

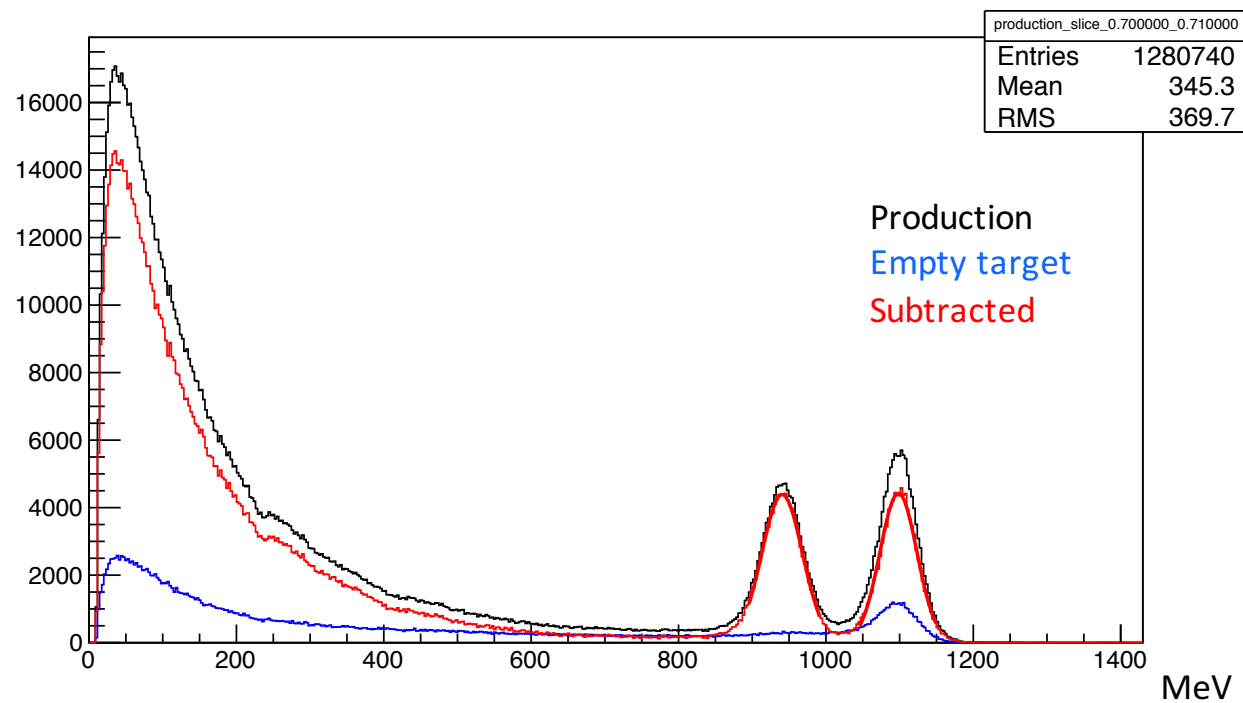
Progress update

- Finished HyCal physics calibration for 70% of 1.1 GeV data and 70% of 2.2 GeV data
 - Have already sent out the files
 - Only work for original PrimEx island algorithm
 - Problem with LG LMS measurement still need more studies, find out that using averaged LMS from neighboring runs give much better resolution (see the other slides)
- Separation of ee and ep at very small angle
- Yield of ep after calibration and empty target subtraction

