

# All-Silicon Tracker + GEMs ("baseline 1") Angular Resolutions at Forward Pseudorapidities



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ATHENA Tracking Meeting  
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# Goal

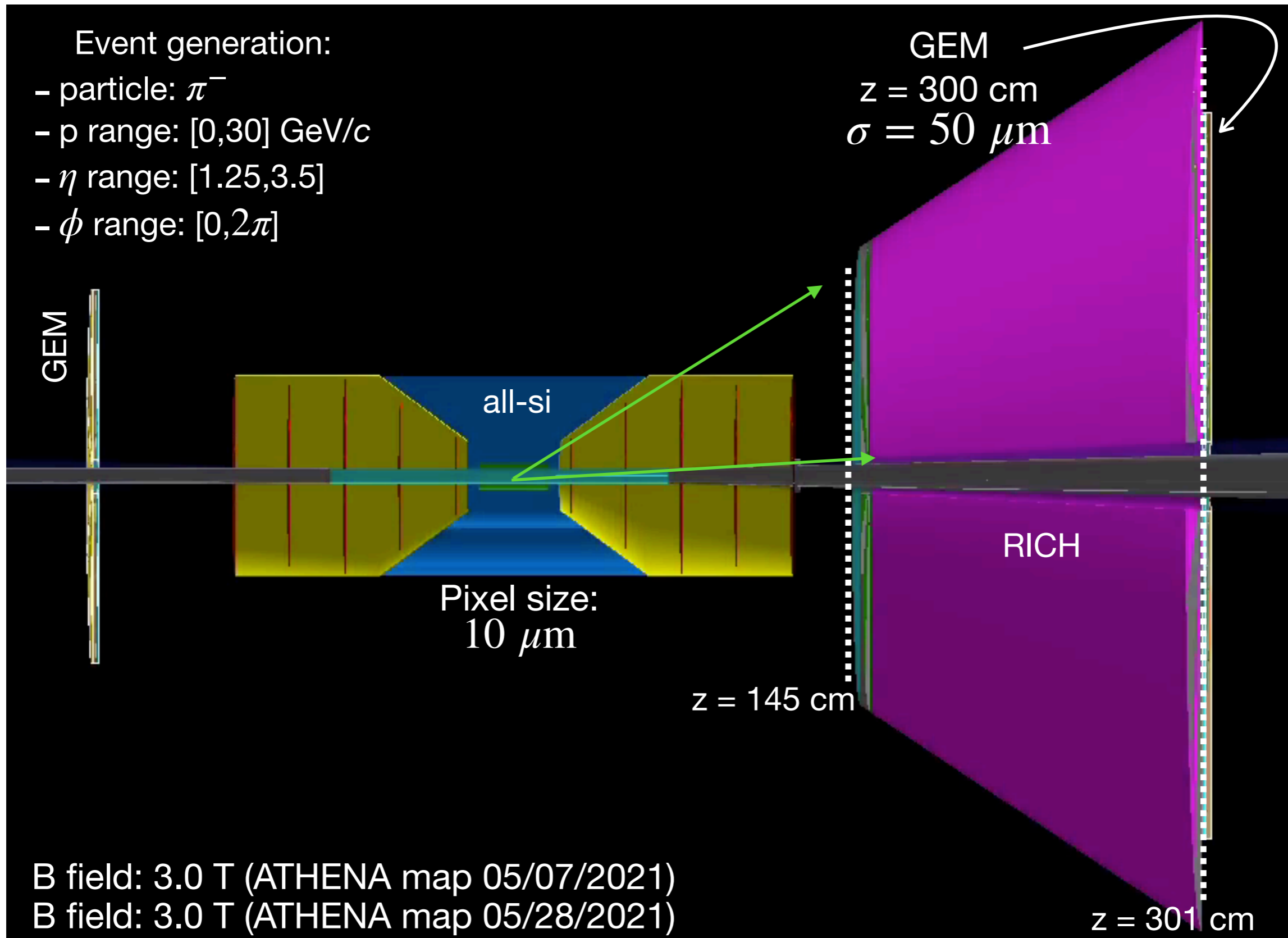
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- ❑ Study angular resolutions at the entrance and exit of the RICH geometry
- ❑ Compare the results obtained with the May 7 and May 28 ATHENA magnetic-field maps

# Simulation Configuration

Event generation:

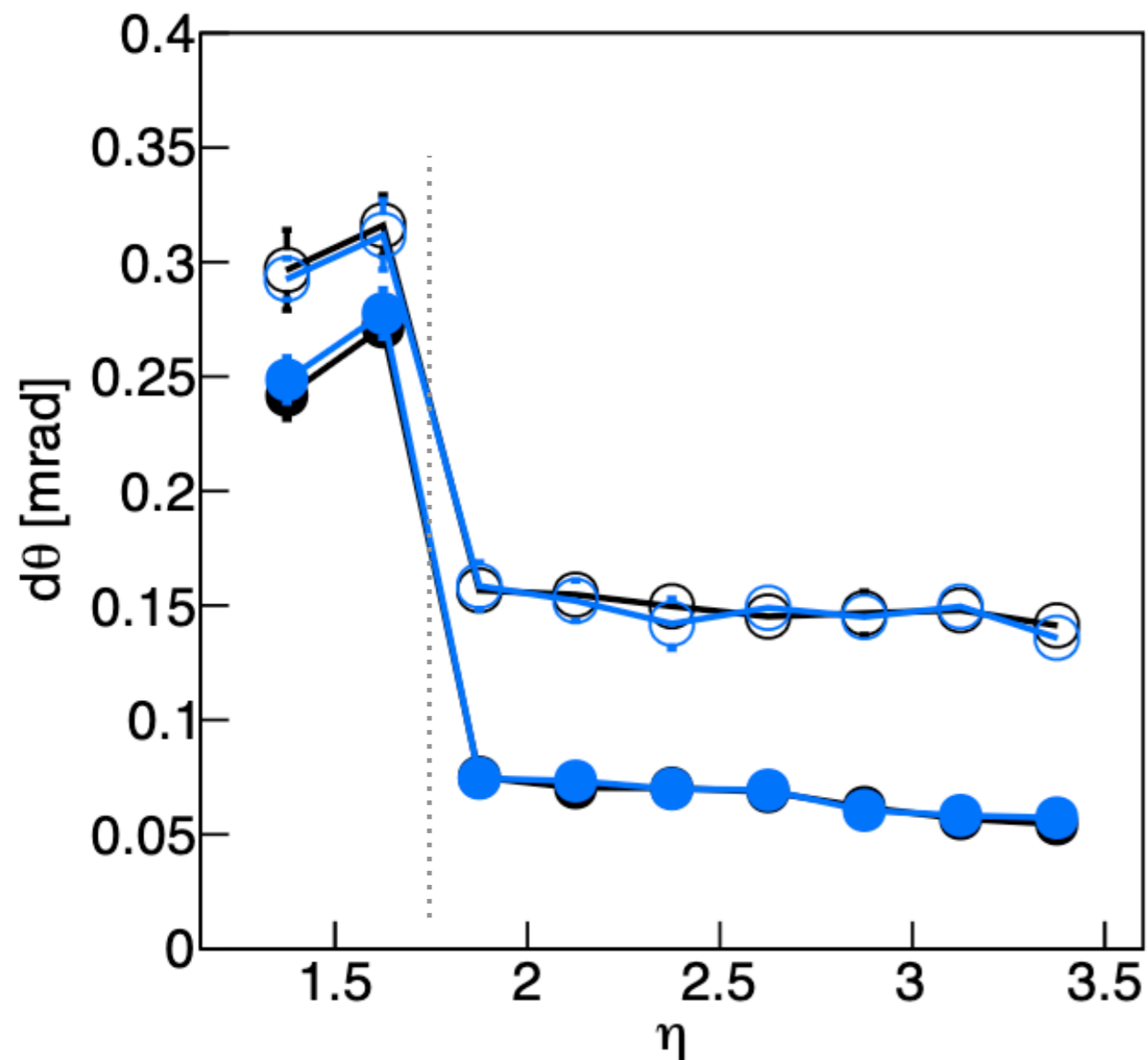
- particle:  $\pi^-$
- p range: [0,30] GeV/c
- $\eta$  range: [1.25,3.5]
- $\phi$  range: [0,2 $\pi$ ]



