

# Electron Reconstruction Study Weekly Updates

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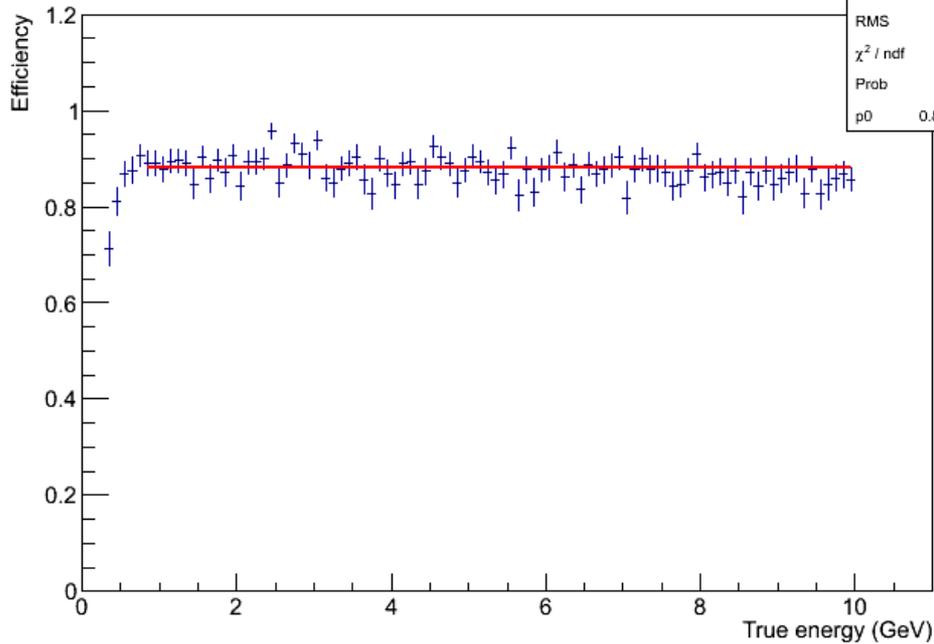
19 September 2012