Separation of ep and ee at Very Forward Angle

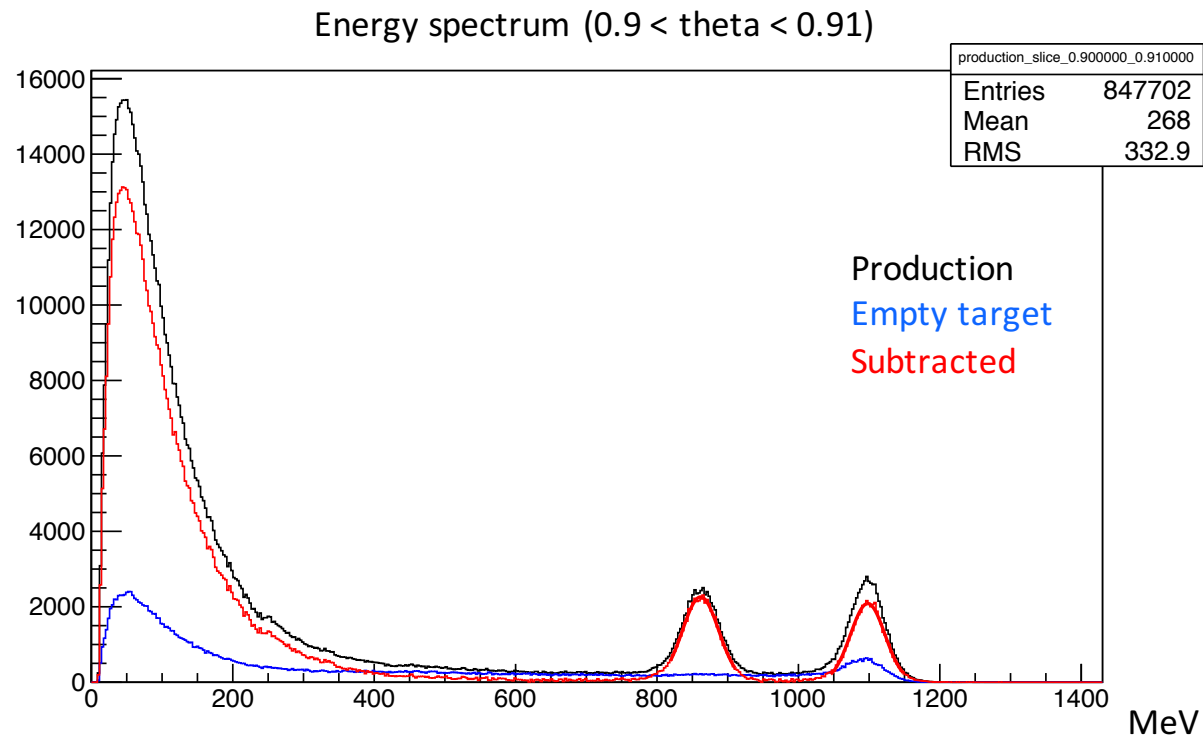
- Cut cluster E vs. theta 2D plots into slices with width of 0.1 deg
- Subtract empty target run from production run after scale with live time and beam charge
- Fit the subtracted peak for the ep and ee to get the mean and resolution

Energy spectrum ($0.7 < \theta < 0.71$)



Separation of ep and ee at Very Forward Angle

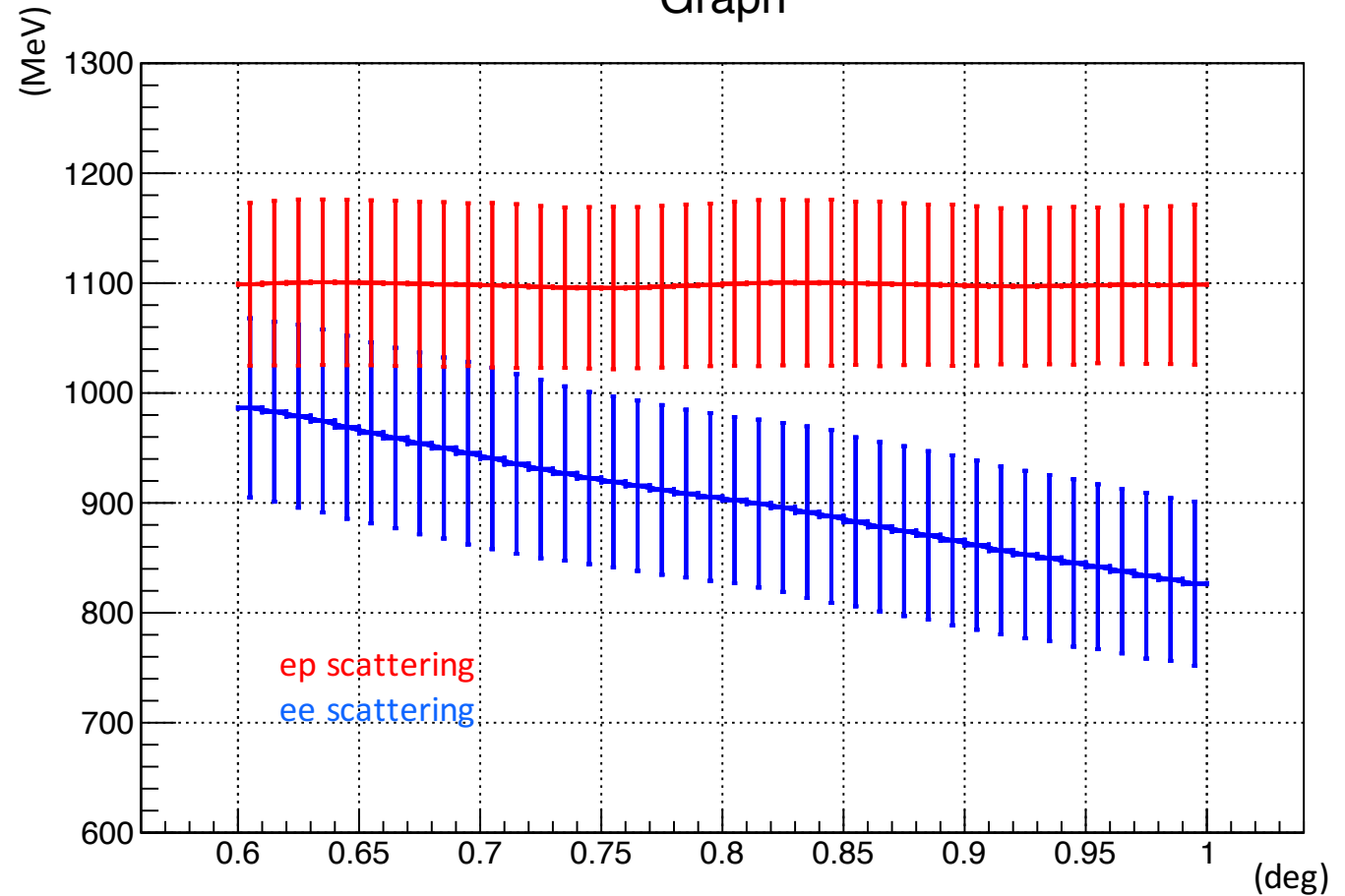
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Separation of ep and ee at Very Forward Angle

