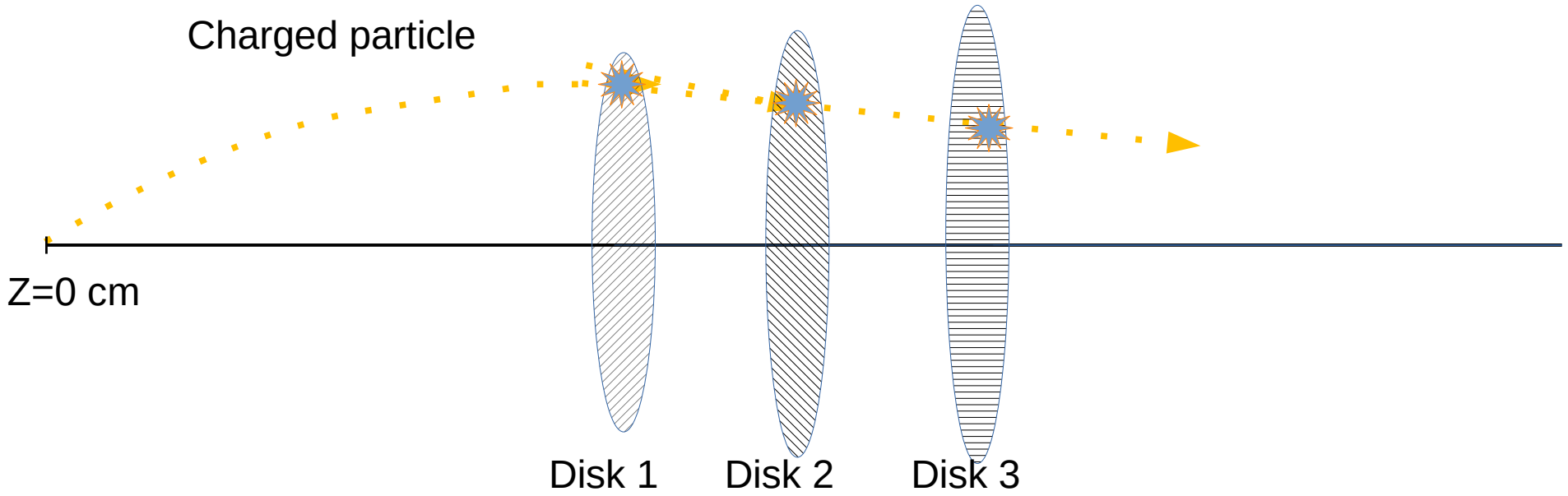


# Quick B-field evaluation of charged tracks at forward rapidity

Astrid Morreale, LANL  
IR meeting April 29

The purpose of these rather quick plots was to quantify the effect of:

- The current (though not final) B-field configurations on a charged track hitting 3 Si disks
- The effect of the z position of the disks on these charged tracks



Evaluate azimuth hit position at at given z in each of these disks

**The purpose of these rather quick plots was to quantify the effect of:**

- The current (though not final) B-field configurations on a charged track hitting 3 Si disks**
- The effect of the z position of the disks on these charged tracks**

Details of box-generation of pions:

