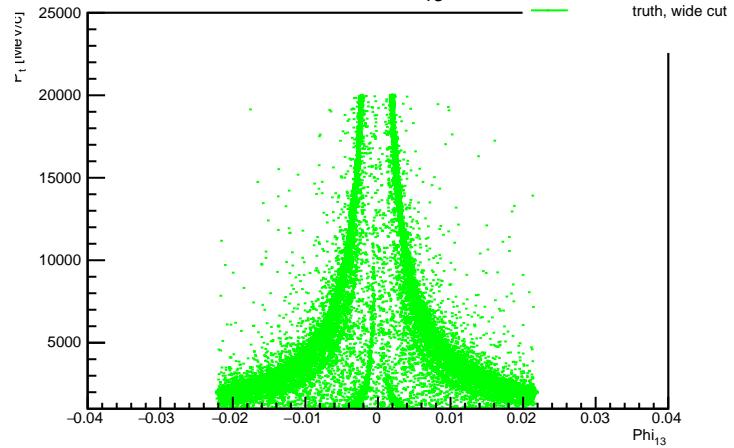
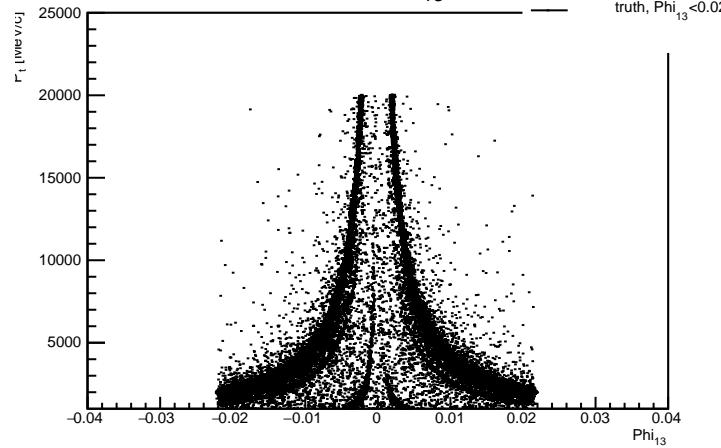
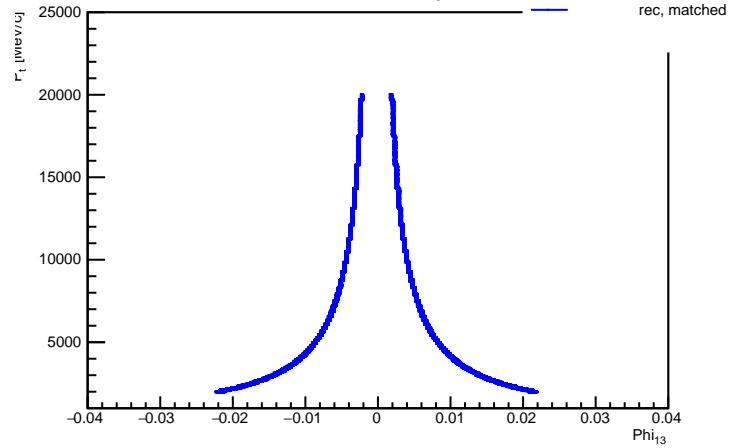
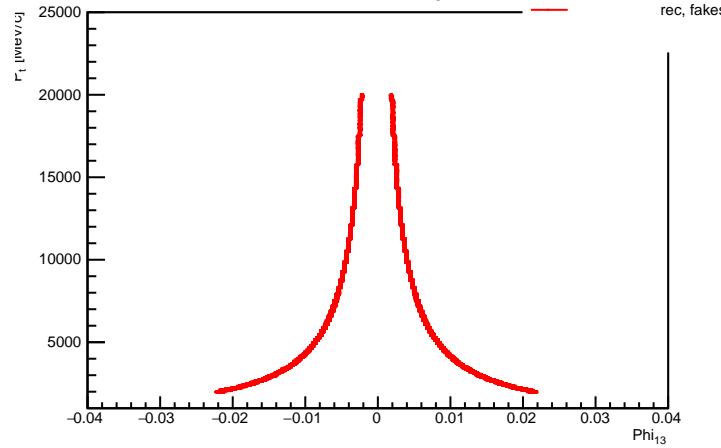
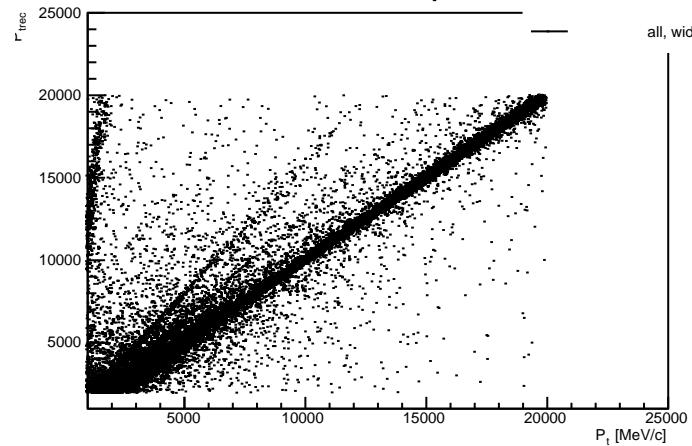
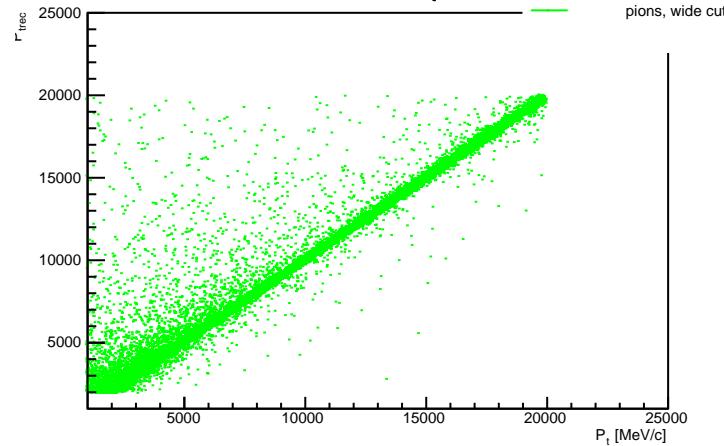


P_t Vs Φ_{13}  P_t Vs Φ_{13}  P_t Vs Φ_{13}  P_t Vs Φ_{13} 

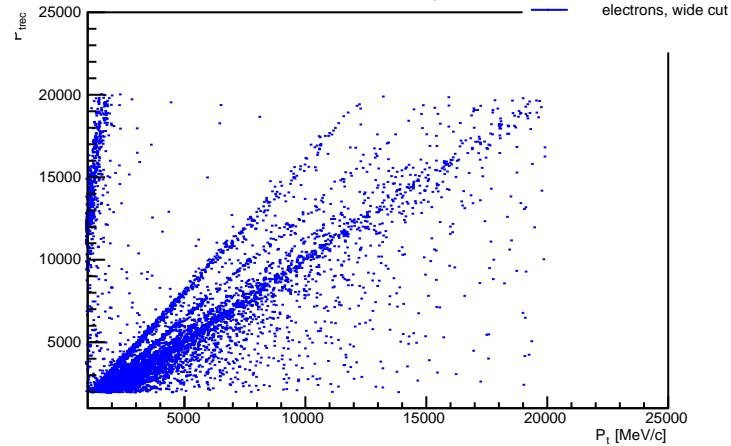
P_{trec} Vs P_t



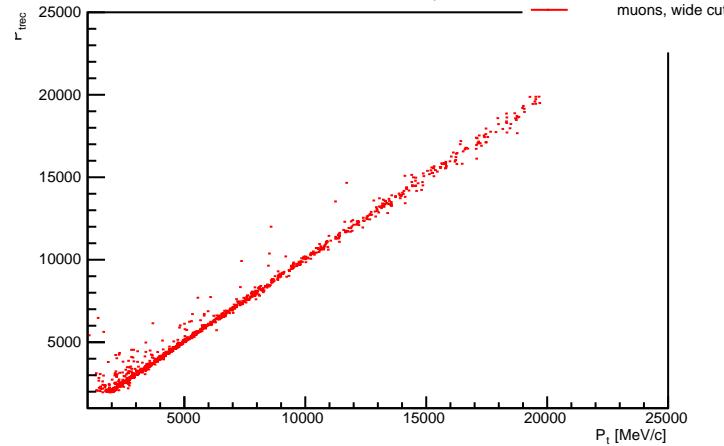
P_{trec} Vs P_t



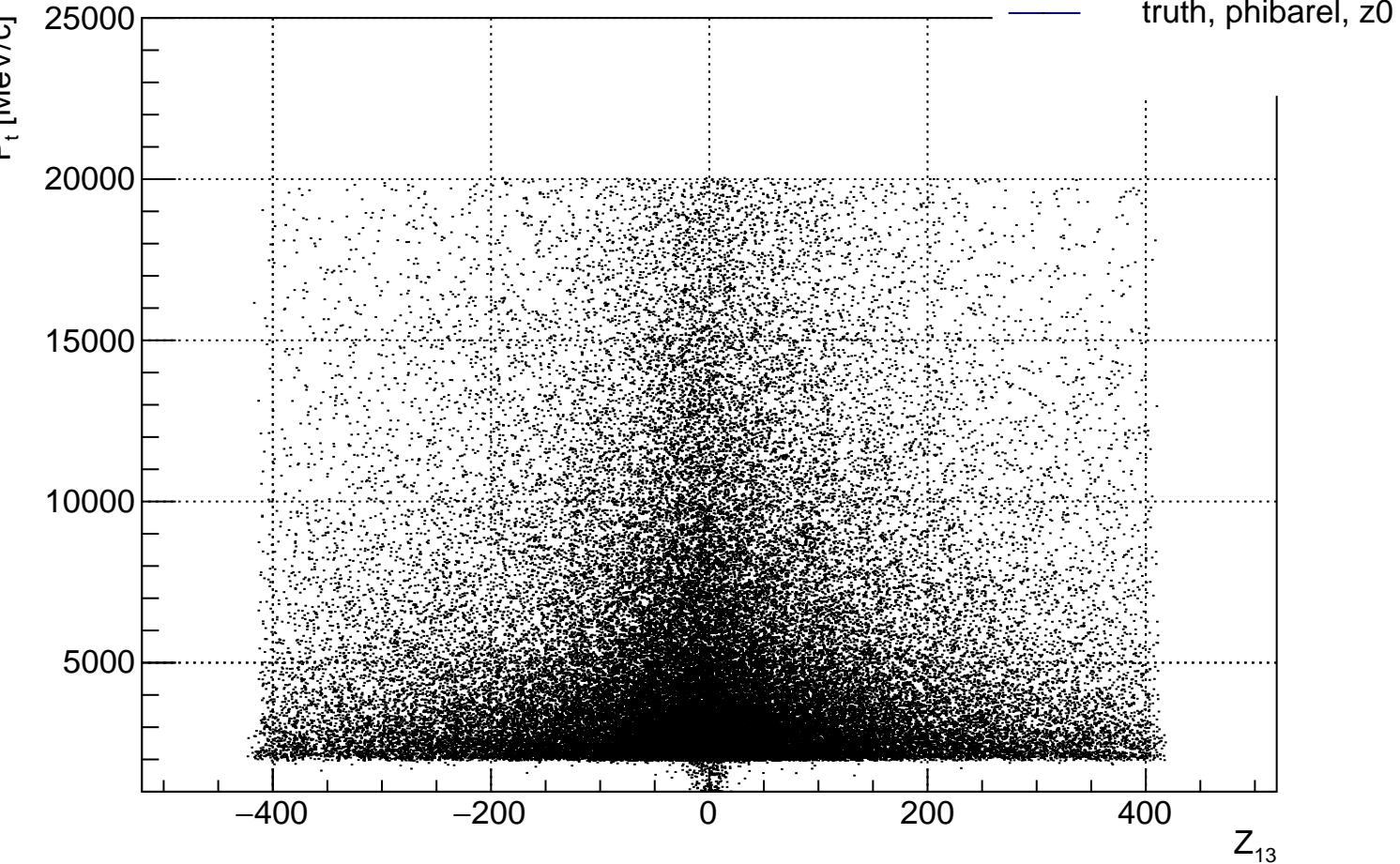
P_{trec} Vs P_t

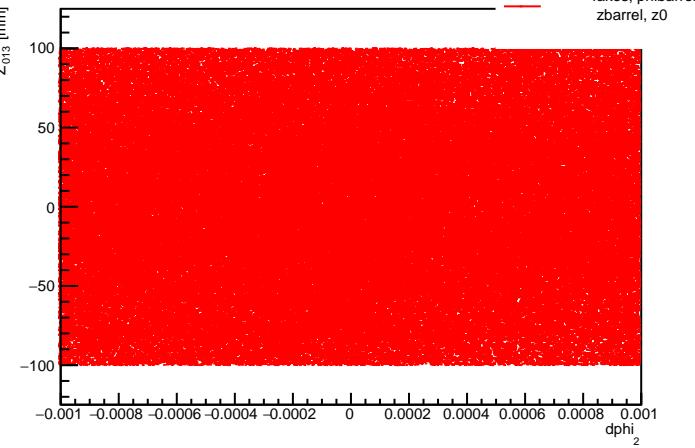
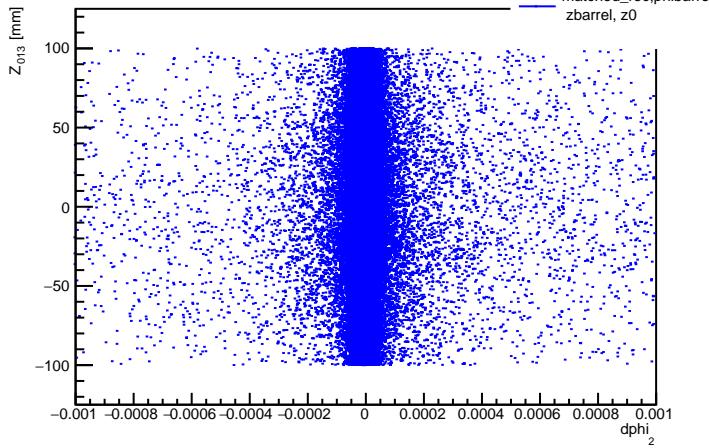
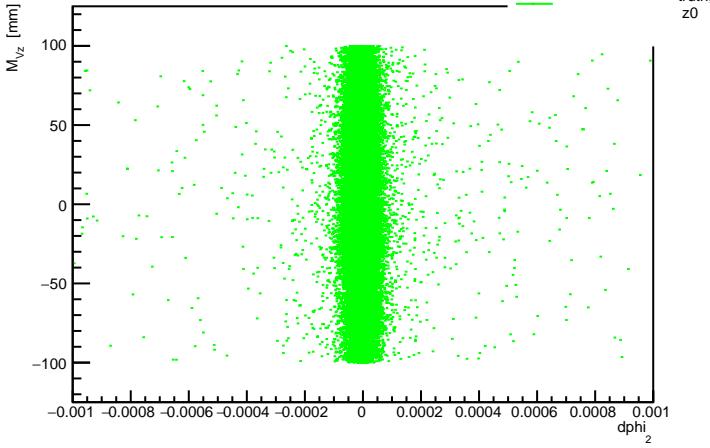
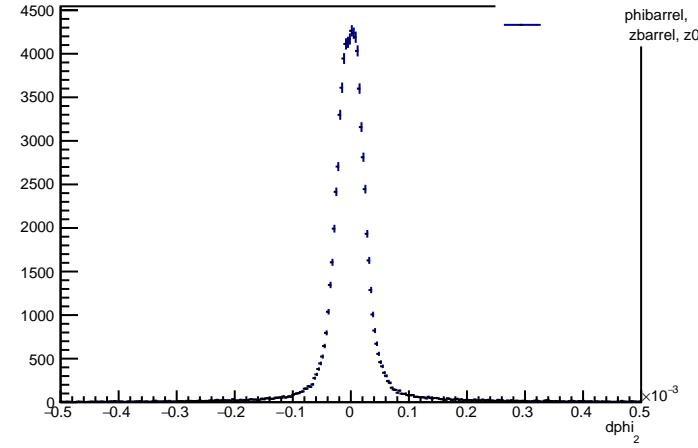