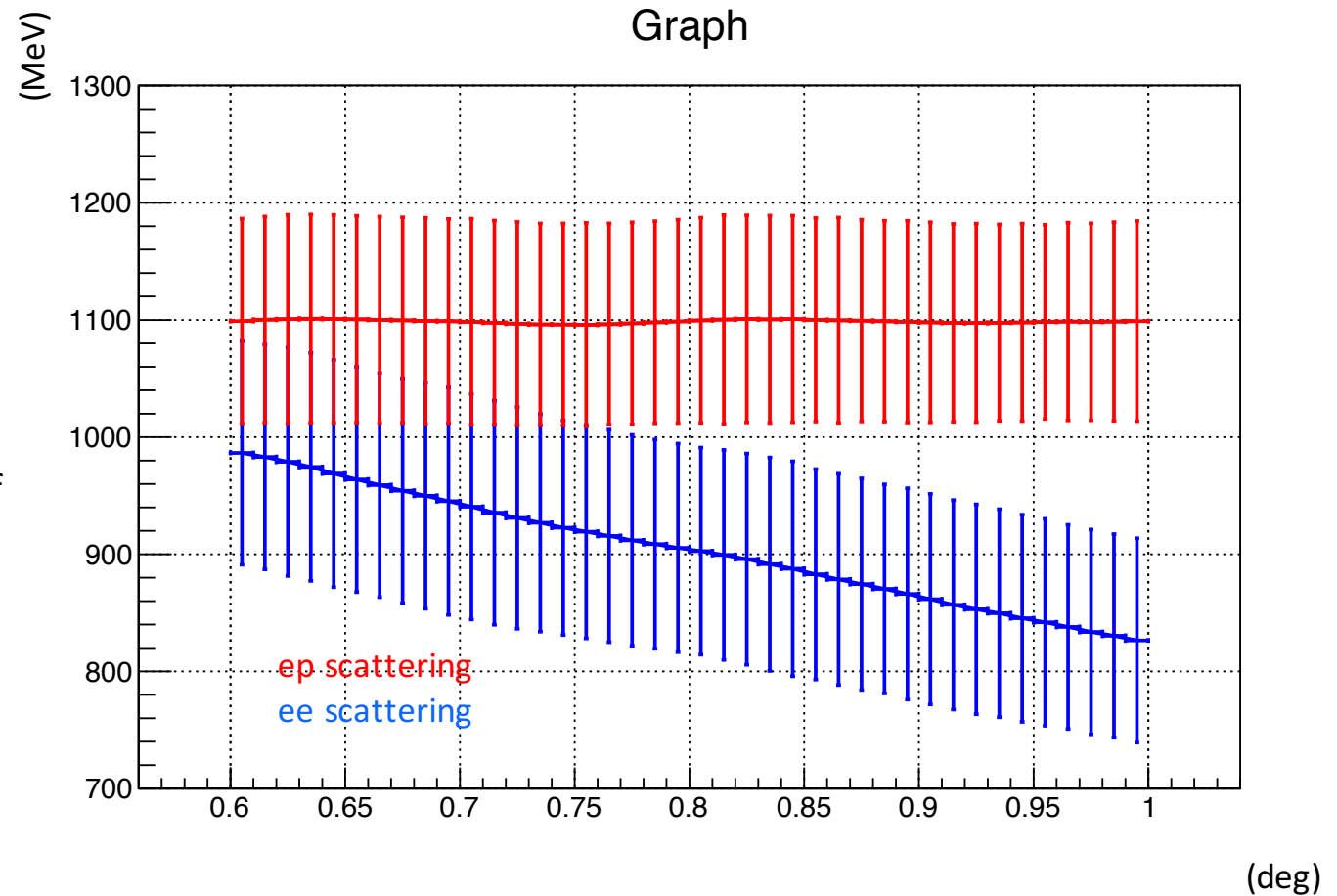
Graph

- Calculated using HyCal info only
- Data points show the mean value of the peak