$p_T$  2-25GeV/c, vertex assumed at origin

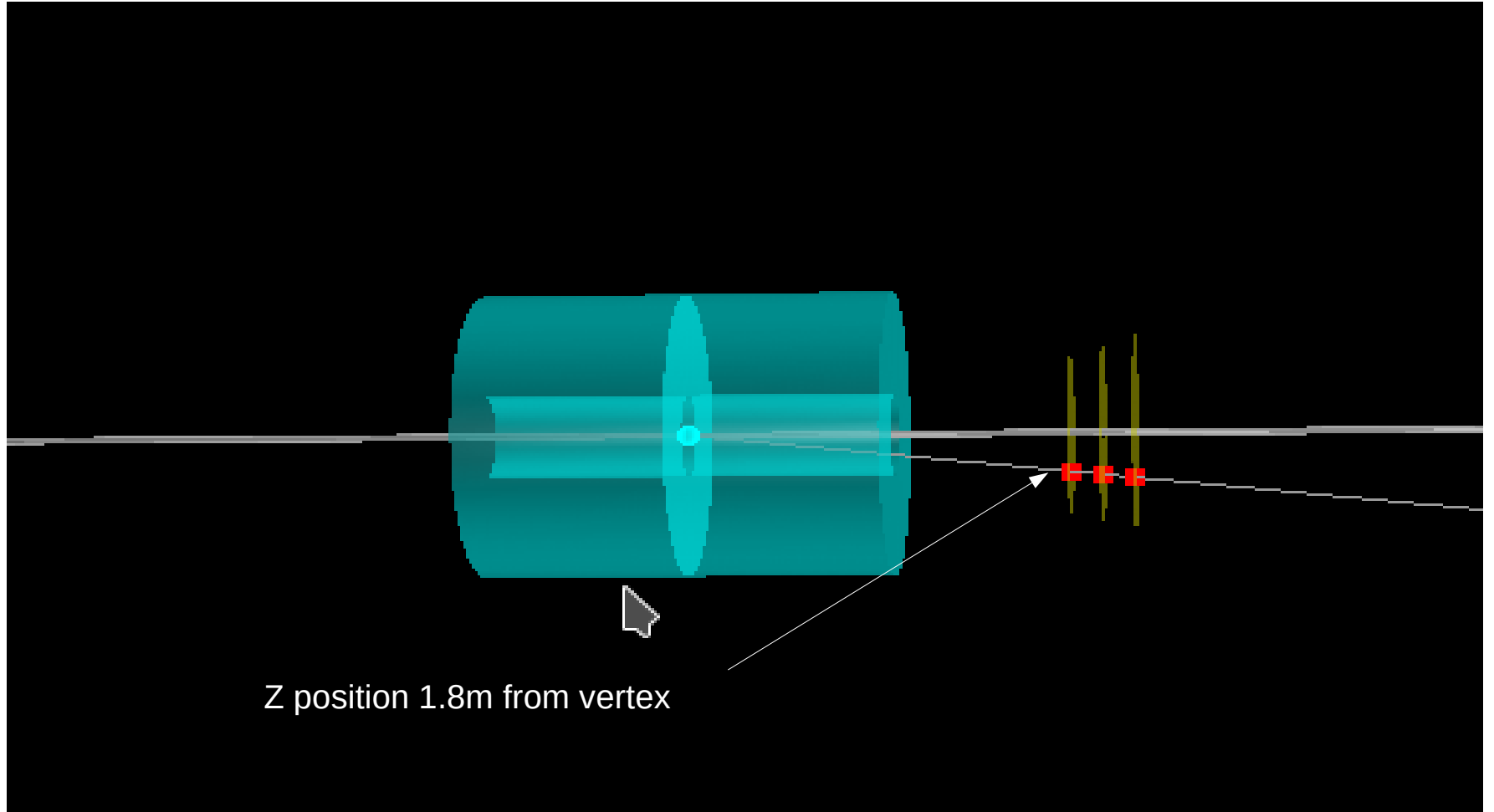
Starting point: 3 disks separated by 15cm starting at 1.8m from IR

Azimuth position in each of the three disks per track is compared.

2 main B-field configurations used: 1.5T (Babar-based) and 3T (open field)

