

# HF PWG Weekly Meeting

Electron/positron/Gamma embedding QA

Test sample number of events :~ 4k

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4/3/2014

# Electron/Positron/Gamma embedding request

electrons/positrons:

Number of events: 200k  
each

Particles/event: 5/event

$|\eta| < 0.8$

$1 < p_T < 20$

$|V_z| < 35$

triggers: 370542, 370522

gamma:

Number of events: 500k  
each

Particles/event: 100/event

$|\eta| < 1.0$

$0 < p_T < 20$

$|v_z| < 35$

triggers: 370542, 370522

# Electron selection in data

## Trigger selection

TH0BBCMBTof0 && DSMadc>11 && DSMadc<=15

TH2BBCMB DSMadc>18

## Event cuts

$|V_z| < 35$  && Ranking>0

## Track quality cut:

$n_{hit} > 20$  &&  $n_{hit}/n_{hit\_poss} > 0.52$  &&  $n_{hitDedx} > 15$  &&  $gDca < 1.5$

&& first\_TPC pointR<73

## ePID cuts:

$|\eta| < 0.7$  &&  $n_{SMD\eta} > 1$  &&  $n_{SMD\phi} > 1$

$0.3 < poe_0 < 1.5$  &&  $SMD\eta_{|z|} < 3$  &&  $SMD\phi_{|\phi|} < 0.015$  &&  $-1 < n_{\sigma e} < 3$

## Electron partner cut:

$0.2 < P_t$

## Photonic electron pair cut:

Pair Dca<1 && InvMass<0.15Gev

# Electron selection in embedding

## Trigger selection

TH0BBCMBTof0

TH2BBCMB

## Event cuts

$|Vz| < 35$

## Track quality cut:

$N_{hit} > 20 \ \&\& \ n_{hit}/n_{hit\_poss} > 0.52 \ \&\&$

$n_{hitDedx} > 15 \ \&\& \ gDca < 1.5$

$\&\& \text{first\_TPC pointR} < 73$

Other cuts:

$|\text{Eta}| < 0.7$

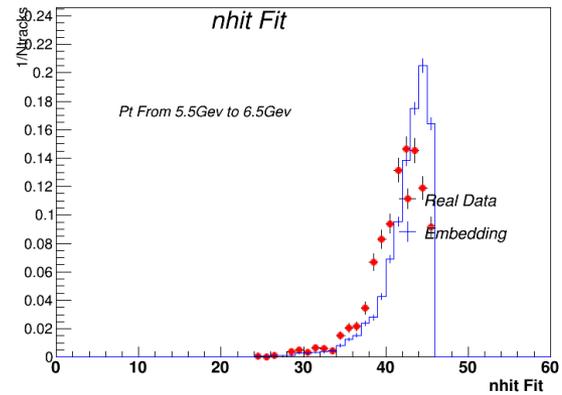
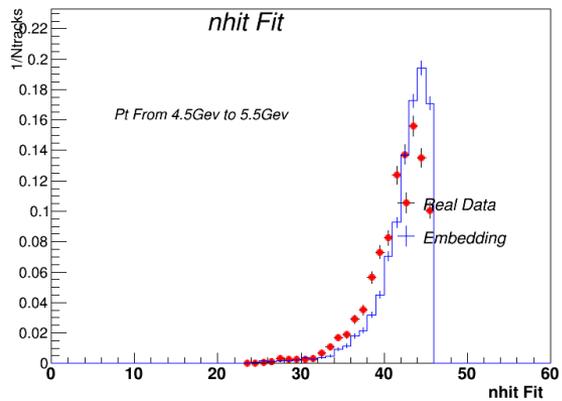
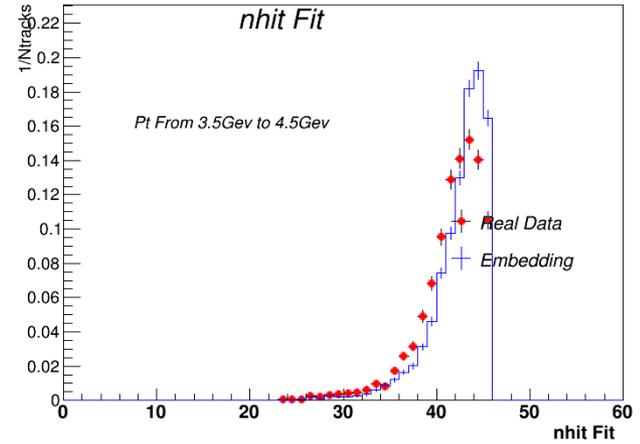
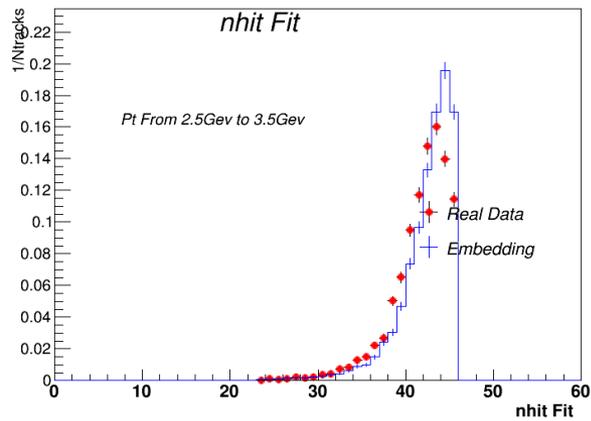
No ePID cuts applied embedding

(Electron selected by the particle

GeantID)

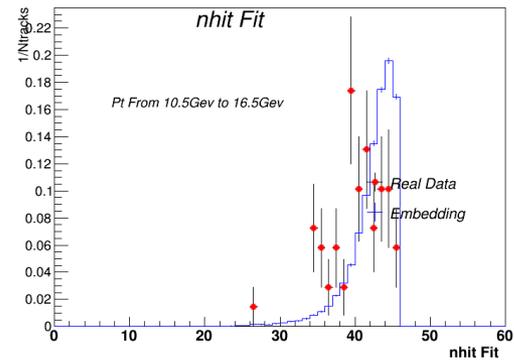
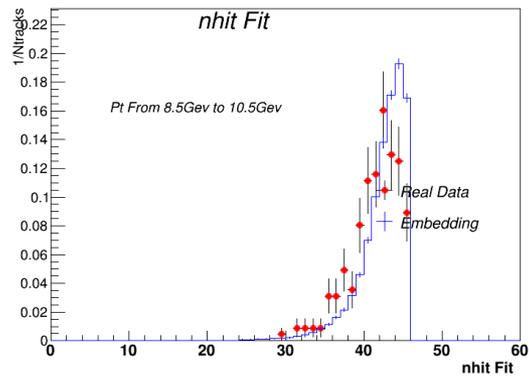
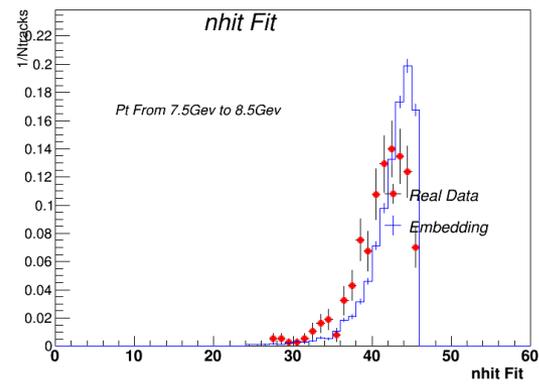
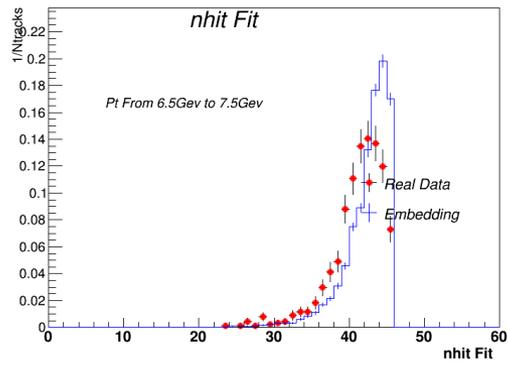
4/3/14

# Nhit fit of electron/positron embedding and real data in pt bin

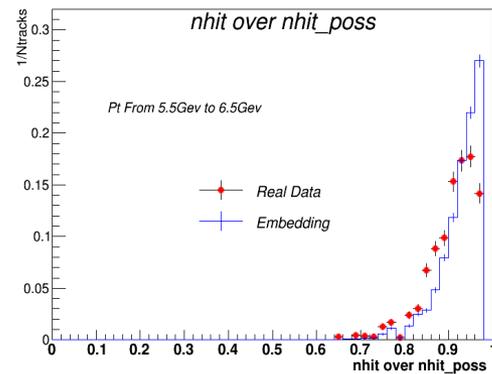
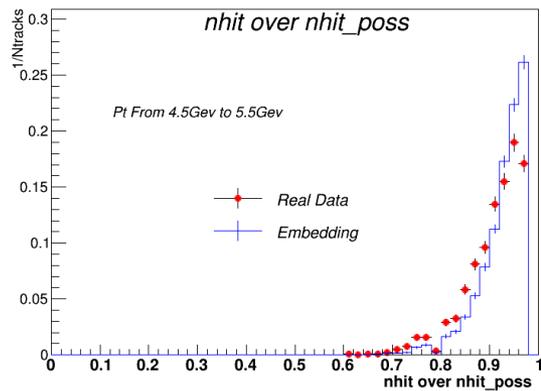
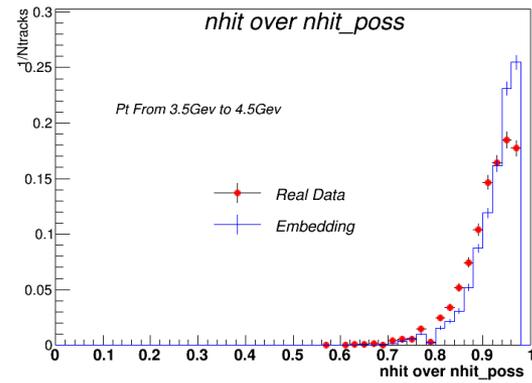
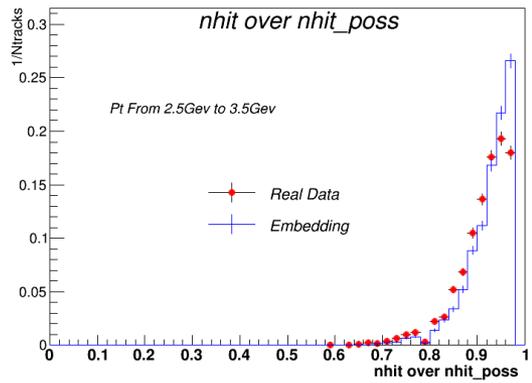


