Hit Efficiency as a Function of Layer 2016

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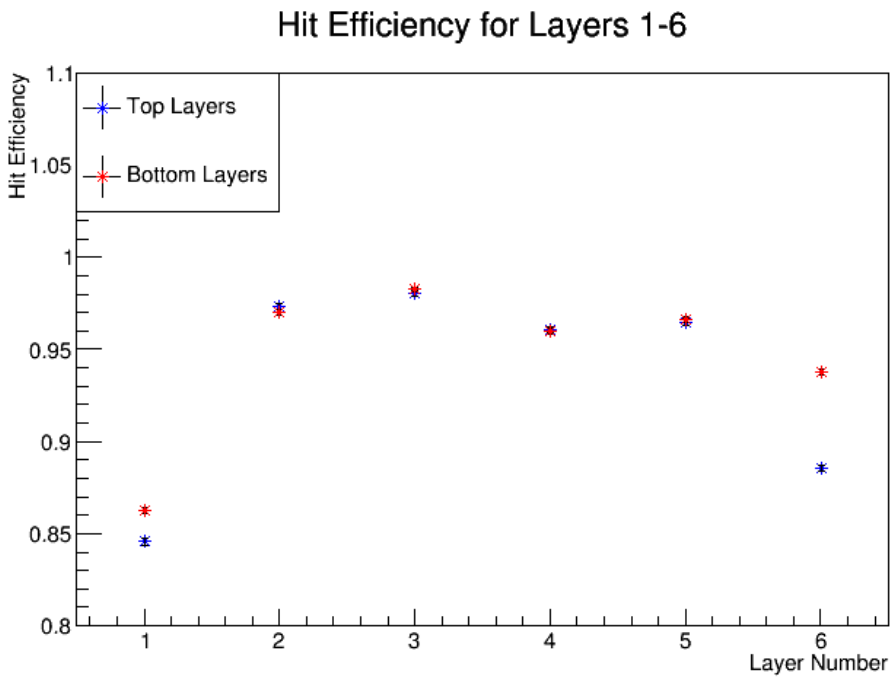
Method

- Use run 008087 and run the recon with different tracking strategies to isolate each layer
- Track fits used 5 layers (3 seed, 1 confirm, 1 extend)
- Extrapolate track to missing layer and see if it lies within acceptance (number of reconstructed tracks)
- Search for a stereo hit within a narrow region of the extrapolated track - about 5 sigma of unbiased residual - (number of tracks with hits on all layers)

$$efficiency = \frac{numberoftrackswithhitsonalllayers}{numberofreconstructedtracks} \quad (1)$$