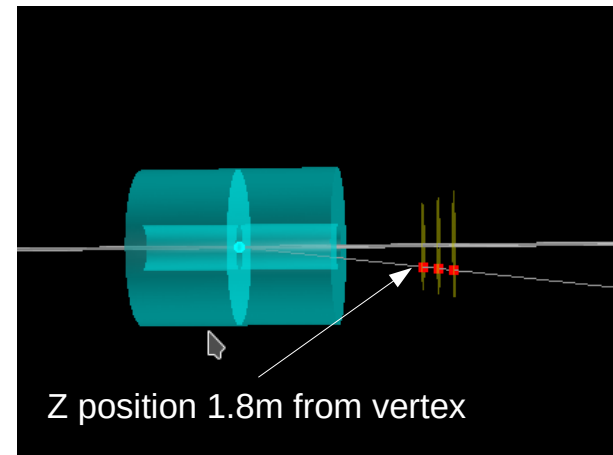
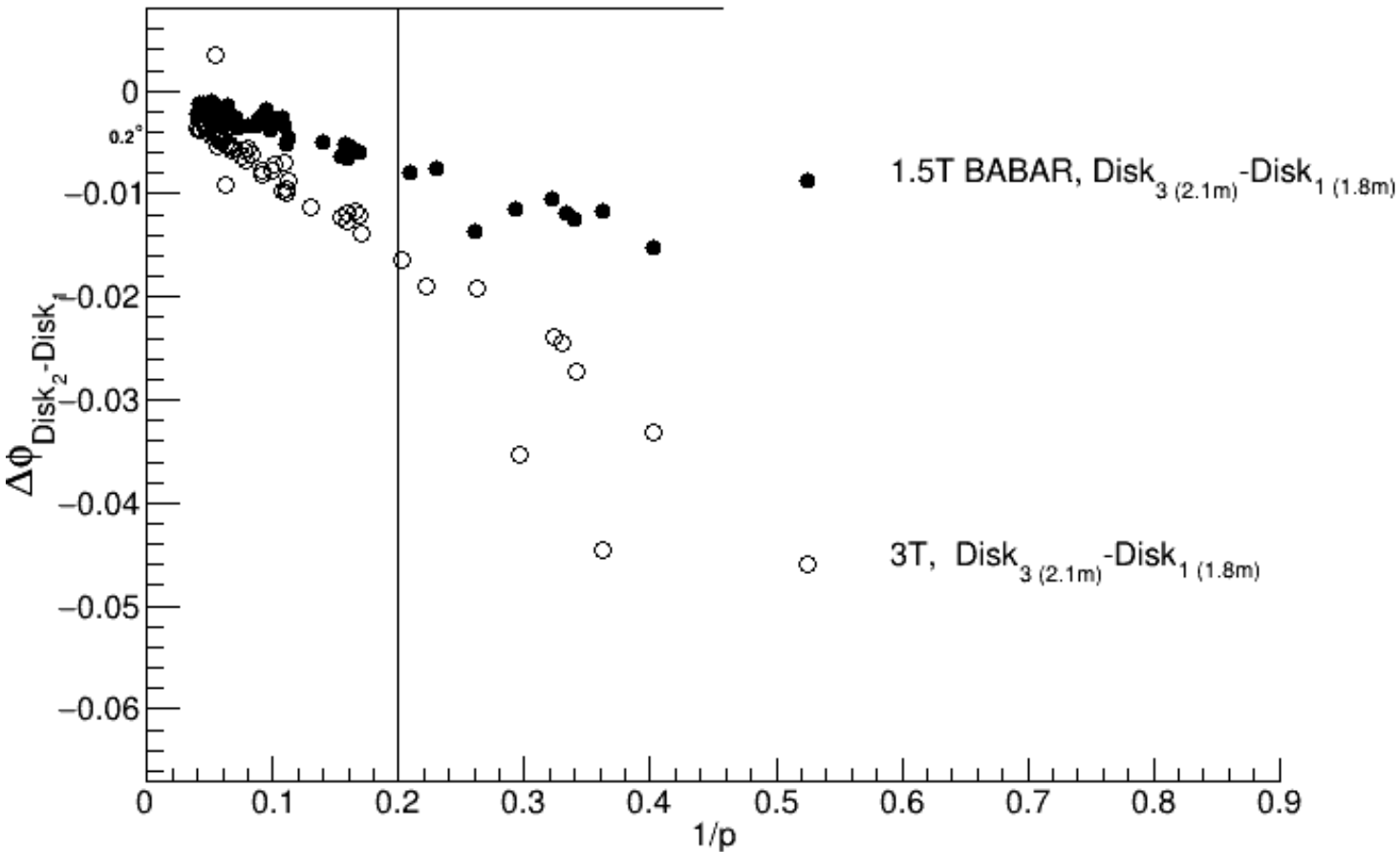
NB: EICRoot is the software used in all of these plots.