# Electron and positron embedding QA

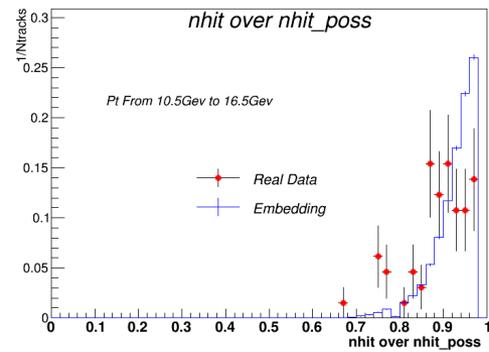
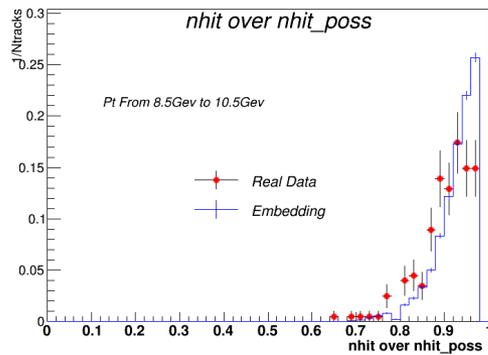
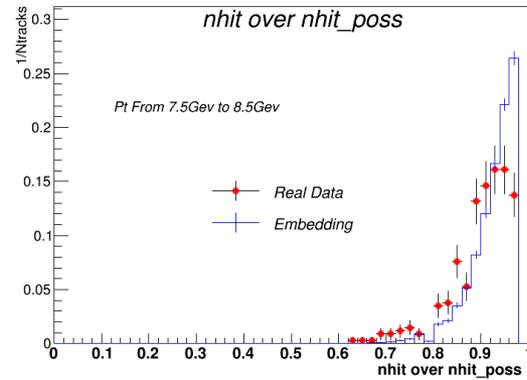
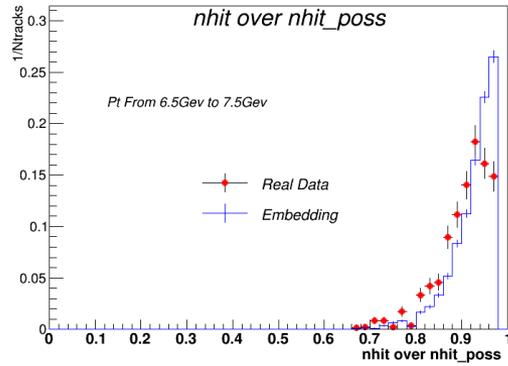
# nhit fit of electron/positron embedding and real data in pt bin



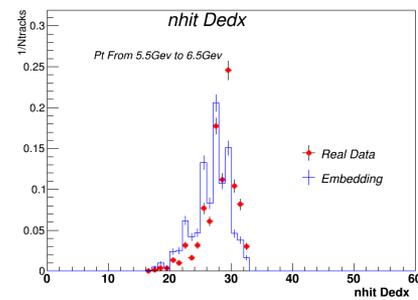
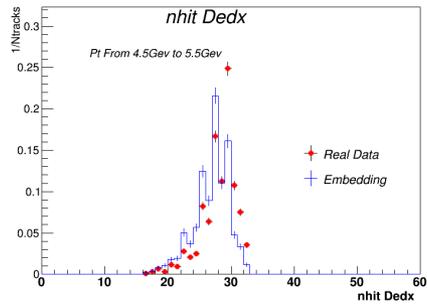
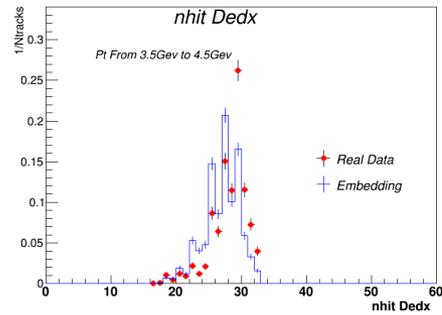
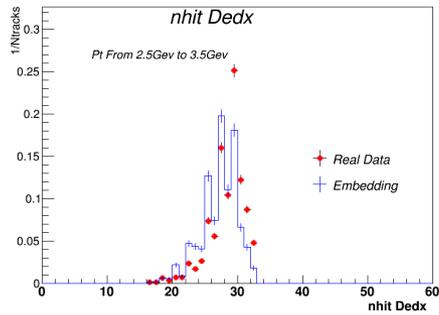
# Nhit fit over Possible hit of electron/positron embedding and real data in pt bin



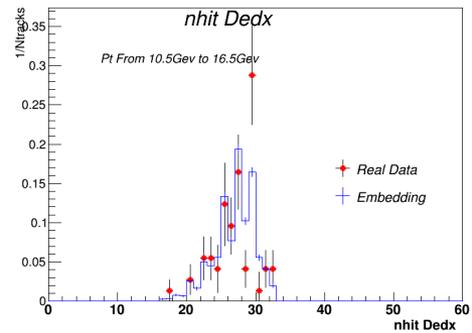
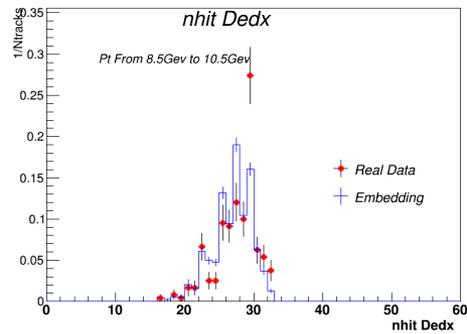
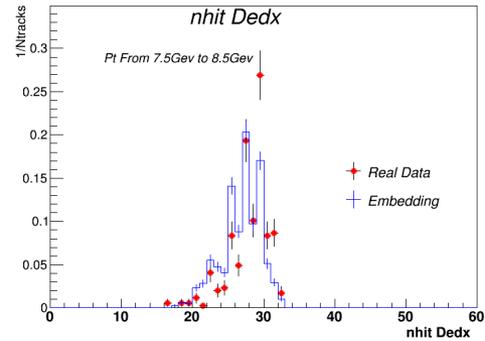
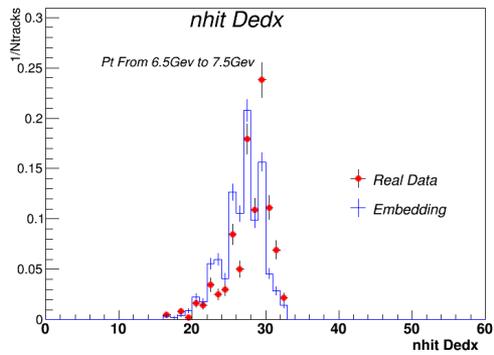
# Nhit fit over Possible hit of electron/positron embedding and real data in pt bin



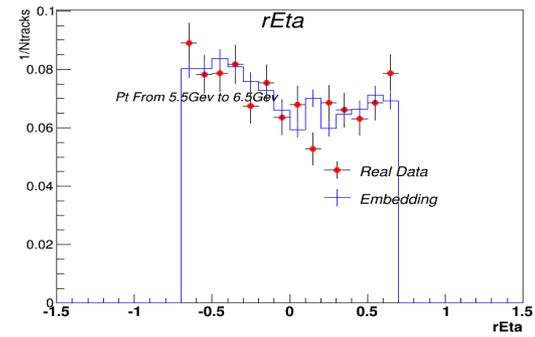
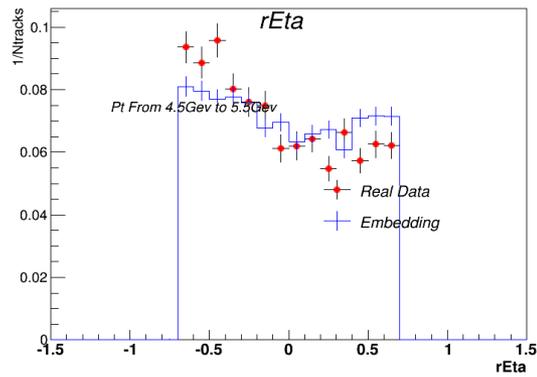
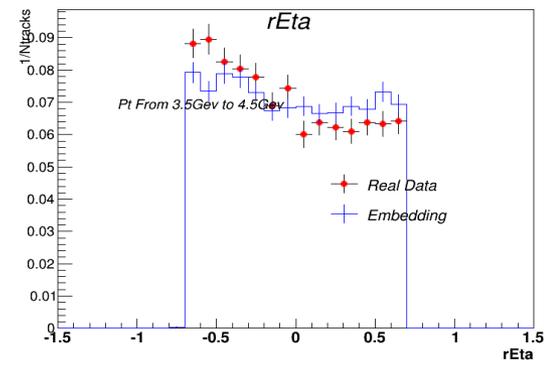
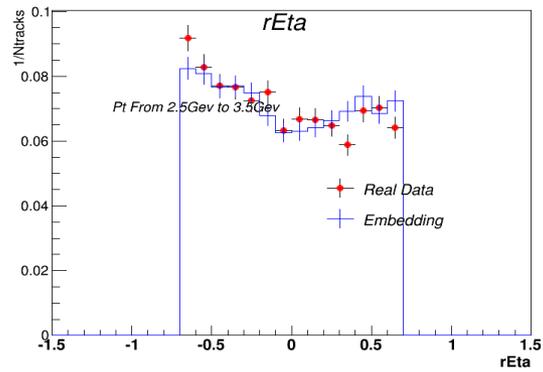
# Nhit dEdx of electron/positron embedding and real data in pt bin



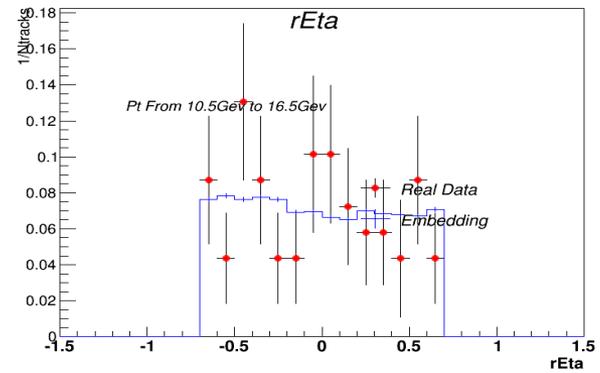
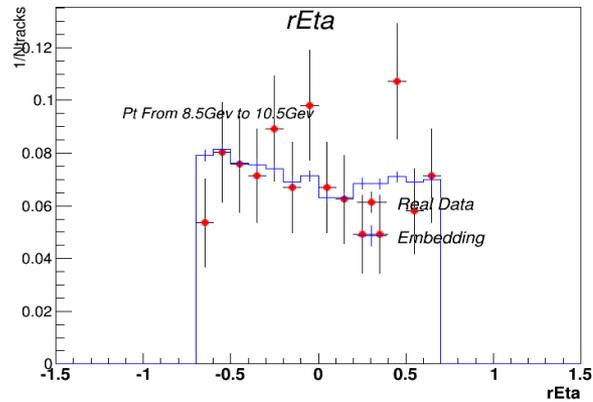
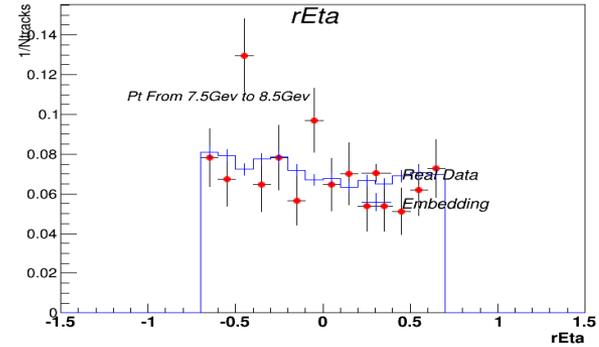
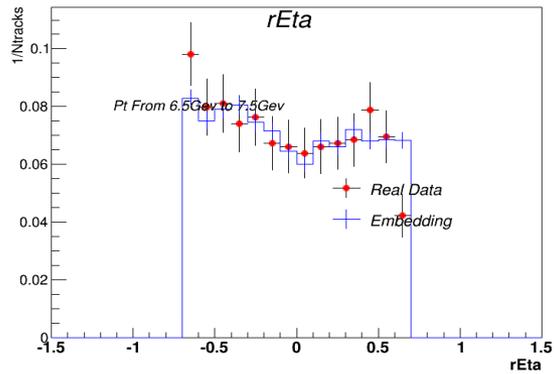
# Nhit dEdx of electron/positron embedding and real data in pt bin