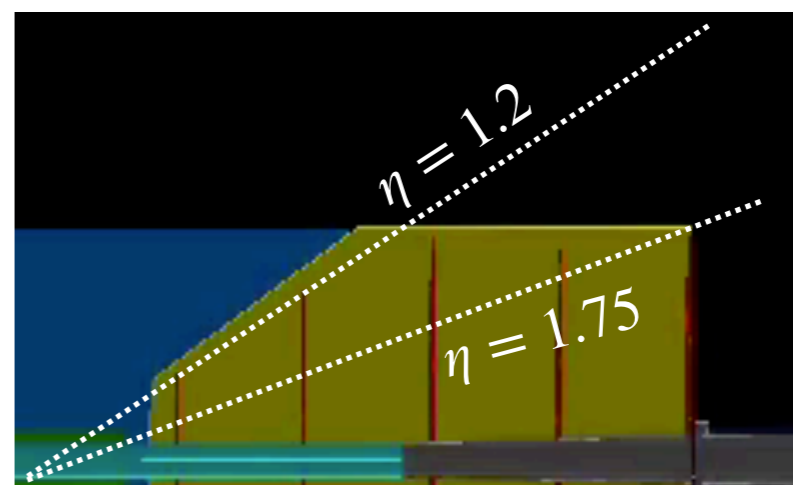
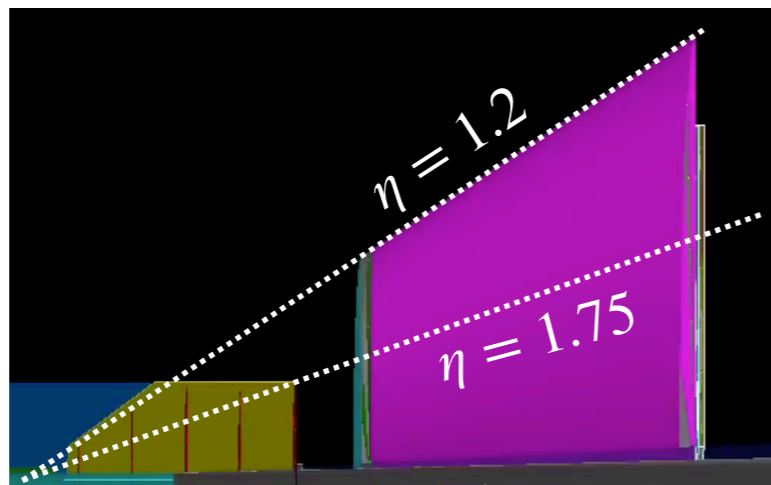
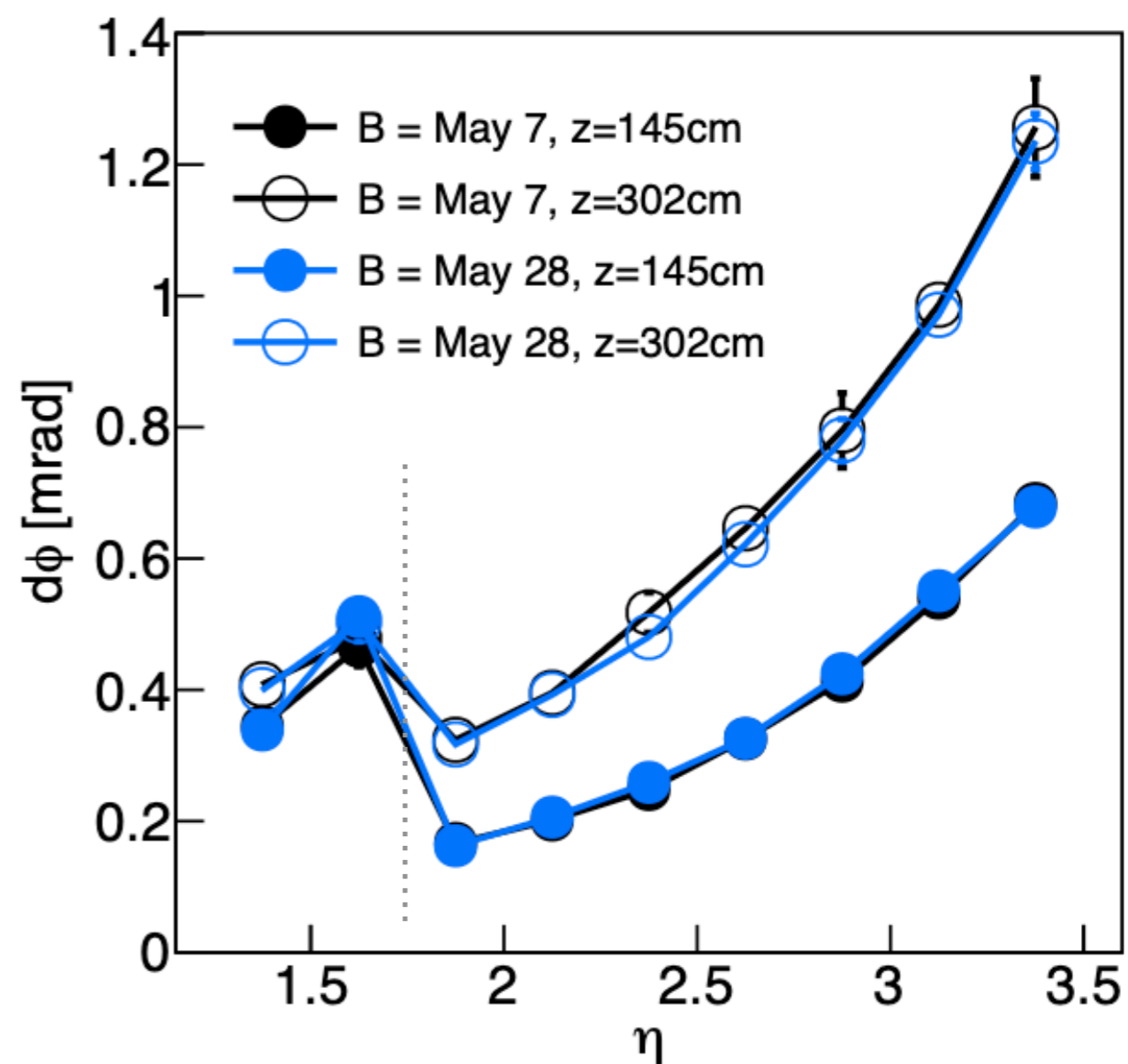
B field: 3.0 T (ATHENA map 05/07/2021)  
B field: 3.0 T (ATHENA map 05/28/2021)