# Efficiency vs True Energy and theta

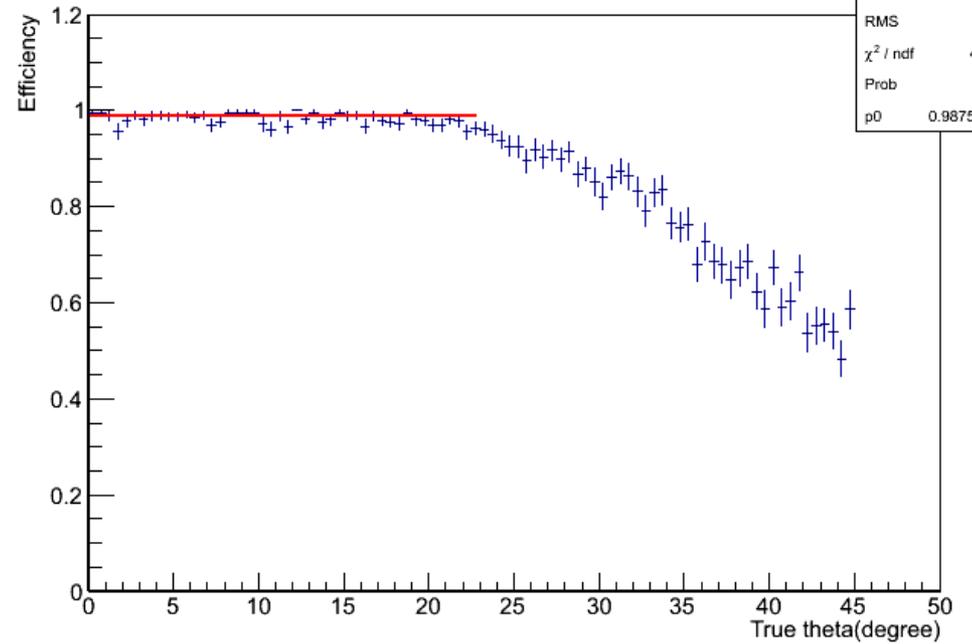
## Electron Particle Gun Sample

Energy:0-10 GeV flat distribution ; Angle:0-45 degree