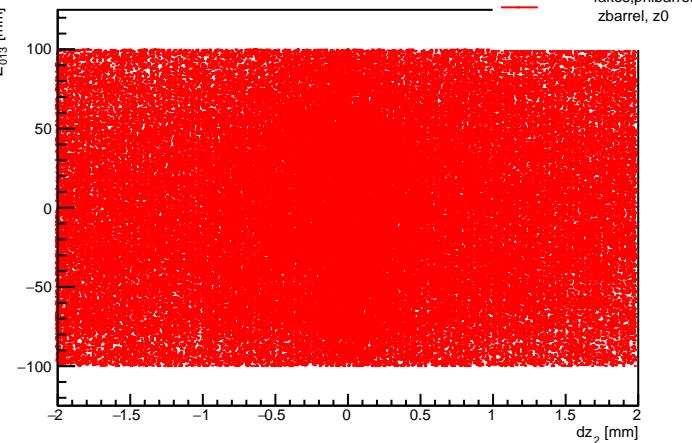
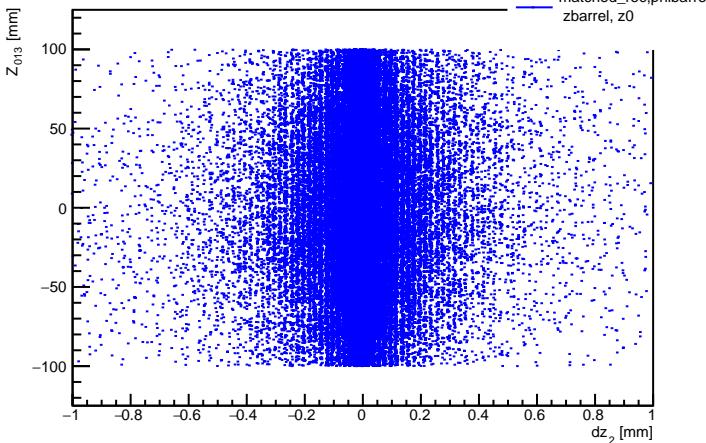
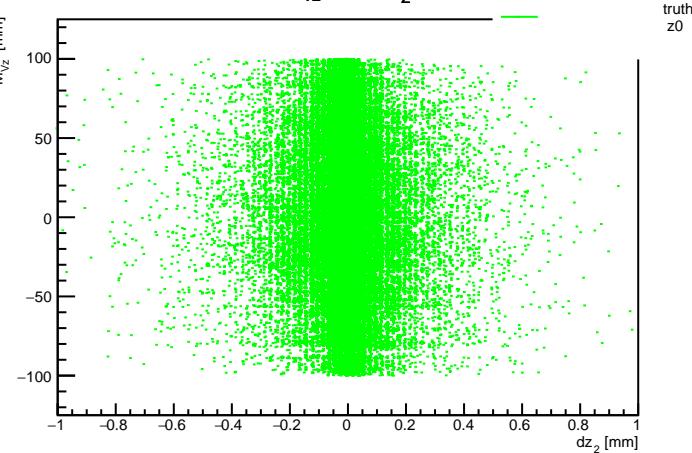
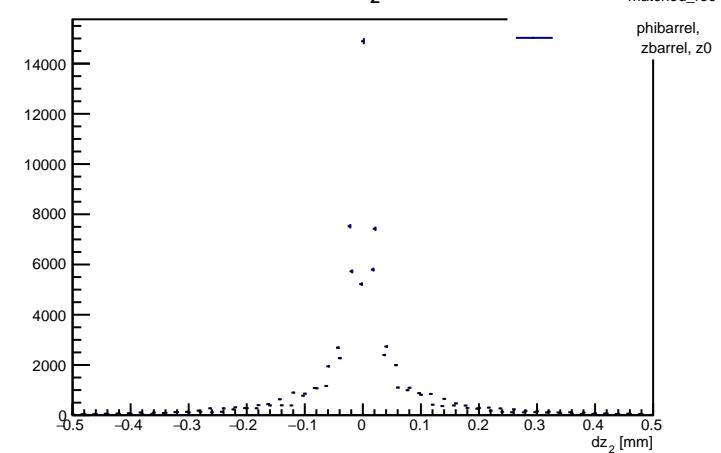
P_{trec} Vs P_t



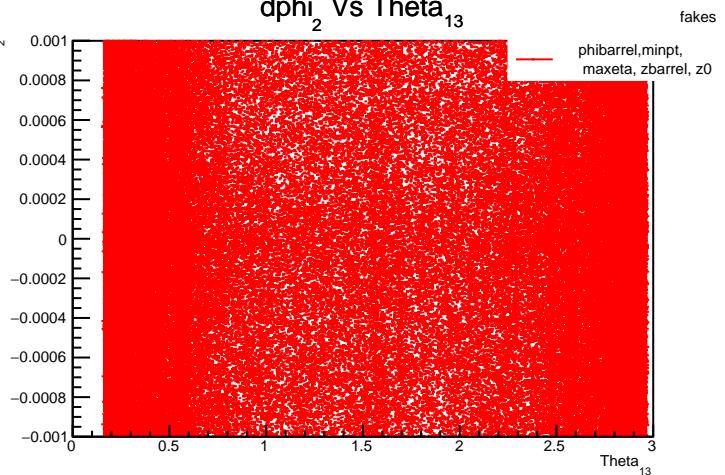
P_t Vs Z_{13}



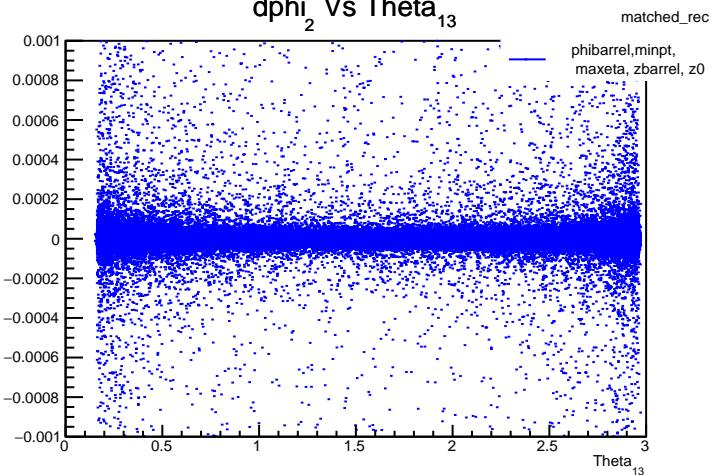
Z_{013} Vs $d\phi_i$  Z_{013} Vs $d\phi_i$  M_{vz} Vs $d\phi_i$  $d\phi_i$ 