# Angular Resolution Comparison

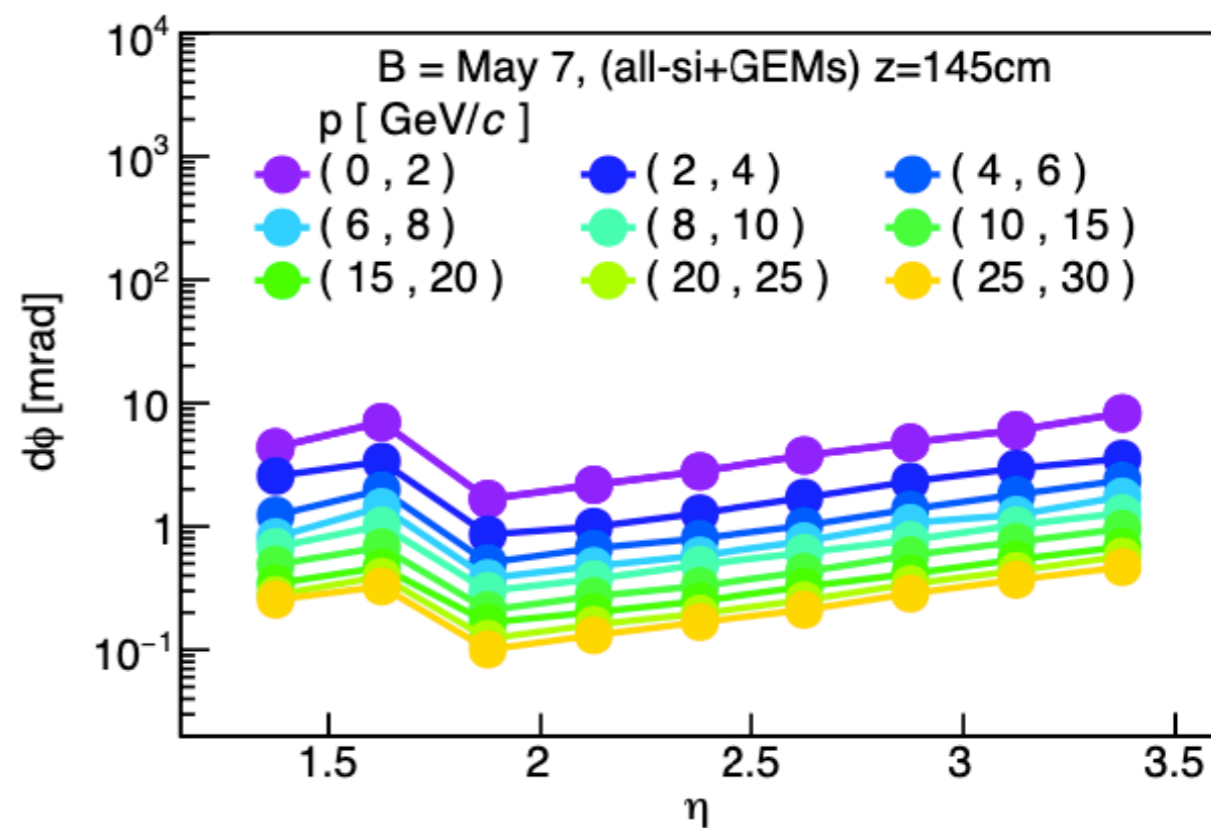
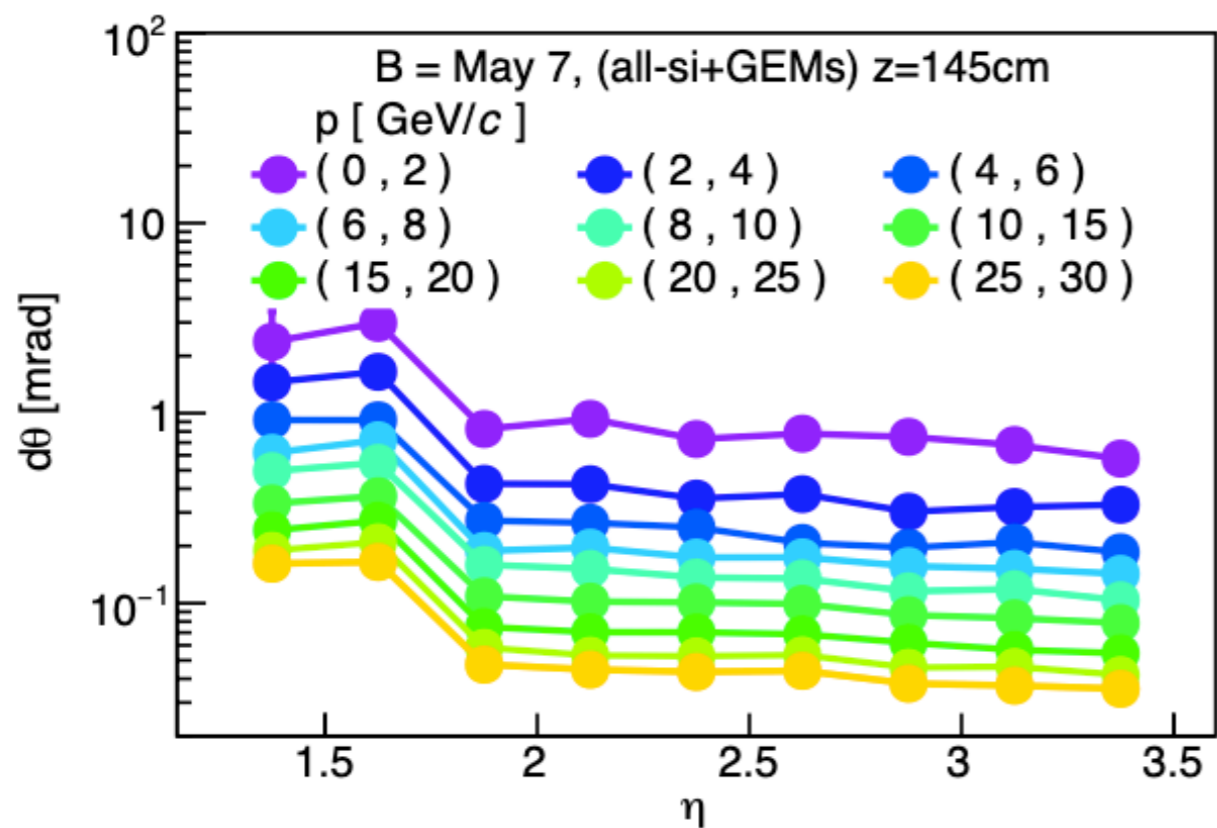
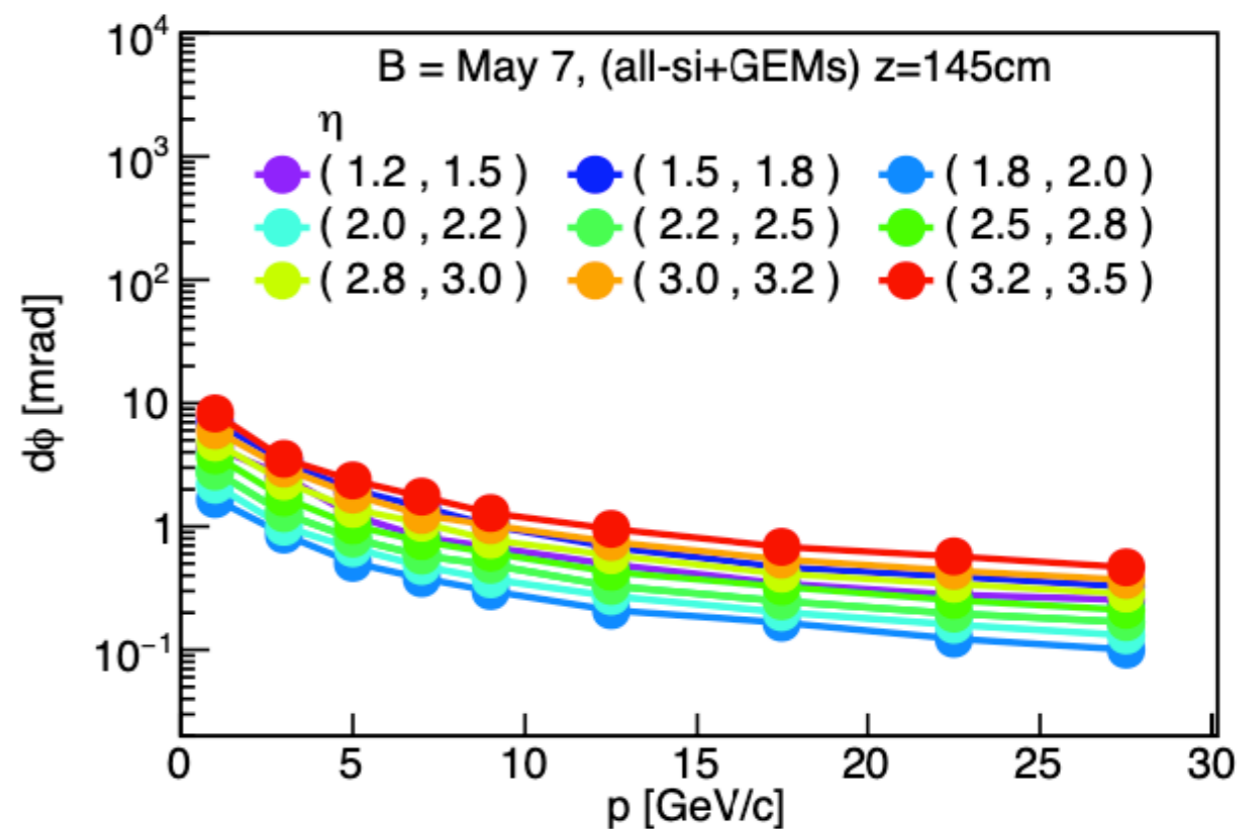
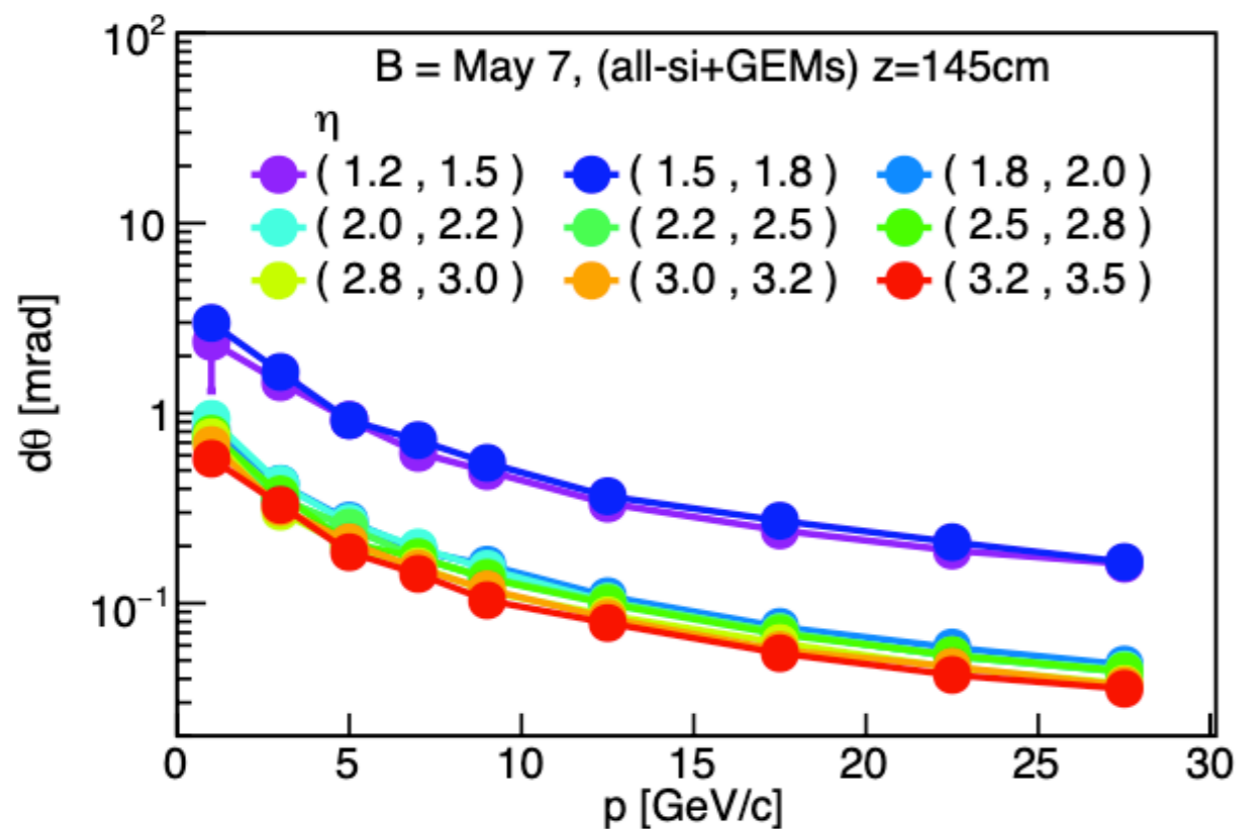
15.0 < p < 20.0 GeV/c