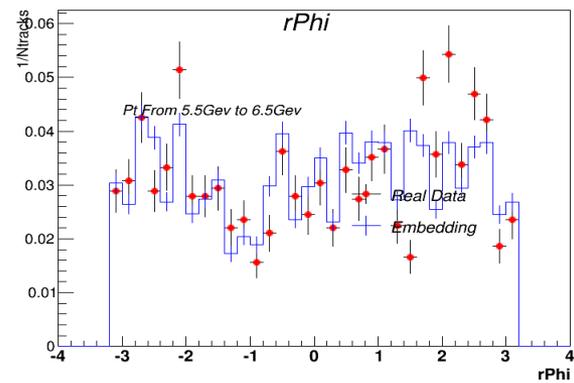
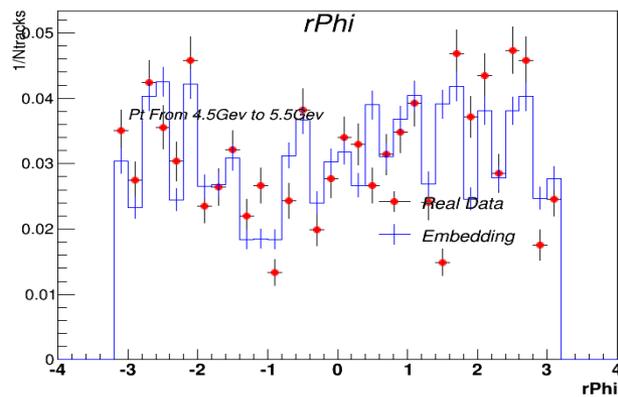
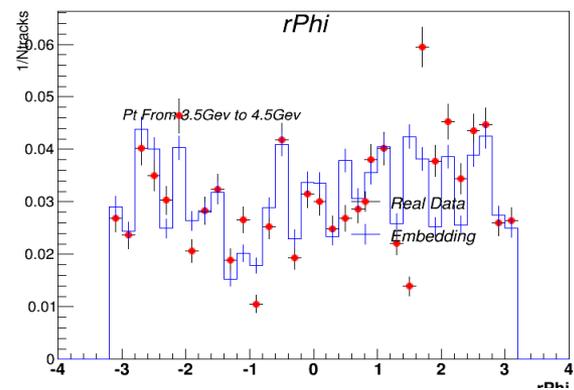
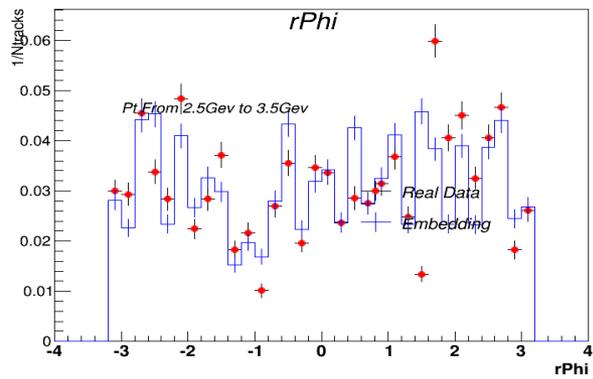
# rEta of electron/positron embedding and real data in pt bin



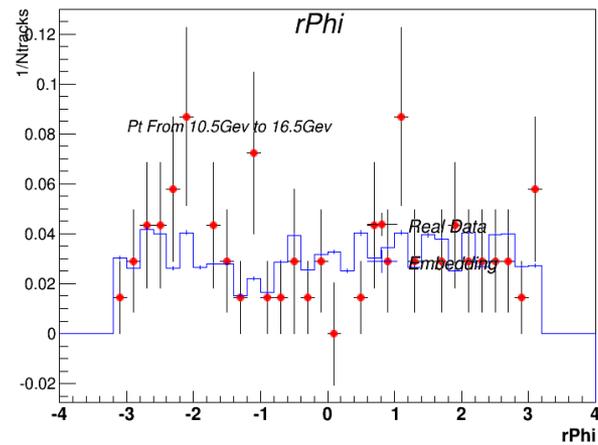
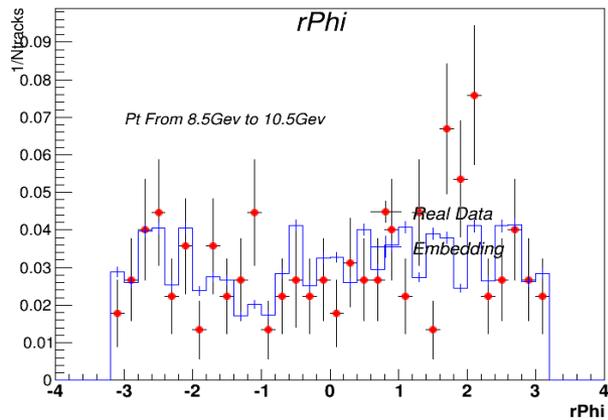
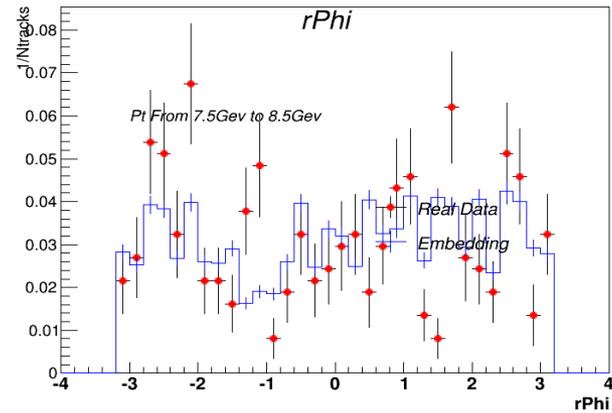
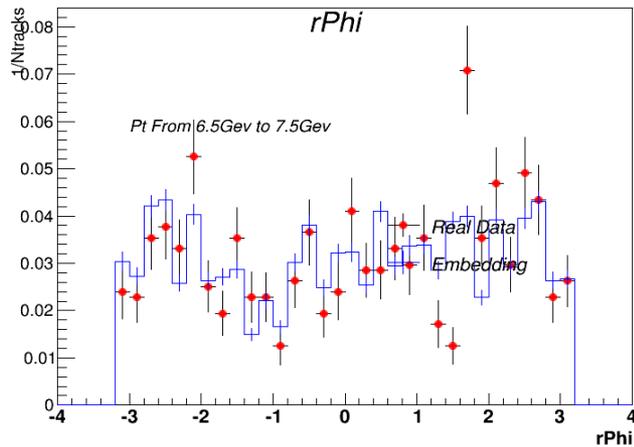
# rEta of electron/positron embedding and real data in pt bin



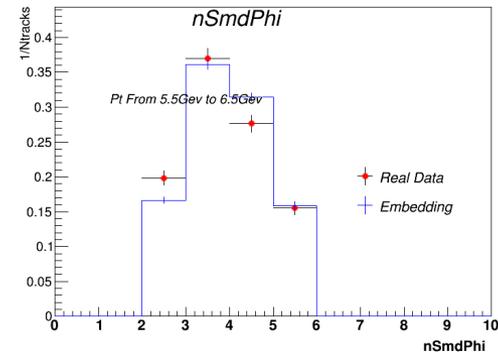
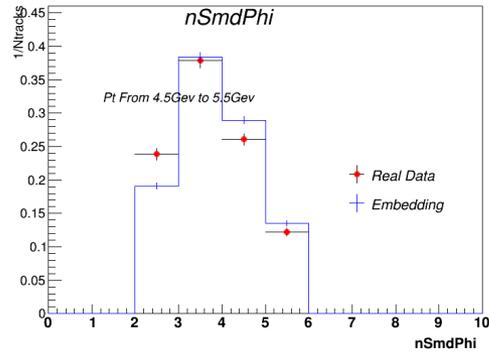
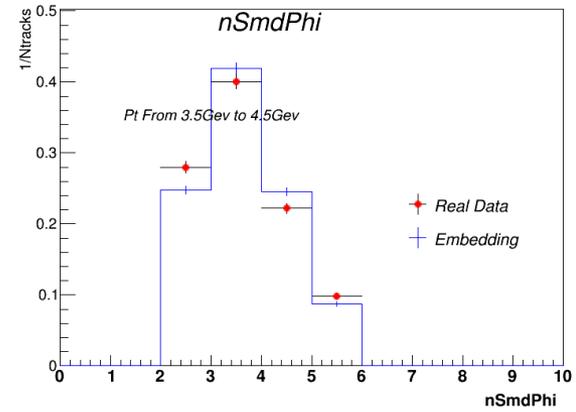
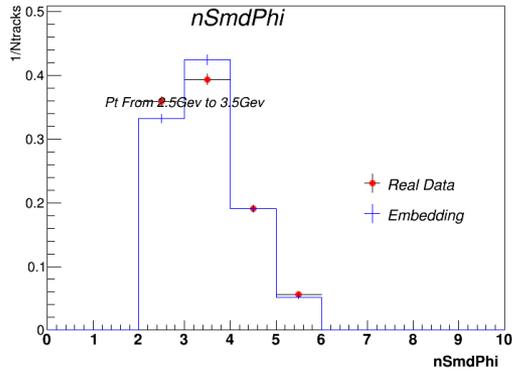
# rPhi of electron/positron embedding and real data in pt bin



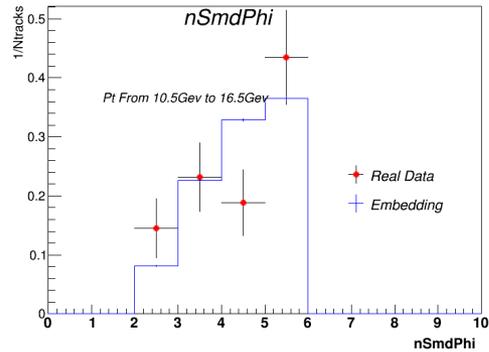
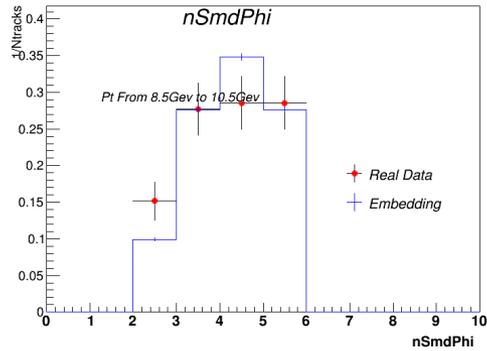
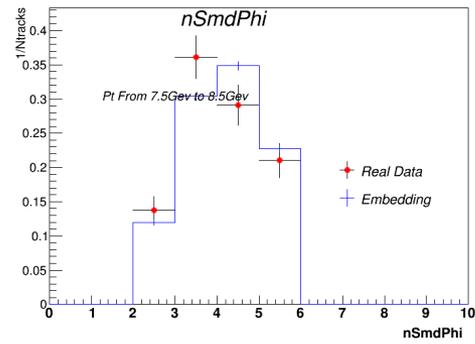
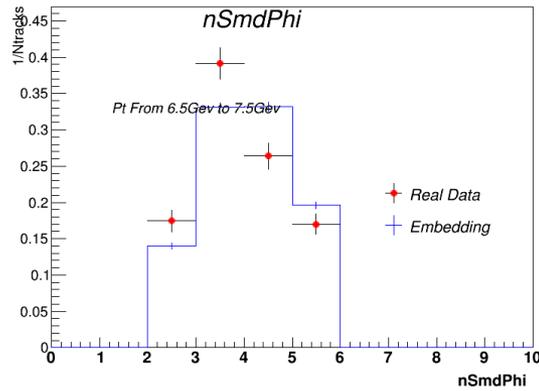
# rPhi of electron/positron embedding and real data in pt bin