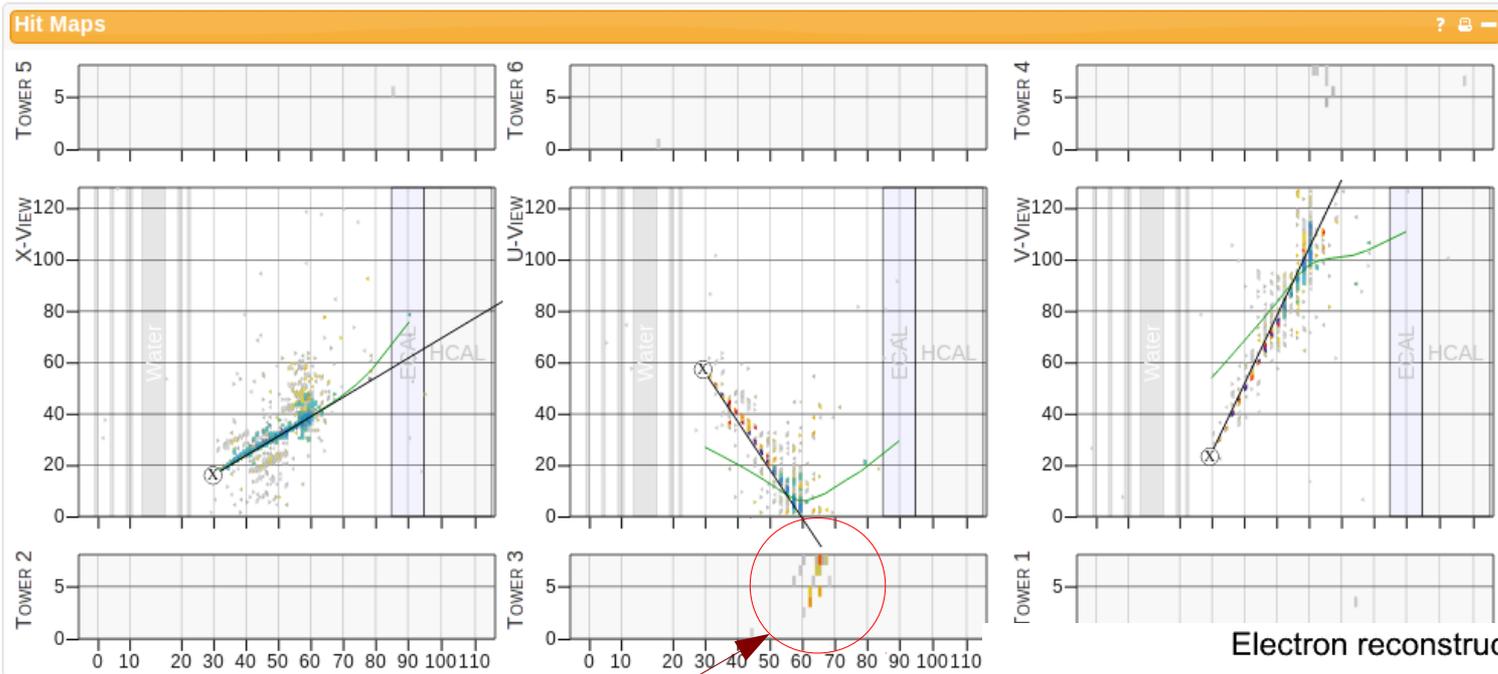
Electron reconstruction efficiency



Electron reconstruction efficiency



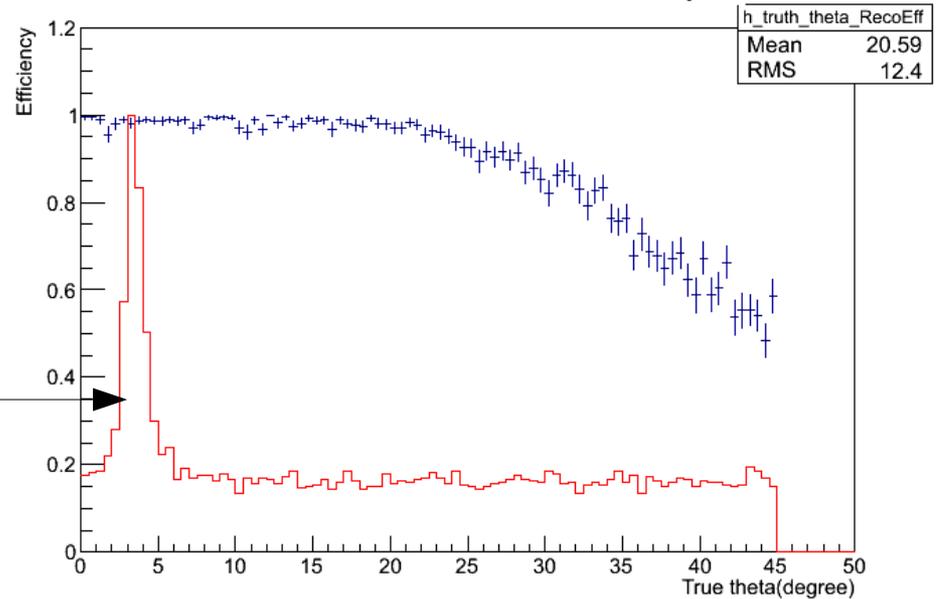
# High Angle Low Efficiency