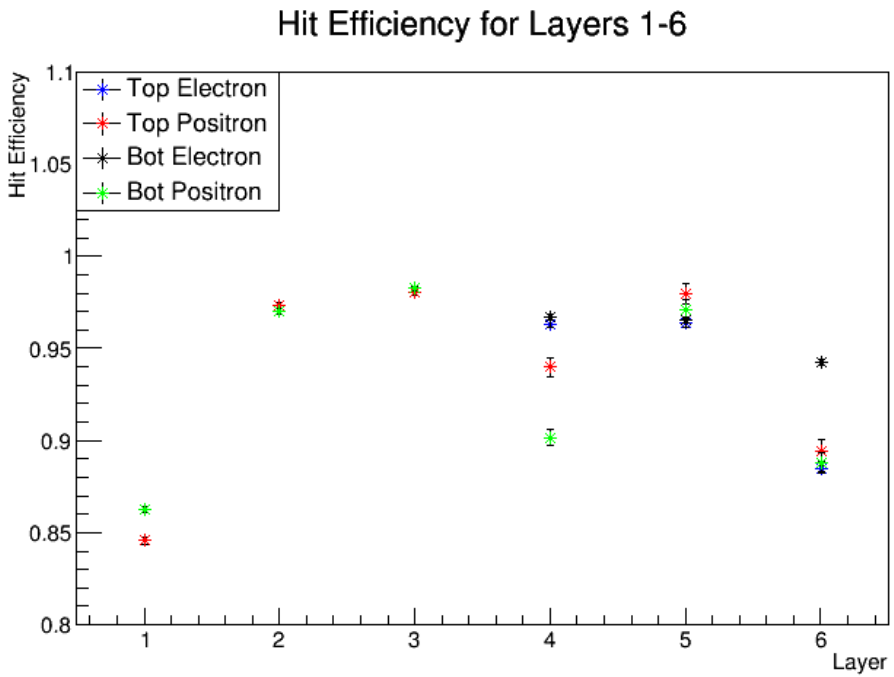
Hit Efficiency 2016

- Hit efficiency as a function of layer for 2016 data



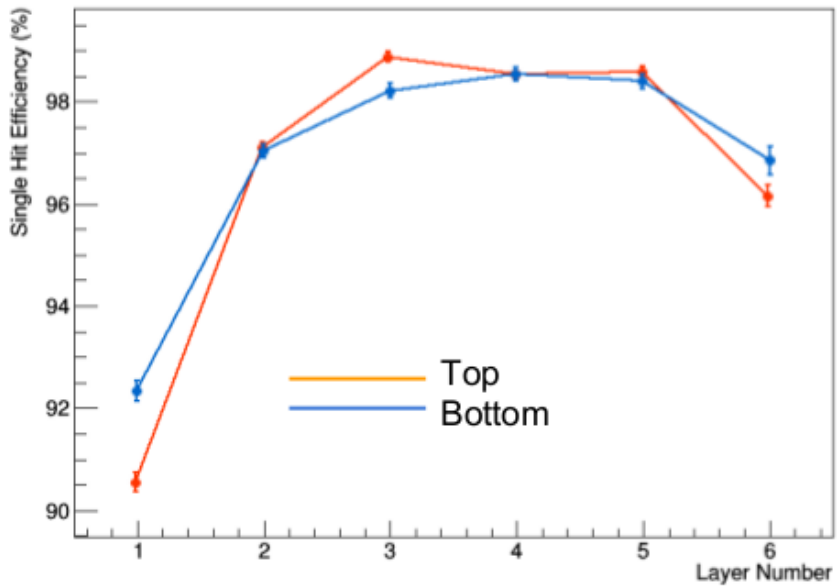
Hit Efficiency 2016

- Hit efficiency as a function of layer separated for positron/electron side



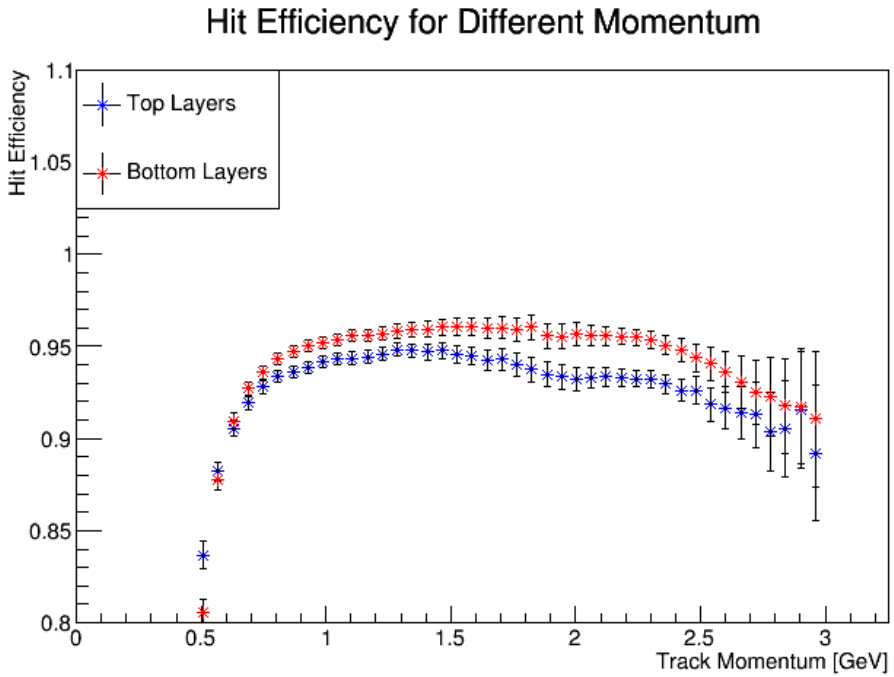
Hit Efficiency 2015

- Hit efficiency as a function of layer **for 2015 data** using **Omar's method**



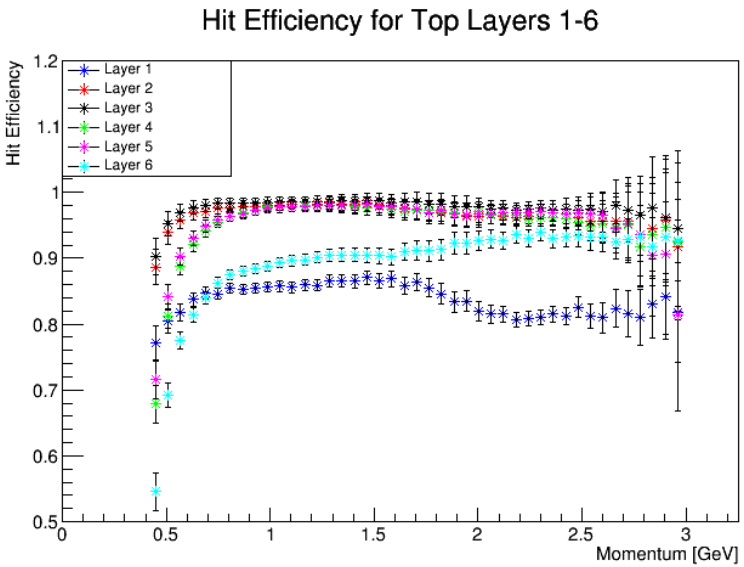
Hit Efficiency 2016

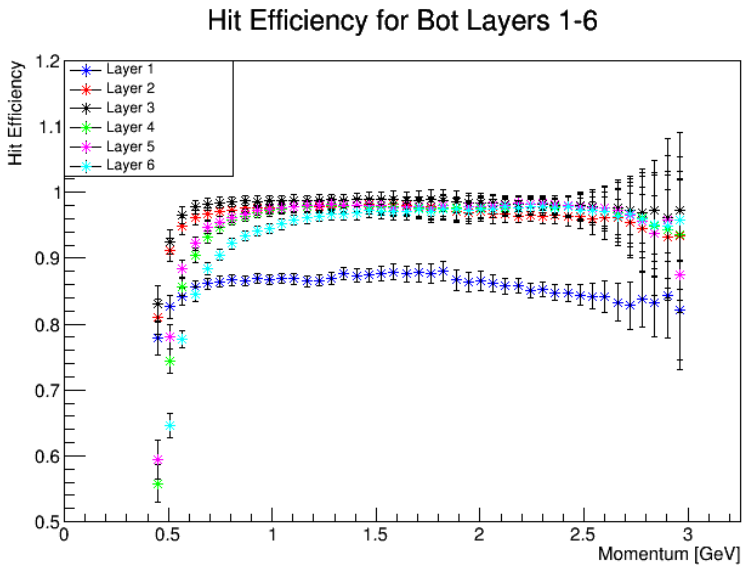
- Hit efficiency as a function of momentum for 2016 data