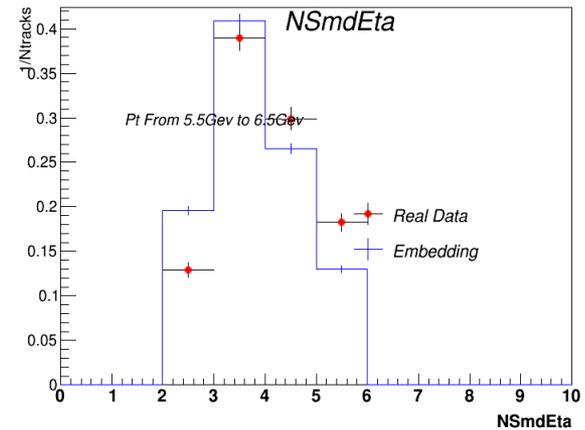
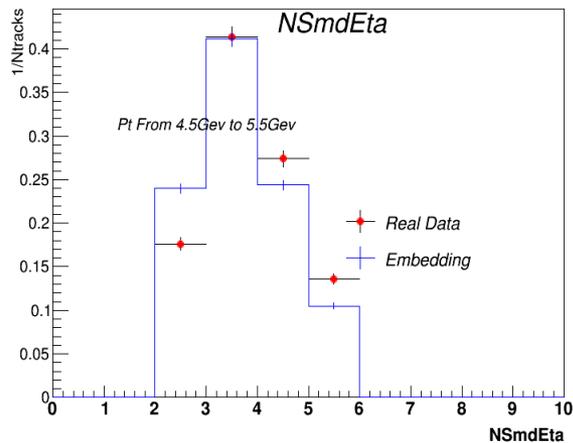
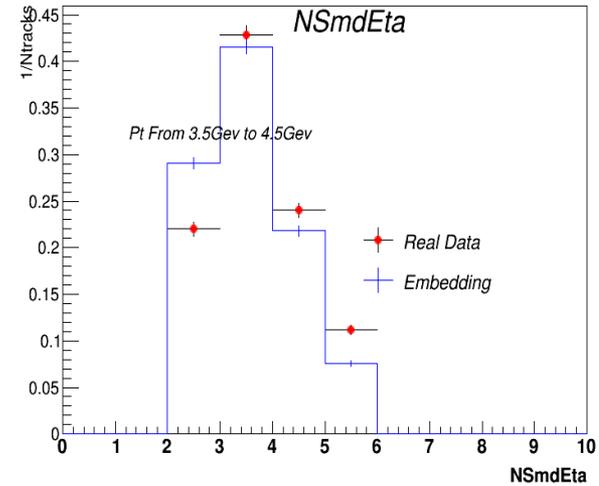
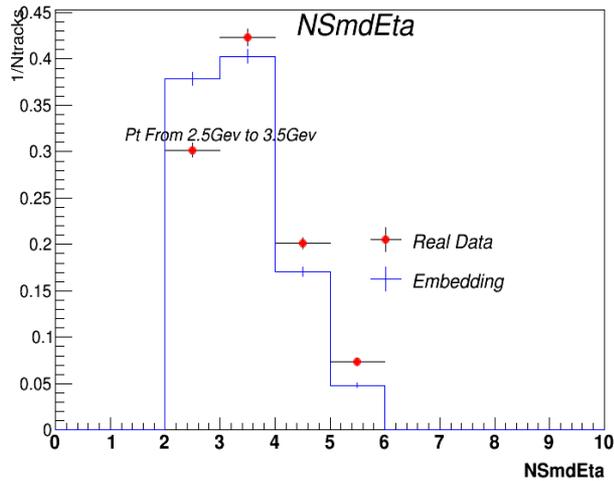
# NsmdPhi electron/positron embedding and real data in pt bin



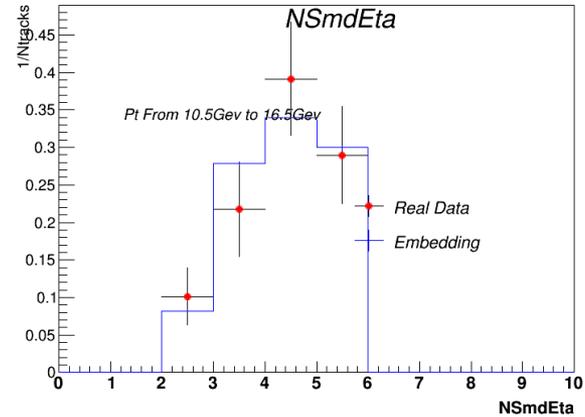
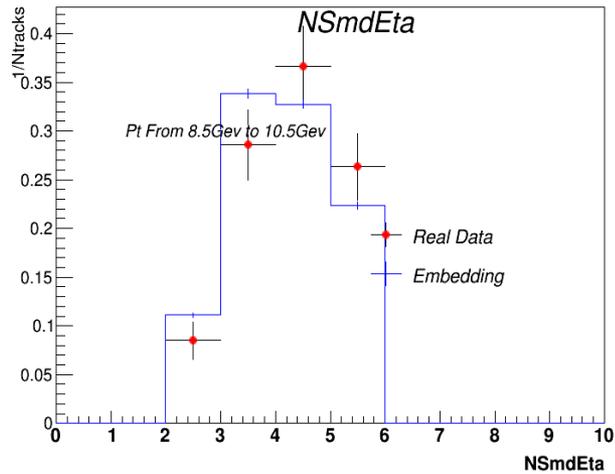
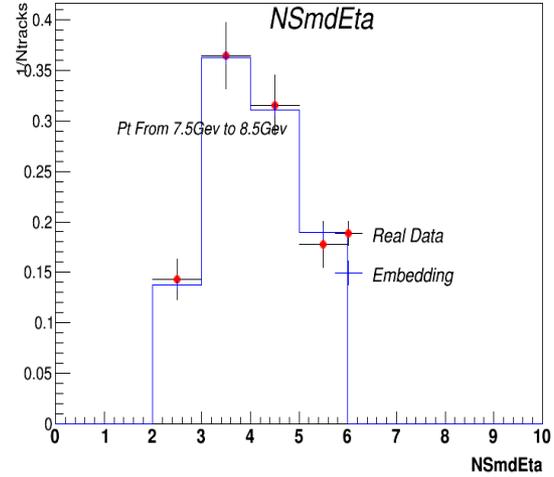
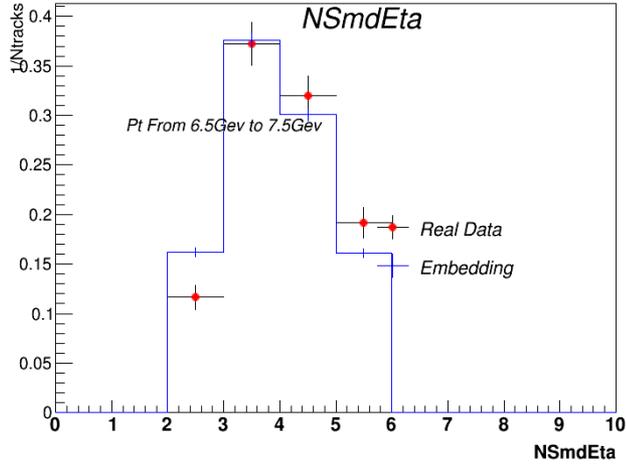
# NSmdPhi of electron/positron embedding and real data in pt bin



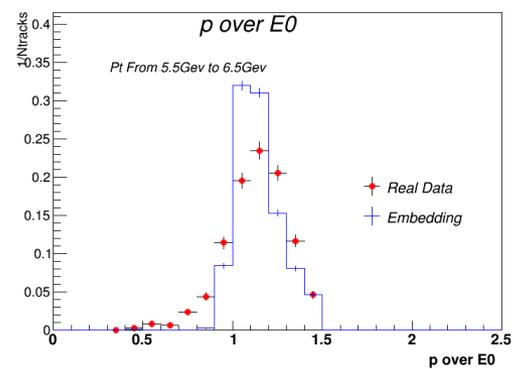
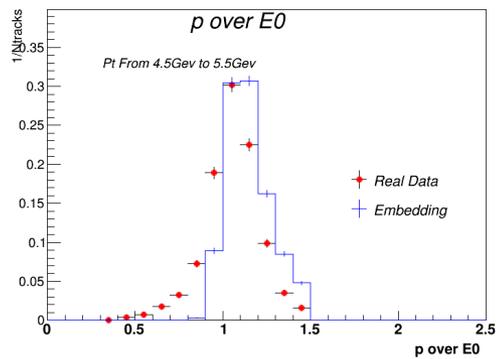
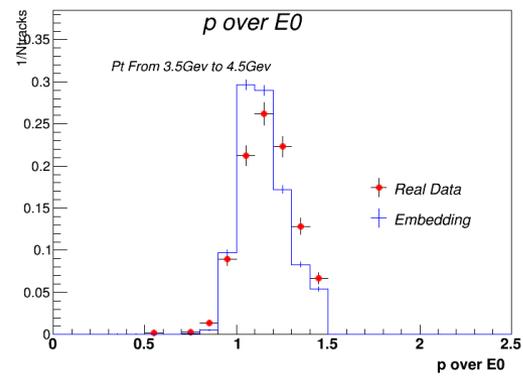
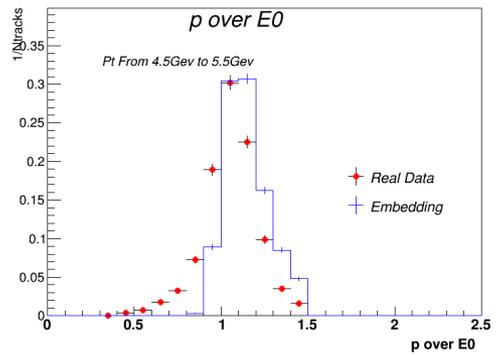
# NsmdEta of electron/positron embedding and real data in pt bin



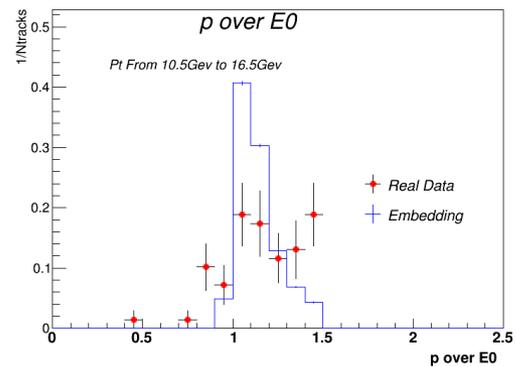
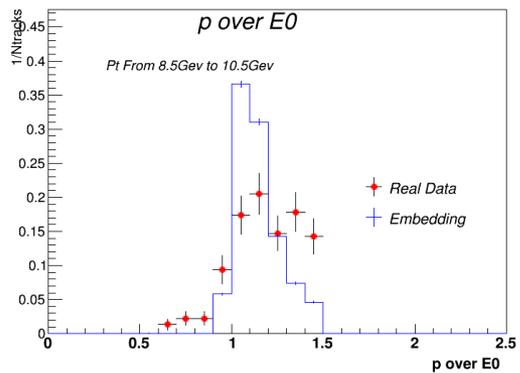
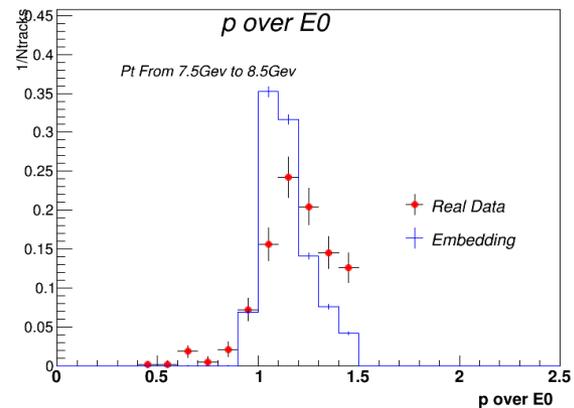
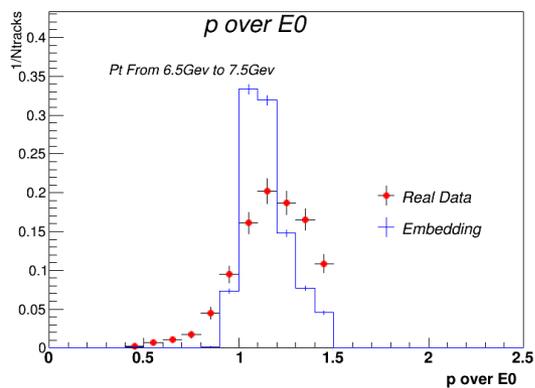
# NsmdEta of electron/positron embedding and real data in pt bin



