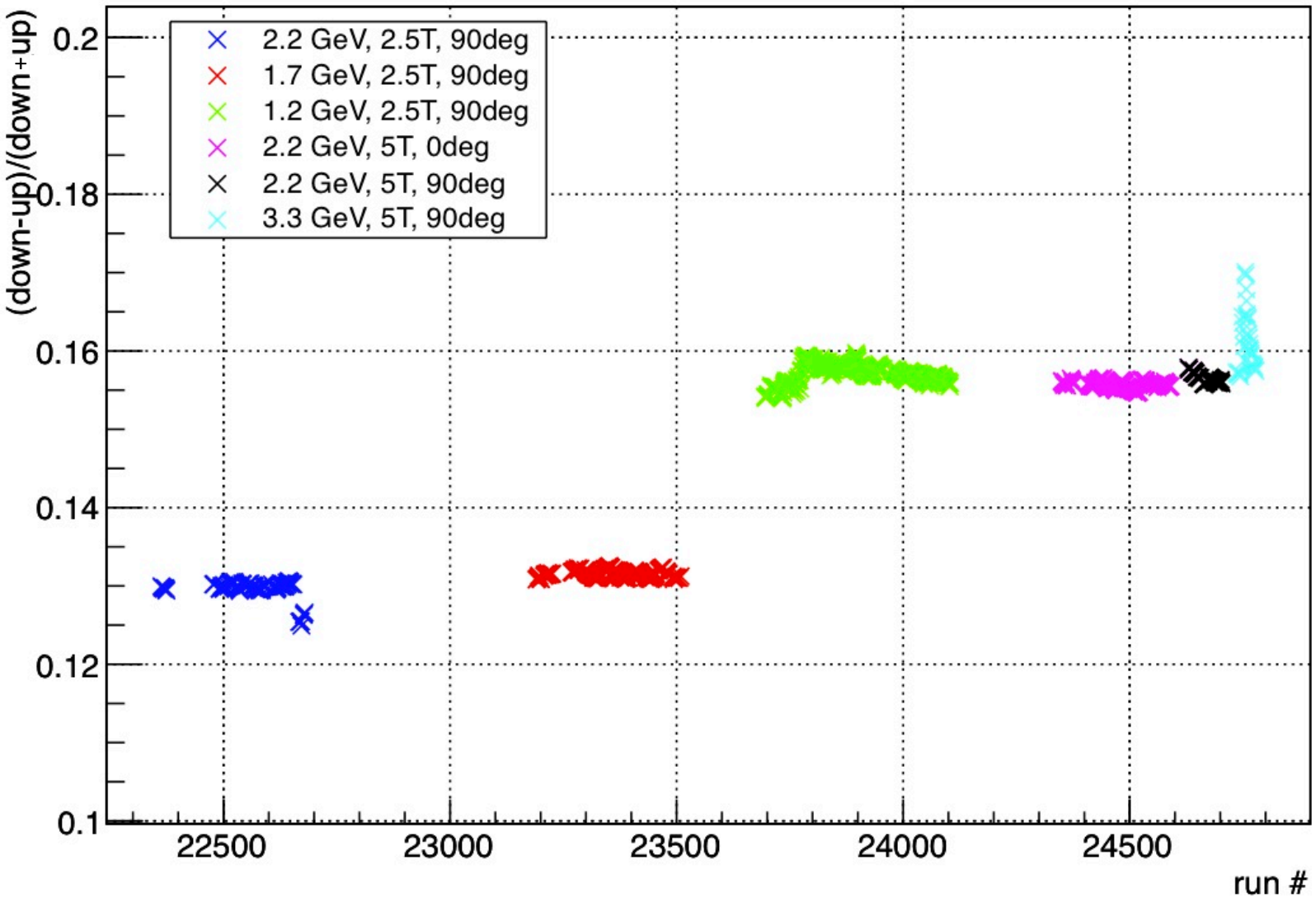
RHRS BCM Asymmetry for 2.2 GeV, 5.0T, 90deg