- Error bars show 3 times of the Gaussian width



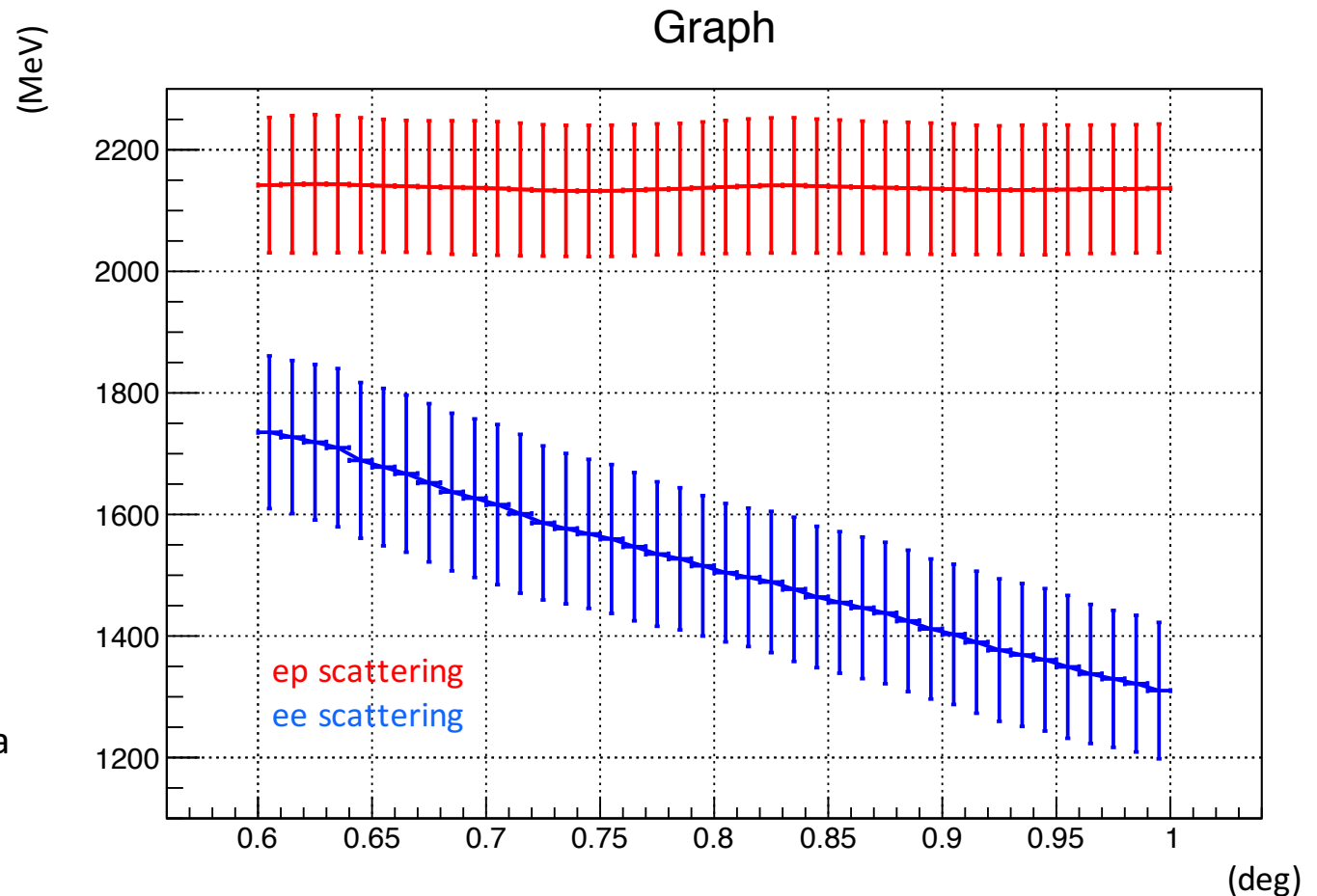
Separation of ep and ee at Very Forward Angle