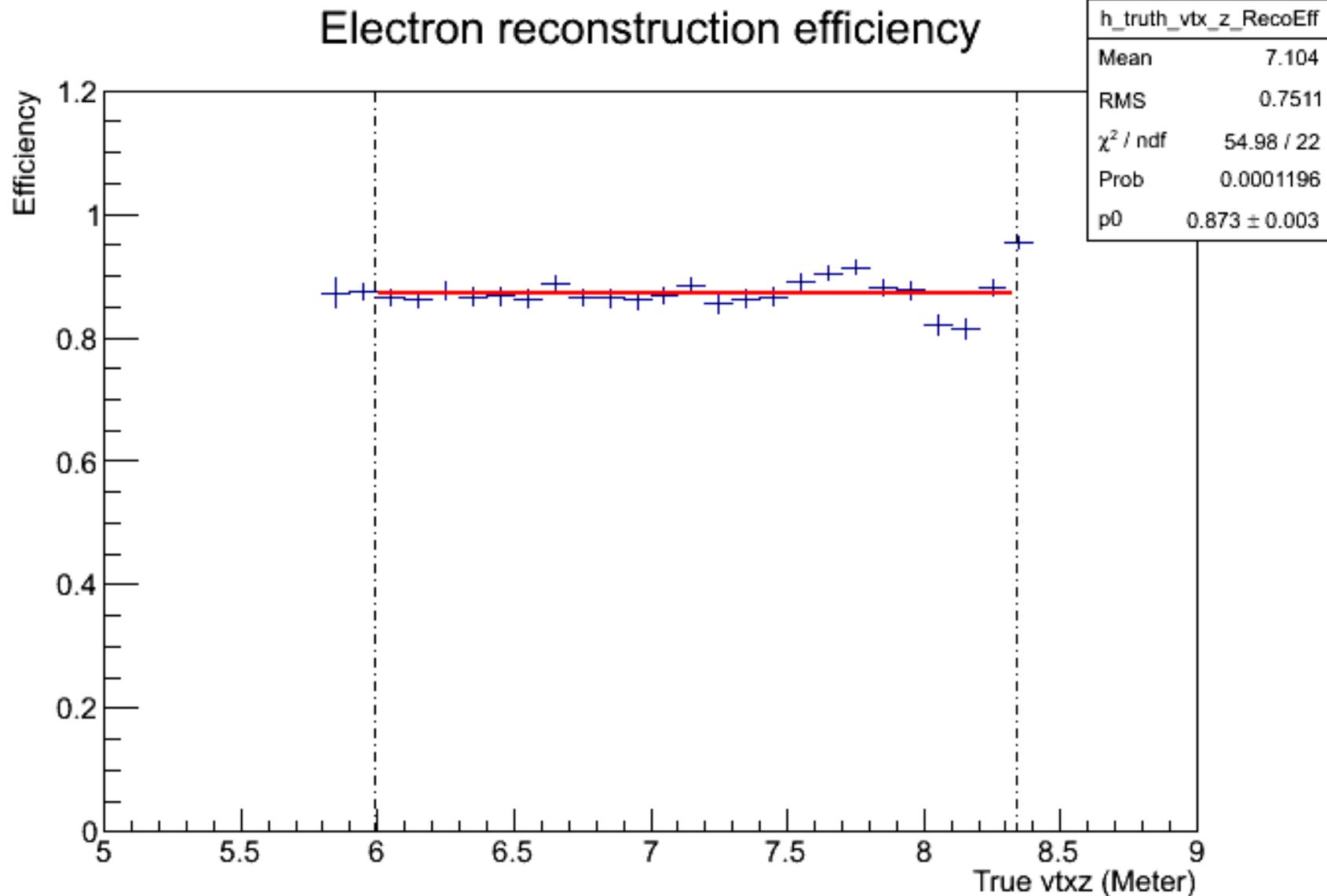
Hits out of tracker

$\nu_e$  signal electron angle range is mostly within the high efficiency part

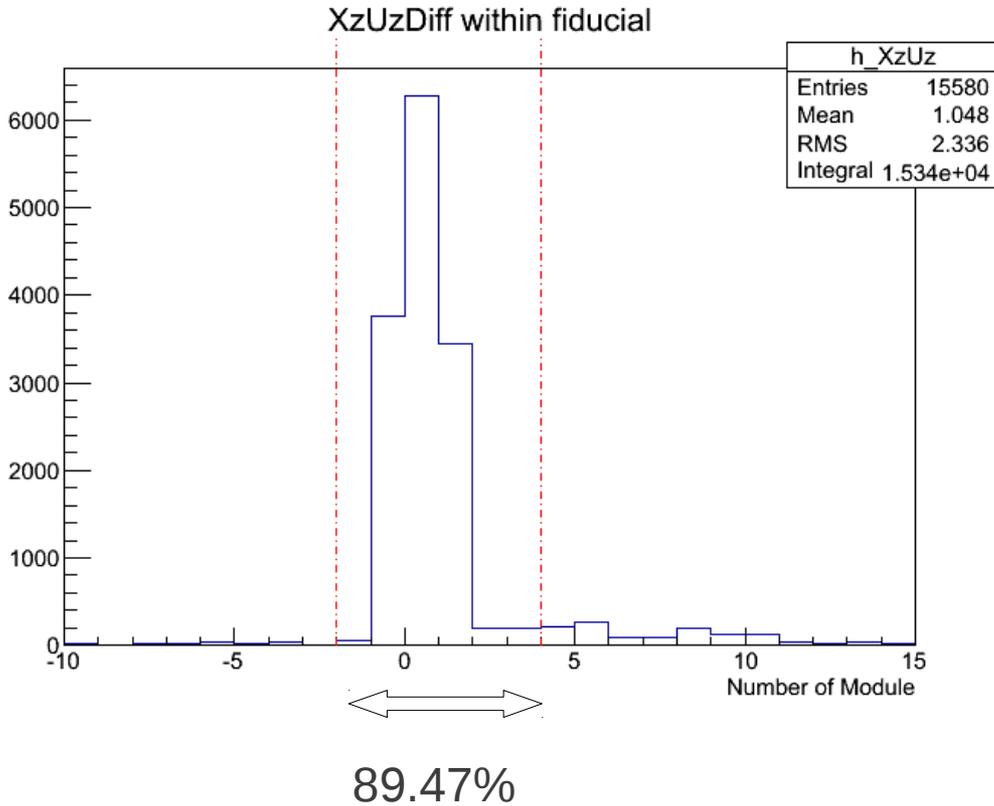