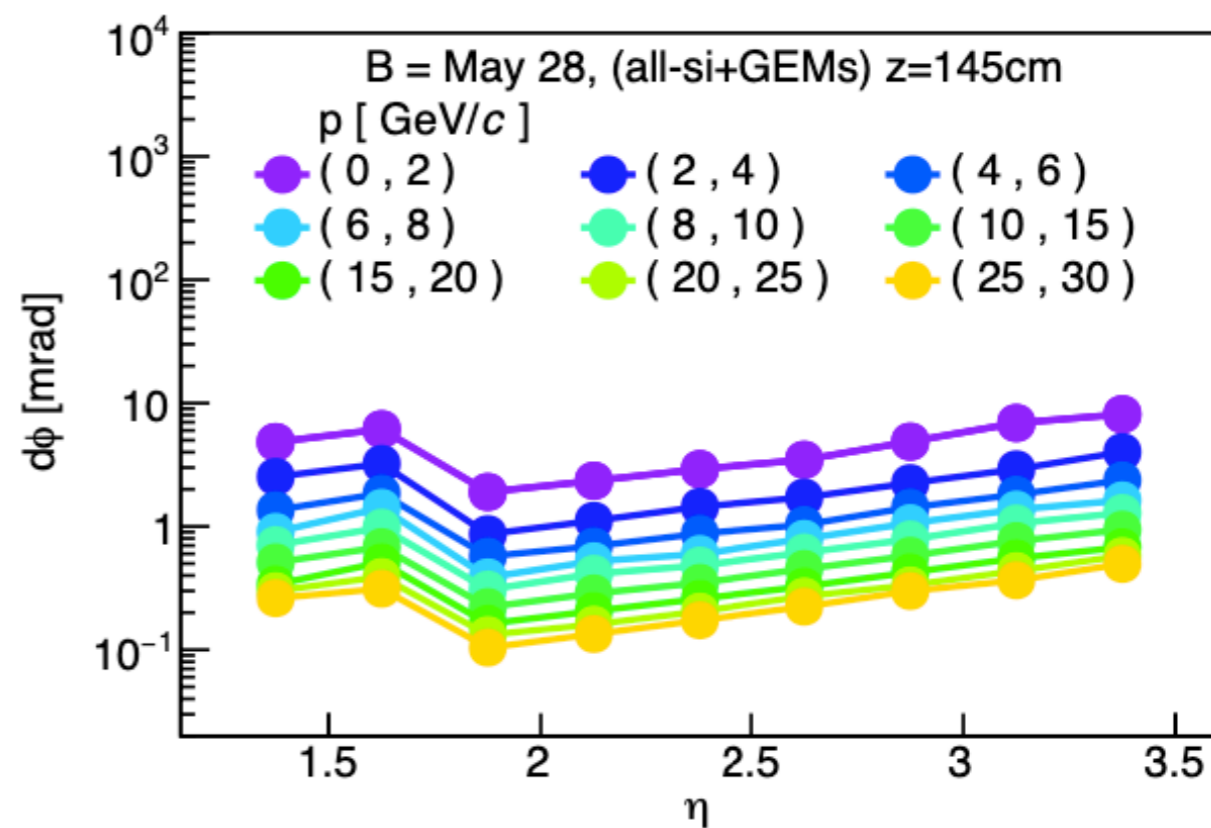
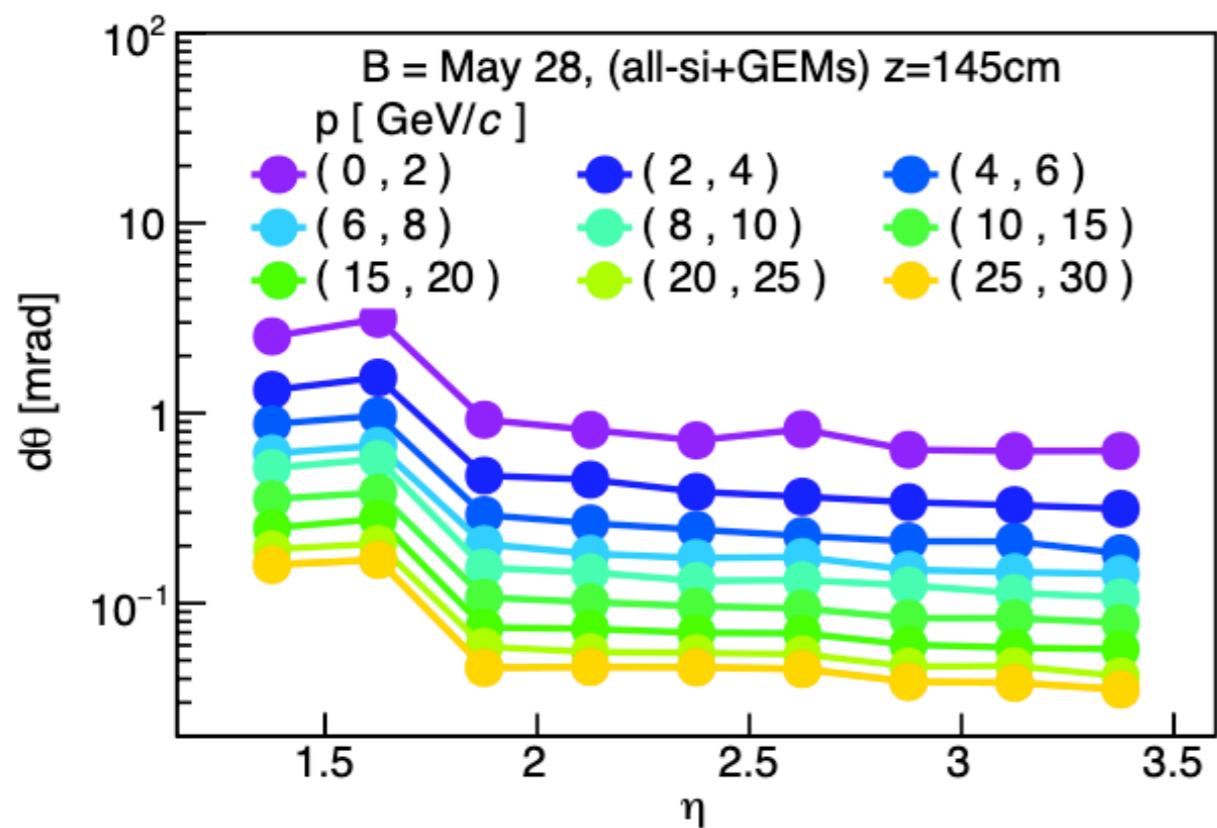
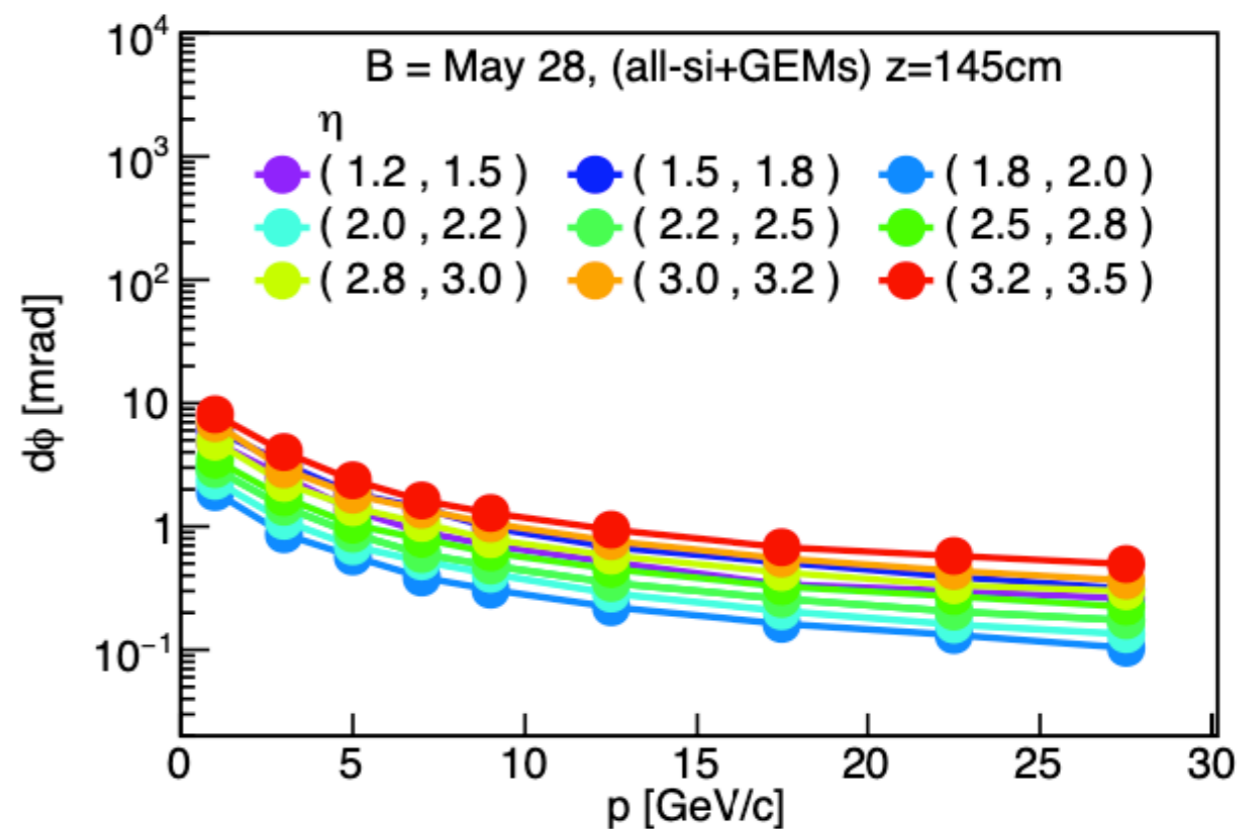
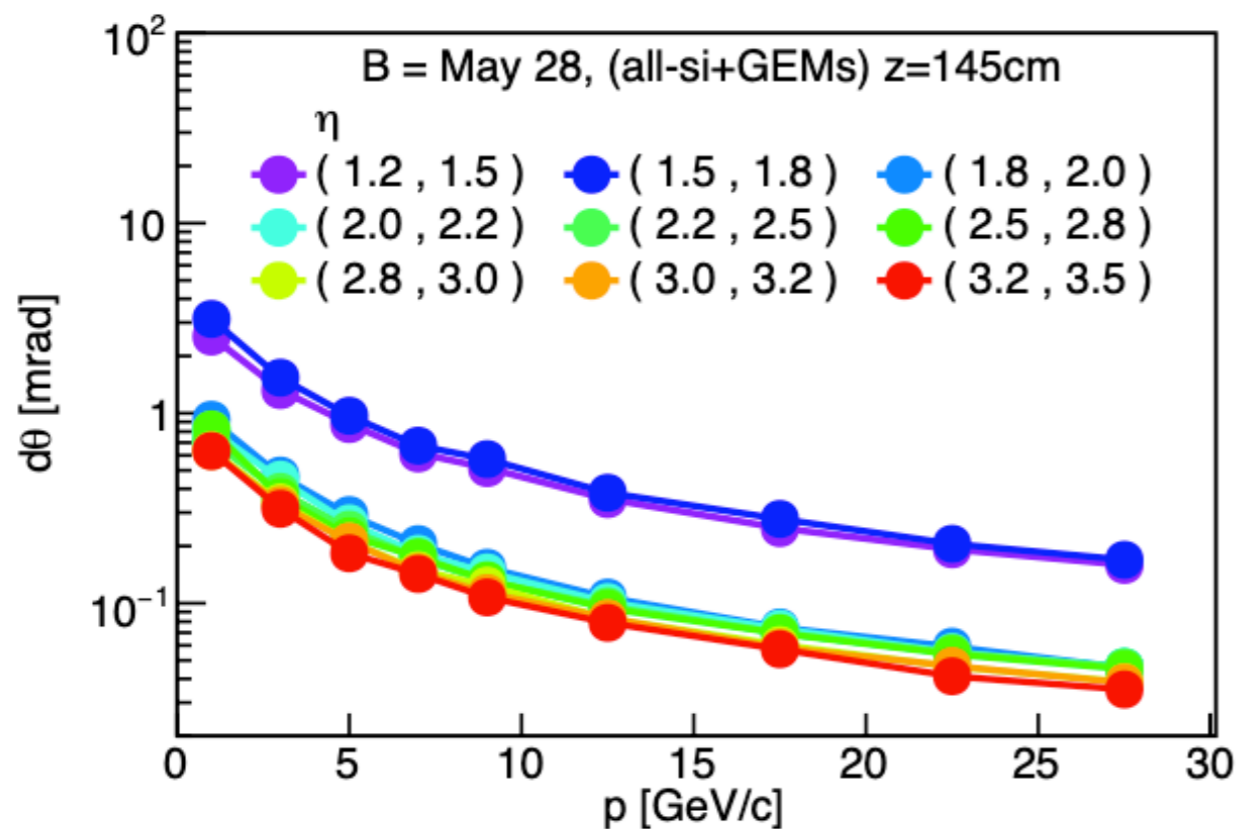
15.0 < p < 20.0 GeV/c