RHRS BCM Asymmetry for 3.3 GeV, 5.0T, 90deg



BCM Asymmetry



Beam Charge Asymmetry

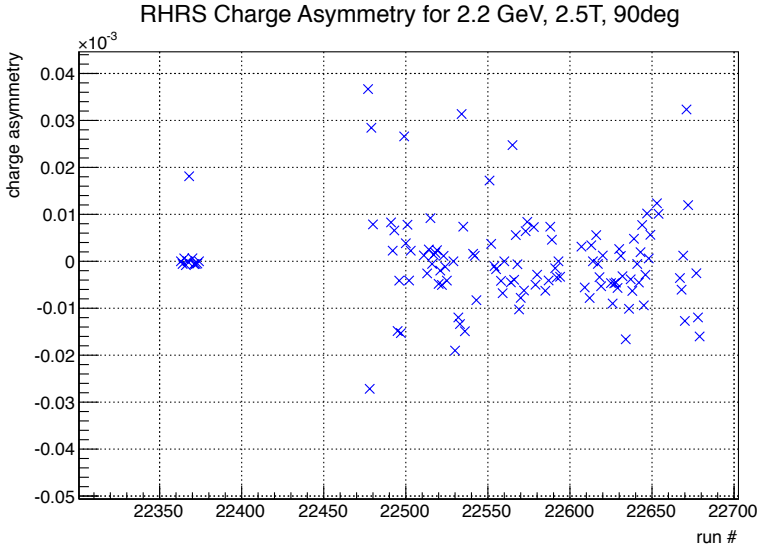
1 : Up BCM Asymmetry $$A^u = \frac{u^+ - u^-}{u^+ + u^-}$$

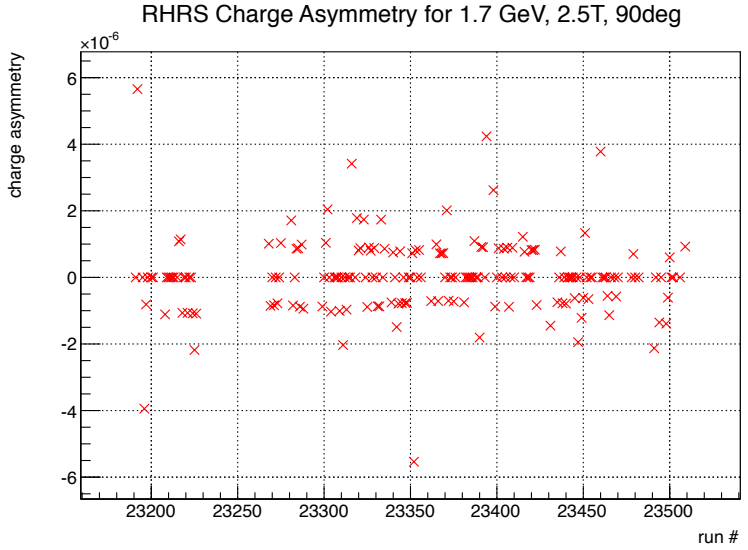
2 : Down BCM Asymmetry $$A^d = \frac{d^+ - d^-}{d^+ + d^-}$$