# 1.5T vs 3T at nominal position



# 1.5T vs 3T at nominal position

Disk<sub>3</sub>-Disk<sub>1</sub>  $\pi^+$

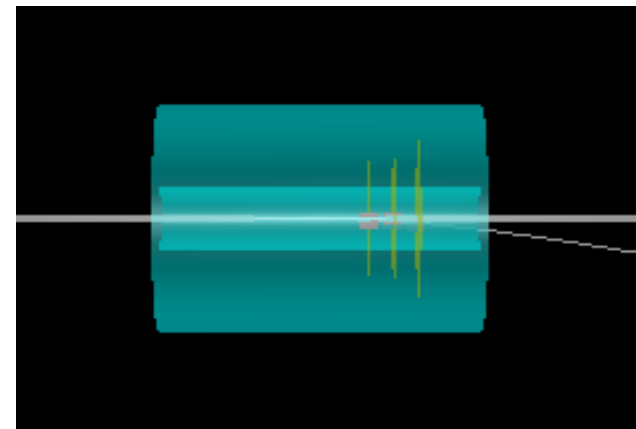
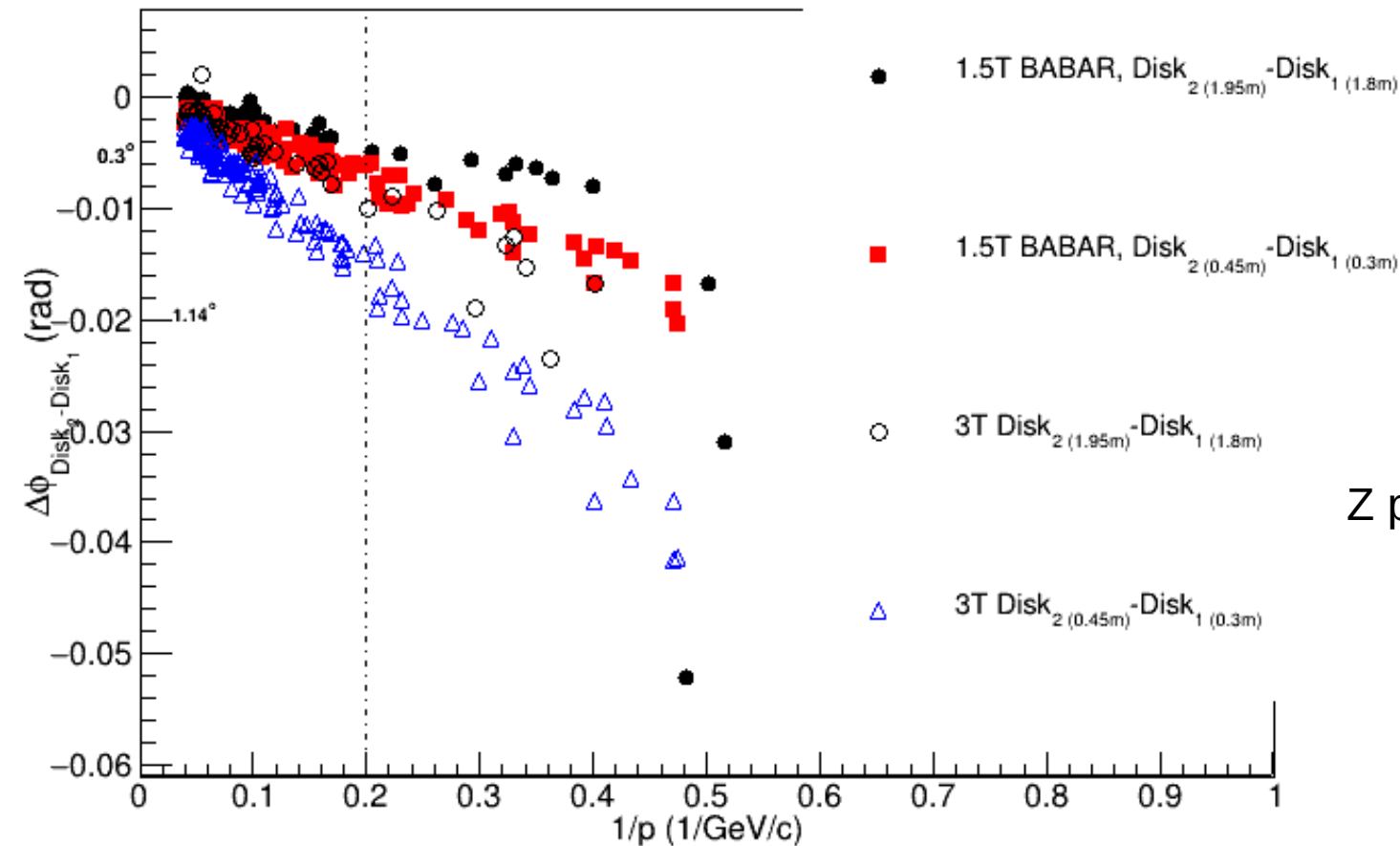