# Angular Resolutions @ RICH entrance

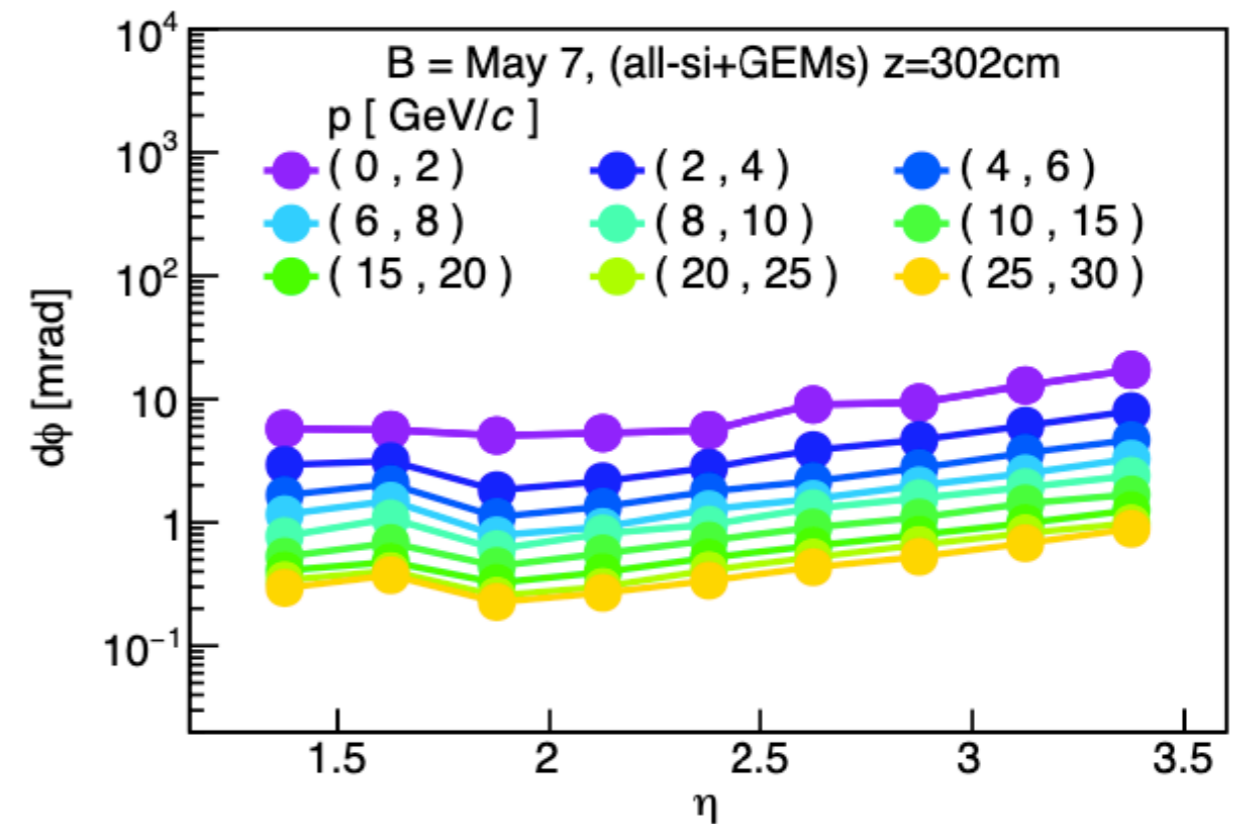
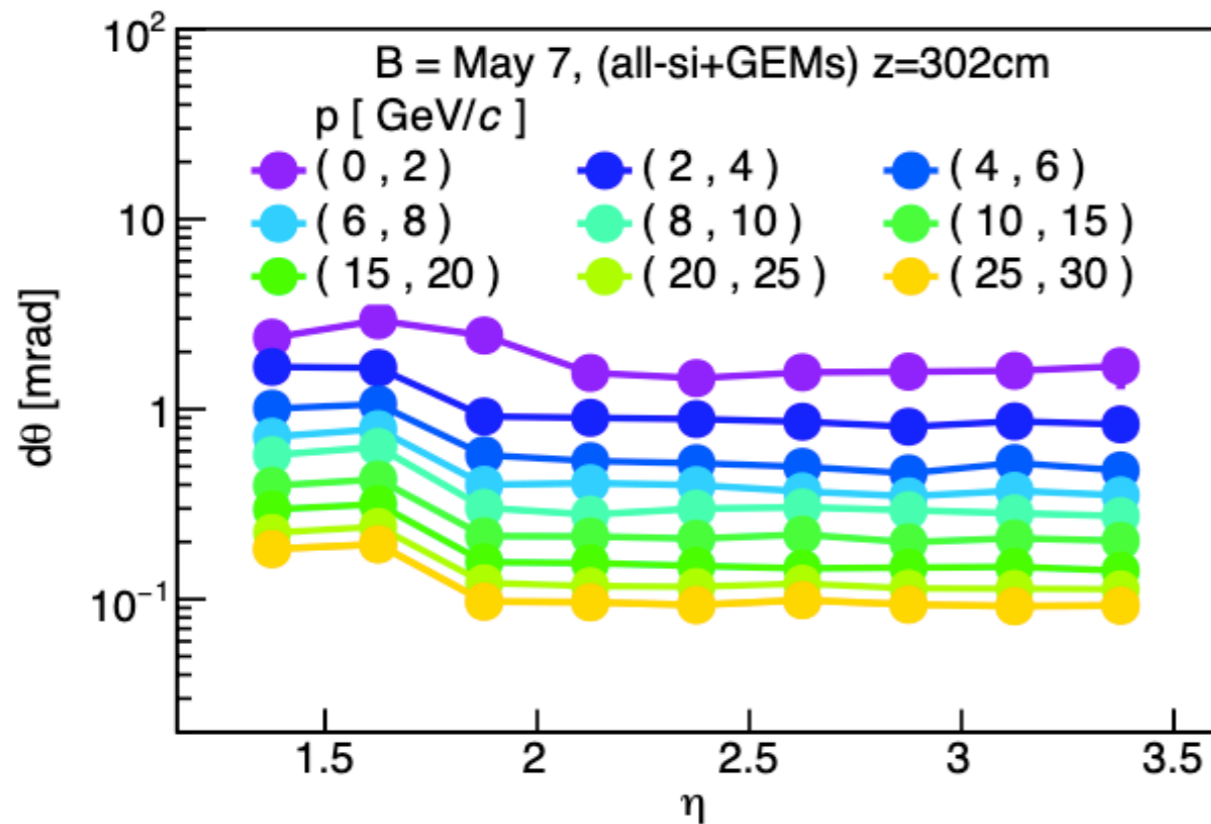