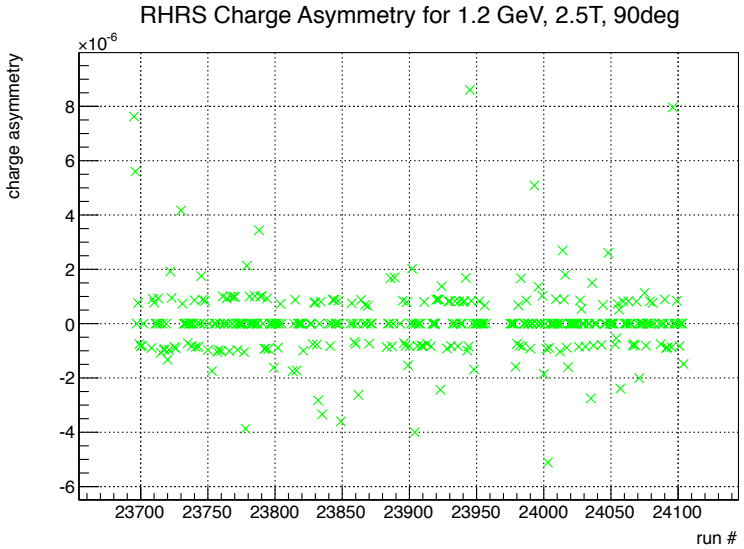
*3 : Average of Both BCMs $$A^{avg} = \frac{B^+ - B^-}{B^+ + B^-}$$

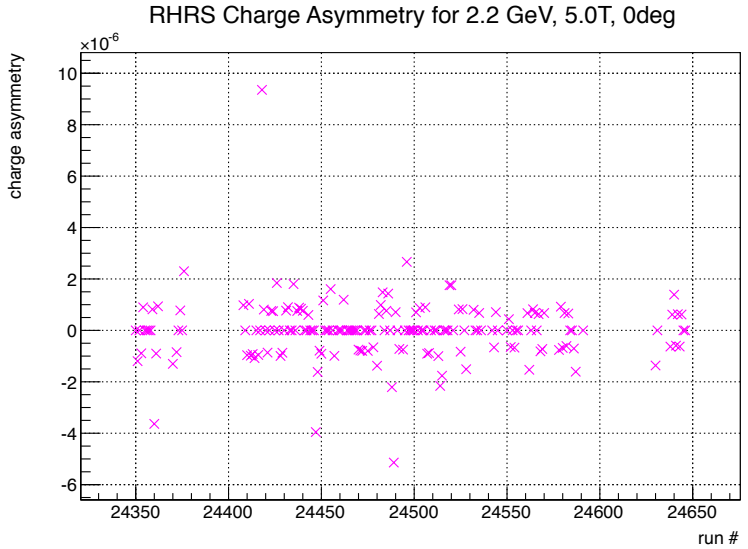
Where: $$B^{\pm} = \frac{u^{\pm} + d^{\pm}}{2}$$