- Calculated using HyCal info only
- Data points show the mean value of the peak
- Error bars show 3.5 times of the Gaussian width

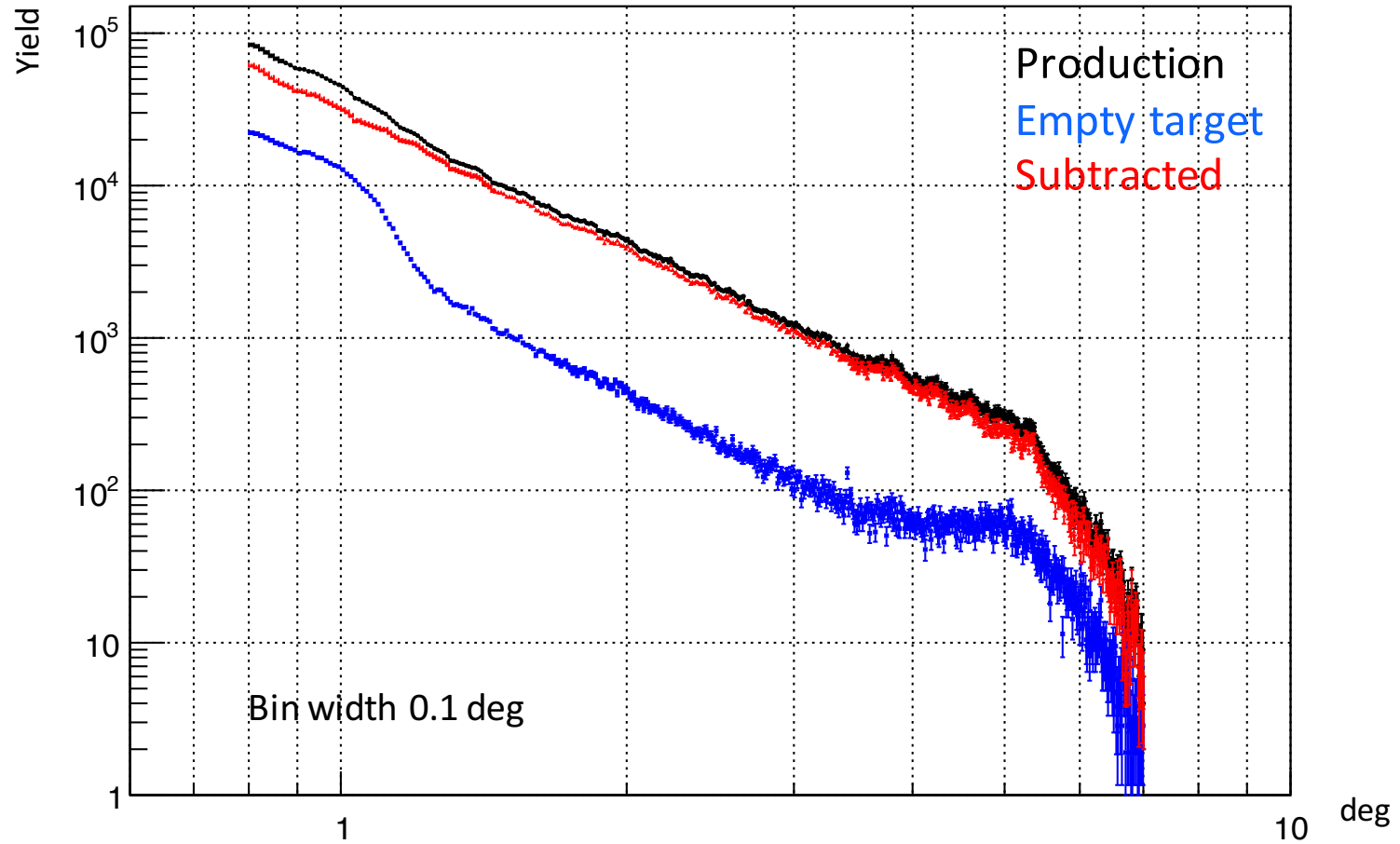


Separation of ep and ee at Very Forward Angle