Z_{013} Vs dz_2  Z_{013} Vs dz_2  M_{vz} Vs dz_2  dz_2 

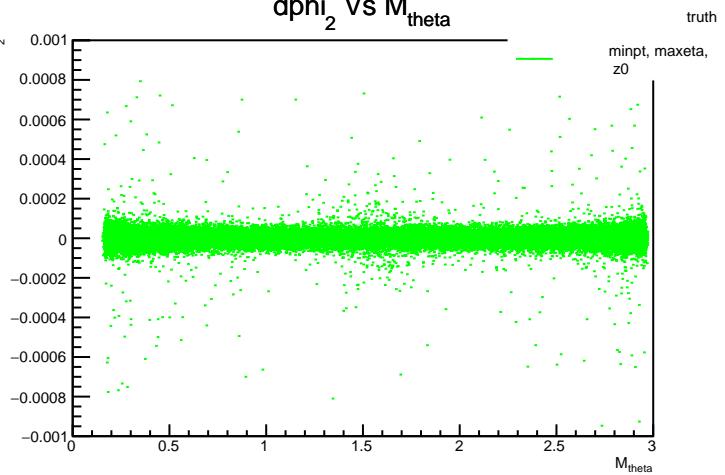
dphi₂ Vs Theta₁₃



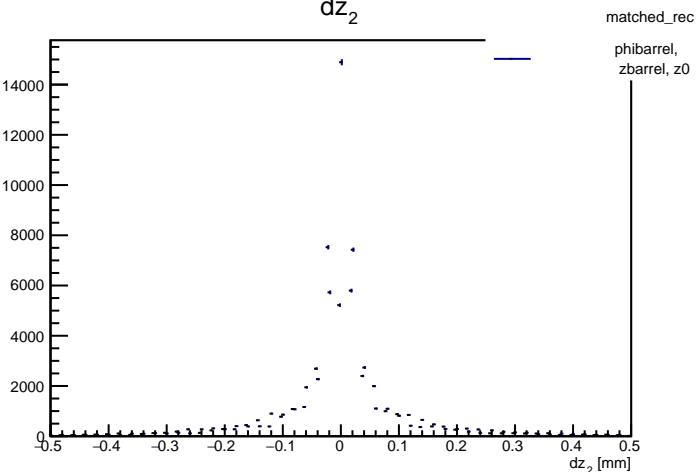
dphi₂ Vs Theta₁₃



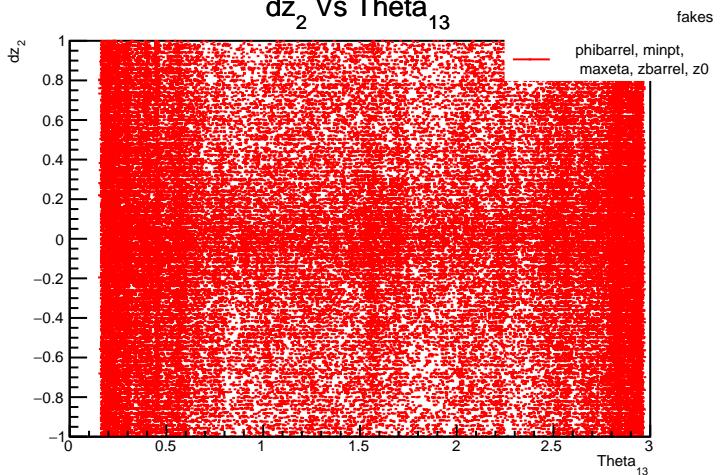
dphi₂ Vs M_{theta}



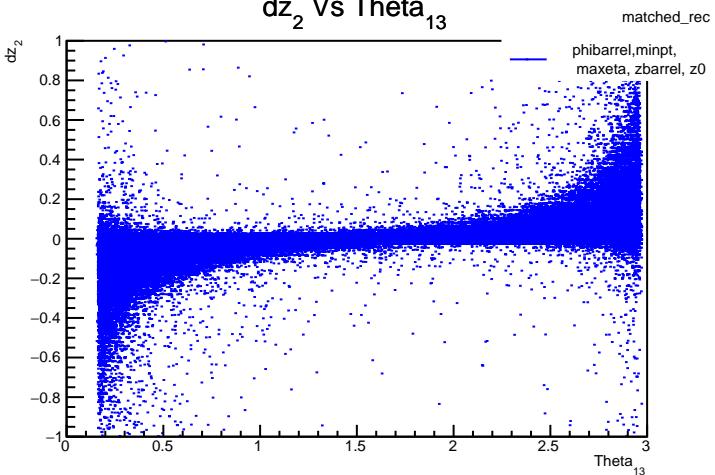
dz₂



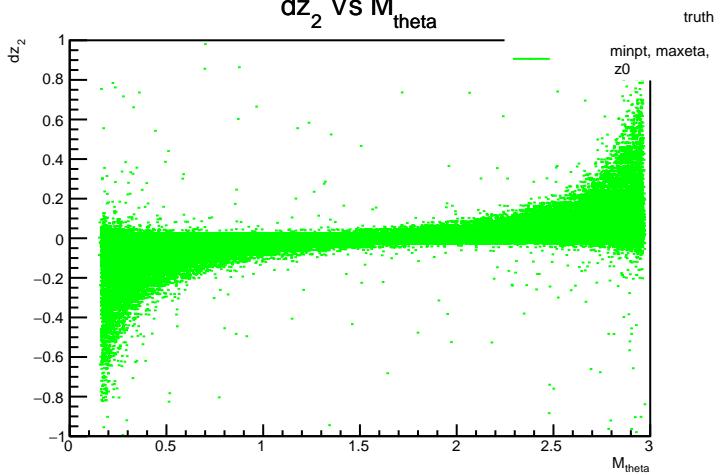
dz_2 Vs Θ_{13}



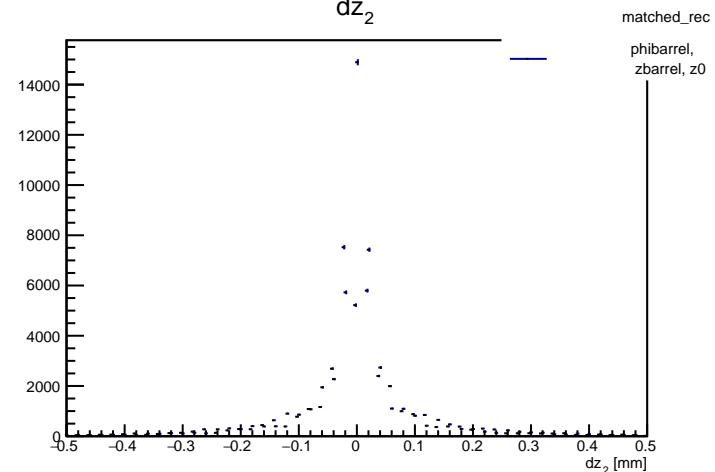
dz_2 Vs Θ_{13}



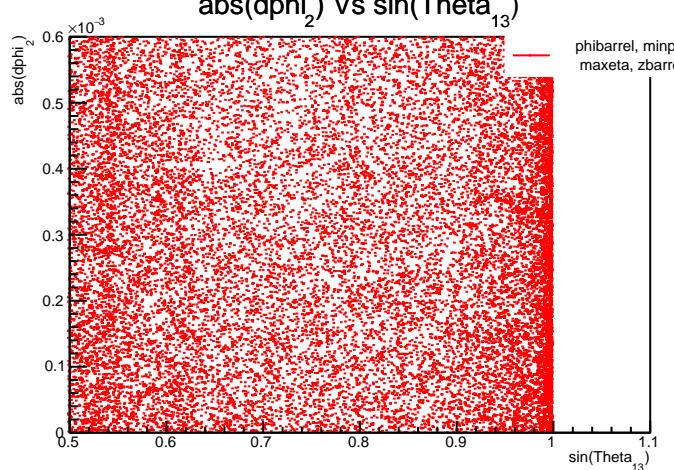
dz_2 Vs M_{θ}



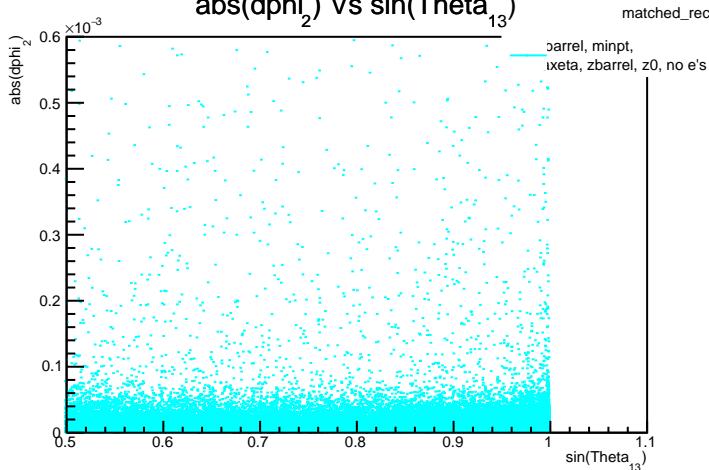
dz_2



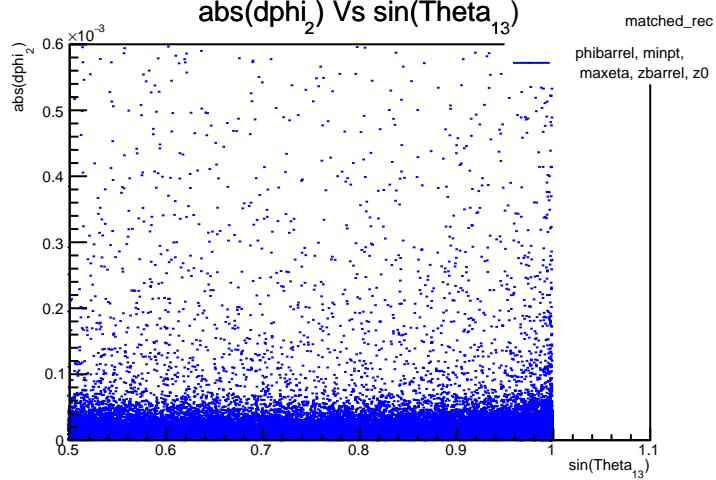
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$



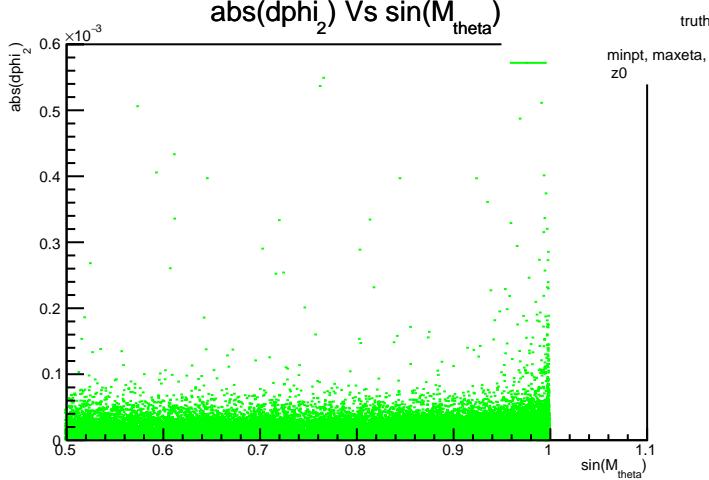
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$



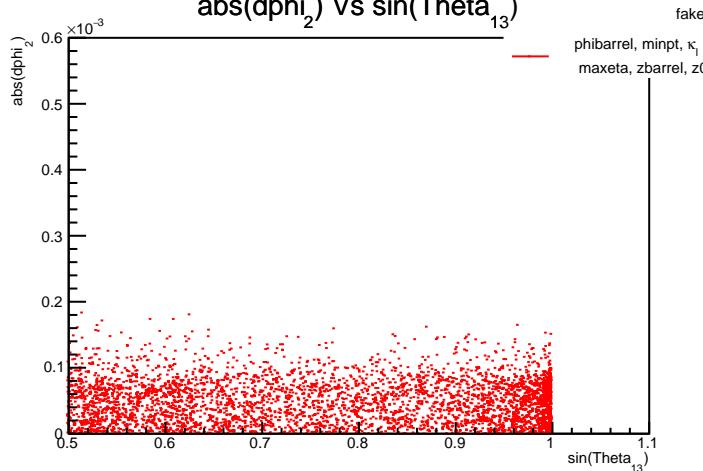
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$



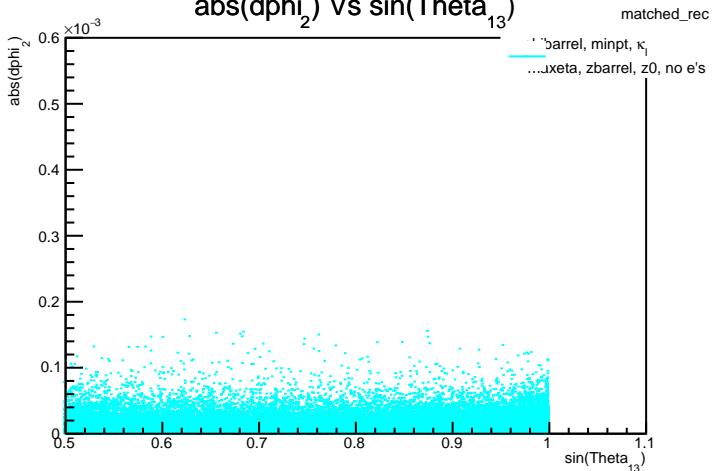
$\text{abs}(\text{dphi}_2)$ Vs $\sin(M_{\theta})$



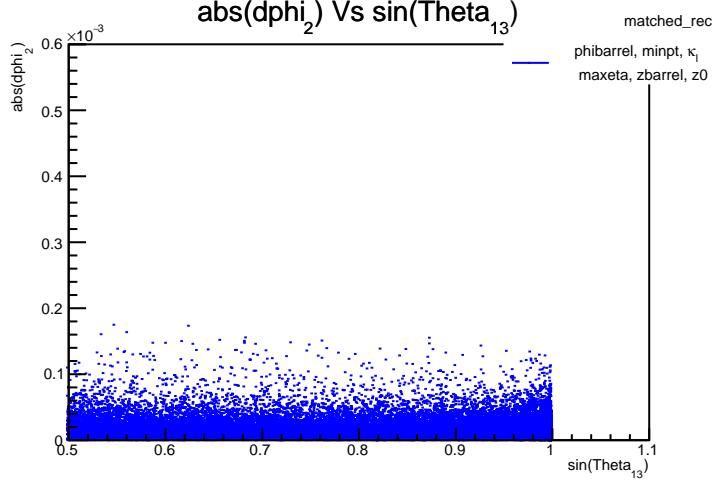
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$



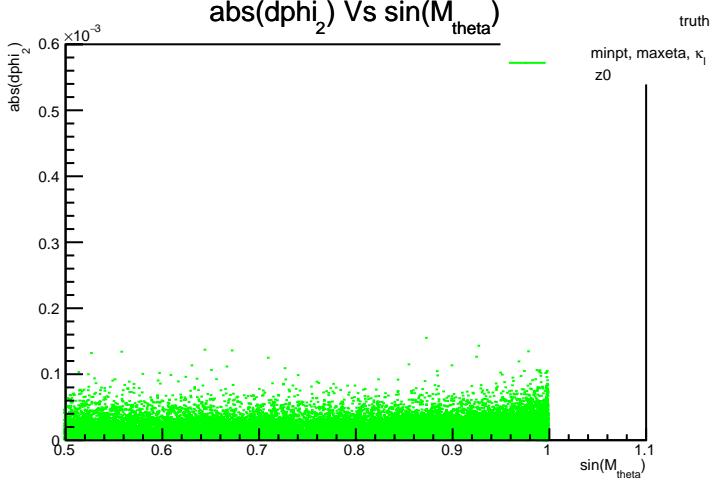
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$

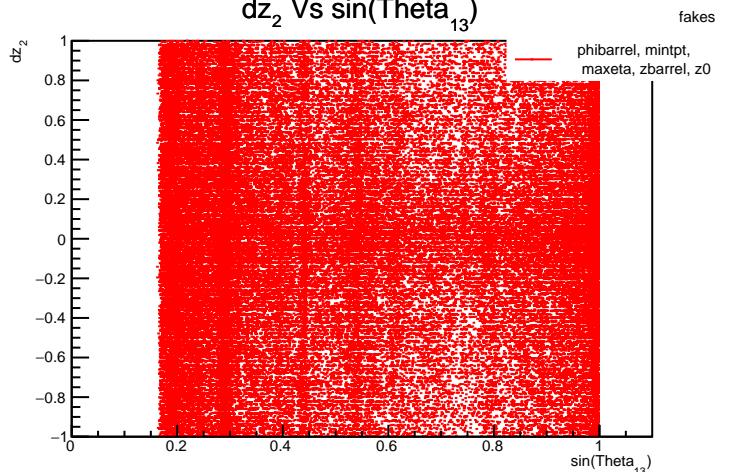
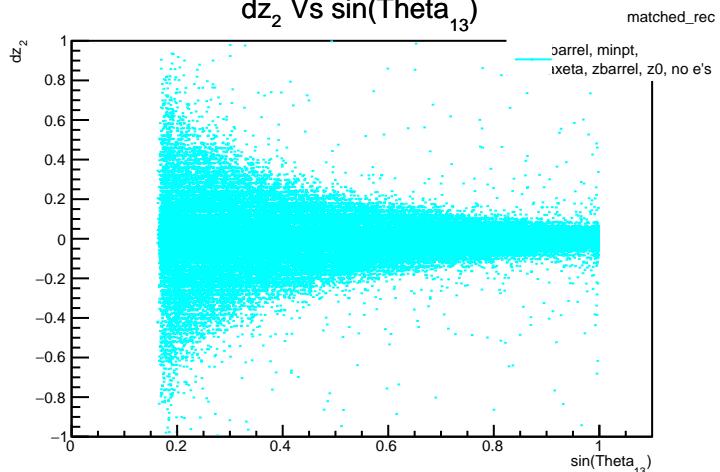
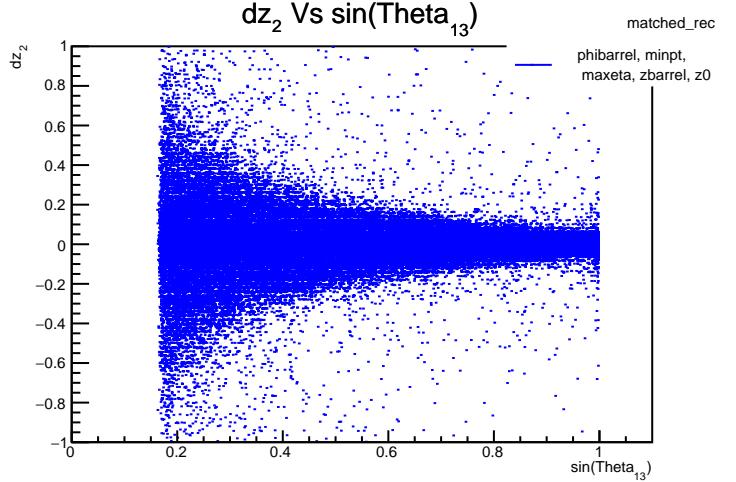
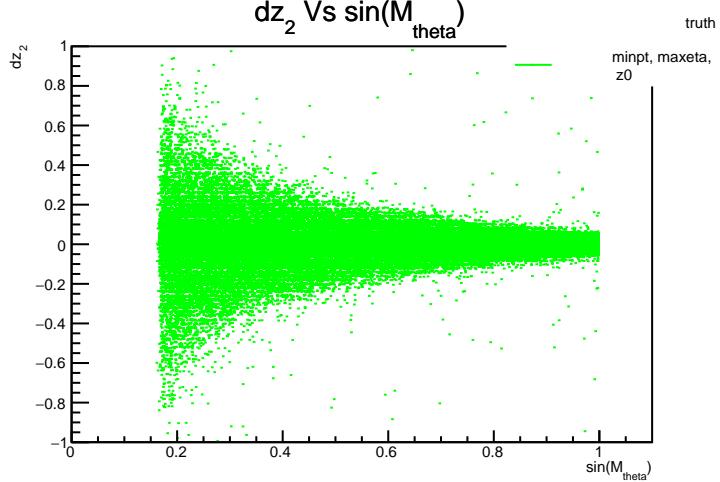