Hit Efficiency 2016

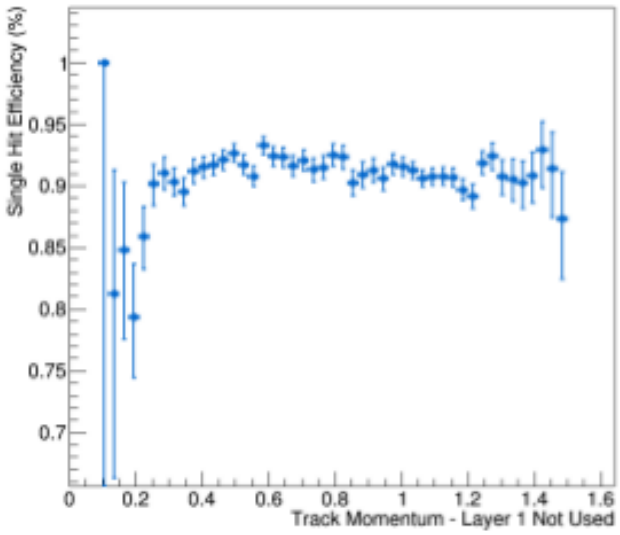
- Hit efficiency as a function of momentum for 2016 data separated by layer for Top (left) and Bottom (right)

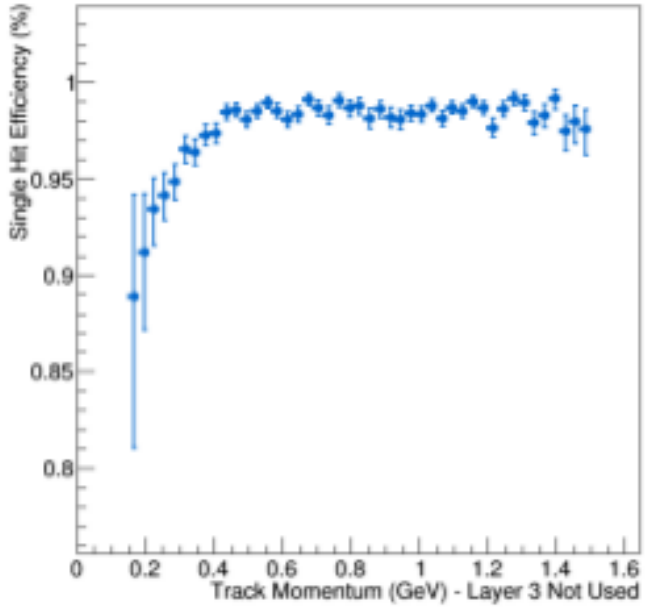




Hit Efficiency 2015

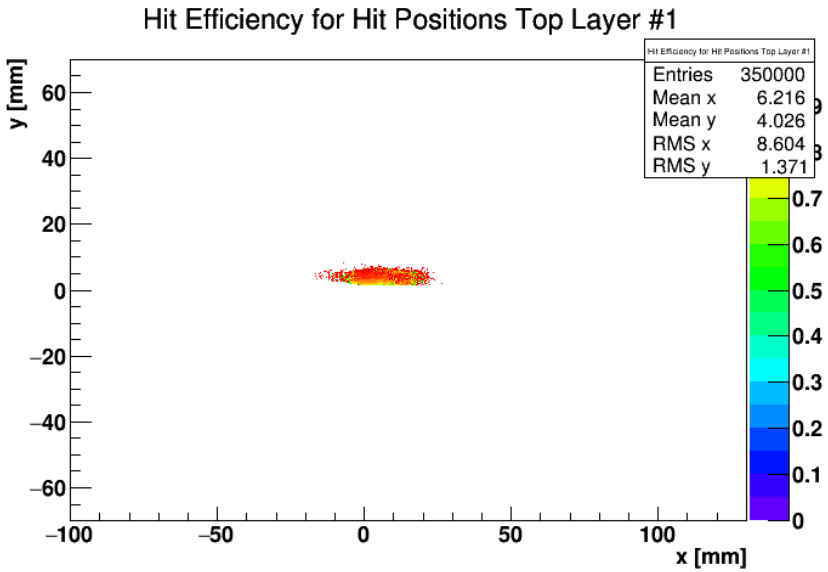
- Hit efficiency as a function of momentum **for 2015 data** using **Omar's method**