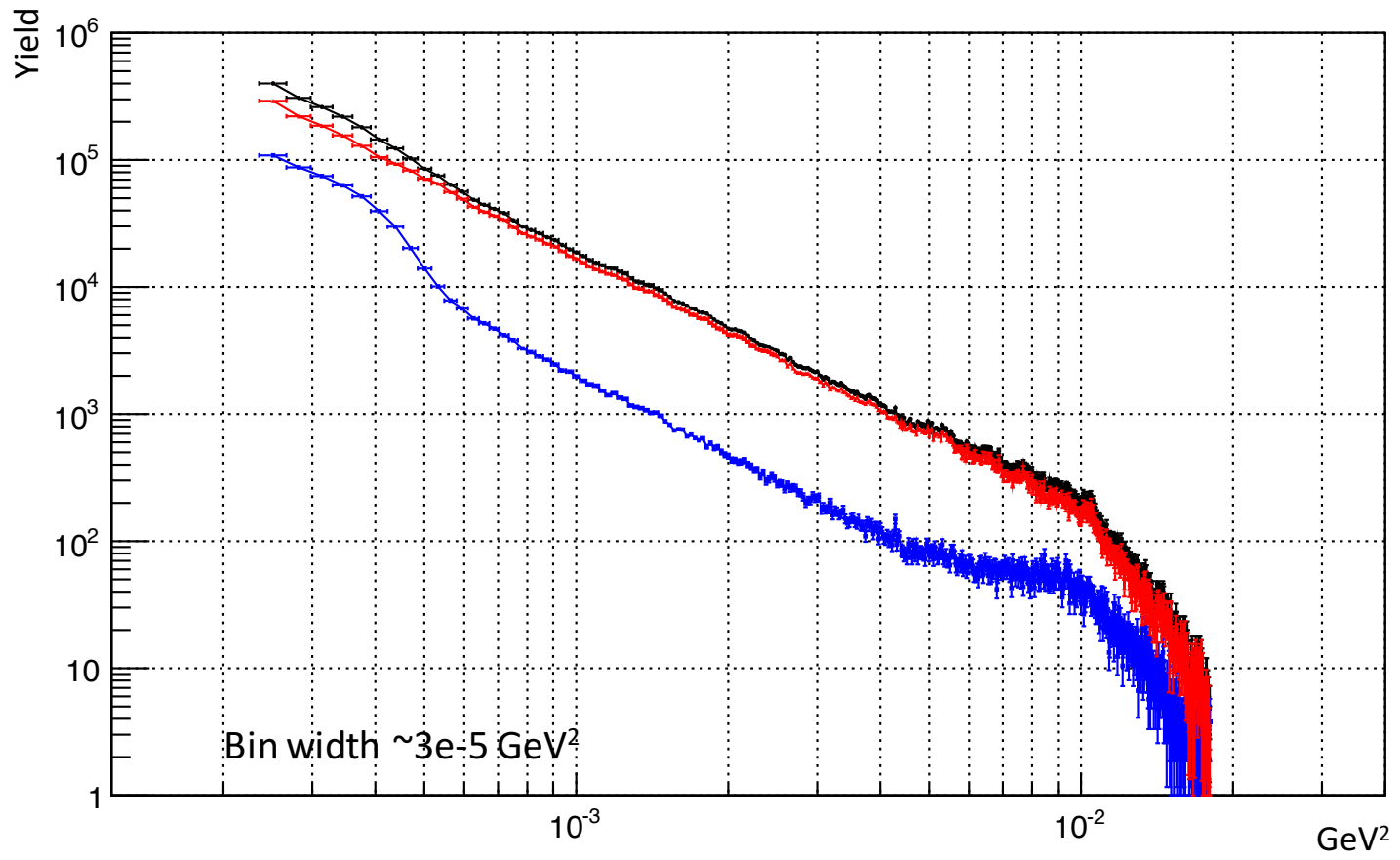
- Calculated using HyCal info only
- Data points show the mean value of the peak
- Error bars show 3 times of the Gaussian width
- At 2.2 GeV, they are well separated, for any reasonable amount of sigma we consider