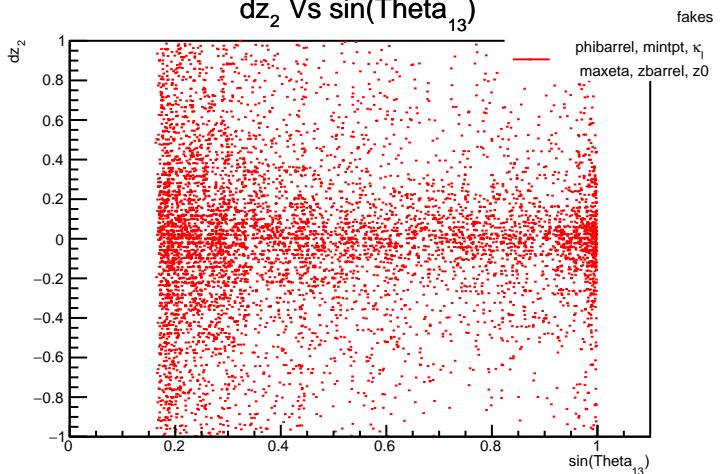
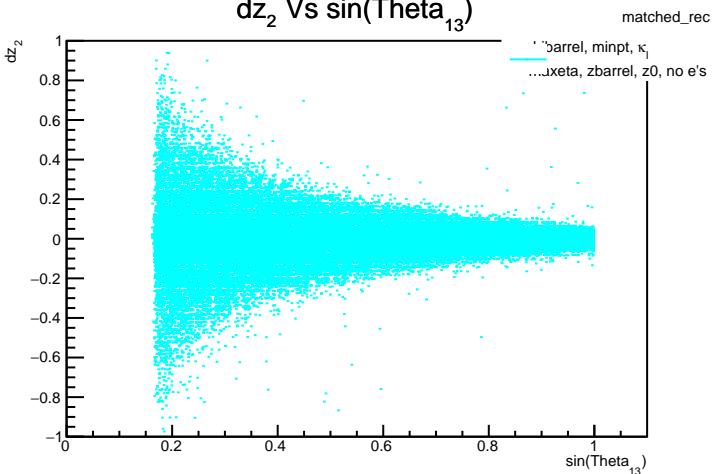
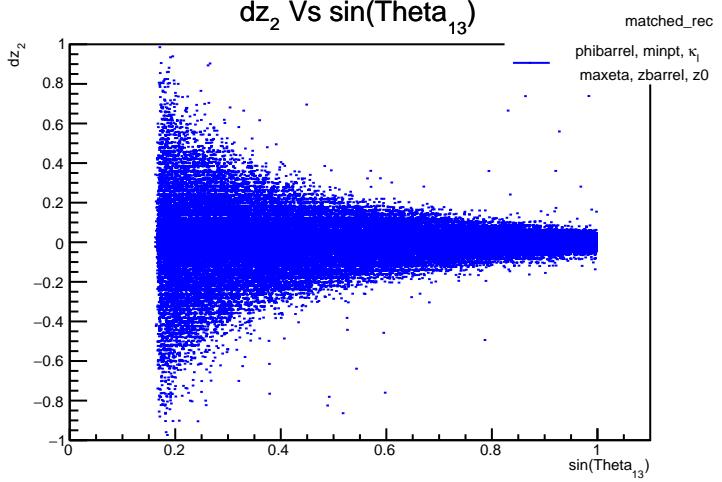
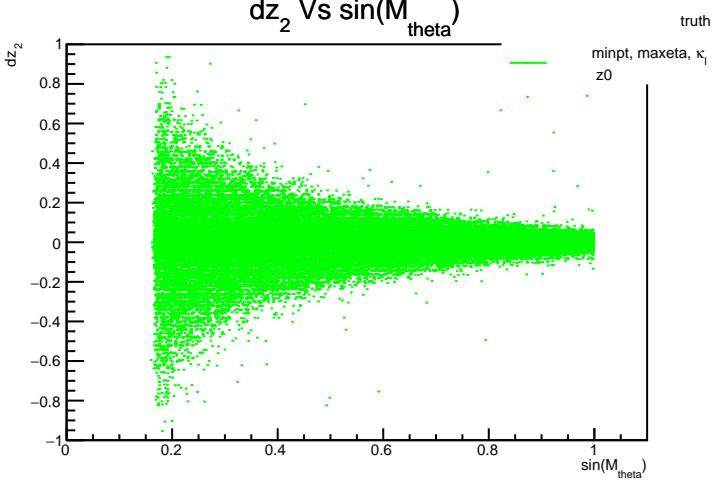
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$



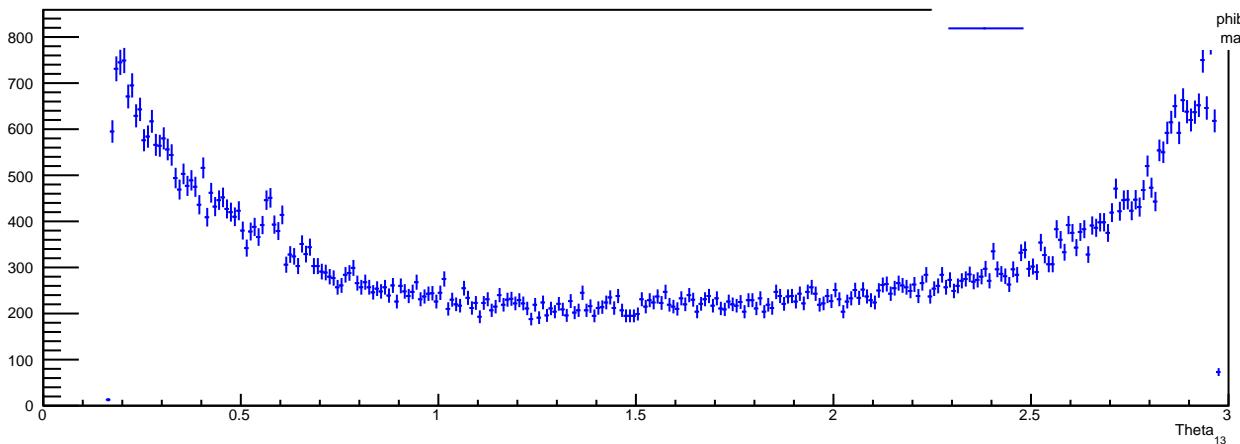
$\text{abs}(\text{dphi}_2)$ Vs $\sin(M_{\theta})$



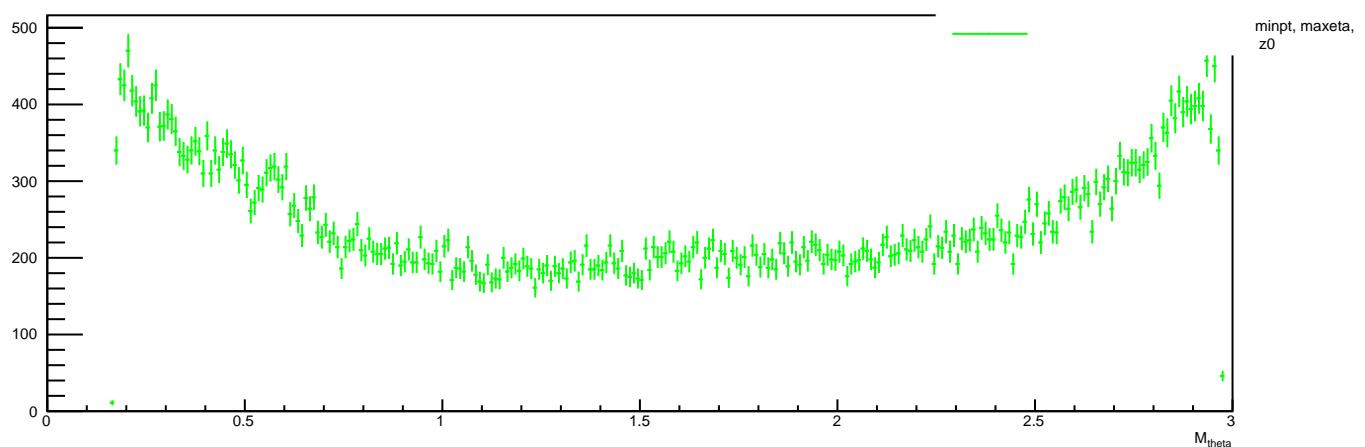
dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(M_{\theta})$ 

dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(\Theta_{13})$  dz_2 Vs $\sin(M_{\theta})$ 

Theta₁₃



M_{theta}

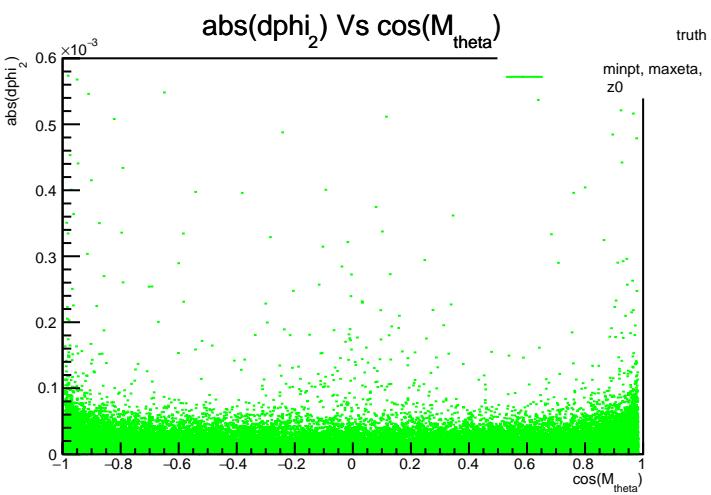
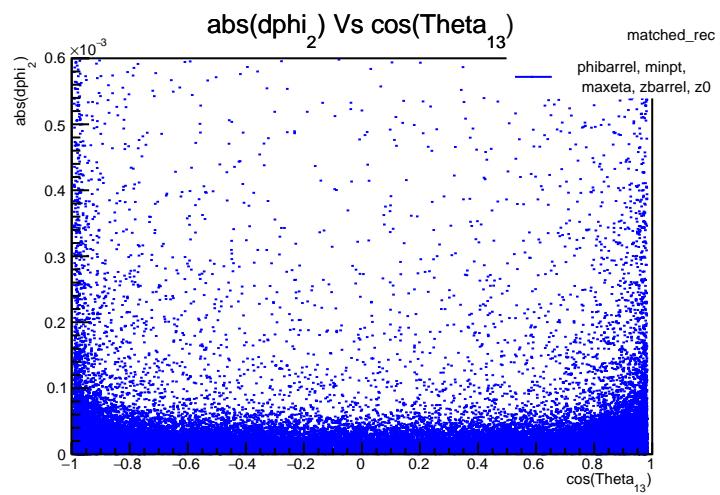
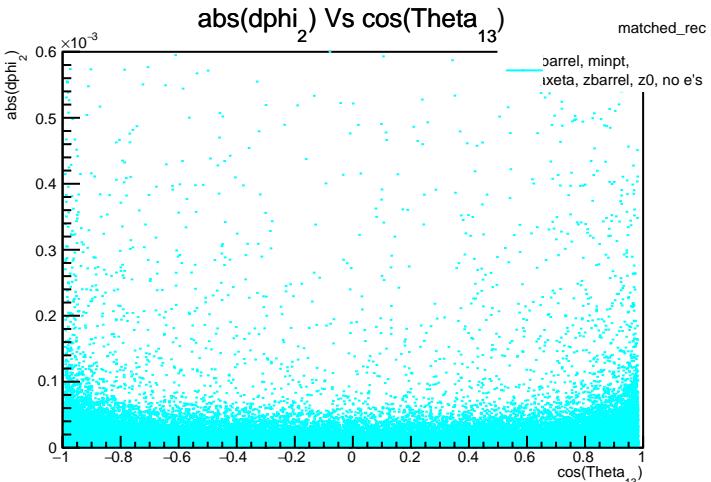
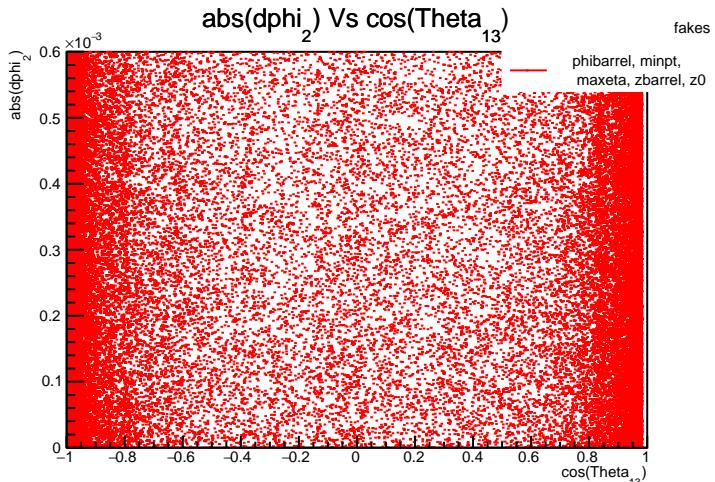