Electron reconstruction efficiency



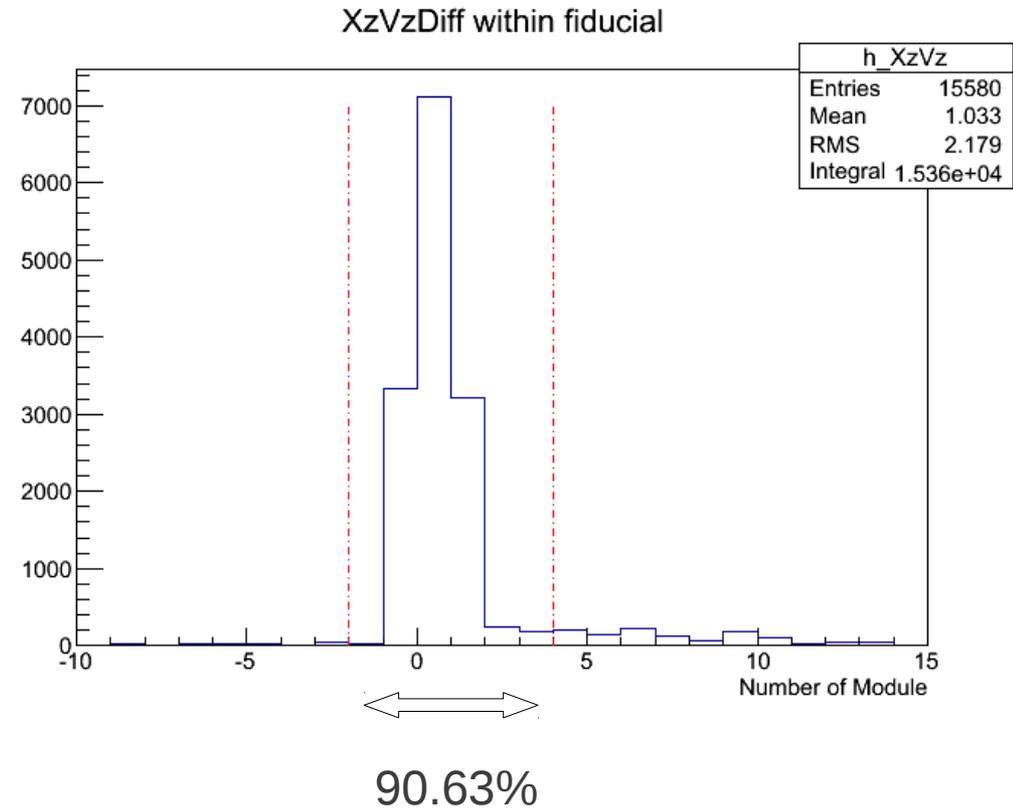
# Efficiency vs True Vertex z within fiducial (tracker is between the dashed lines)