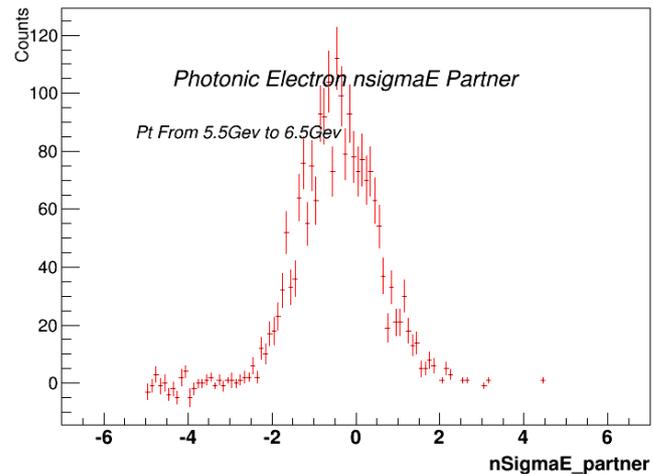
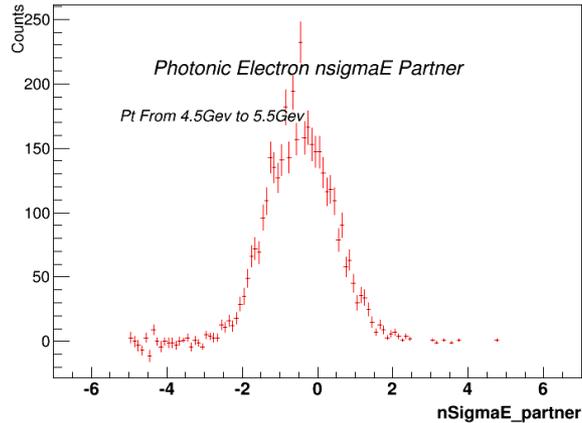
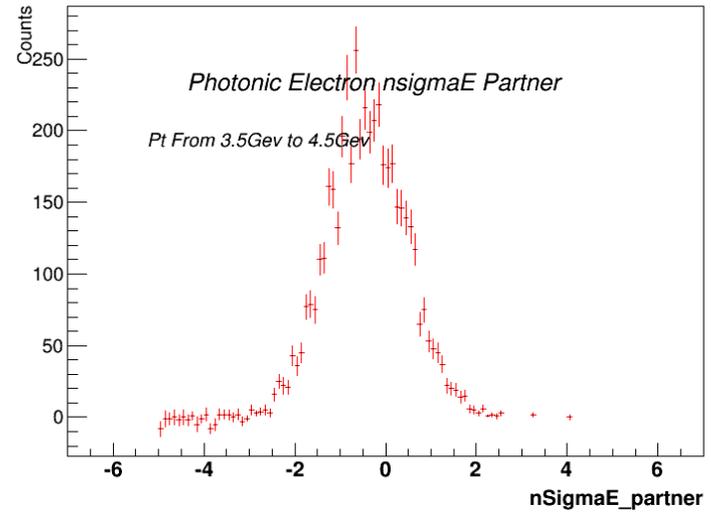
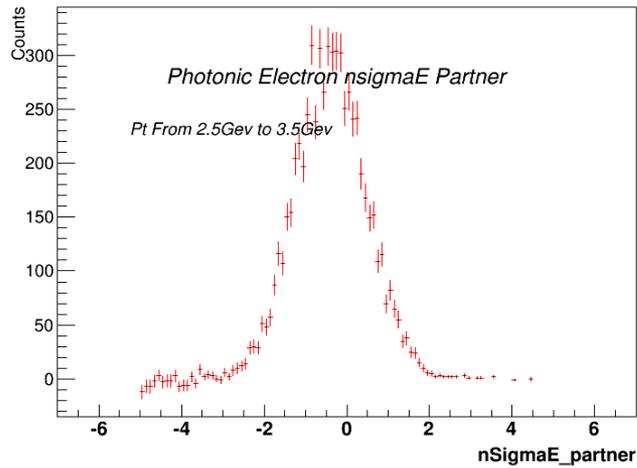
# P over E0 of electron/positron embedding and real data in pt bin



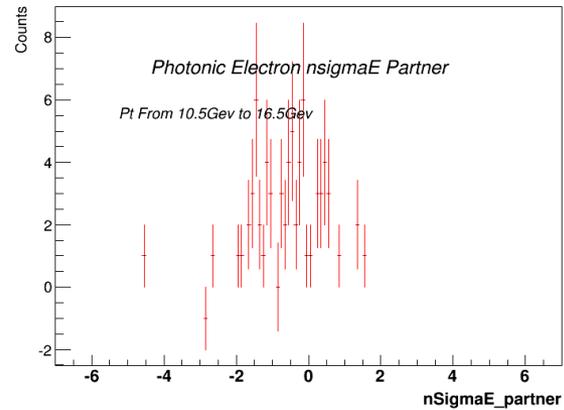
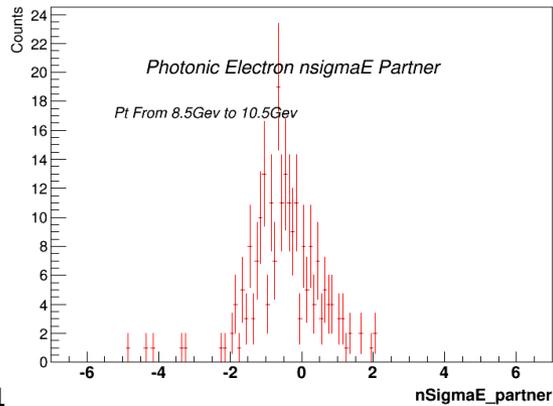
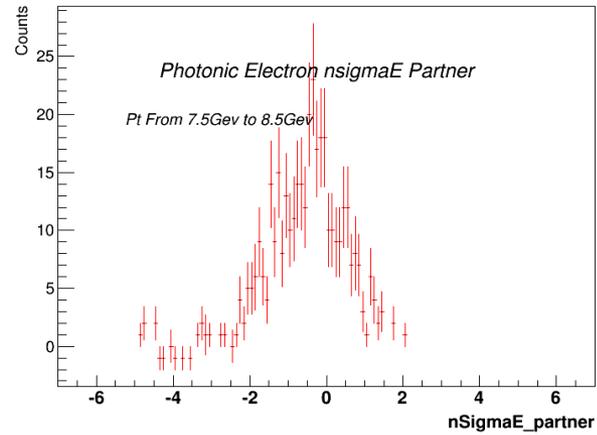
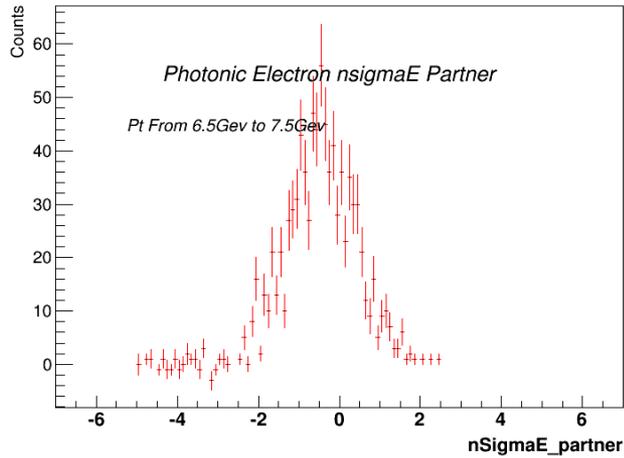
# P over E0 of electron/positron embedding and real data in pt bin



# Photonic Electron nsigmaE of partner

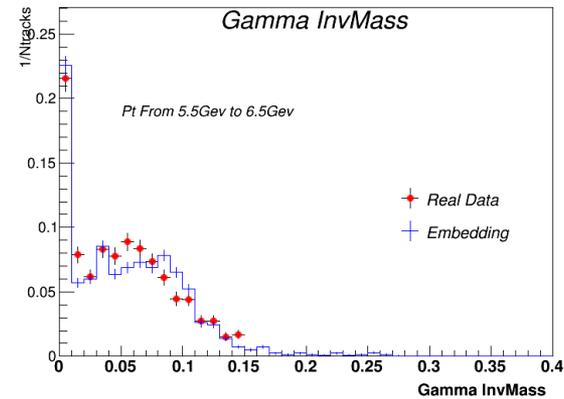
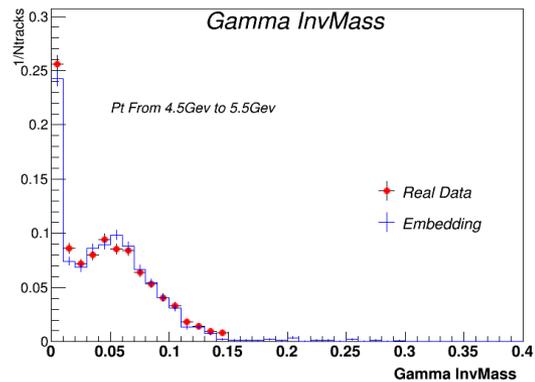
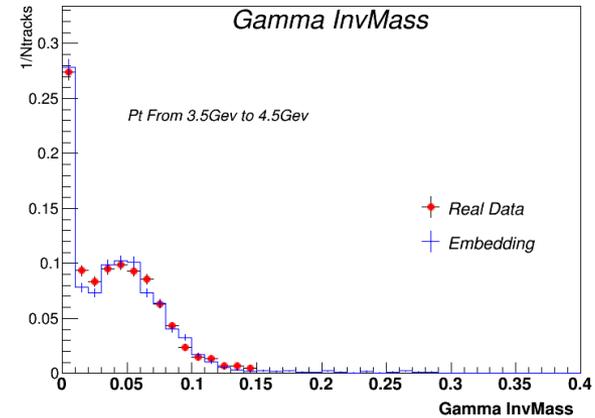
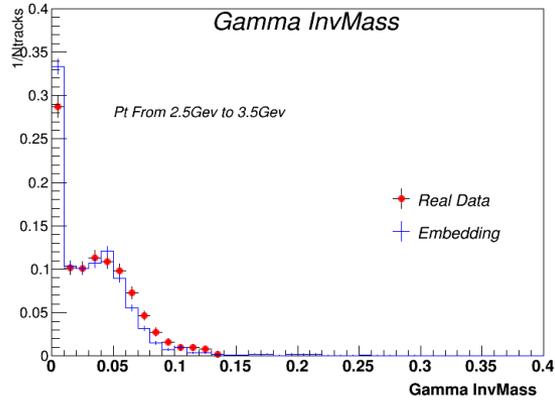