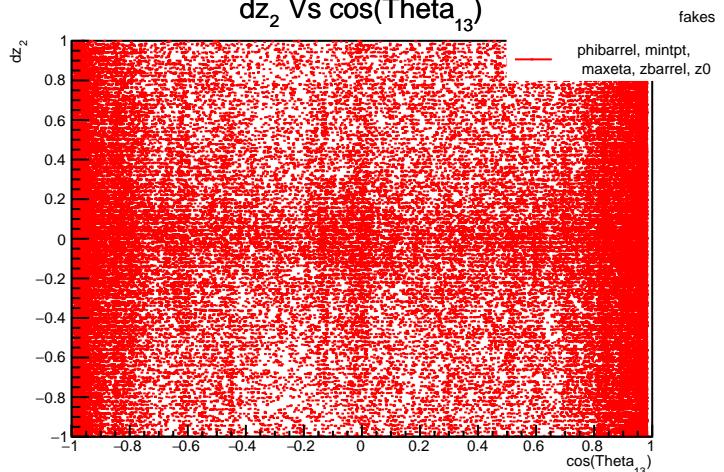
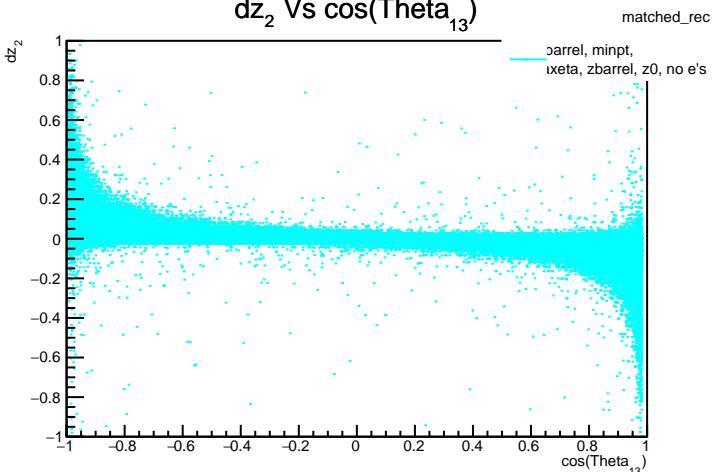
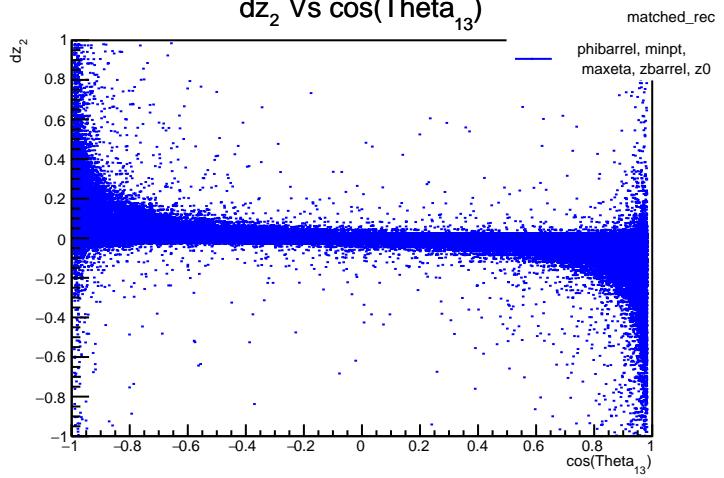
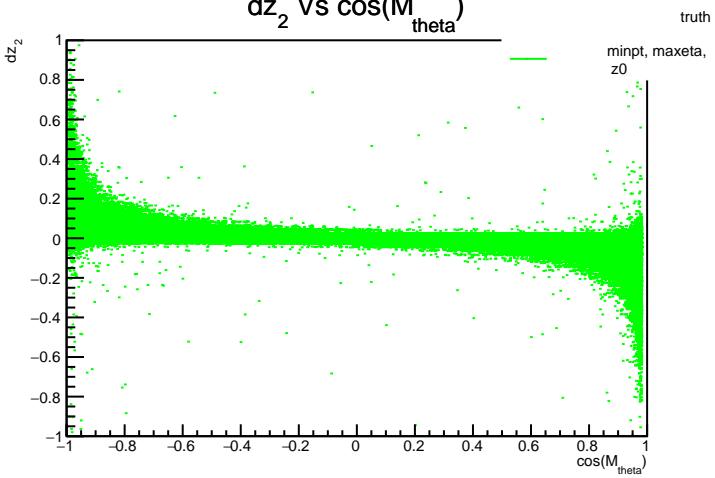
matched_rec

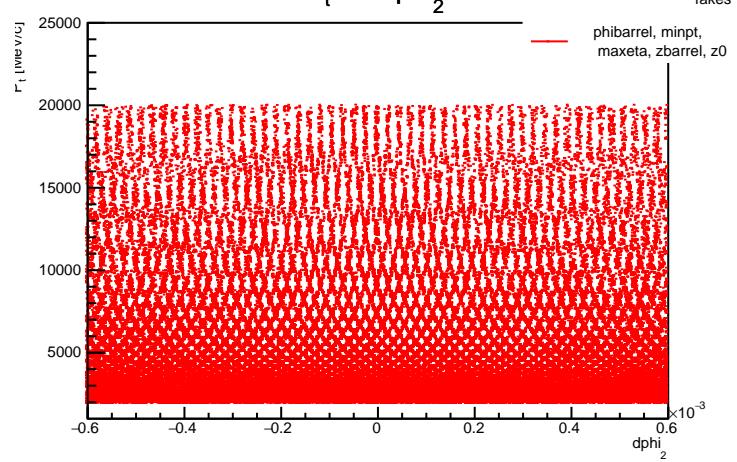
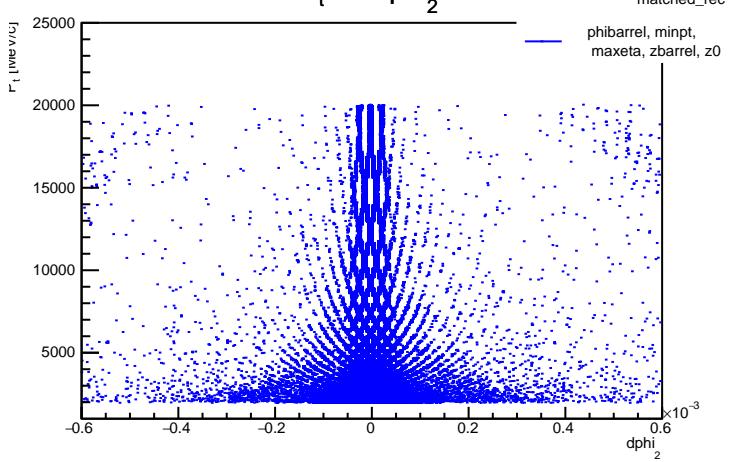
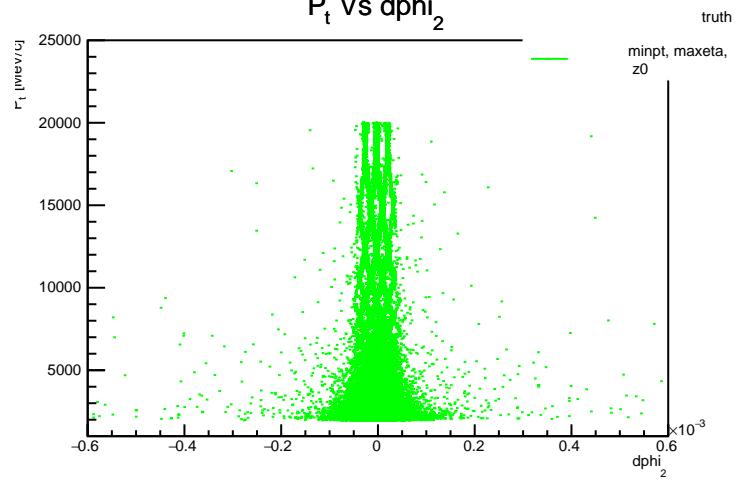
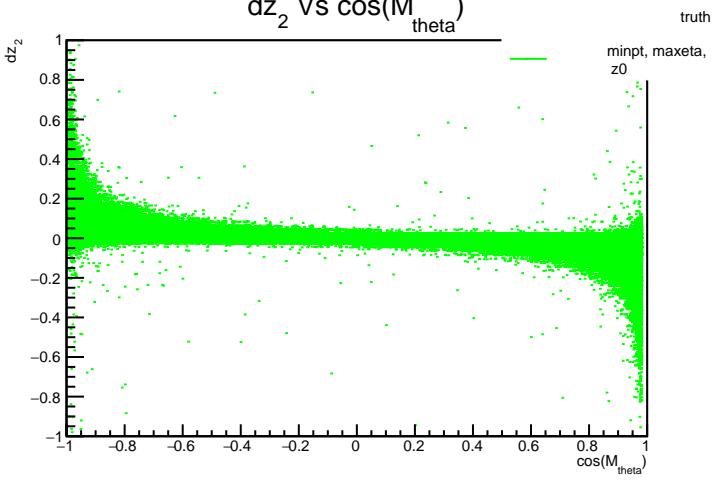
phibarrel,minpt,
maxeta, zbarrel, z0

truth

minpt, maxeta,
z0

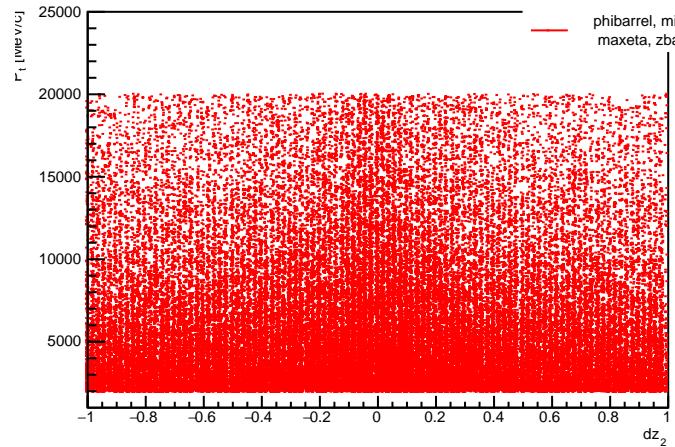


dz_2 Vs $\cos(\Theta_{13})$  dz_2 Vs $\cos(\Theta_{13})$  dz_2 Vs $\cos(\Theta_{13})$  dz_2 Vs $\cos(M_{\theta})$ 

P_t Vs $d\phi_{2}$  P_t Vs $d\phi_{2}$  P_t Vs $d\phi_{2}$  dz_2 Vs $\cos(M_{\theta})$ 

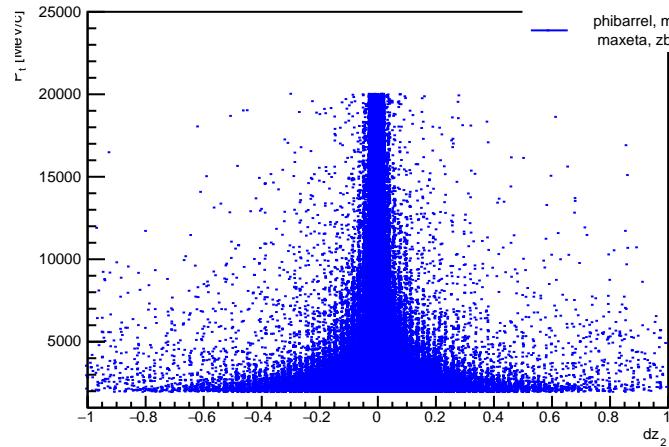
P_t Vs dz_2

fakes



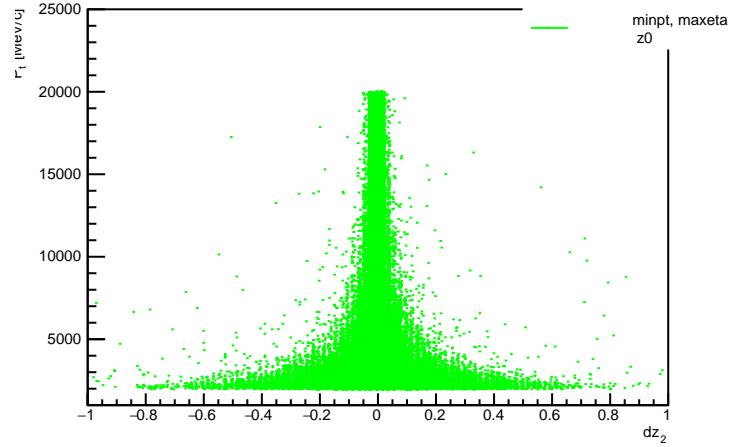
P_t Vs dz_2

matched_rec



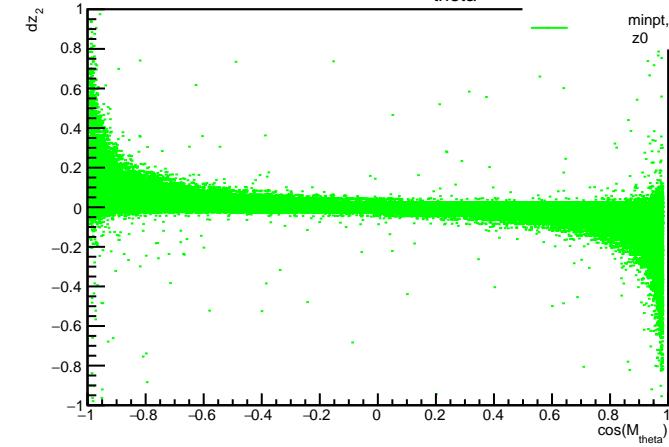
P_t Vs dz_2

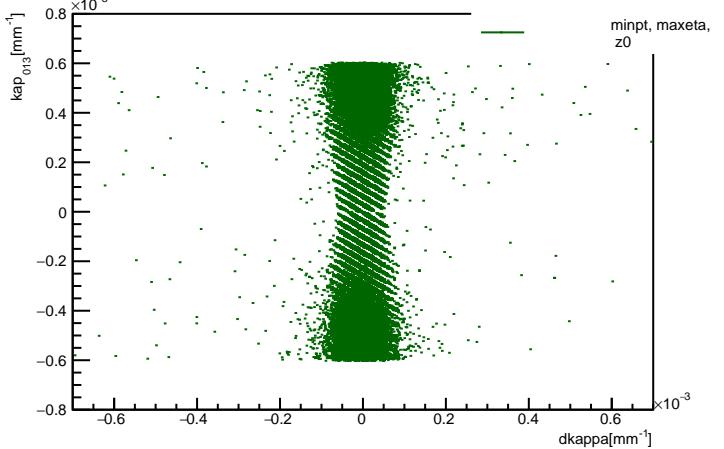
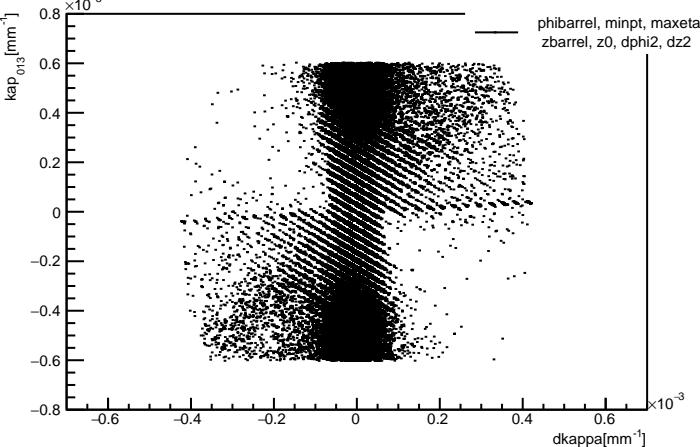
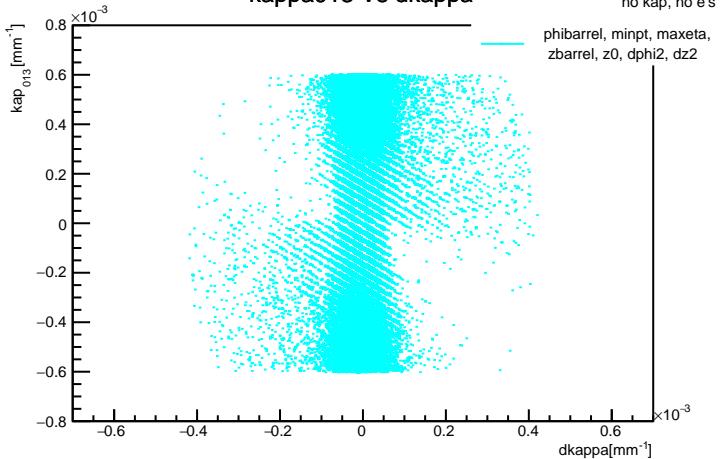
truth