Ordinate:  
Hit  $\phi$  position:  
Disk2-Disk1

Abscissa:  
 $1/p$   
average reconstructed

# Shifting z position of disks

Disk<sub>2</sub>-Disk<sub>1</sub>  $\pi^+$



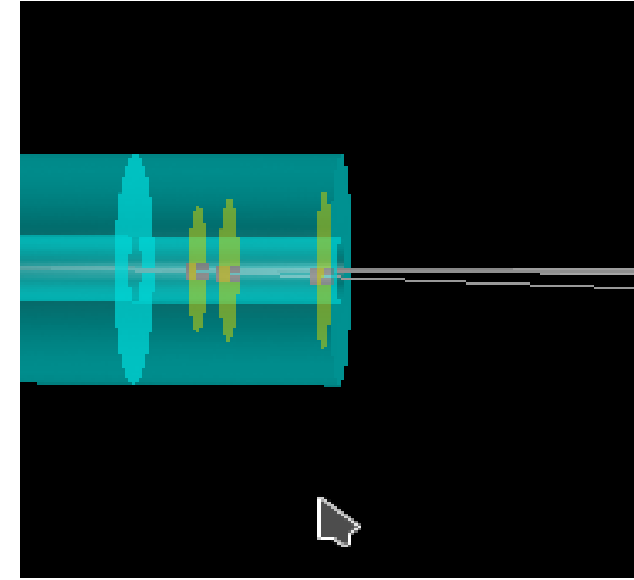
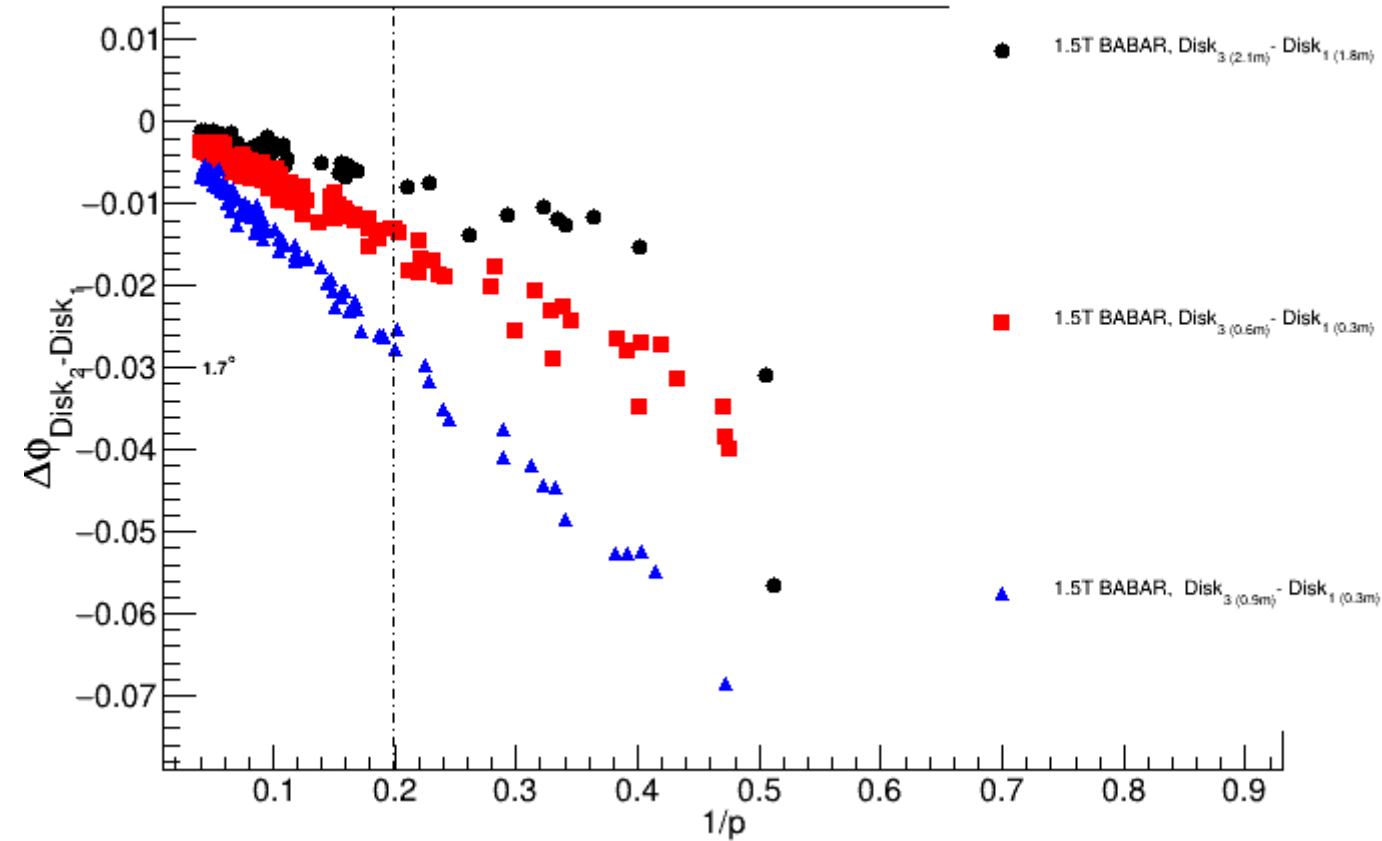
Z position moved closer to vertex