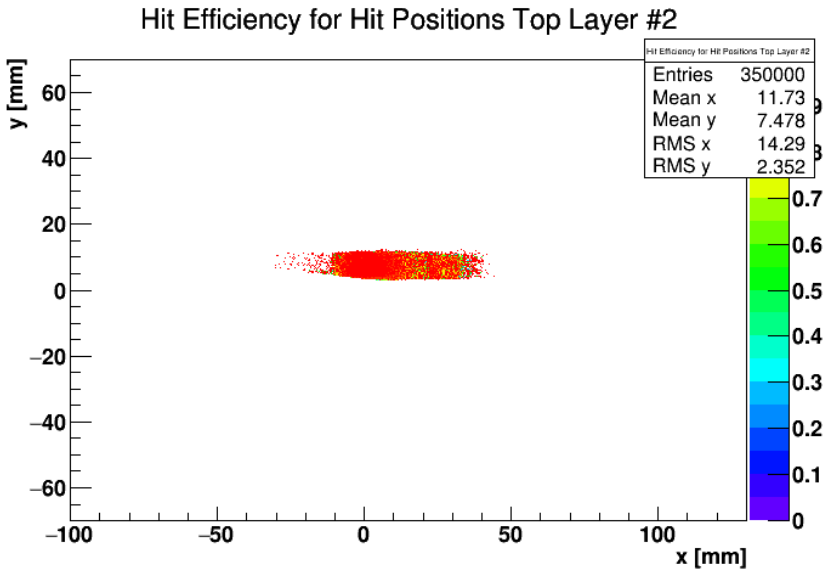




Hit Efficiency 2016 as Function of Hit Position

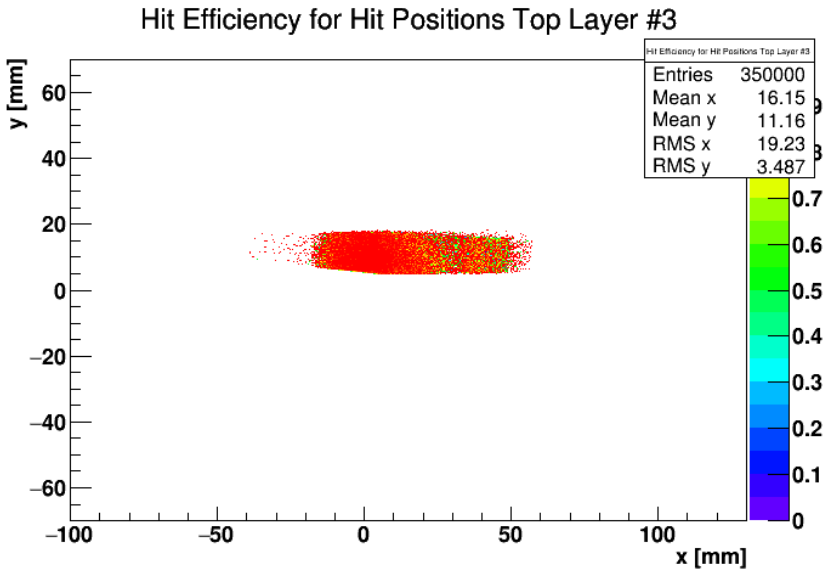
- Hit efficiency as a function of hit position for Top layer 1-2

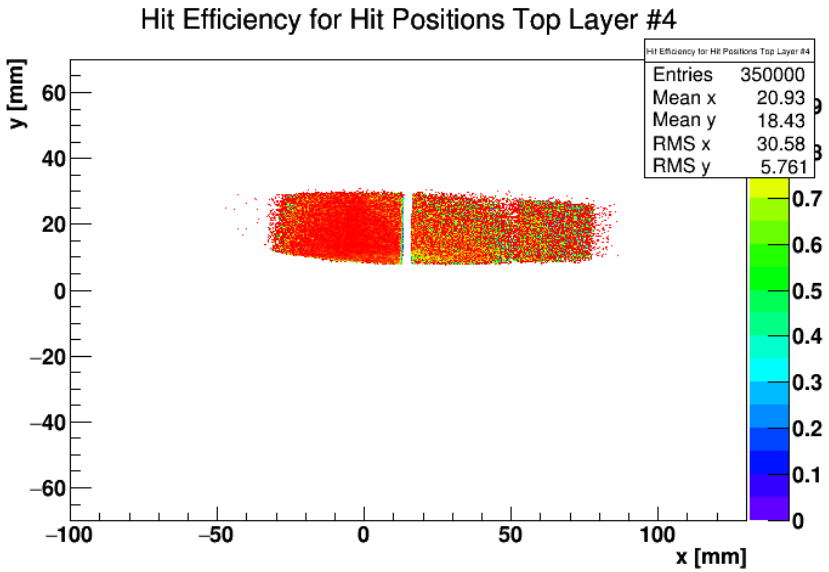




Hit Efficiency 2016 as Function of Hit Position

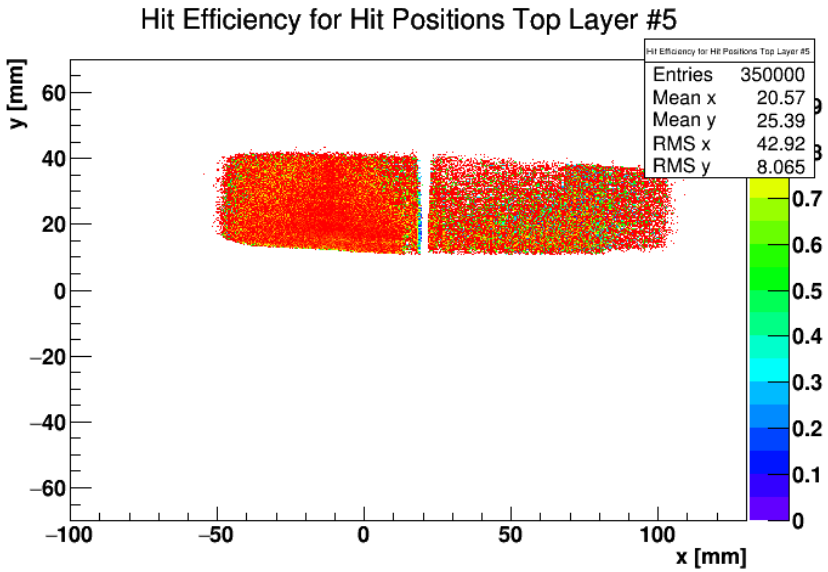
- Hit efficiency as a function of hit position for Top layer 3-4