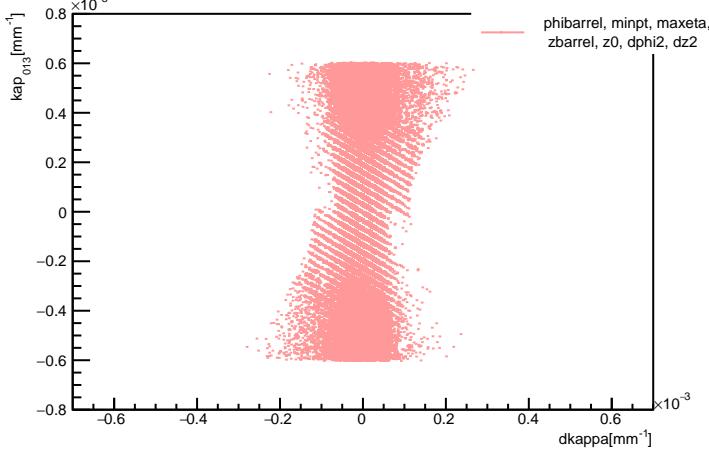
dz_2 Vs $\cos(M_{\theta})$

truth

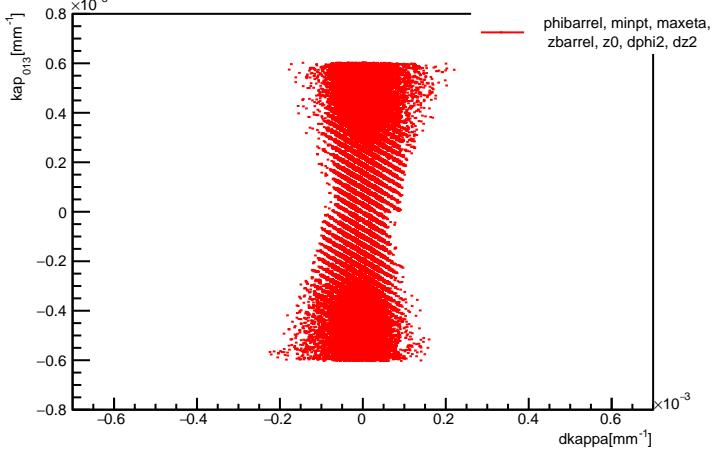


kappa013 Vs dkappa**kappa013 Vs dkappa****kappa013 Vs dkappa**

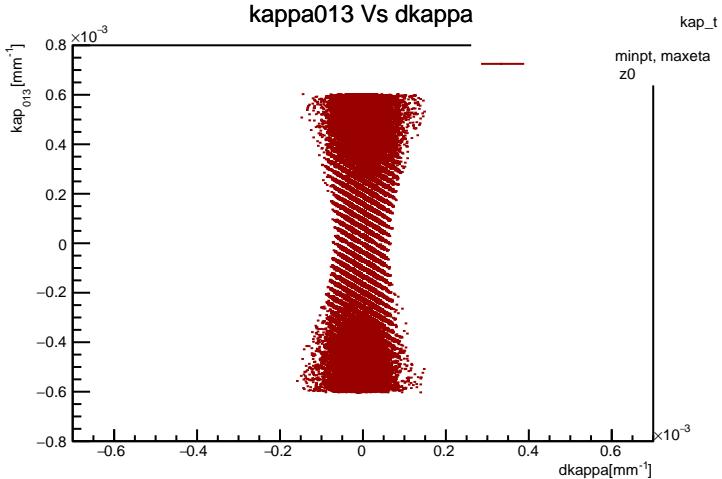
kappa013 Vs dkappa



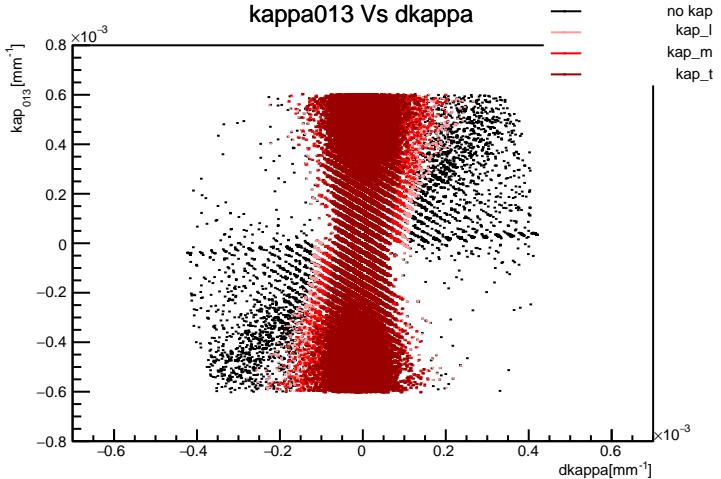
kappa013 Vs dkappa



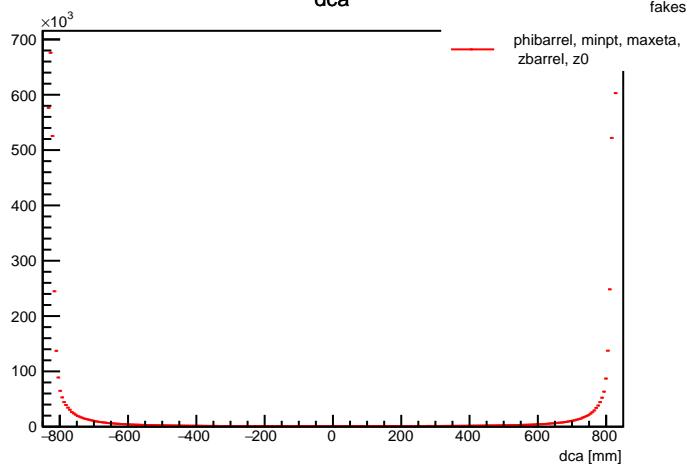
kappa013 Vs dkappa



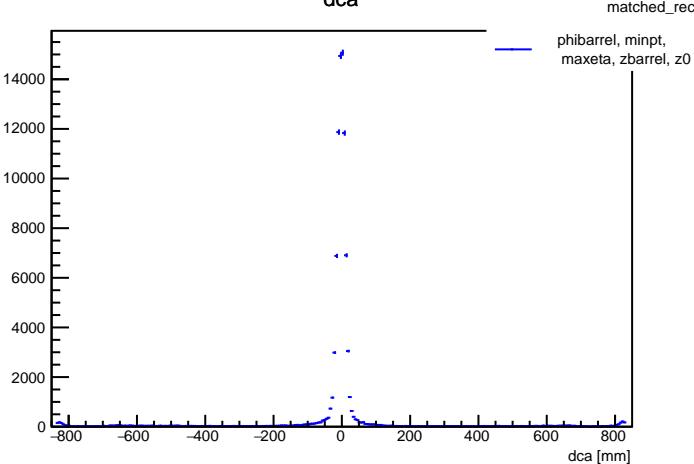
kappa013 Vs dkappa



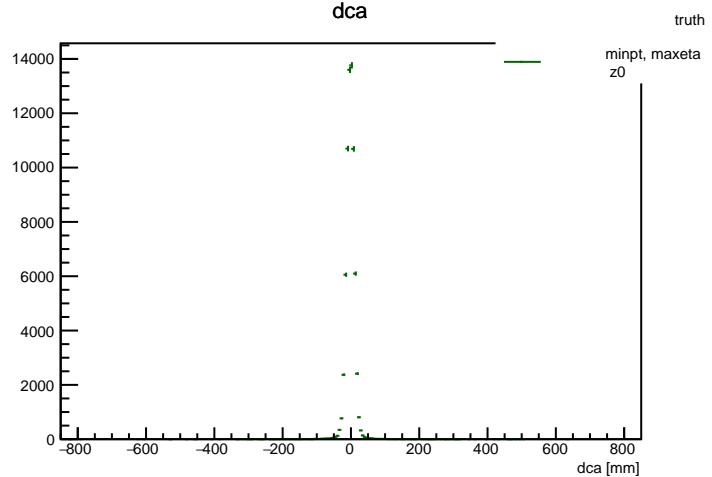
dca



dca

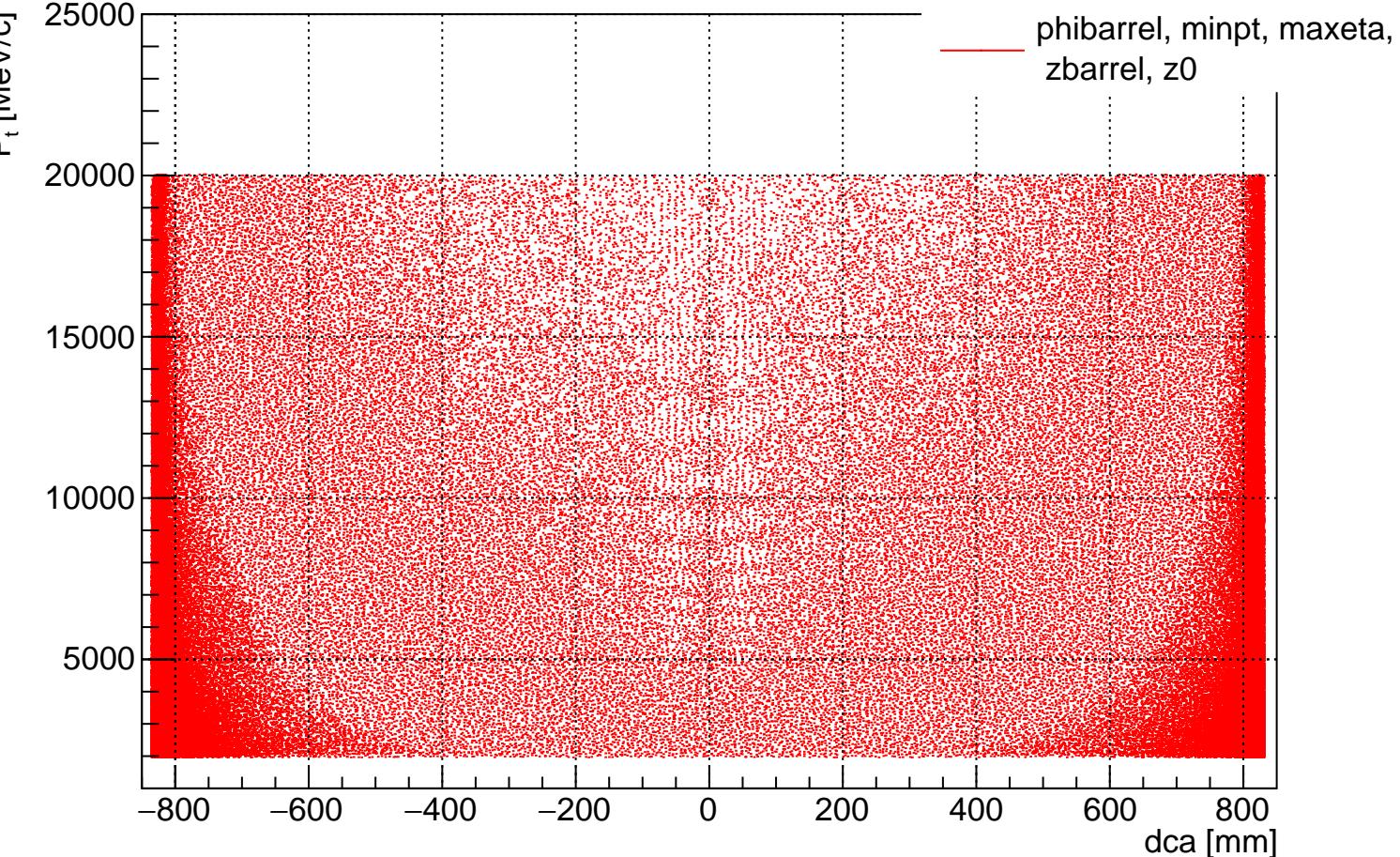


dca

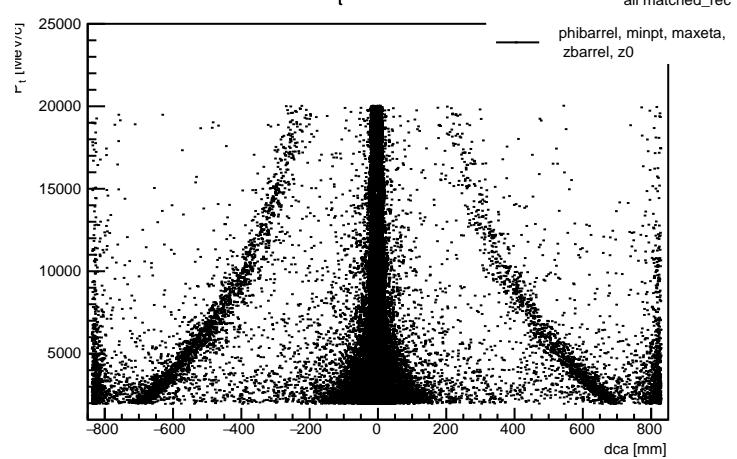


P_t Vs dca

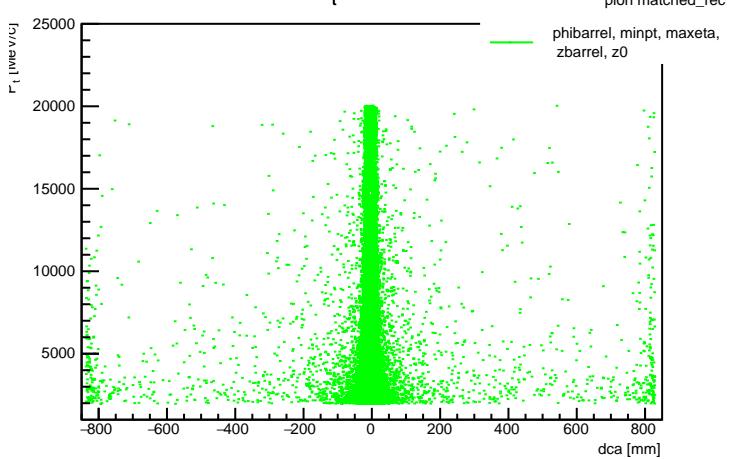
fakes



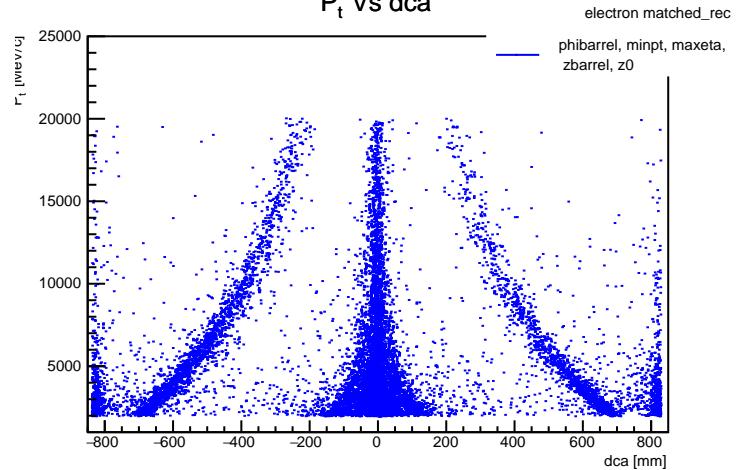