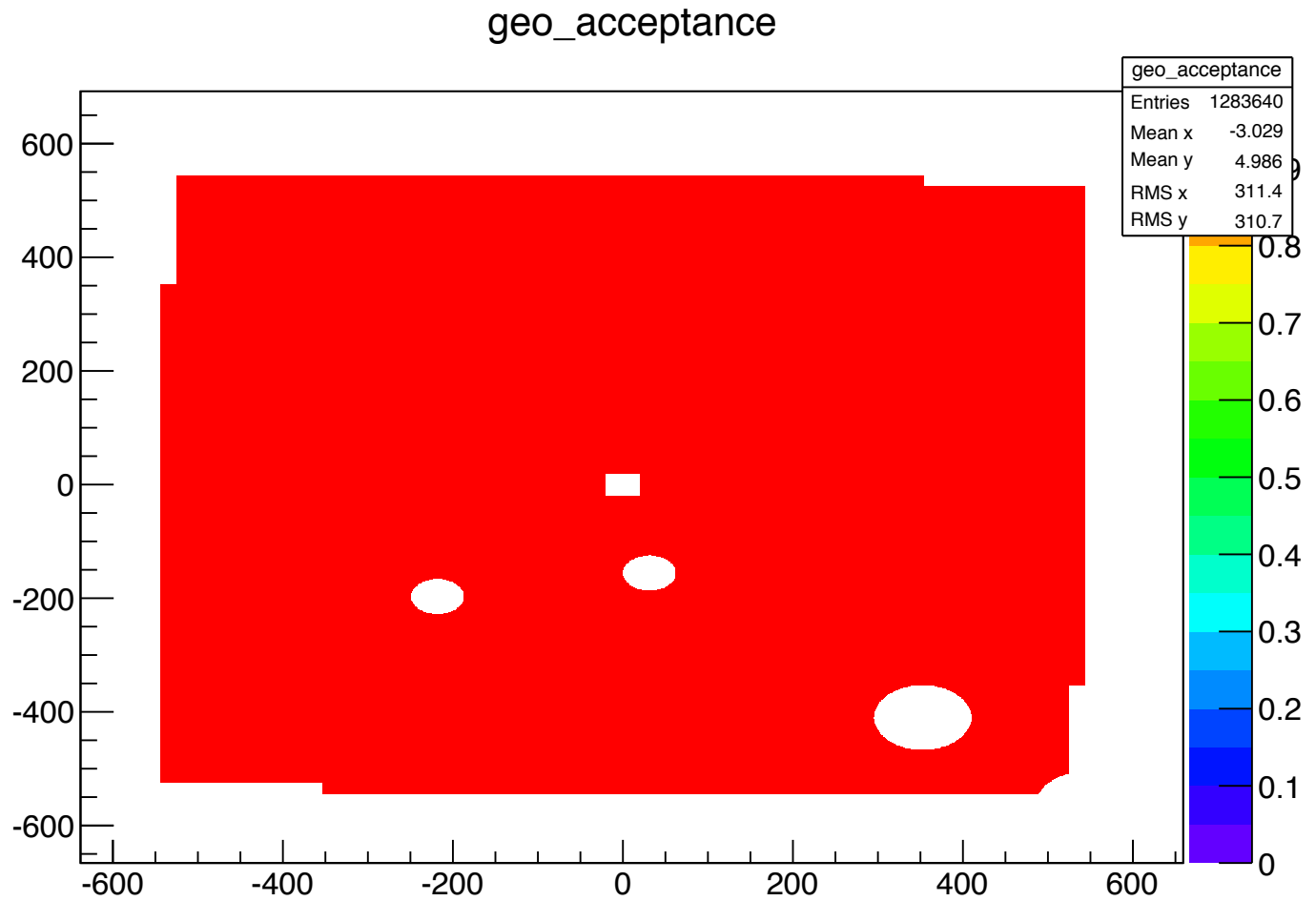
ep Yield vs. Scattering Angle theta (HyCal Info Only)



