

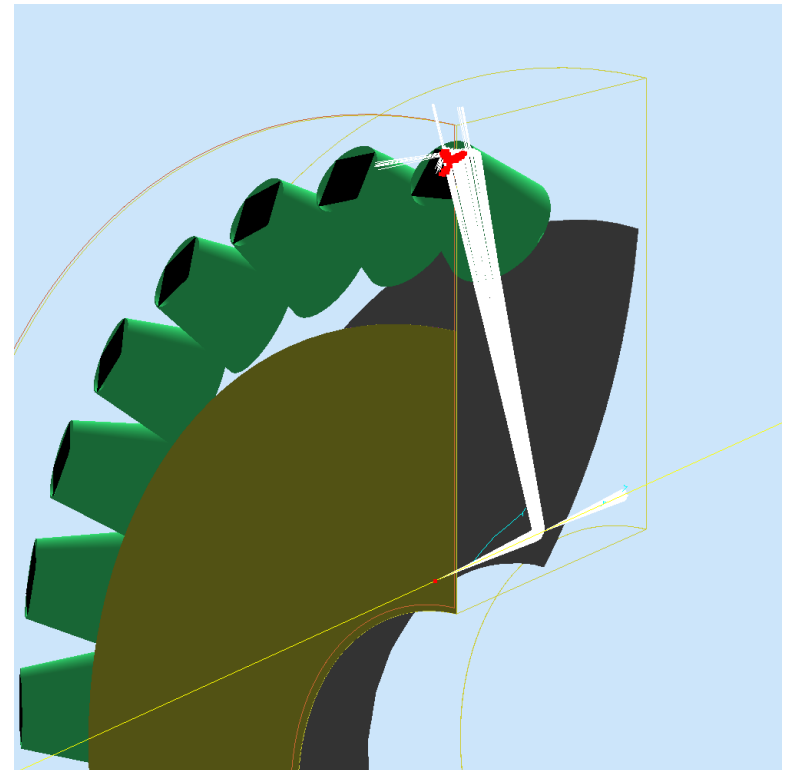
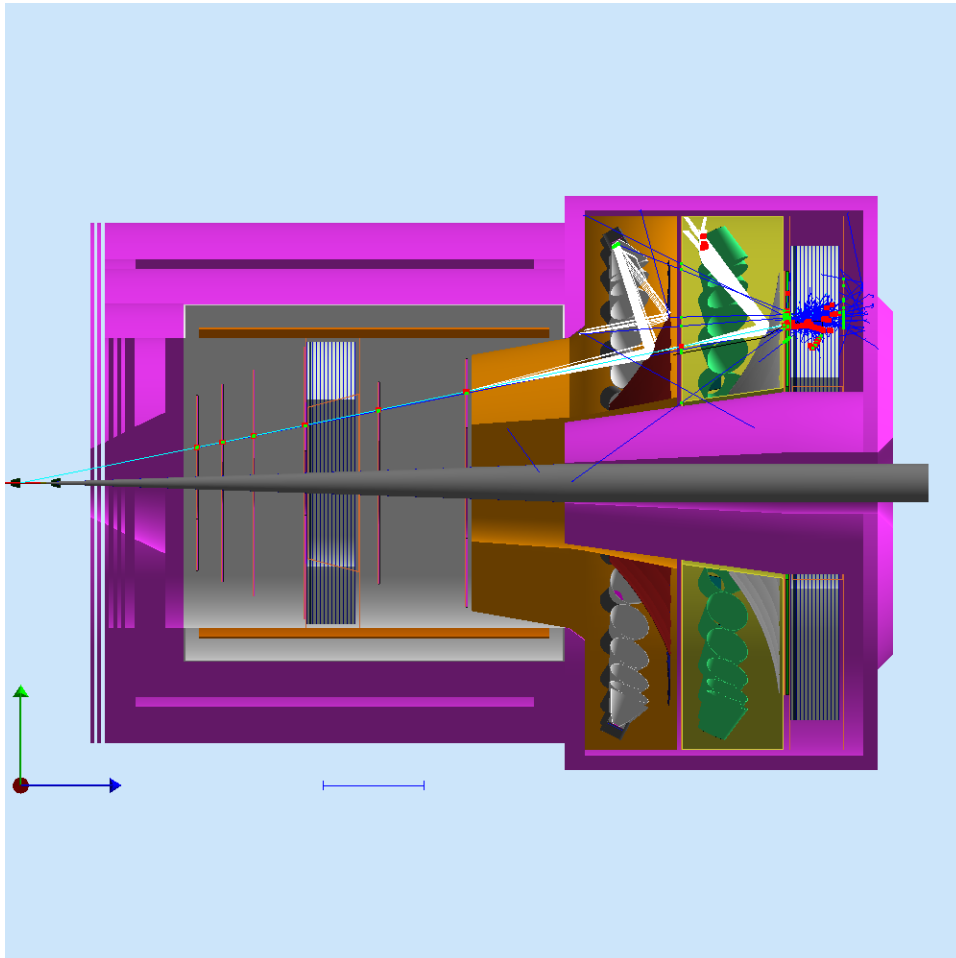
SoLID HGC Update