Beam Charge Asymmetry

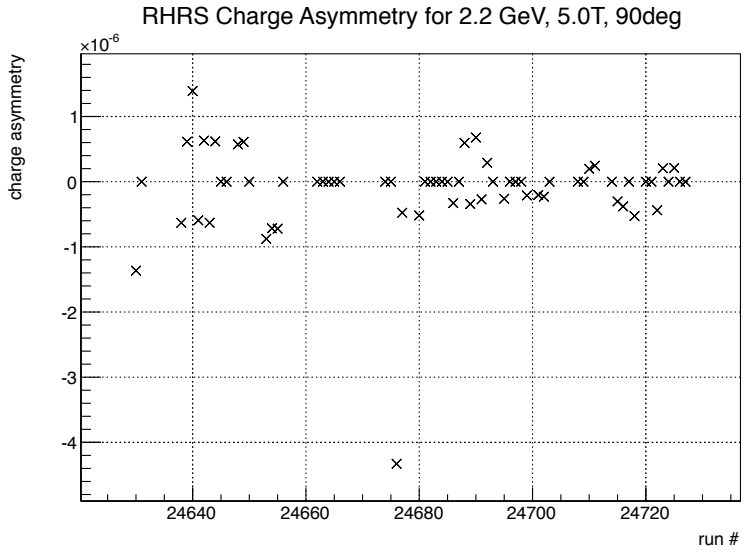


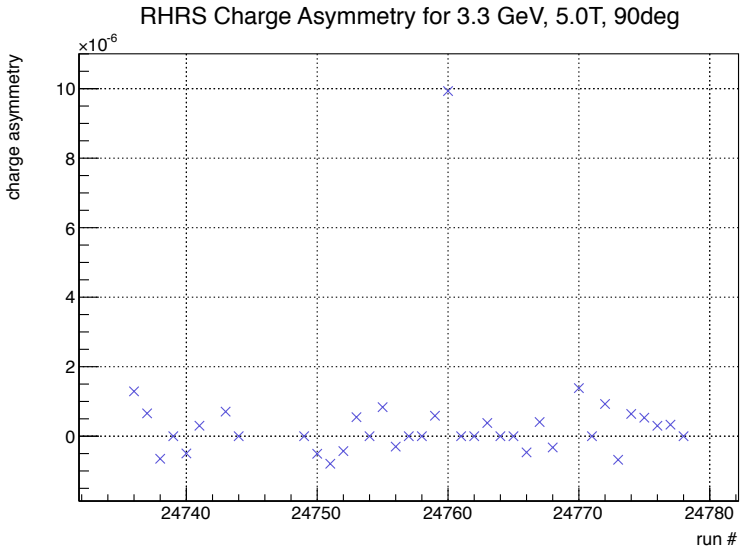




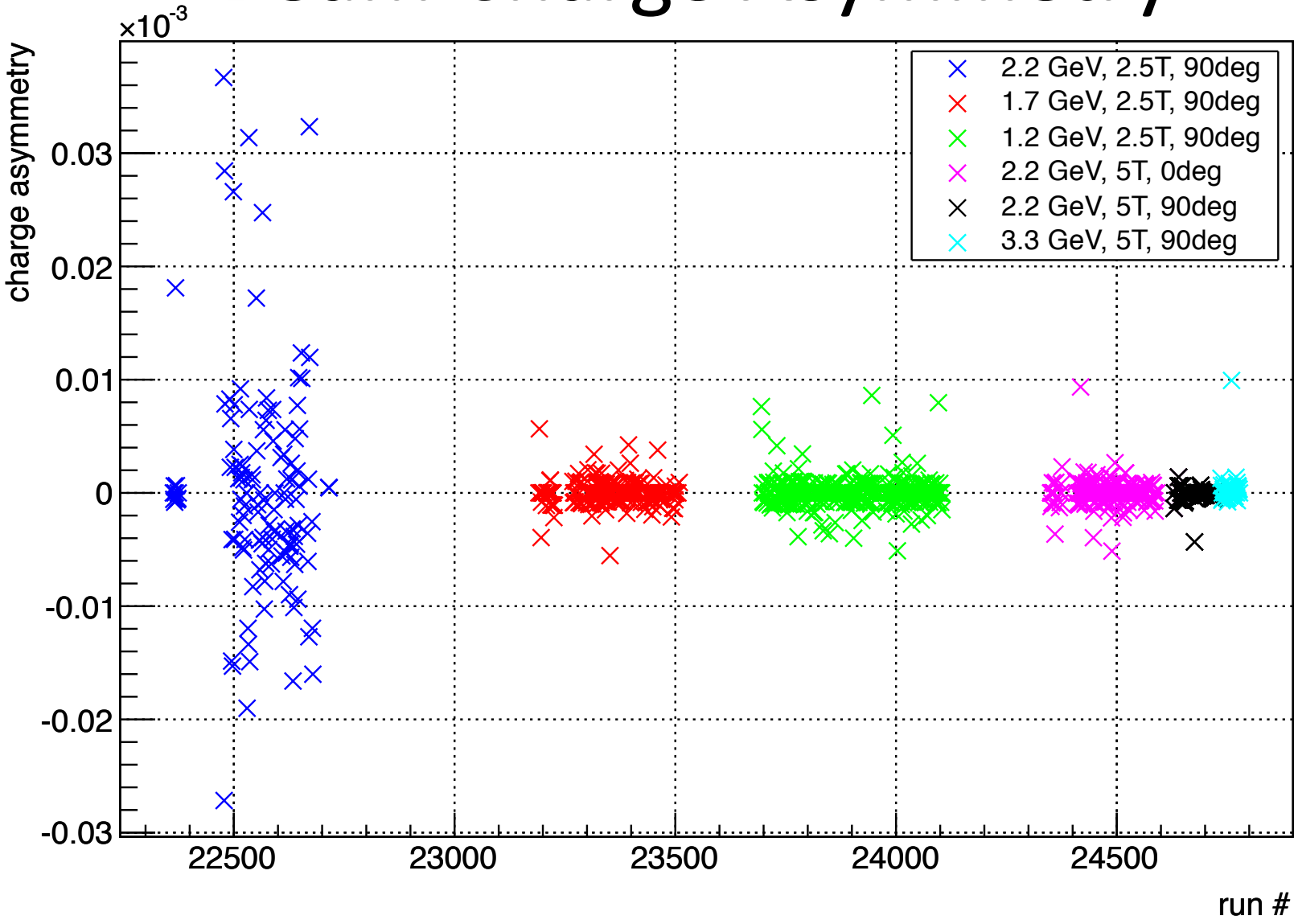