# Photonic Electron nsigmaE of Partner

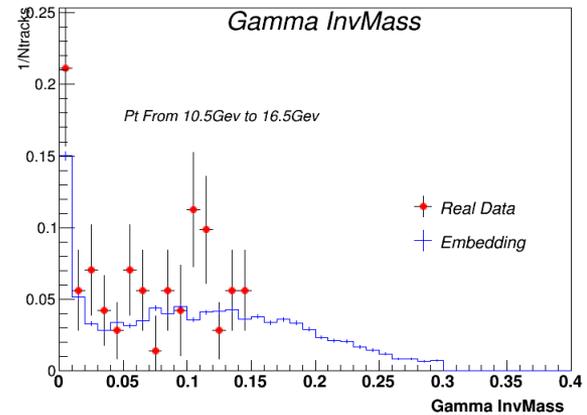
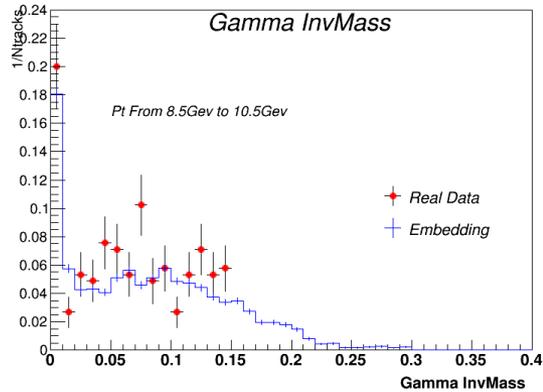
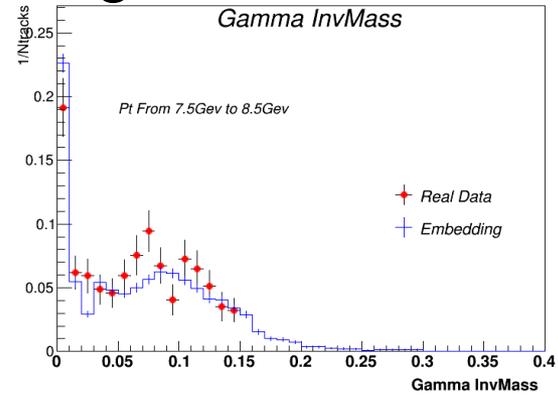
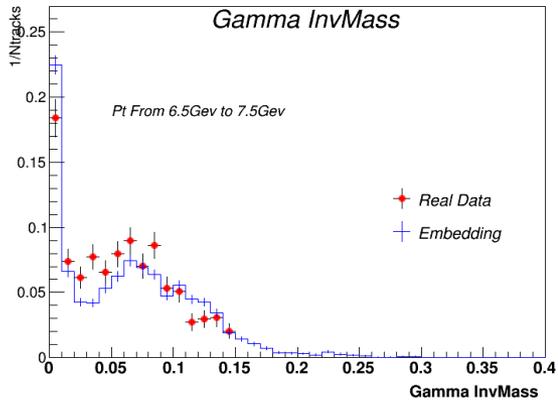


# Gamma Embedding QA

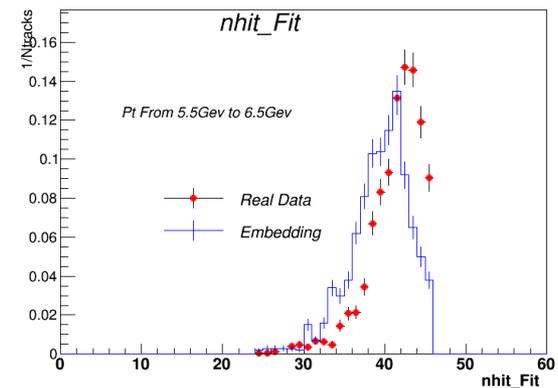
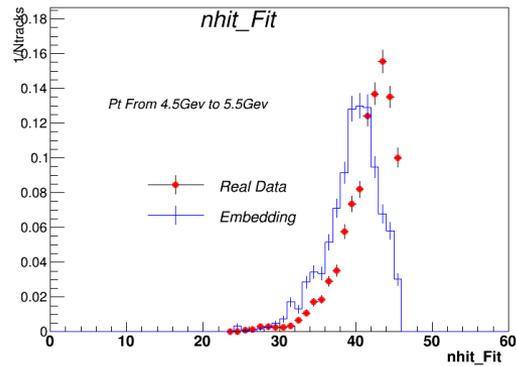
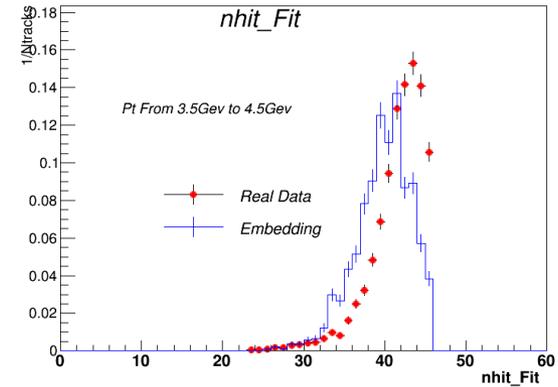
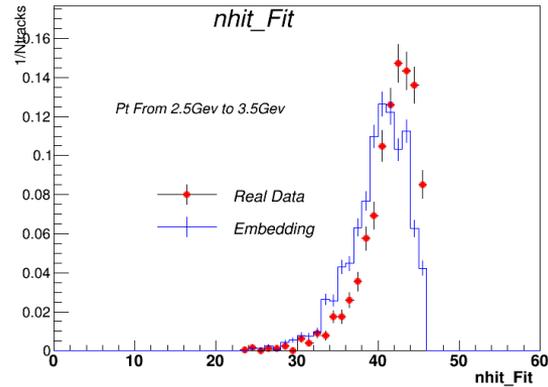
# Gamma InvMass In Real Data and embedding



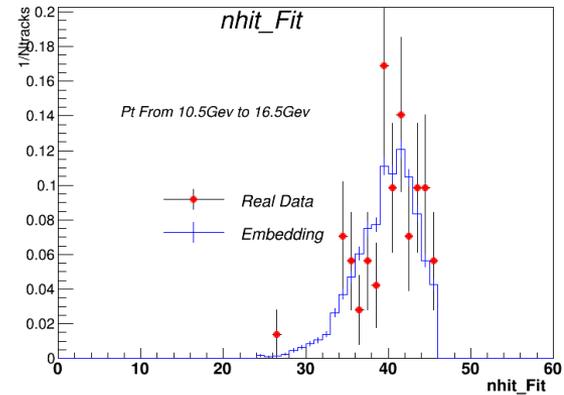
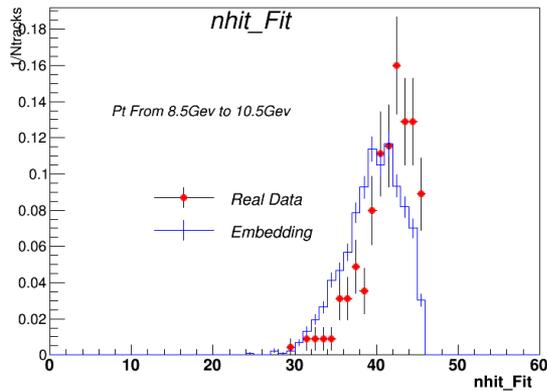
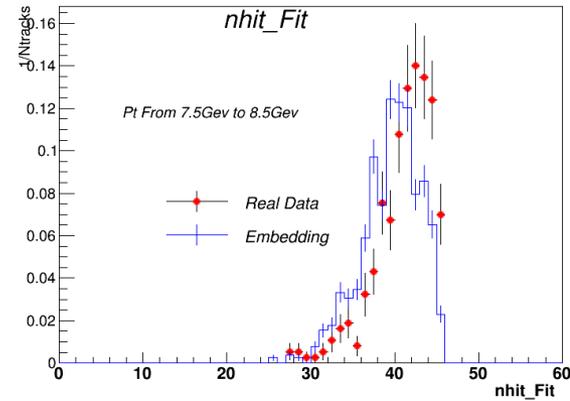
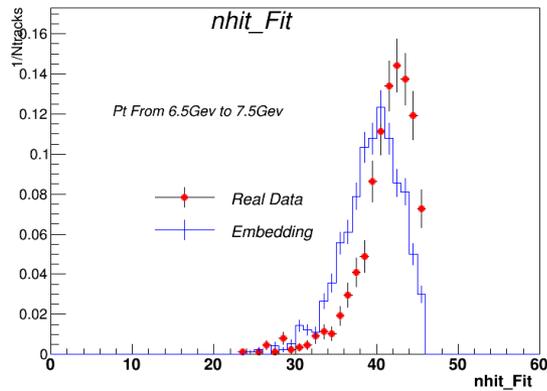
# Gamma InvMass In Real Data and embedding



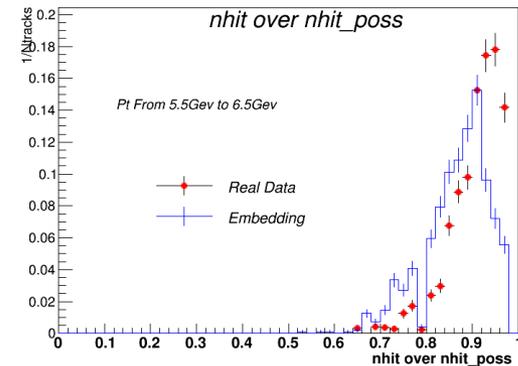
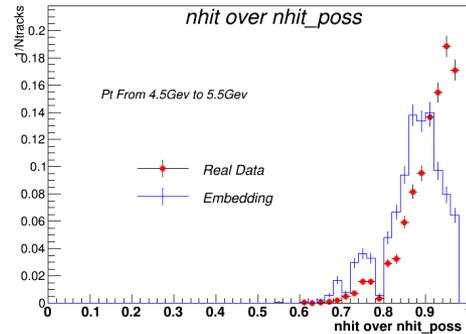
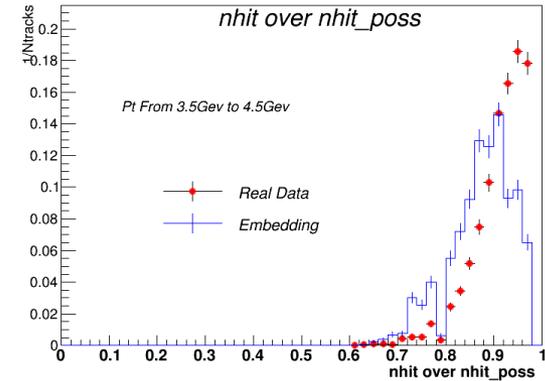
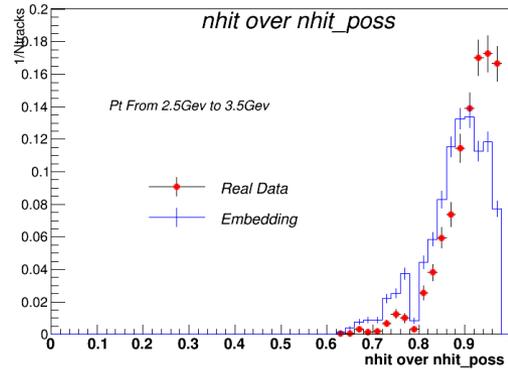
# Nhit fit of electron and positron from Gamma conversion In Real Data and embedding