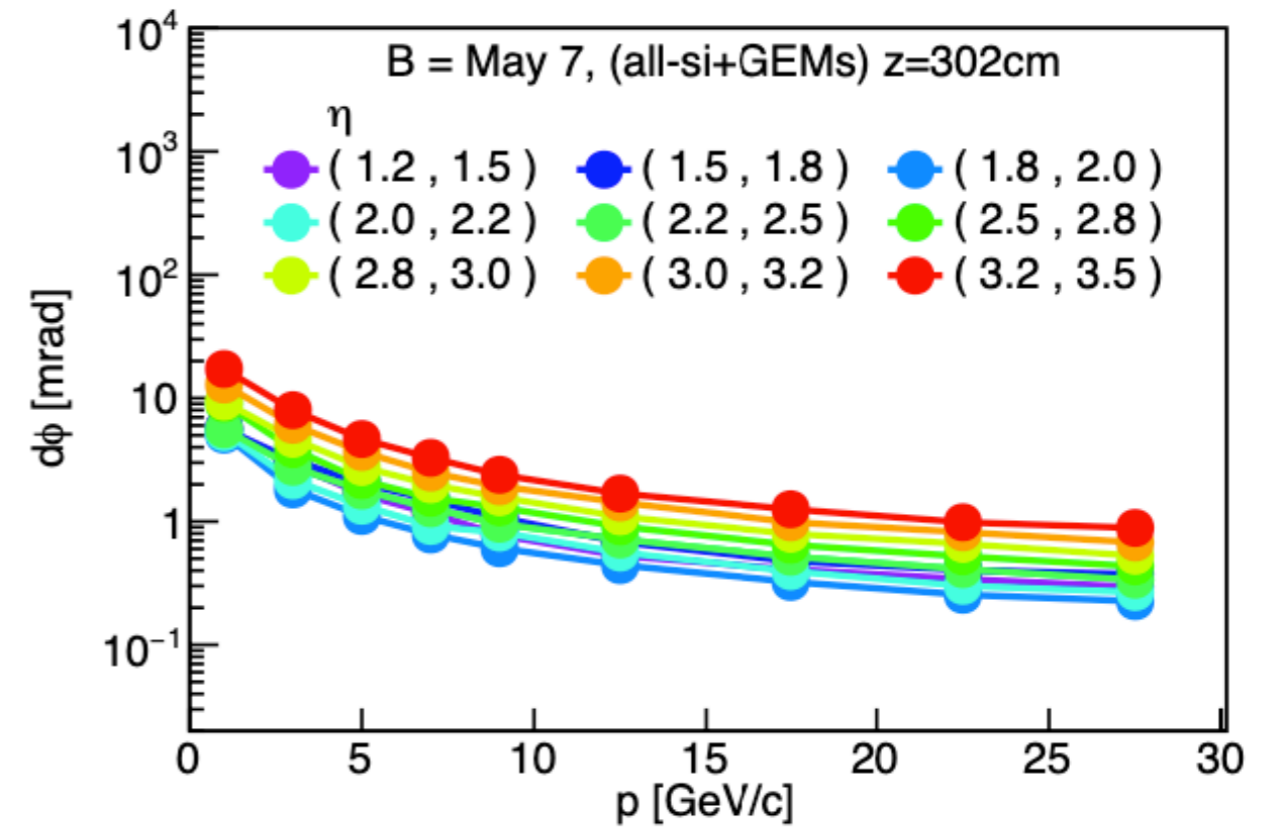
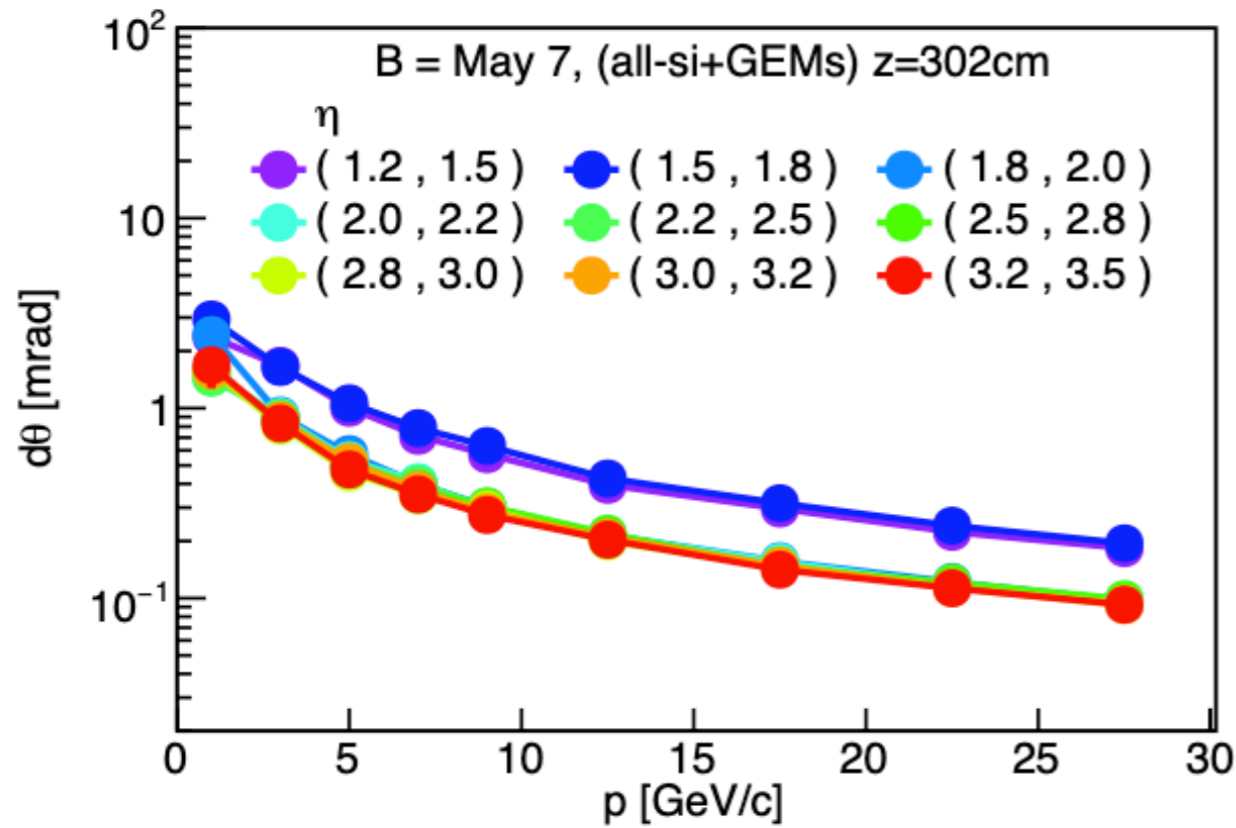