Beam Charge Asymmetry

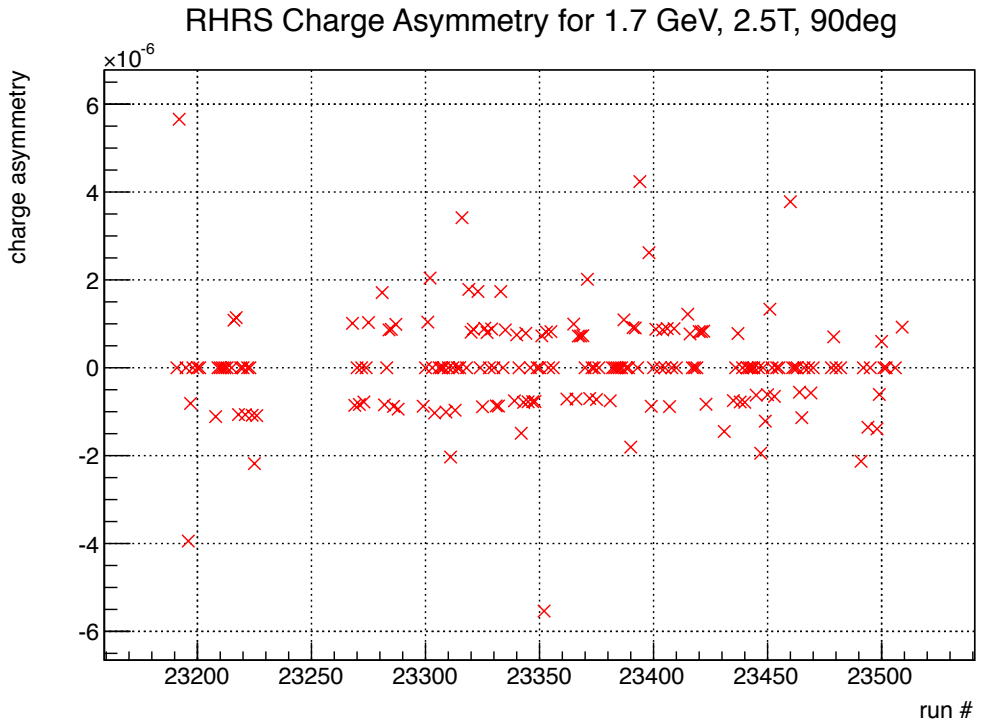




Beam Charge Asymmetry



Zero Asymmetry?



Ex. 1.7 GeV Setting

84 of 189 runs have asymmetry = 0

?????