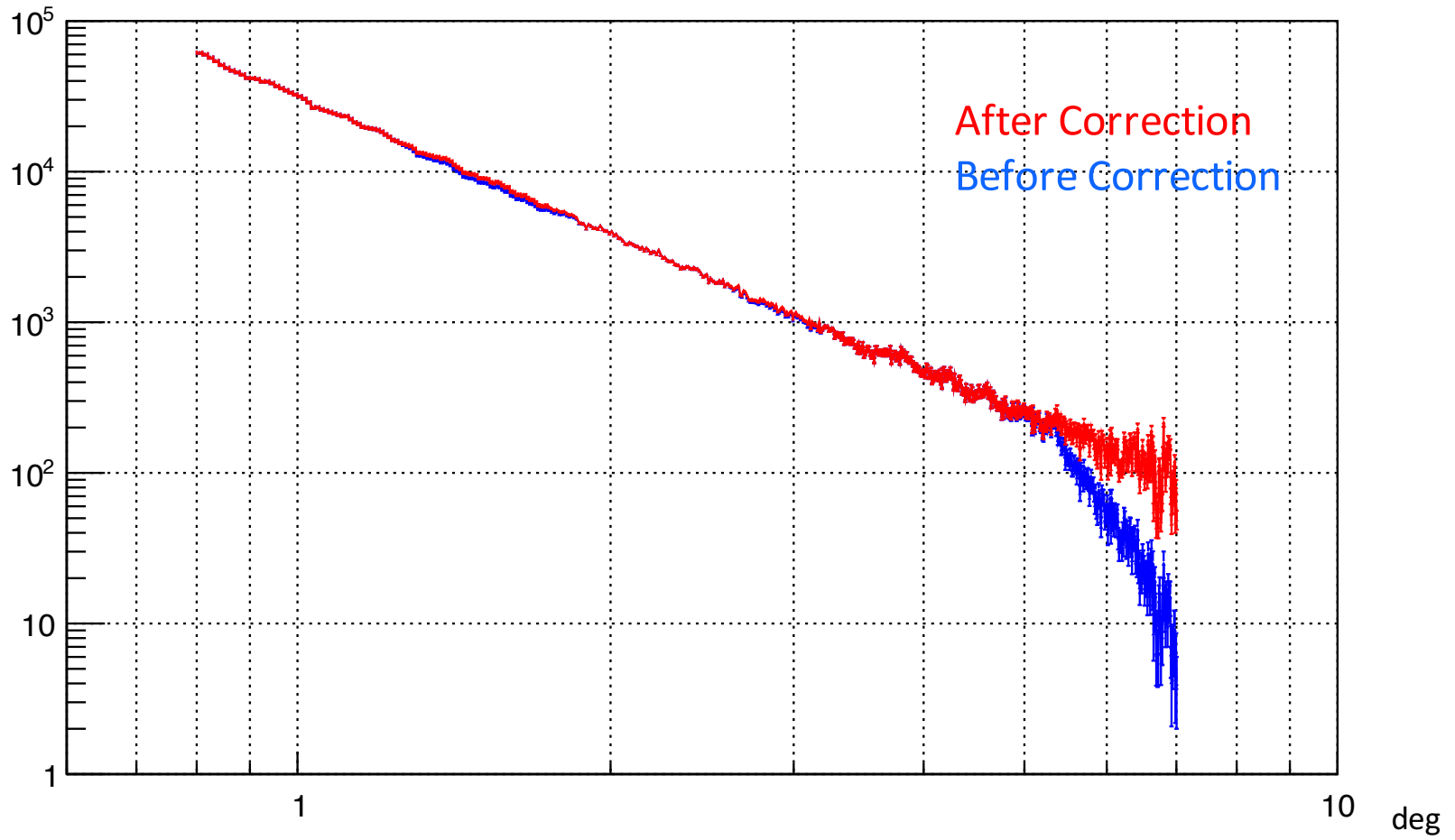
ep Yield vs. Q^2 (HyCal Info Only)



- Cut away hit around 4 dead modules: W835, W891, G775 and G900
- Using radius of 1.5 times the modules size
- Also remove hits that hit the outer boundary of HyCal



ep Yield vs. Scattering Angle theta (HyCal Info Only)



ep Yield vs. Q^2 (HyCal Info Only)