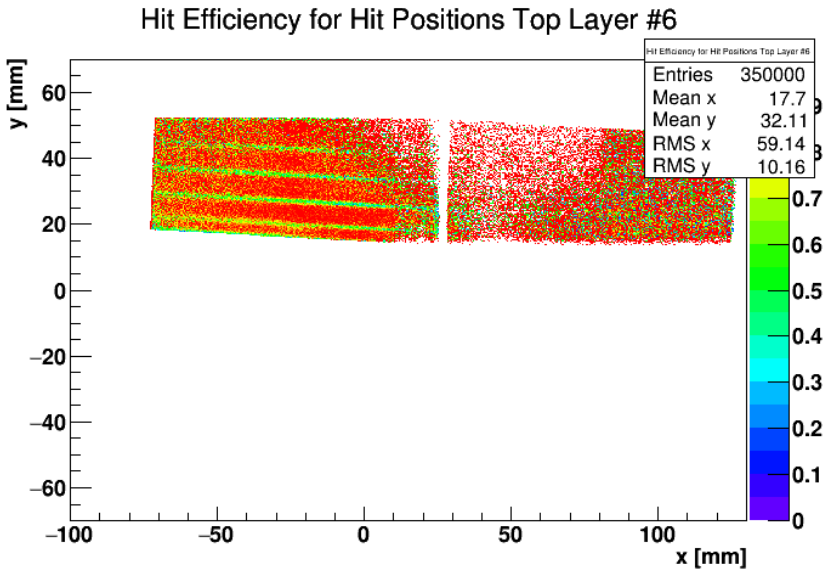




Hit Efficiency 2016 as Function of Hit Position

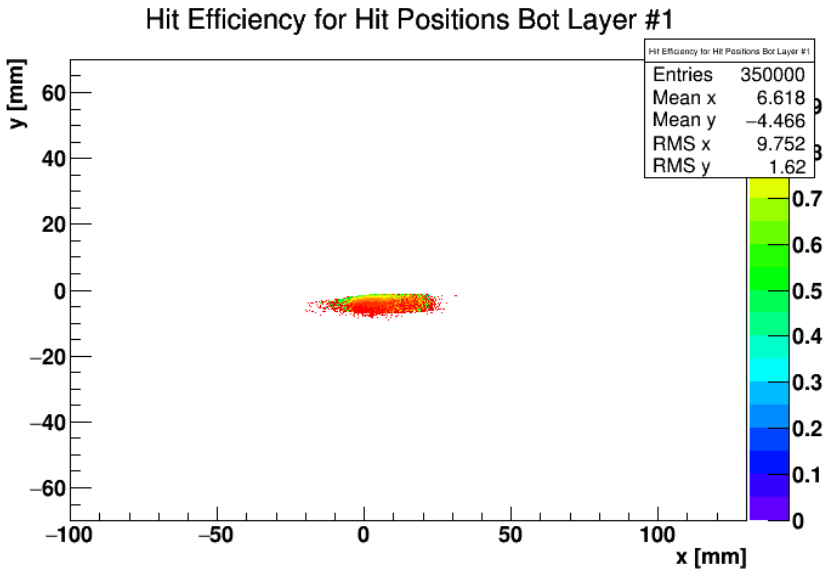
- Hit efficiency as a function of hit position for Top layer 5-6

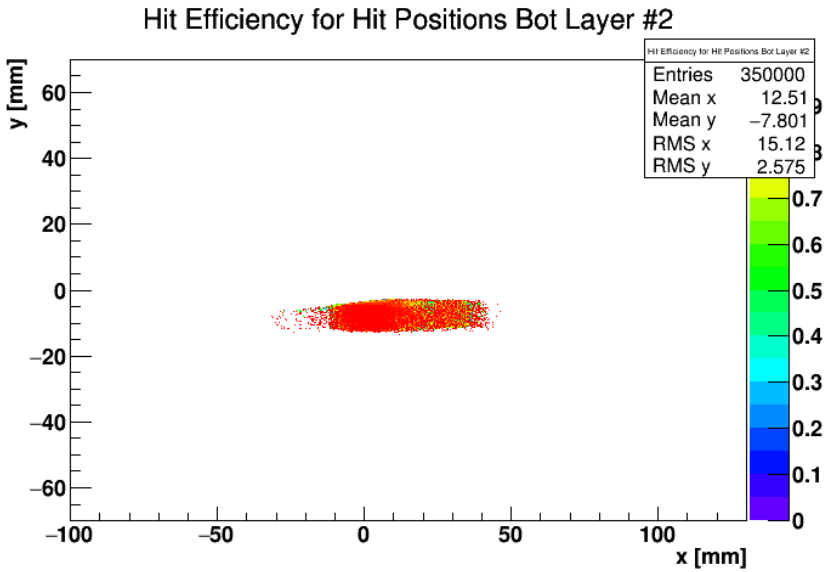




Hit Efficiency 2016 as Function of Hit Position

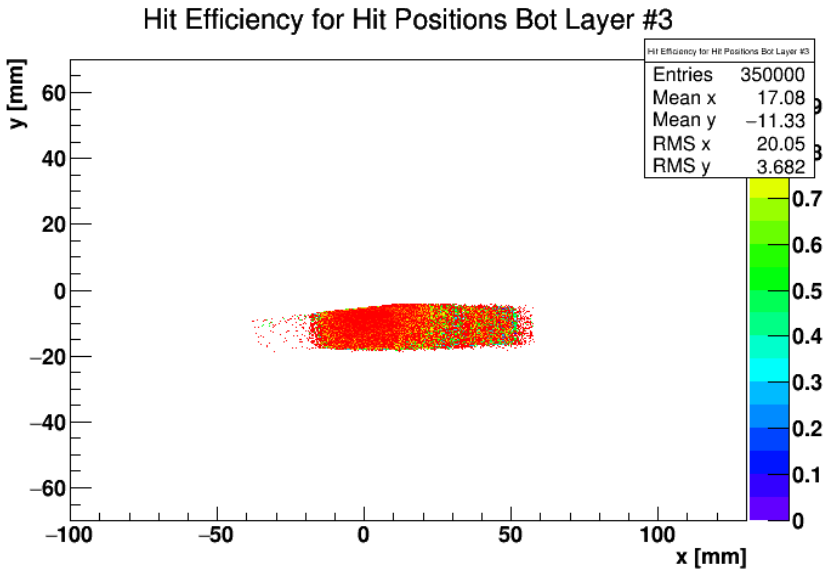
- Hit efficiency as a function of hit position for Bottom layer 1-2