# Angular Resolutions @ RICH entrance

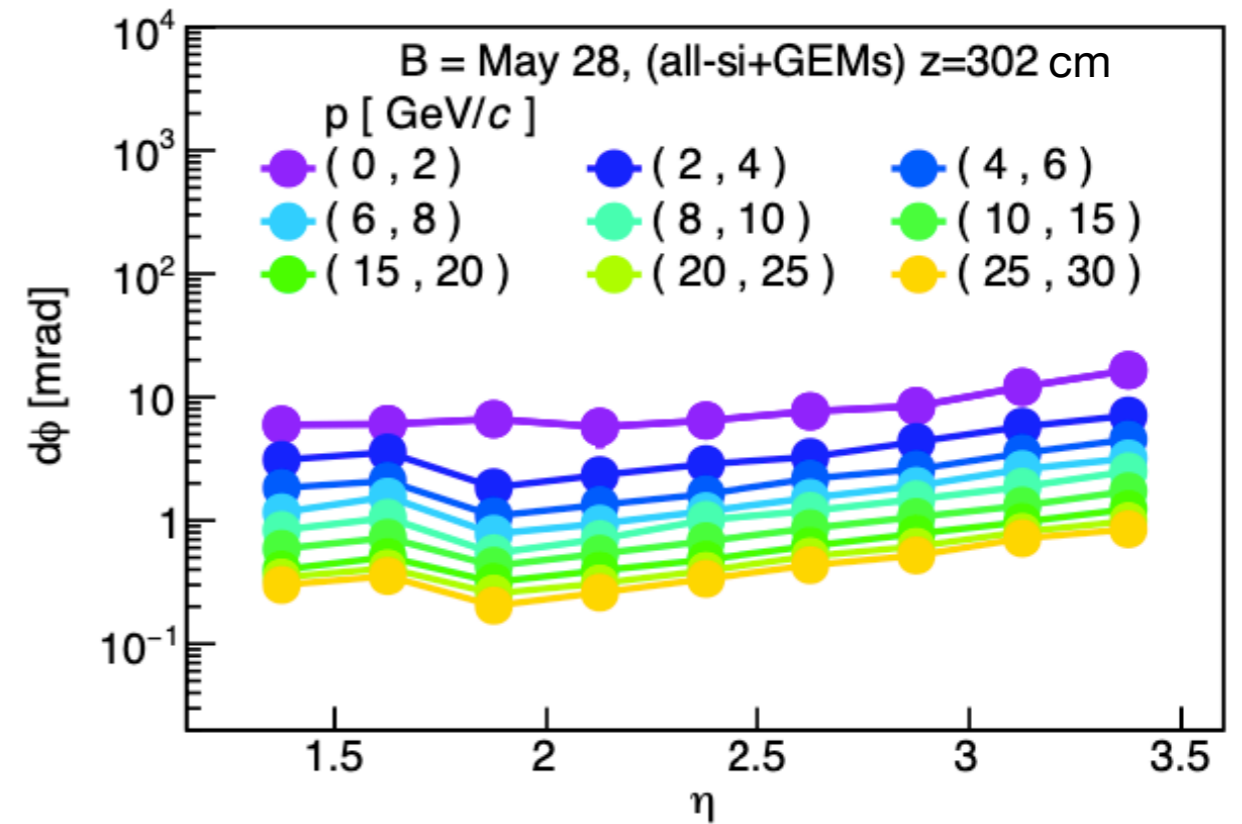
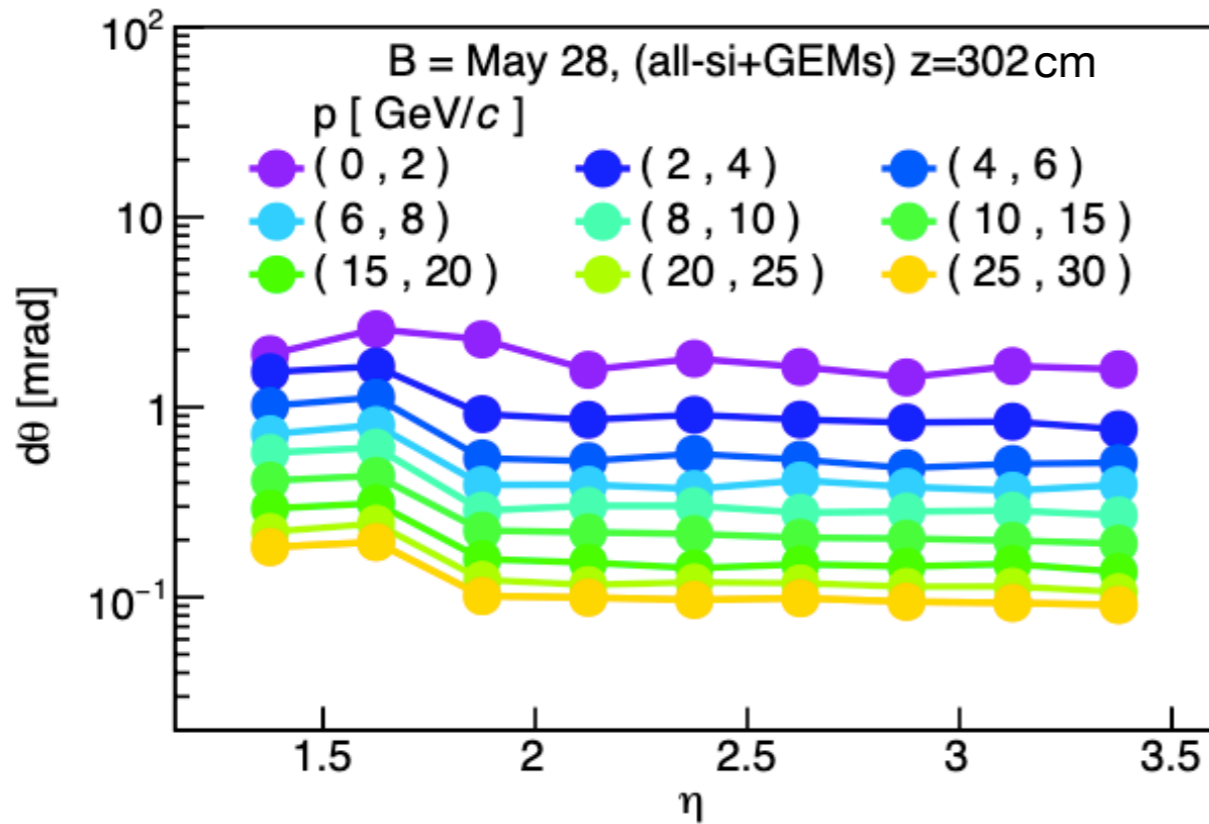
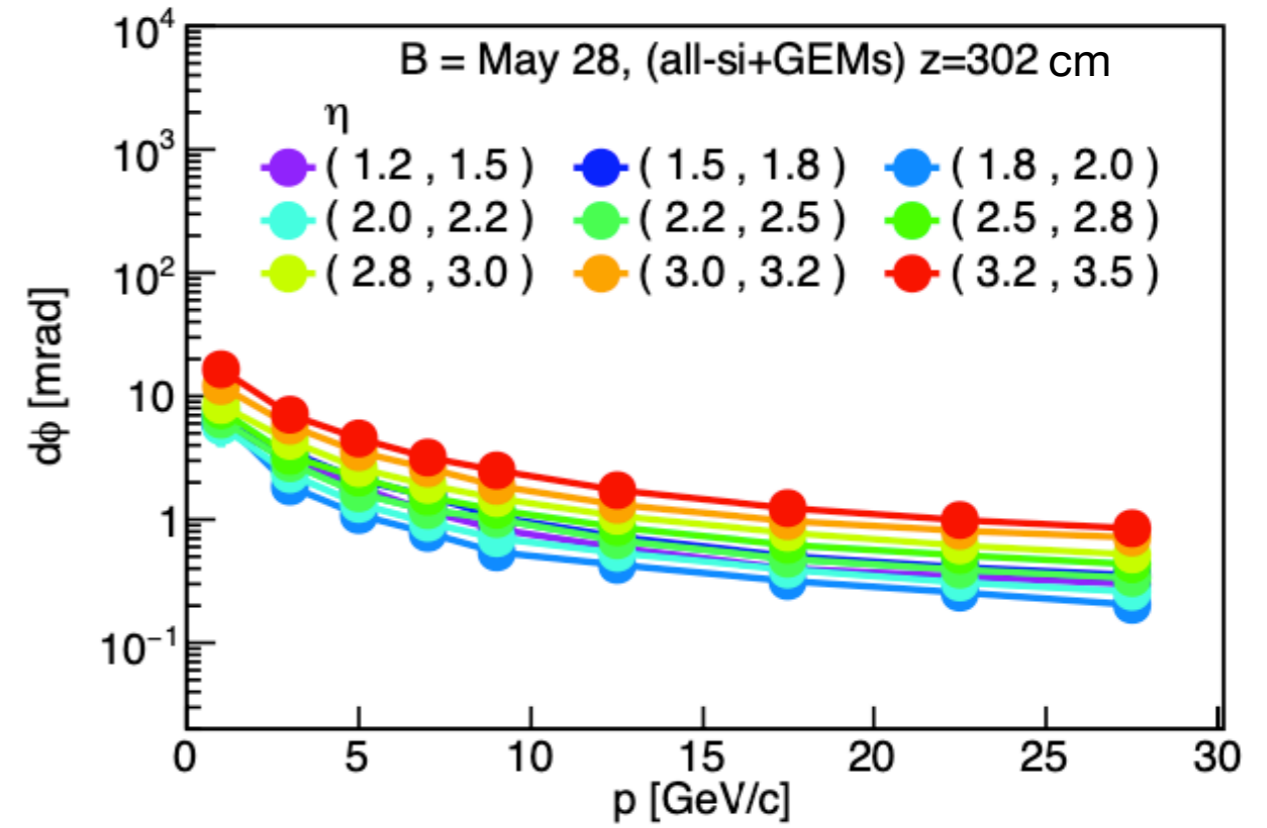
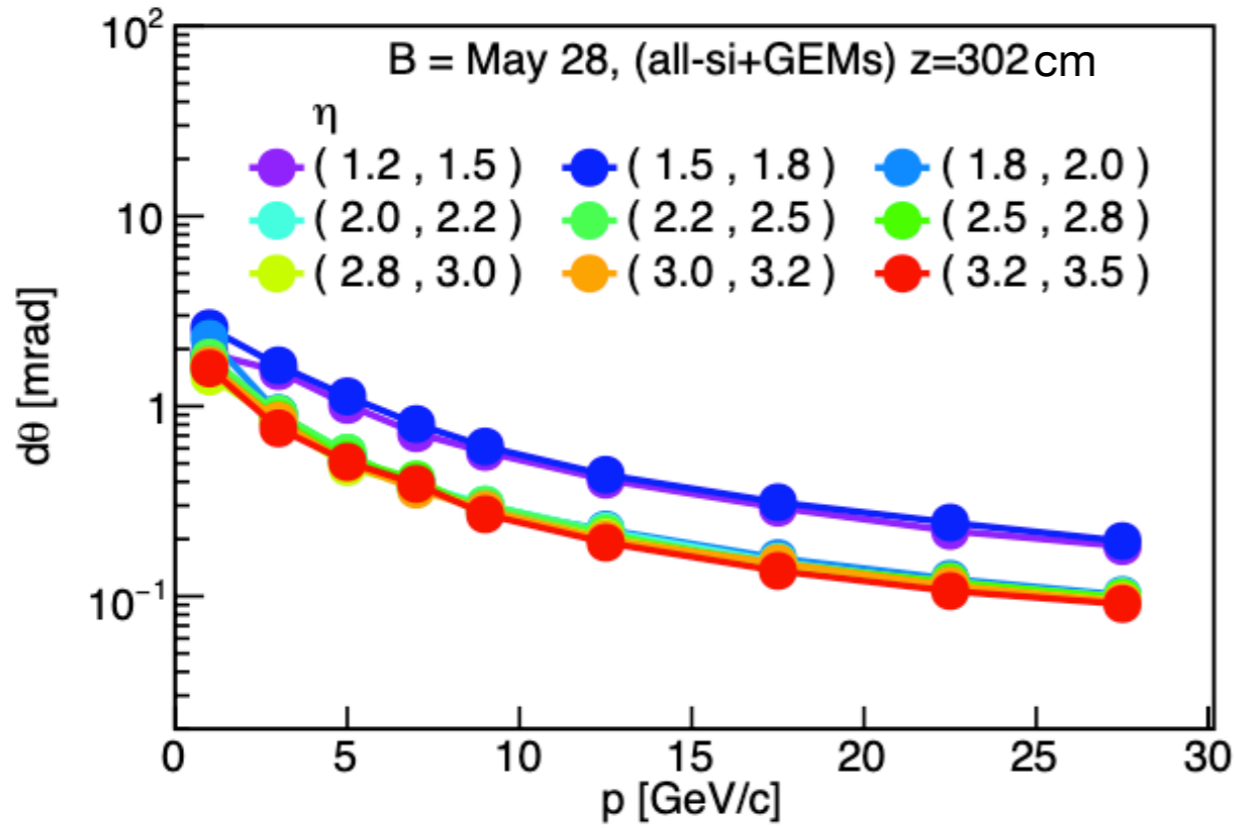




# Angular Resolutions @ RICH exit



# Angular Resolutions @ RICH exit





# Summary

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- ❑ Angular resolutions at the entrance and exit of the RICH geometry were presented for 'baseline1' with ATHENA magnetic fields from May 7 and May 28
- ❑ No significant differences are observed between the angular resolutions extracted using the two magnetic fields
- ❑ Angular resolution is (for  $|\eta| > 1.75$ ) ~50% 'better' at the entrance of the RICH compared to the exit
- ❑ The RICH geometry used in these studies is a rough approximation
- ❑ Missing material will significantly modify these projections