# Efficiency cut on XzUzDiff and XzVzDiff



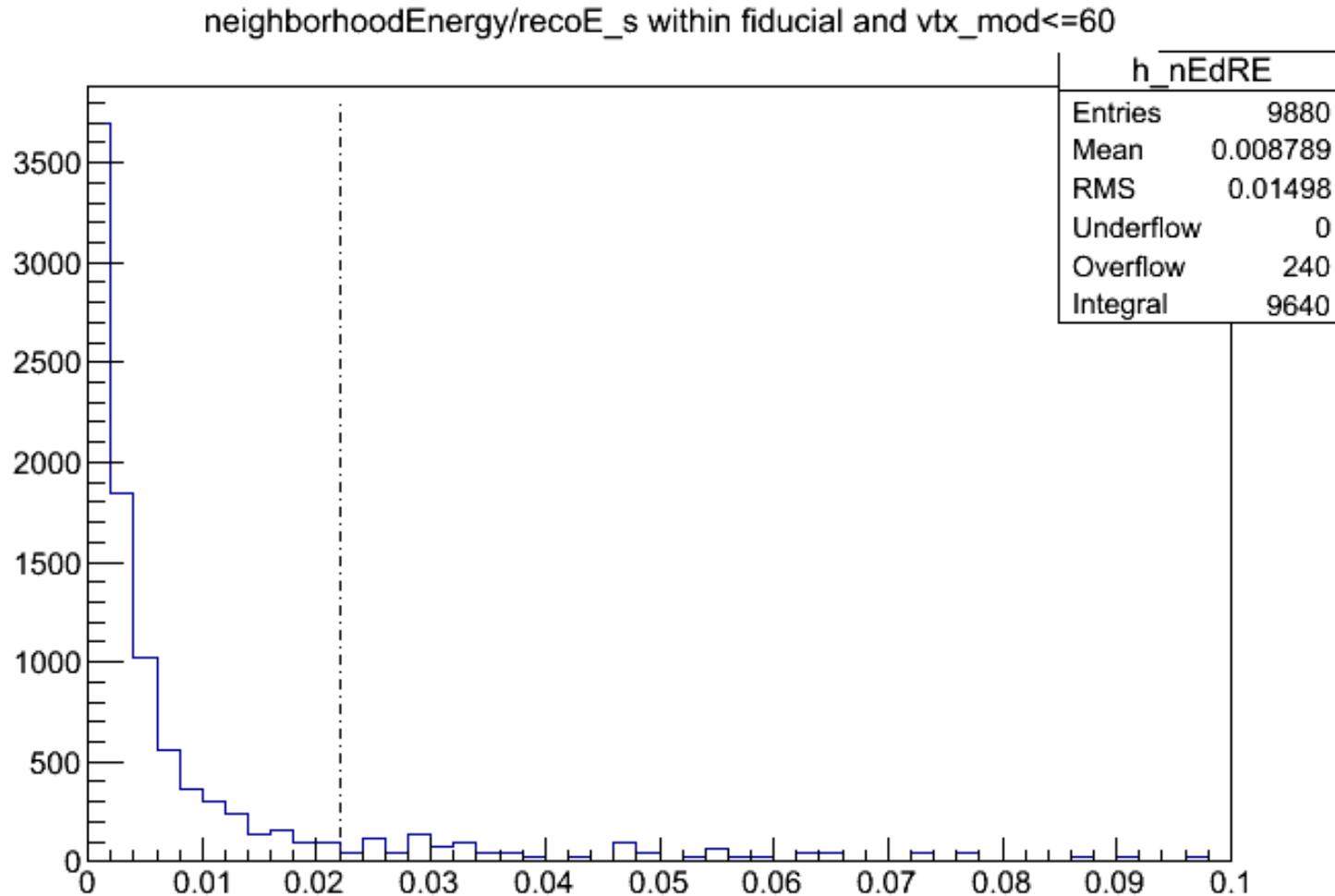
$XzUzDiff \geq -2 \ \&\& \ XzUzDiff < 4$