P_t Vs dca



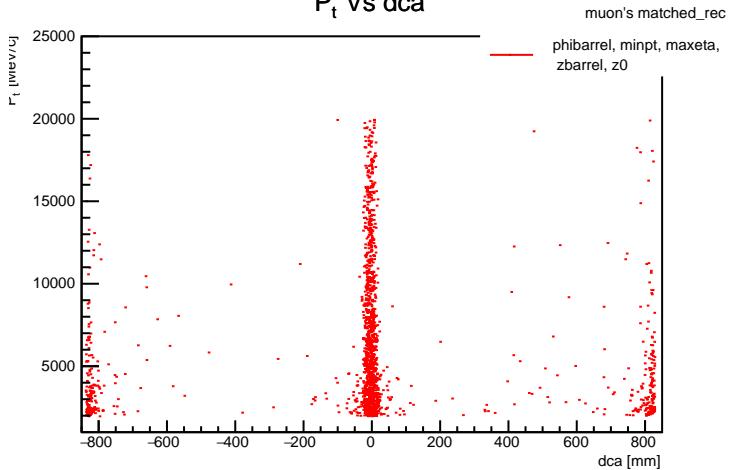
P_t Vs dca



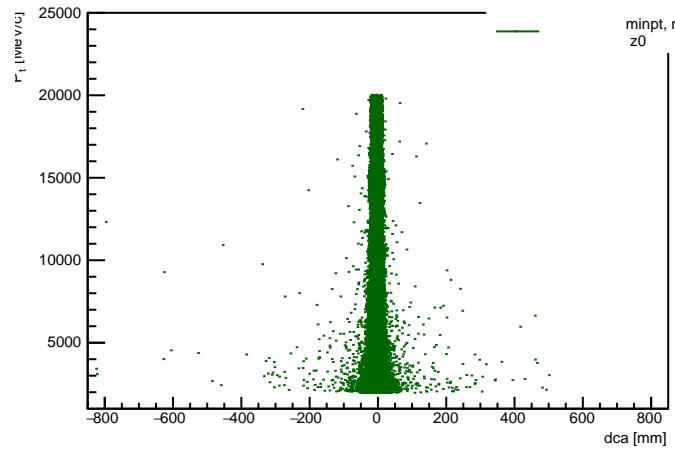
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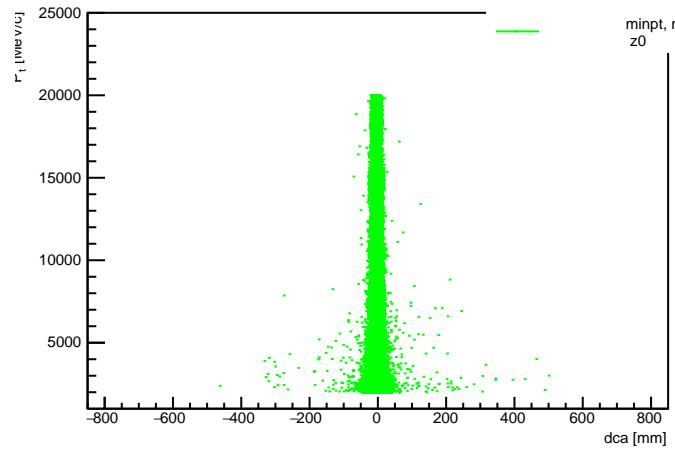
P_t Vs dca



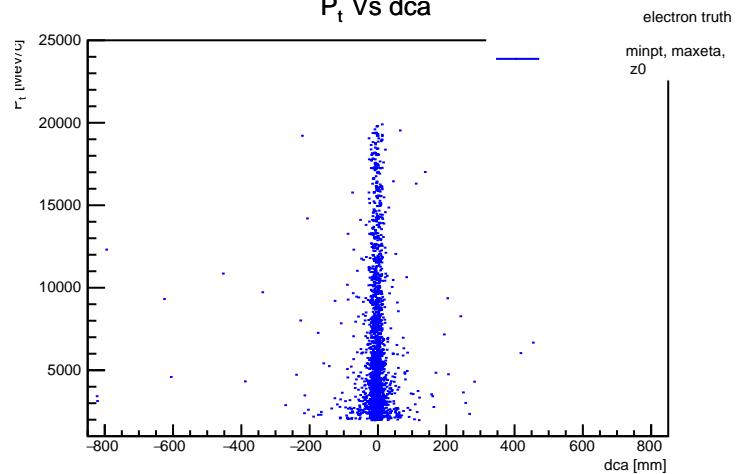
P_t Vs dca



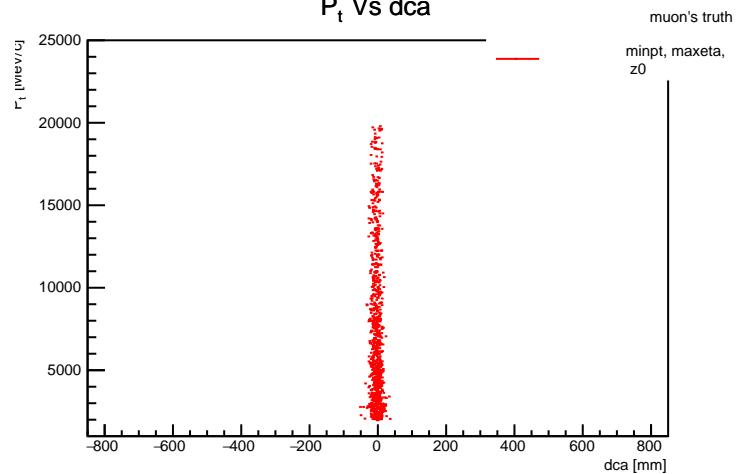
P_t Vs dca



P_t Vs dca



P_t Vs dca



Z_0 Vs dca

fakes

Z_0 [mm]

100

80

60

40

20

0

-20

-40

-60

-80

-100

-800

-600

-400

-200

0

200

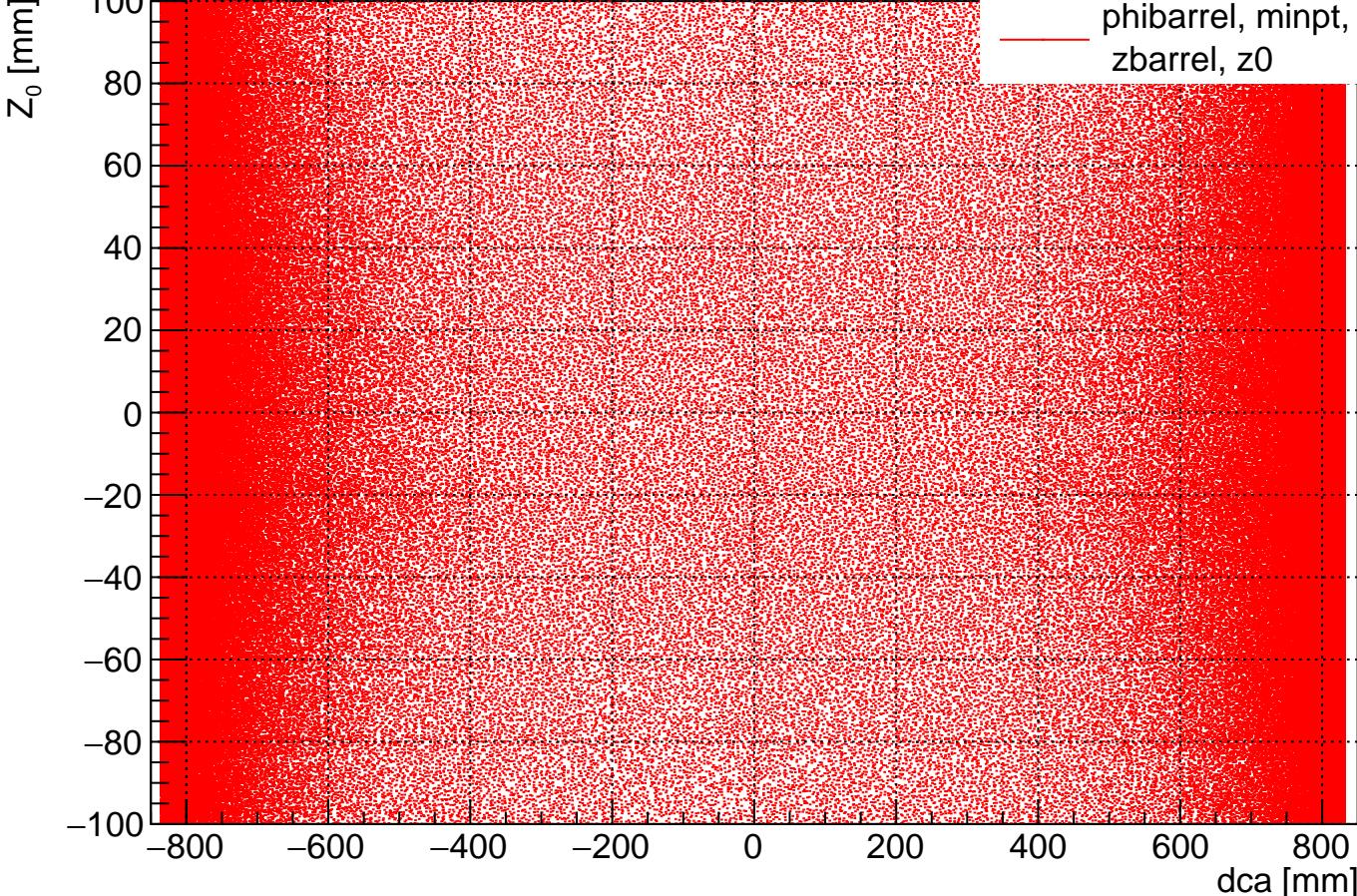
400

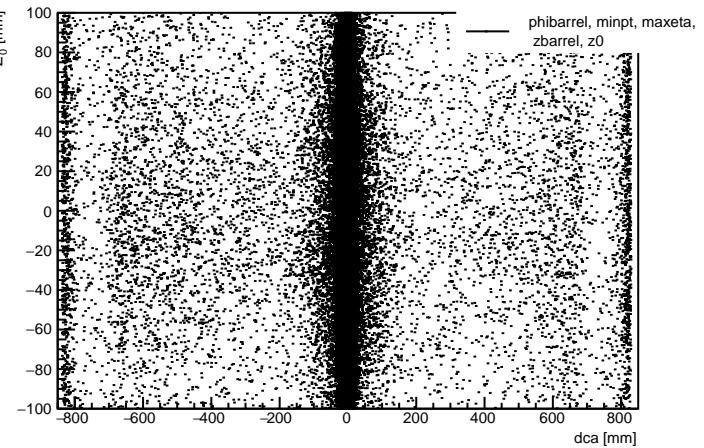
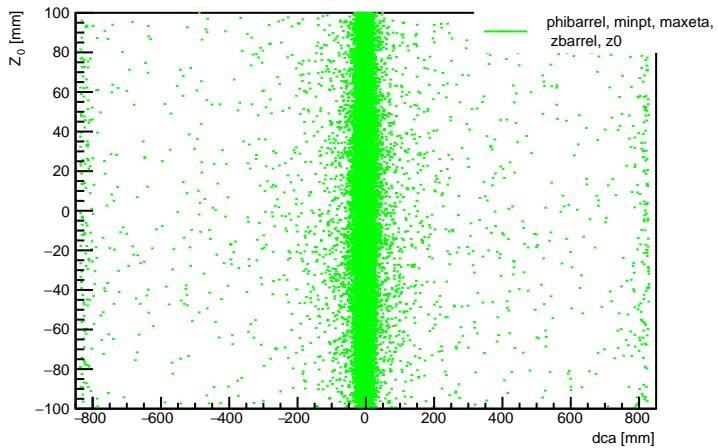
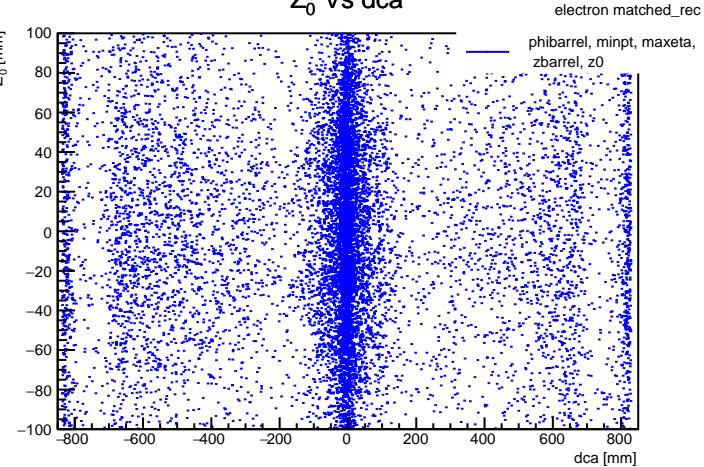
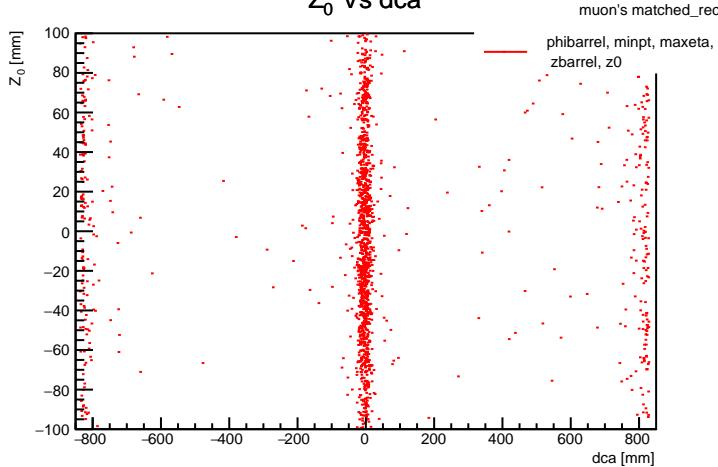
600