Disk<sub>1</sub> 1.8m → 0.3m

Disk<sub>2</sub> 1.95m → 0.45m

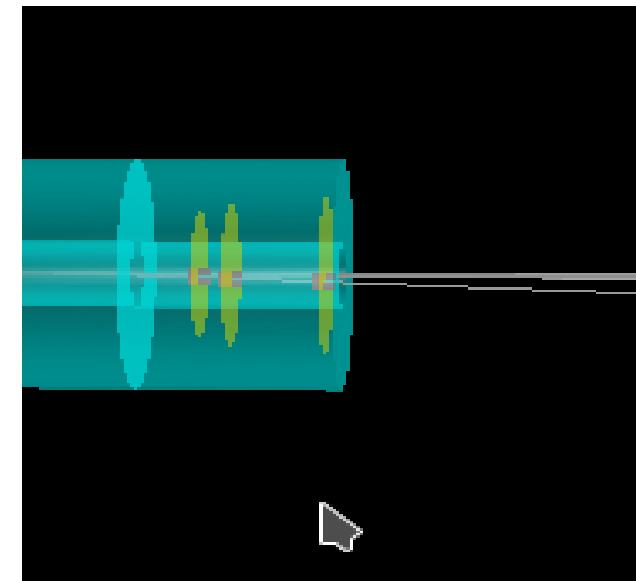
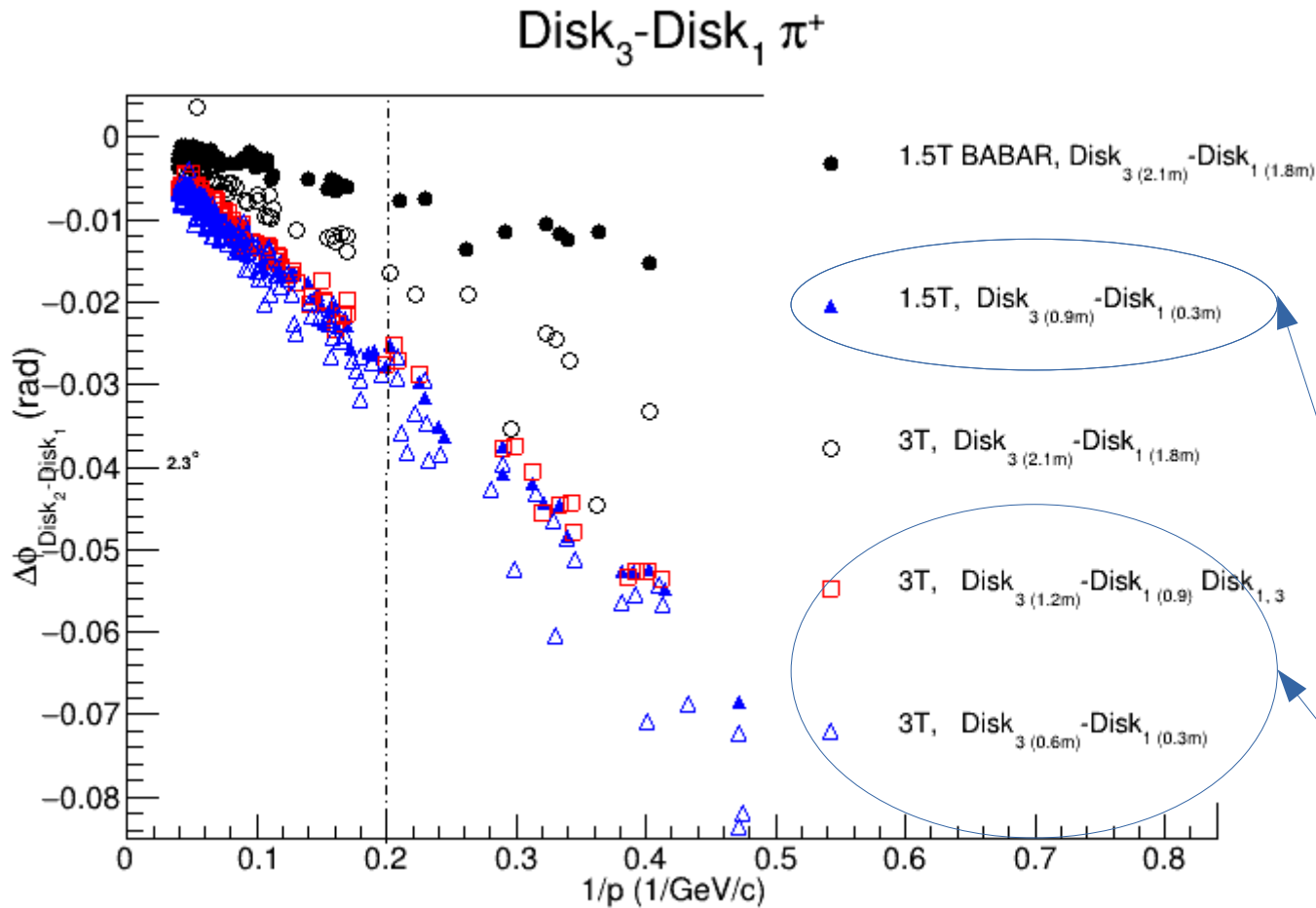
# 1.5T +asymmetric z position configuration

Disk<sub>3</sub>-Disk<sub>1</sub>  $\pi^+$



Disk<sub>1</sub> 1.8m  $\rightarrow$  0.3m  
Disk<sub>3</sub> 1.95m  $\rightarrow$  0.9m

# 1.5T and 3T compared (disk<sub>3</sub> and disk<sub>1</sub>)



Disk<sub>1</sub> 1.8m → 0.3m  
 Disk<sub>3</sub> 1.95m → 0.9m

**Conclusions: these configurations are comparable**