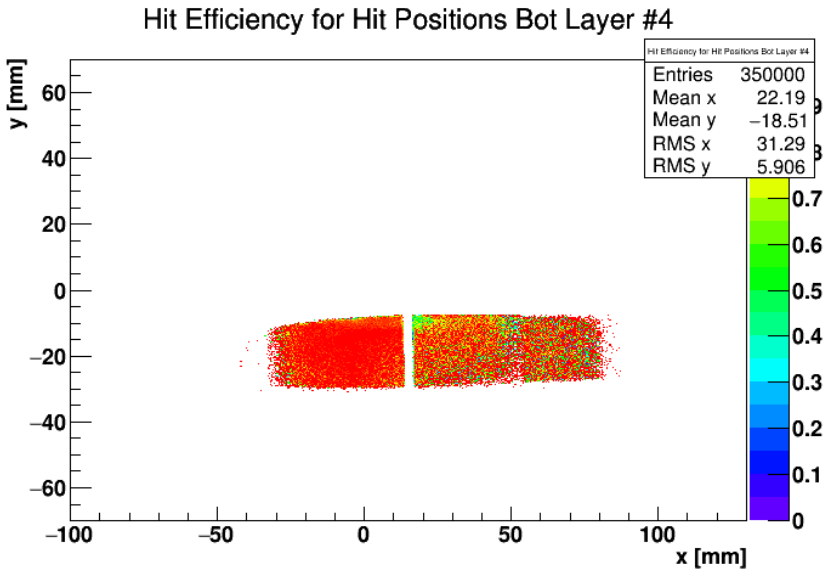




Hit Efficiency 2016 as Function of Hit Position

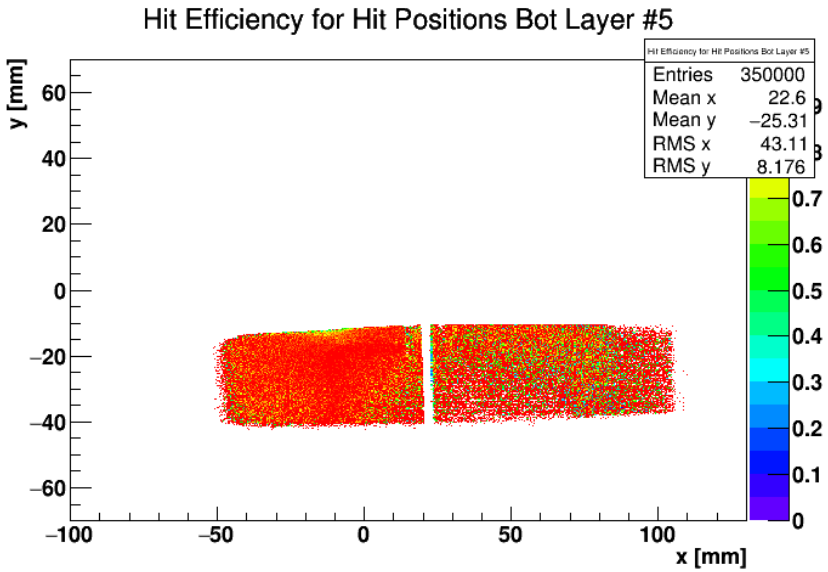
- Hit efficiency as a function of hit position for Bottom layer 3-4

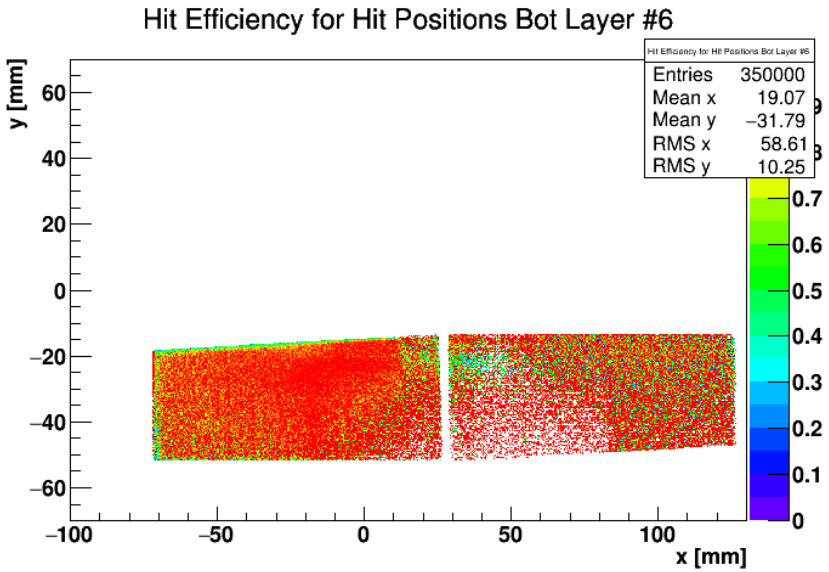




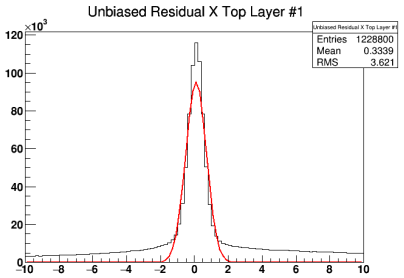
Hit Efficiency 2016 as Function of Hit Position

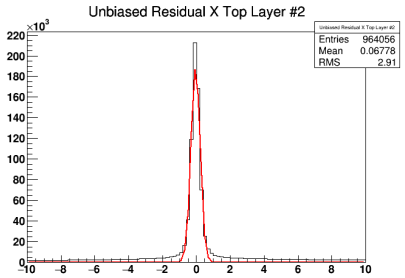
- Hit efficiency as a function of hit position for Bottom layer 5-6