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Optimization for forward angle

where more SIDIS physics and higher background are



Hit pattern on 4x4 of 2" MAPMT

(pionm, at phi=0deg)

2.5GeV

7.5GeV

7.5deg

8.0deg

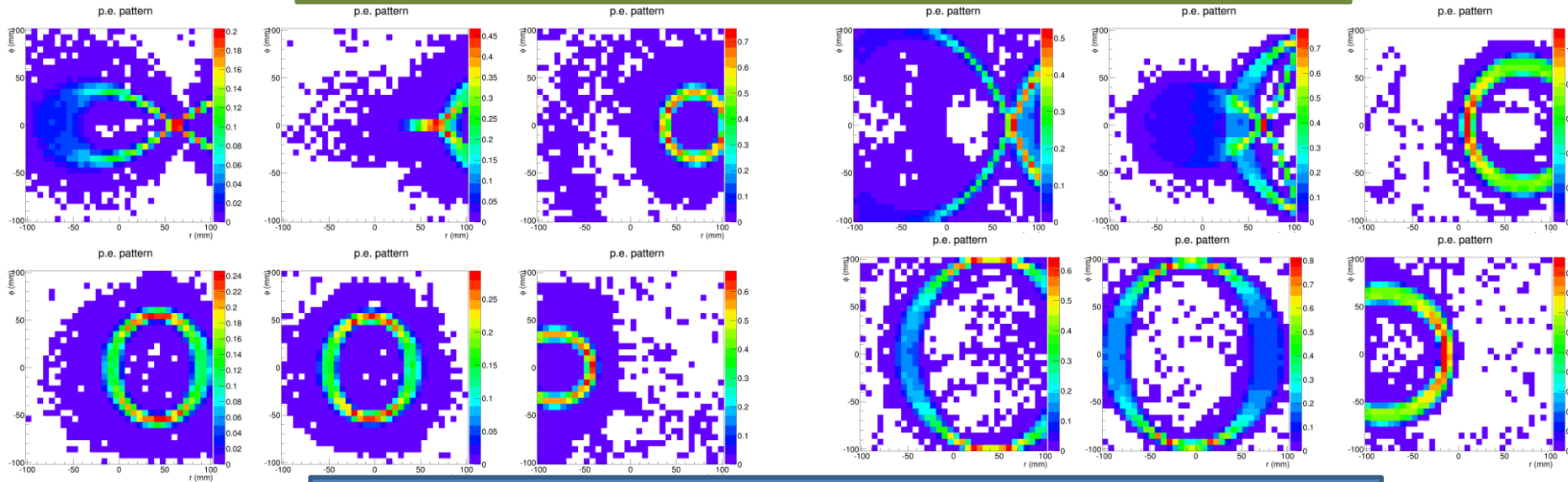
14.8deg

7.5deg

8.0deg

14.8deg

Old configuration, PMT at r=239.7cm, z=325cm, tilt 44 degree

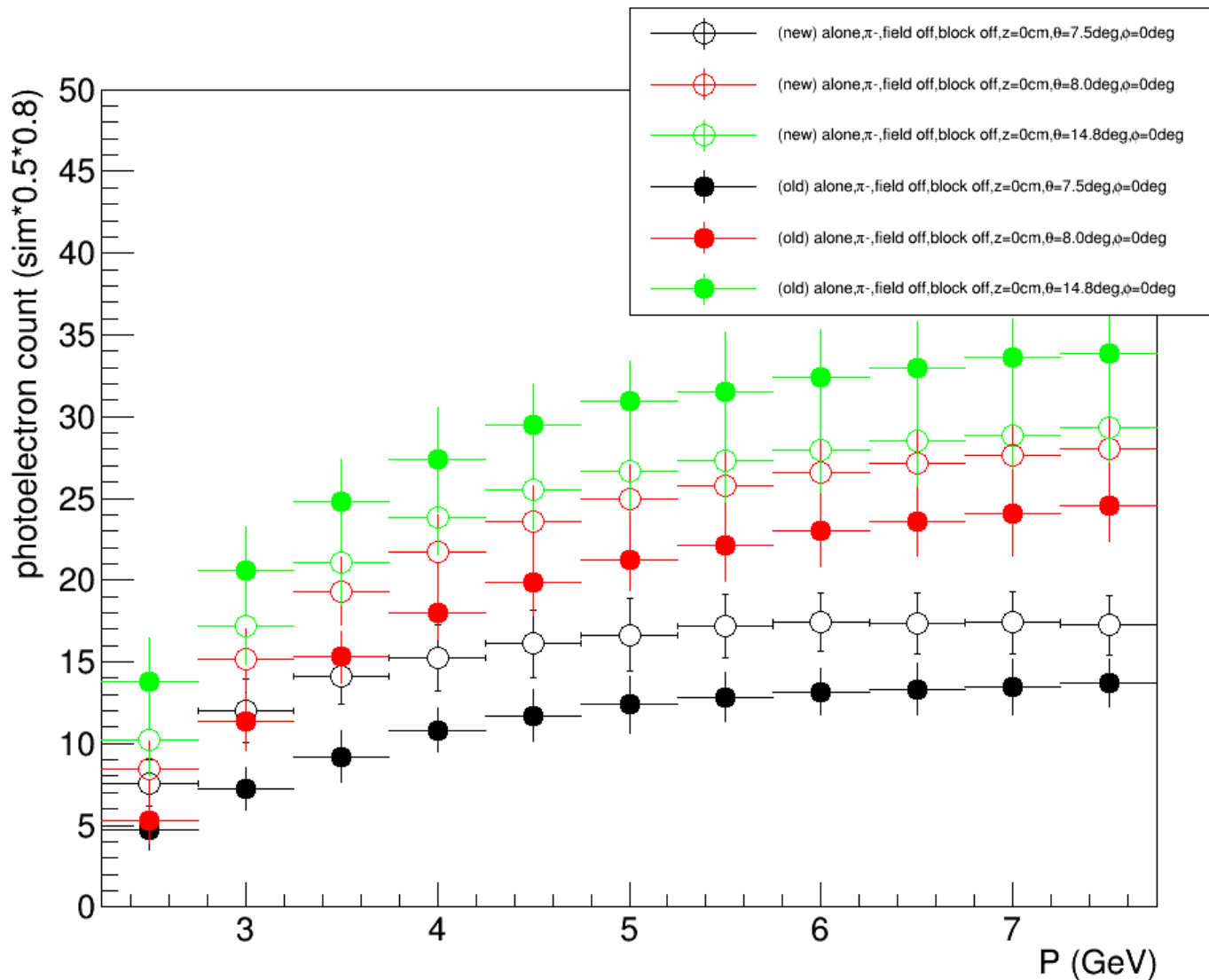


New configuration, PMT at r=249.7cm, z=335cm, tilt 65 degree

- New configuration optimized for forward angle where higher rate, higher background
- New configuration relies more on one bounce photons from mirror, less on two bounce photons from cone

Comparison

- Theta= 7.5deg and 8deg, increase by 20-30%
- Theta=14.8 deg, decrease by 20-30%



Outlook

- Further study the new configuration in simulation, especially on background
- Garth Huber's Canadian fund request (C\$100k), The first half approved in March, waiting for the other half and hope to start prototyping frame and window soon
- Making board with JLab electronic group and test them late Summer or early Fall
- Collaborating on PMT shielding and PMT test with Wuhan University nuclear group

backup

Result in pCDR