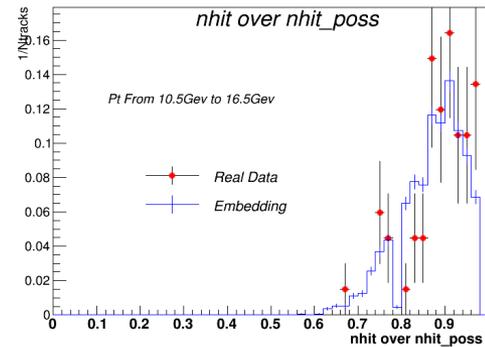
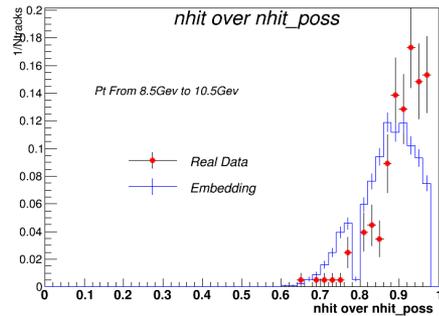
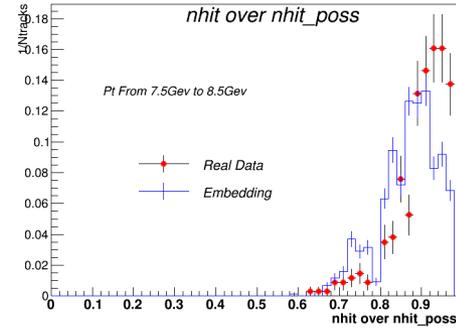
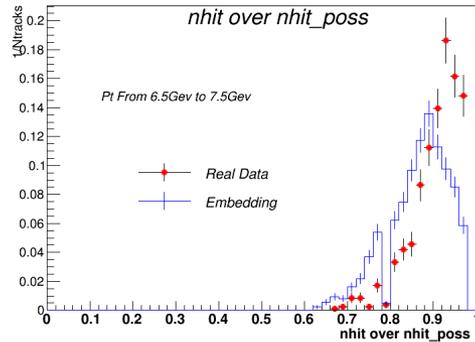
# Nhit fit of electron and positron from Gamma conversion In Real Data and embedding



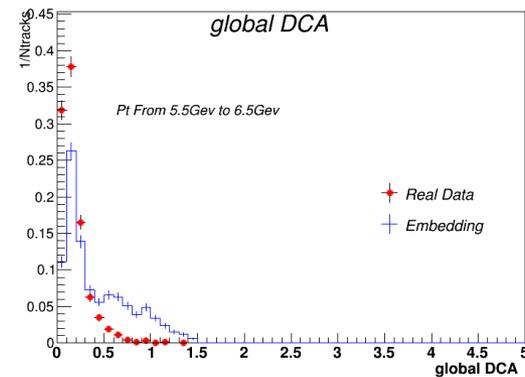
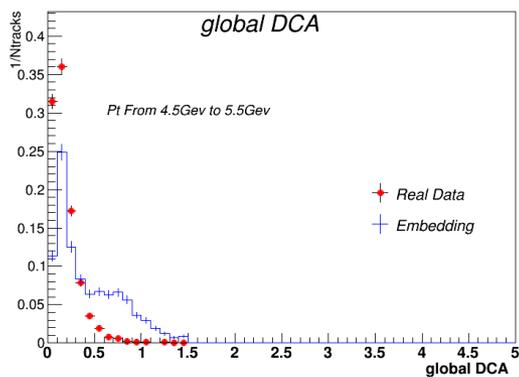
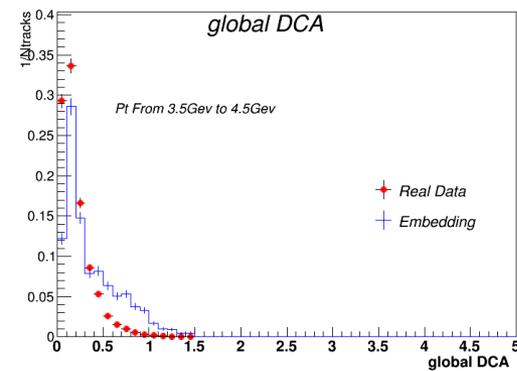
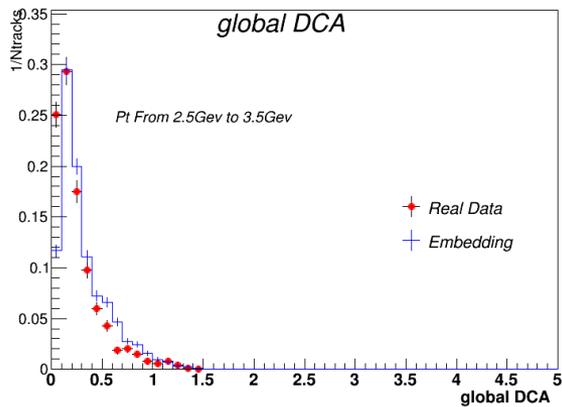
# Nhit fit over nhit possible of electron and positron from Gamma conversion In Real Data and embedding



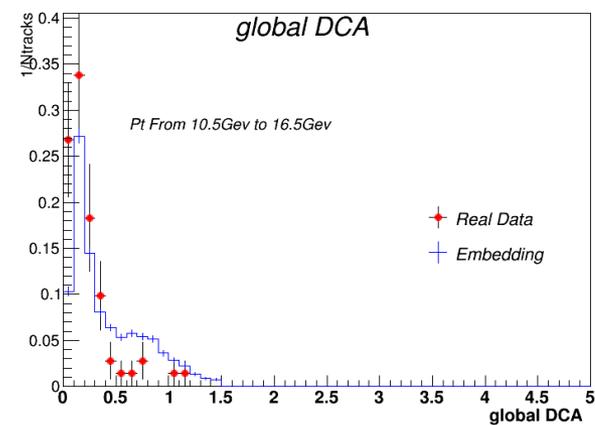
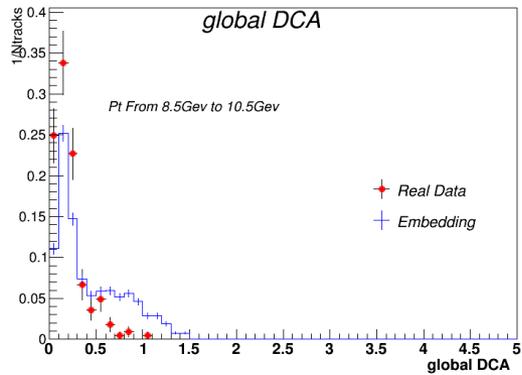
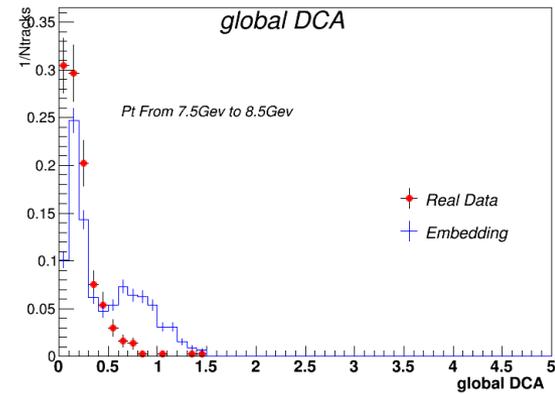
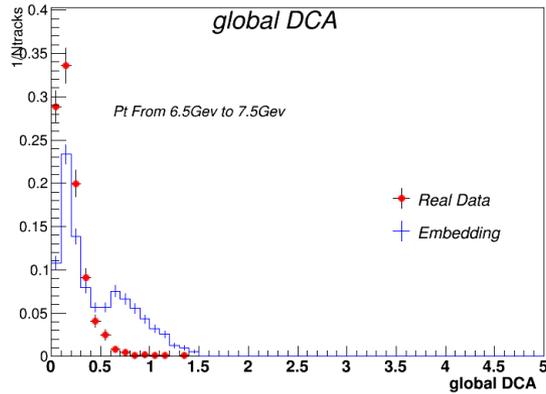
# Nhit fit over nhit possible of electron and positron from Gamma conversion In Real Data and embedding



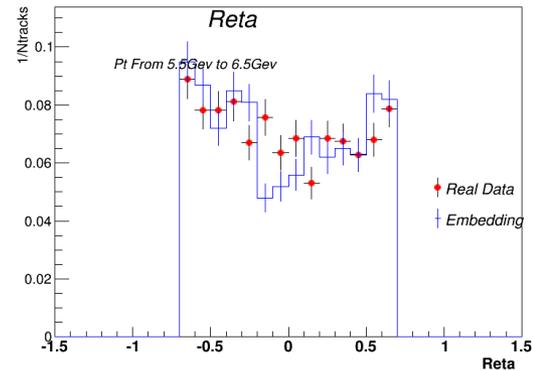
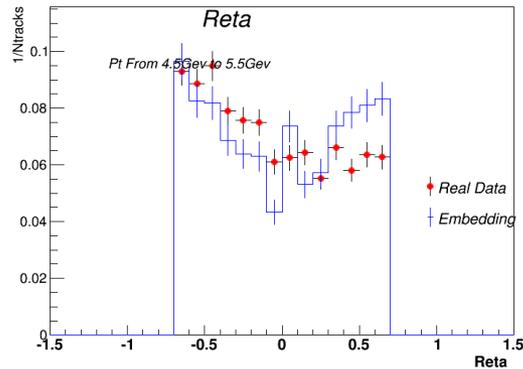
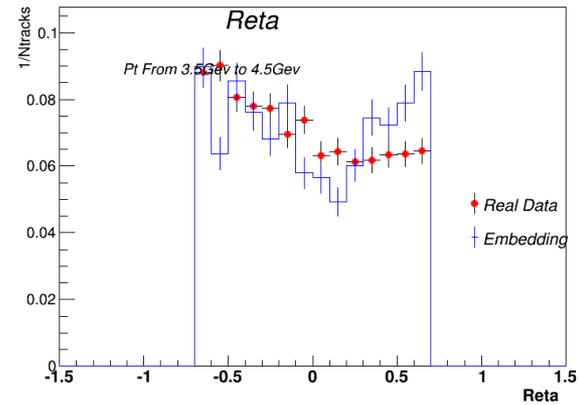
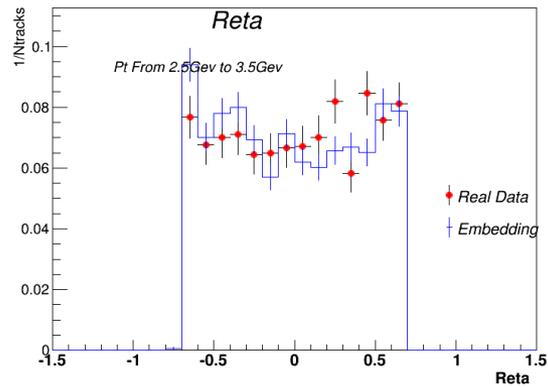
# global DCA of electron and positron from Gamma conversion In Real Data and embedding