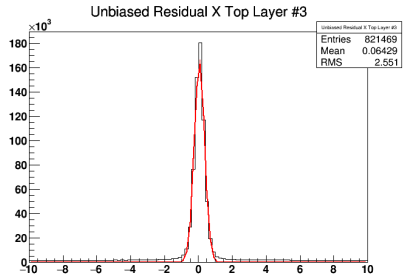


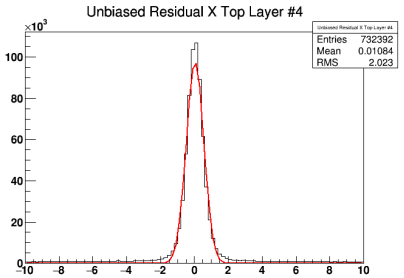


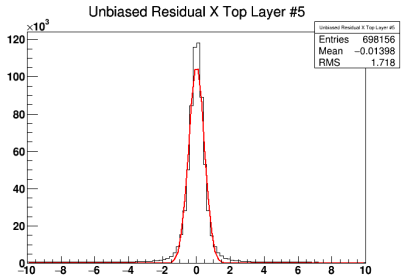
Fitted Unbiased Residuals in X Top

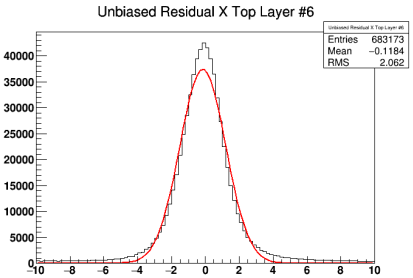




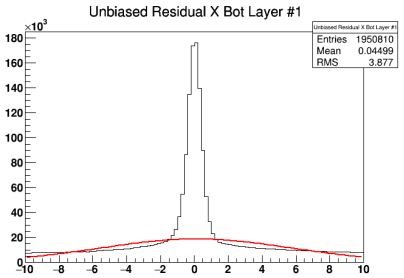


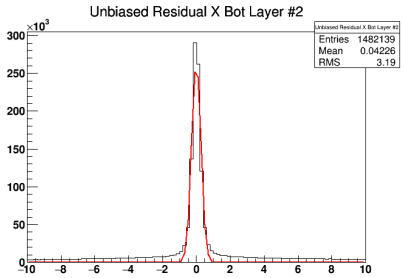


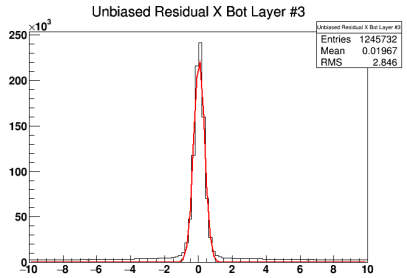


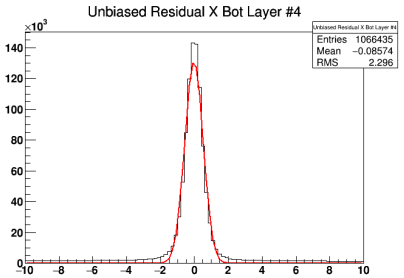


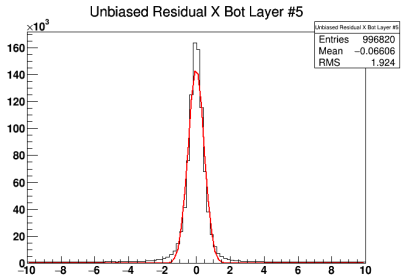
Fitted Unbiased Residuals in X Bottom

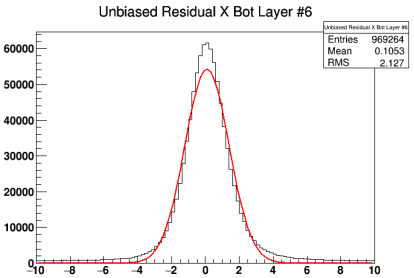




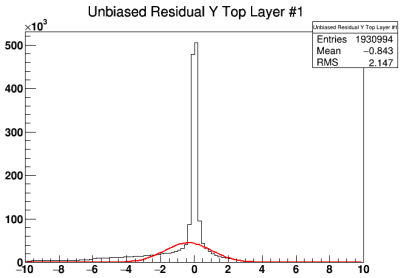


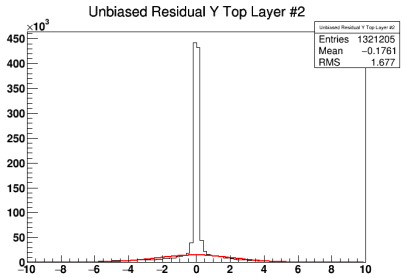


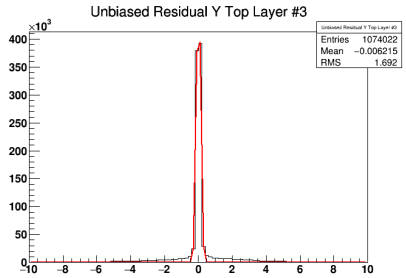


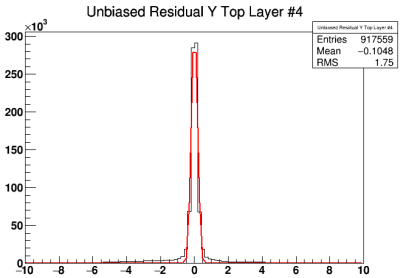


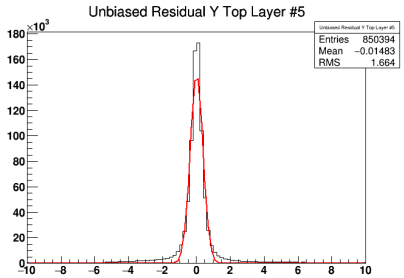
Fitted Unbiased Residuals in Y Top