$XzVzDiff \geq -2 \ \&\& \ XzVzDiff < 4$

Removing Bad Reconstruction

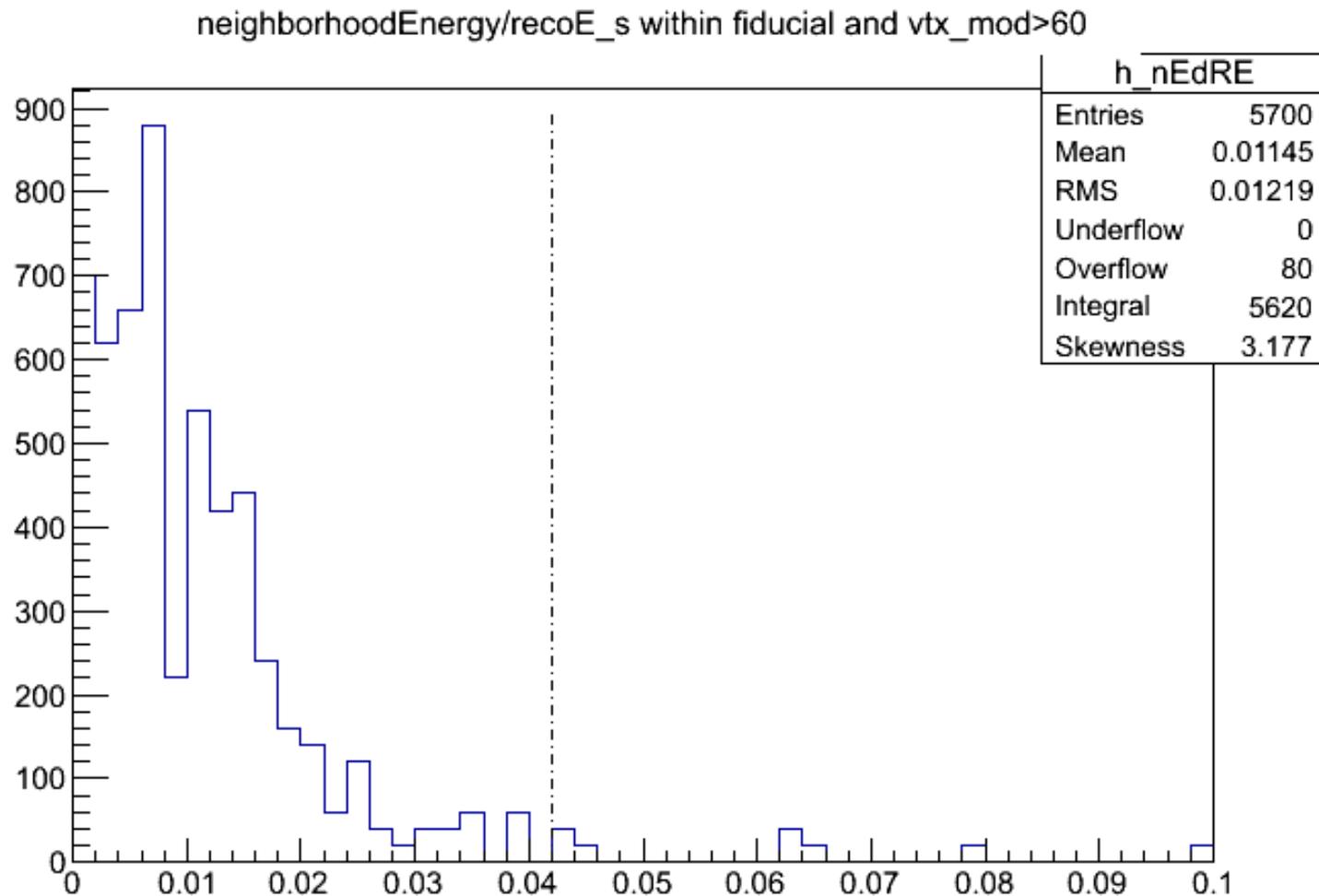
# Efficiency cut on neighborhoodEnergy/recoE\_s before module60