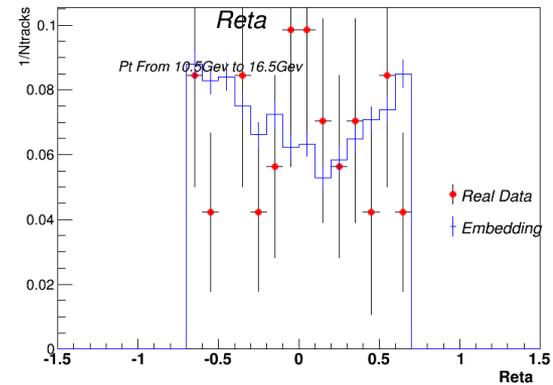
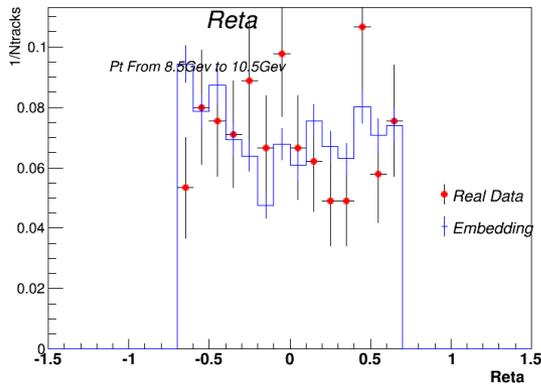
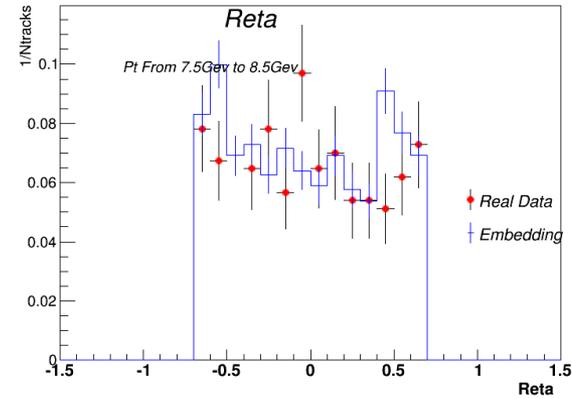
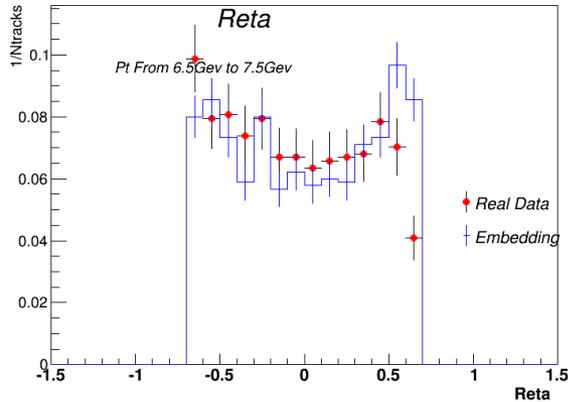
# global DCA of electron and positron from Gamma conversion In Real Data and embedding



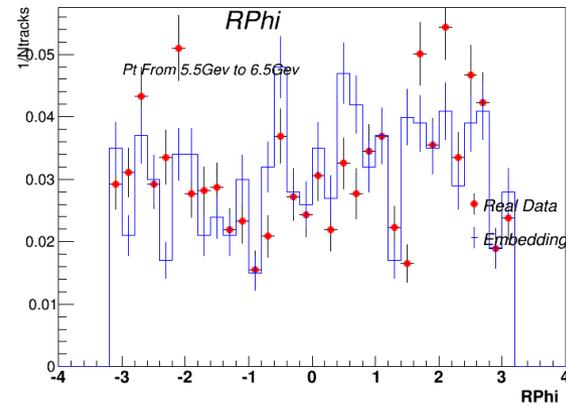
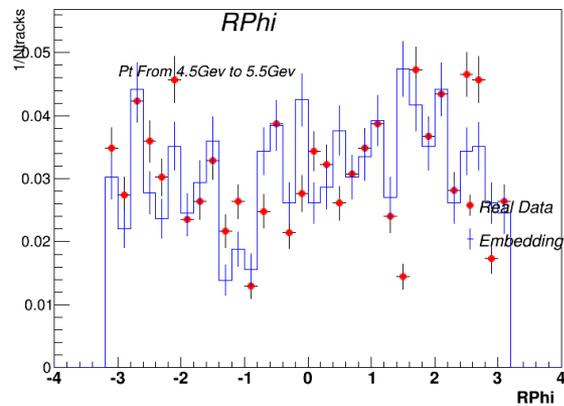
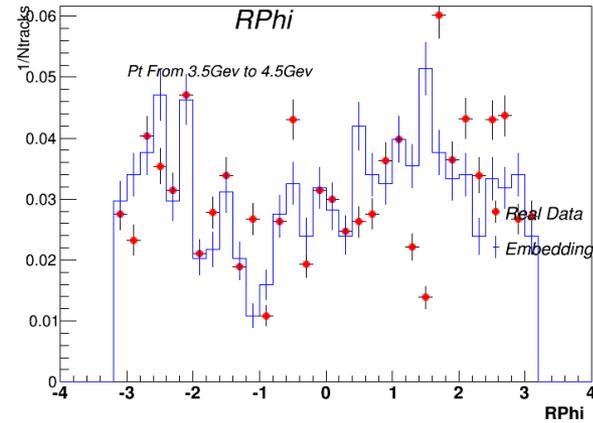
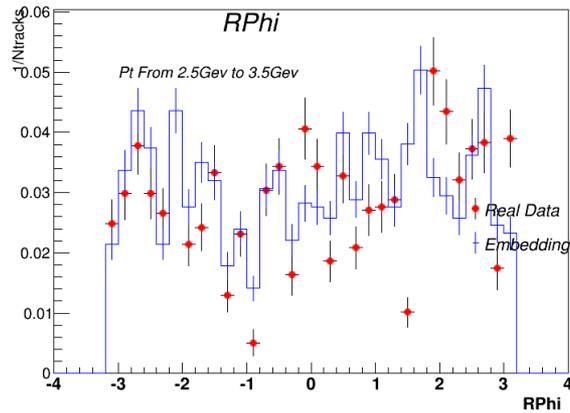
# Reconstruction Eta of electron and positron from Gamma conversion In Real Data and embedding



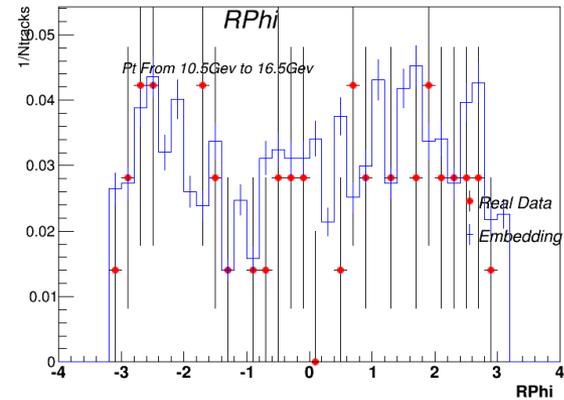
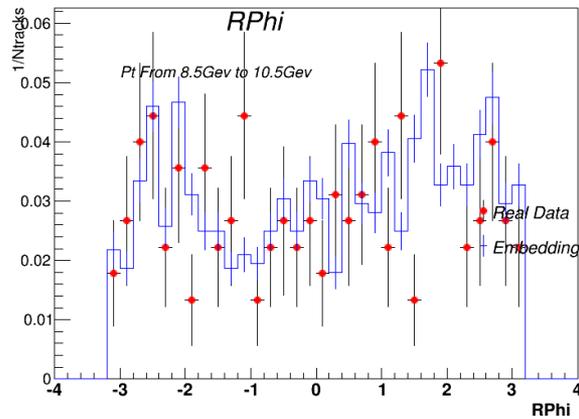
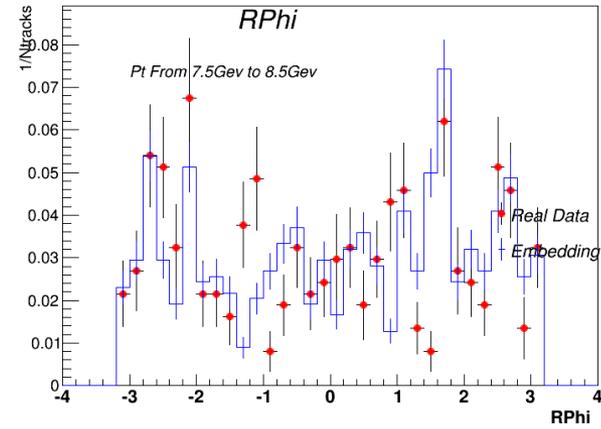
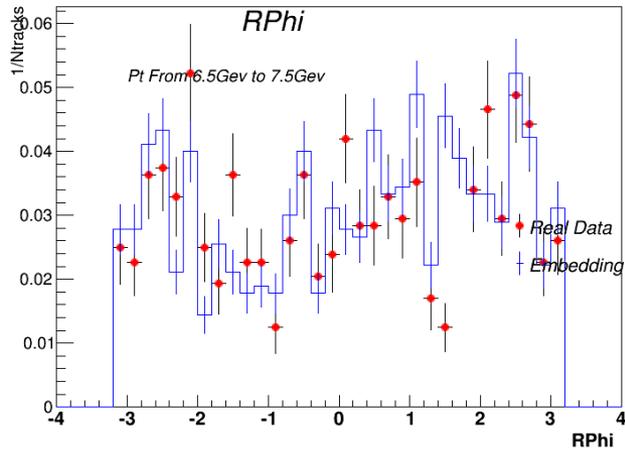
# Reconstruction Eta of electron and positron from Gamma conversion In Real Data and embedding



# Reconstruction Phi of electron and positron from Gamma conversion In Real Data and embedding

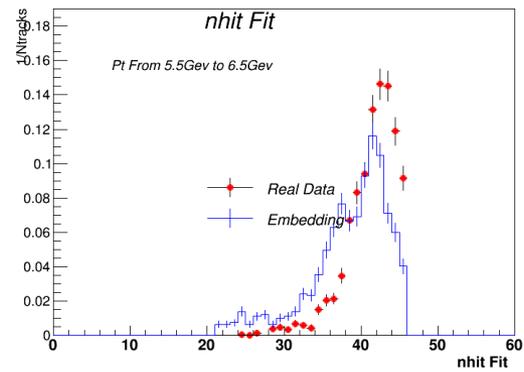
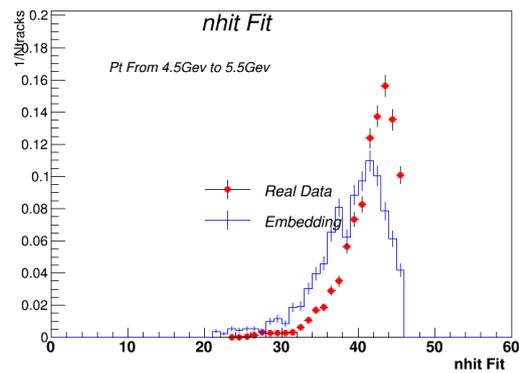
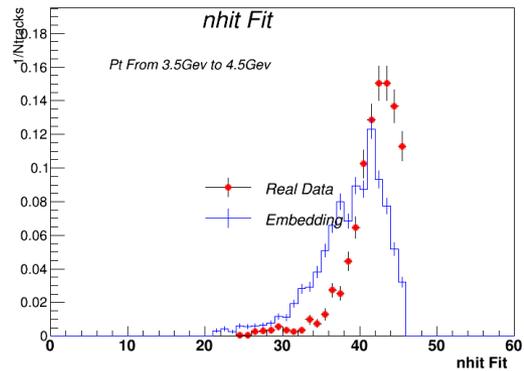
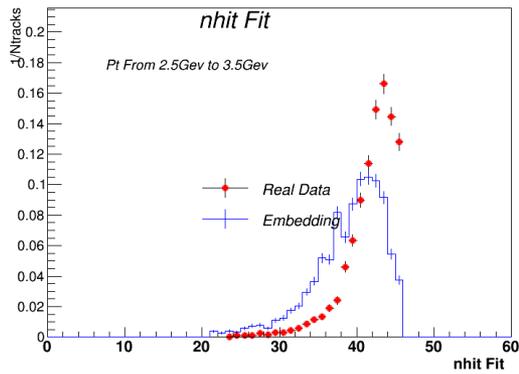


# Reconstruction Phi of electron and positron from Gamma conversion In Real Data and embedding



Back up

# Nhit fit of gamma embedding and real Data (without applied the track match to EMC cut)



# Nhit fit of gamma embedding and real Data (without applied the track match to EMC cut)