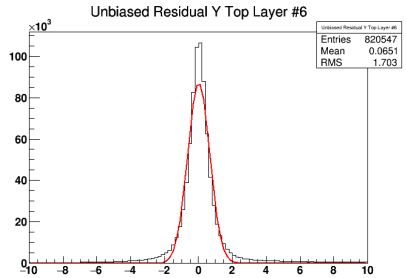




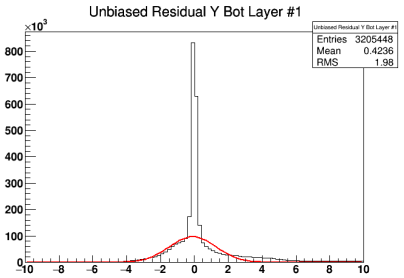


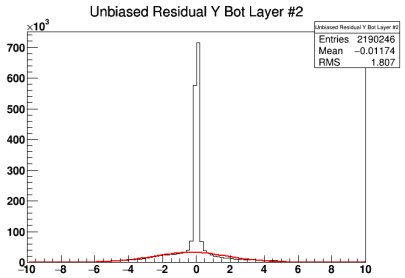


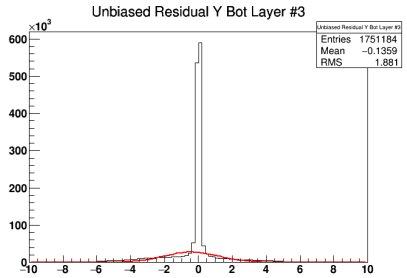


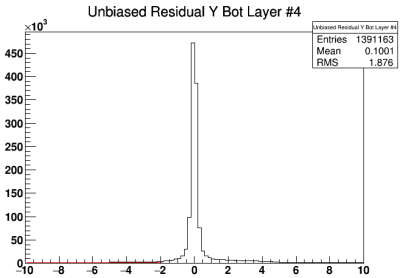


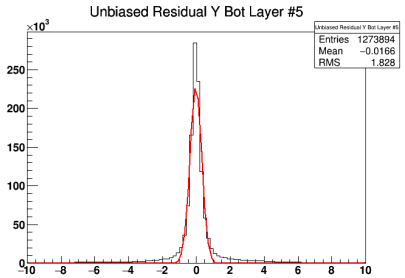
Fitted Unbiased Residuals in Y Bottom

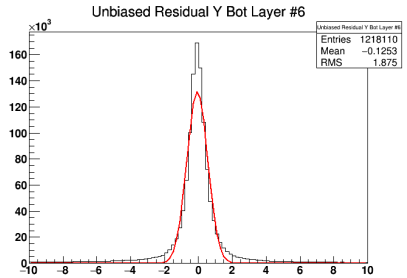






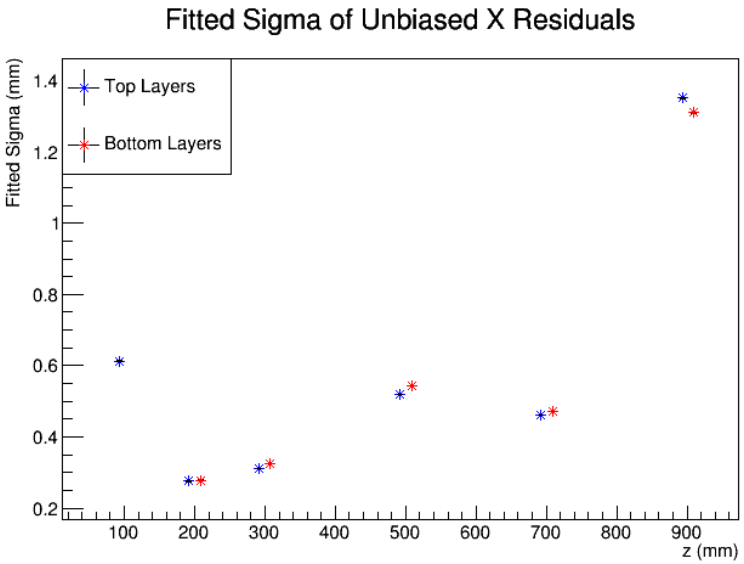


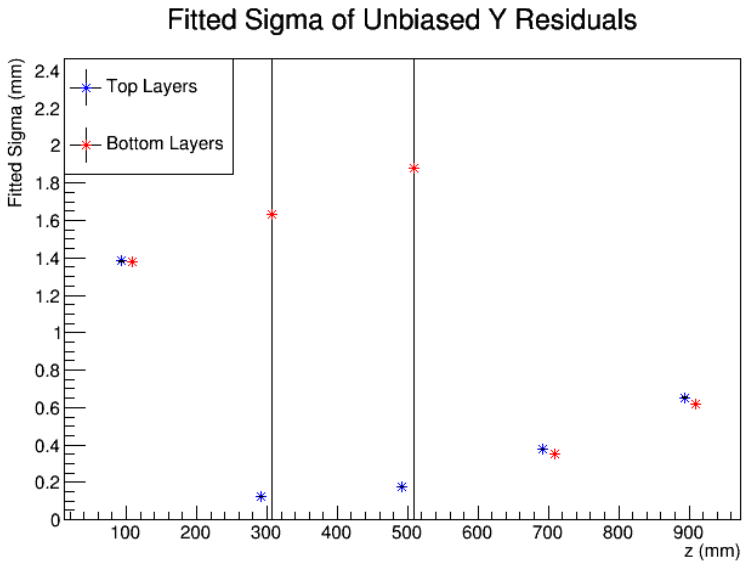




Fitted Sigma for Unbiased Residuals

- Fitted sigma for unbiased residuals for x (left) and y (right). Some fits are poor and not optimized





Things To Do

- Run over old data
- Separate hit efficiency into individual sensors
- Explore inefficient regions in more detail?
- Refine hit position residual cuts?