vtx\_mod<=60 &&  
neighborhoodEnergy/recoE\_s<0.022

Removing Background

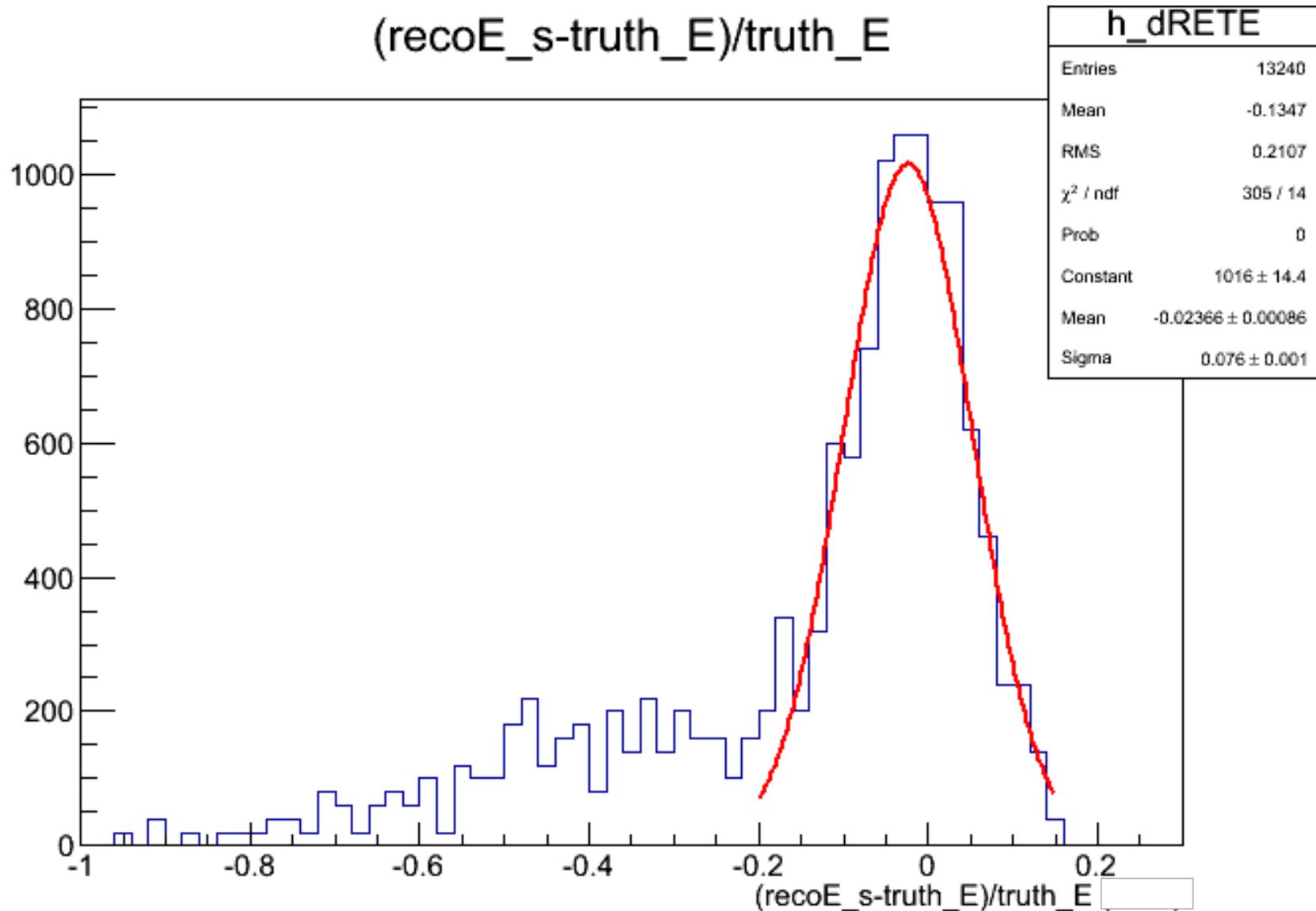
# Efficiency cut on neighborhoodEnergy/recoE\_s before module60



vtx\_mod>60 &&  
neighborhoodEnergy/recoE\_s<0.042

Removing Background

# Reco E Fractional Error



# Vertex x,y resolution