800

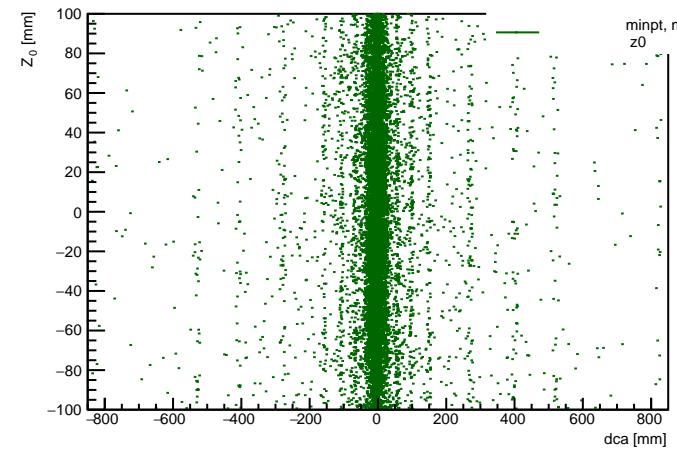
dca [mm]

phibarrel, minpt, maxeta,
zbarrel, z0

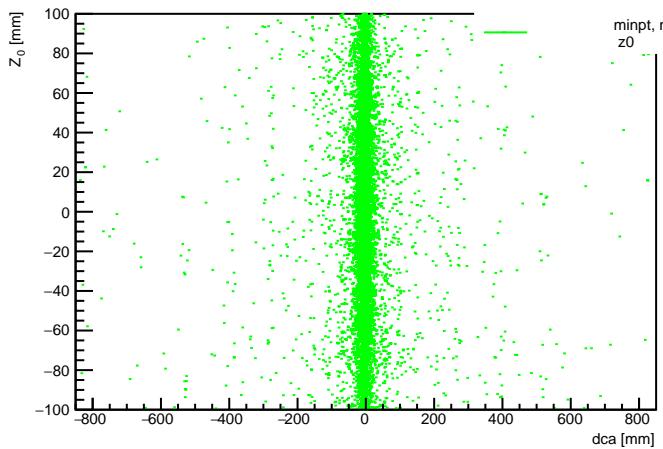


Z_0 Vs dca Z_0 Vs dca Z_0 Vs dca Z_0 Vs dca

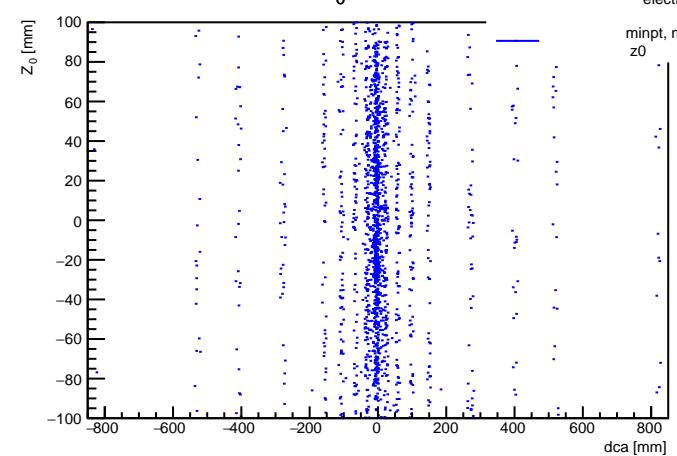
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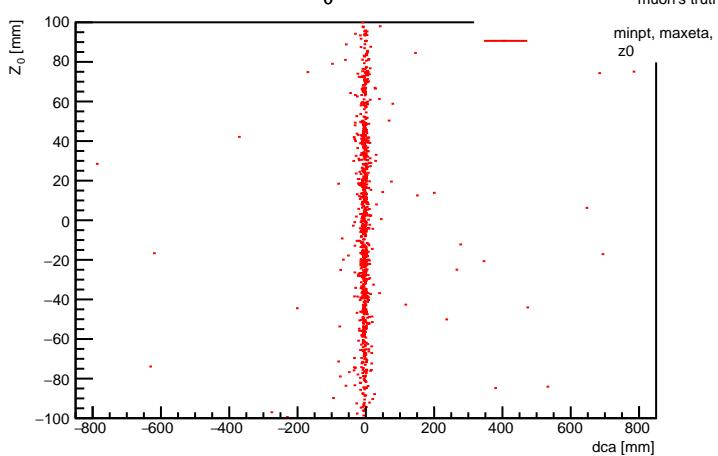
Z_0 Vs dca



Z_0 Vs dca

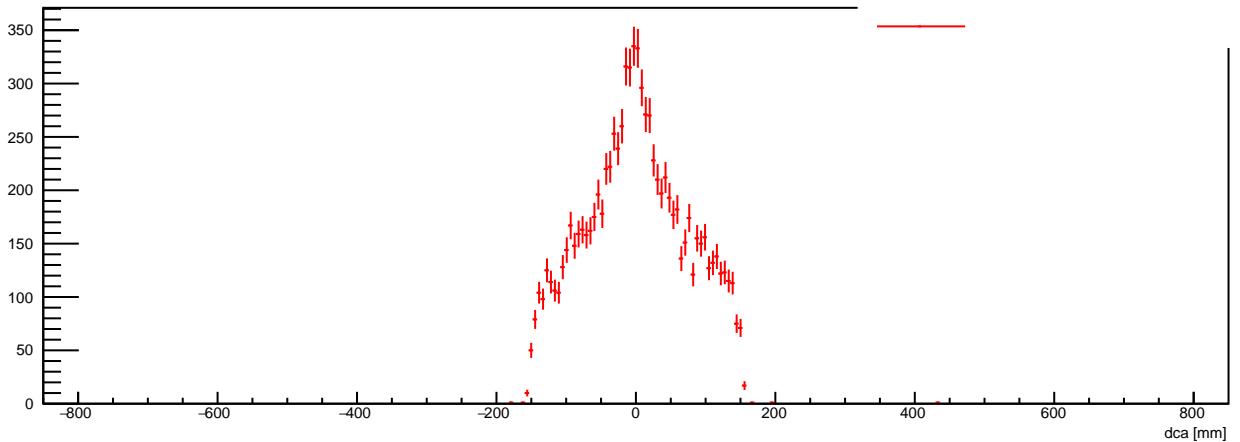


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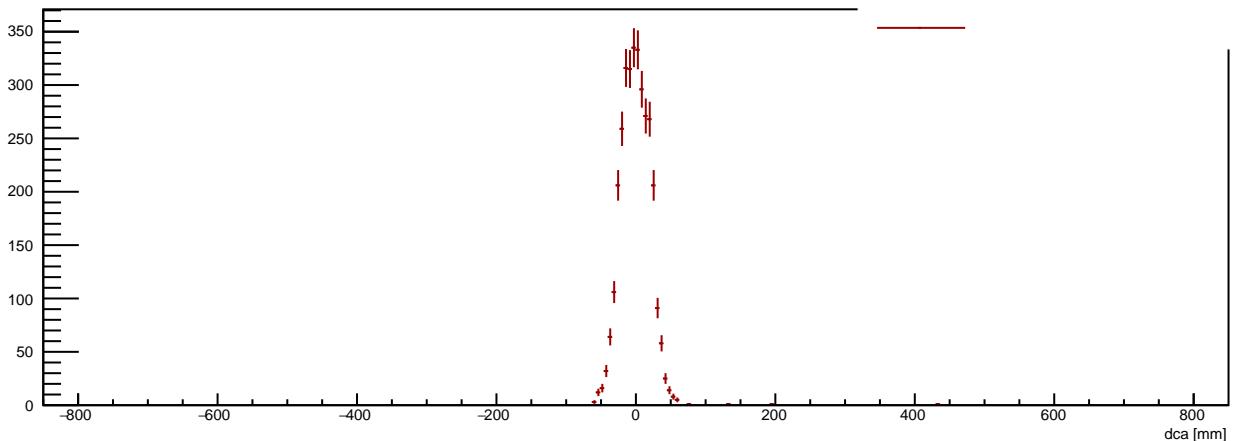
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fakes

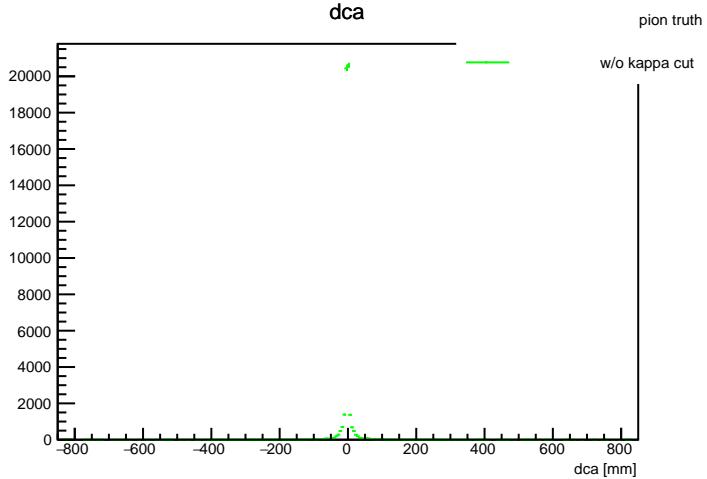


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fakes



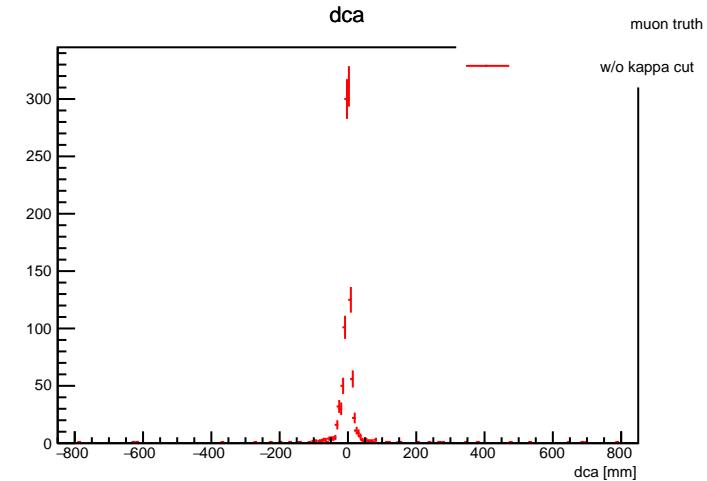
dca



pion truth

w/o kappa cut

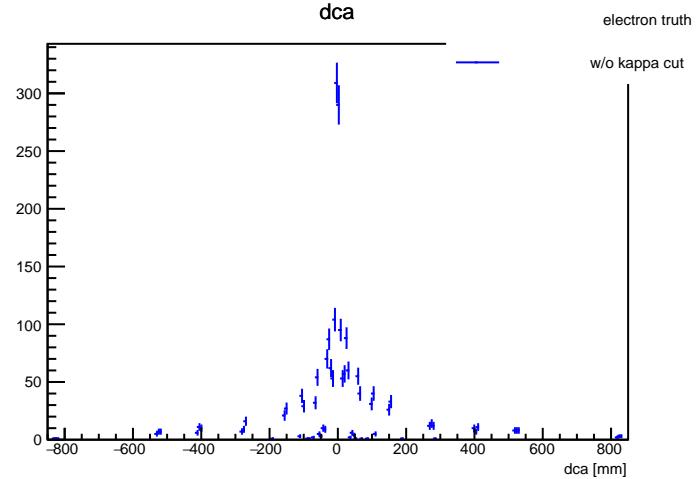
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muon truth

w/o kappa cut

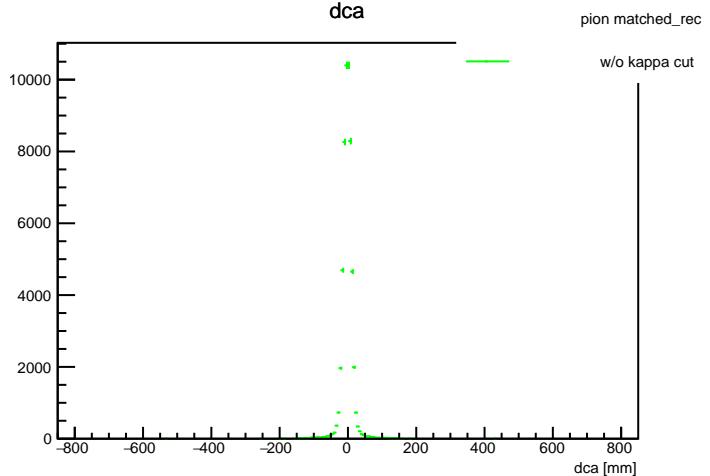
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electron truth

w/o kappa cut

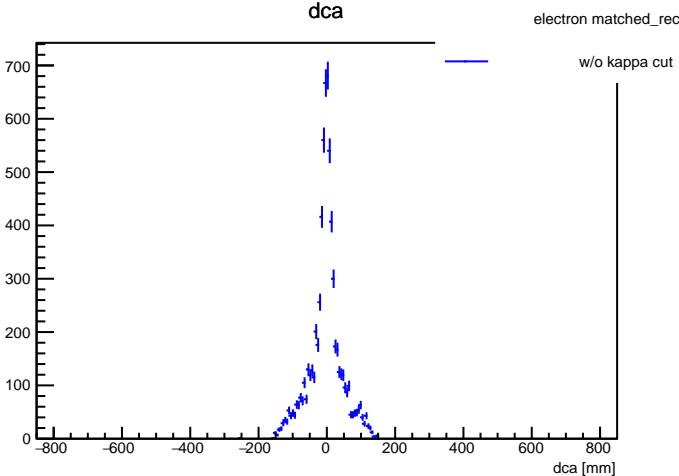
dca



pion matched_rec

w/o kappa cut

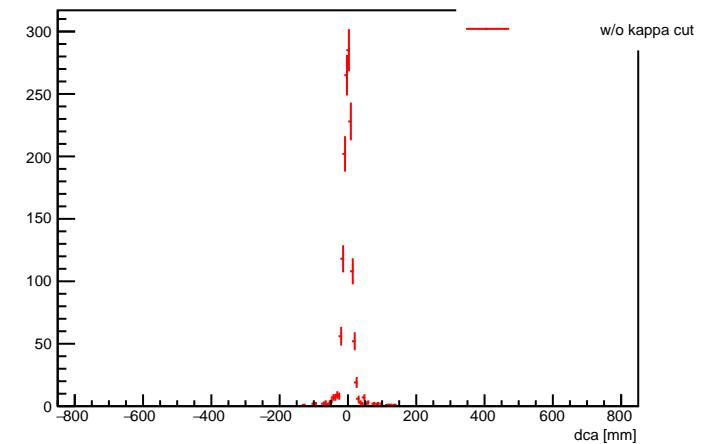
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electron matched_rec

w/o kappa cut

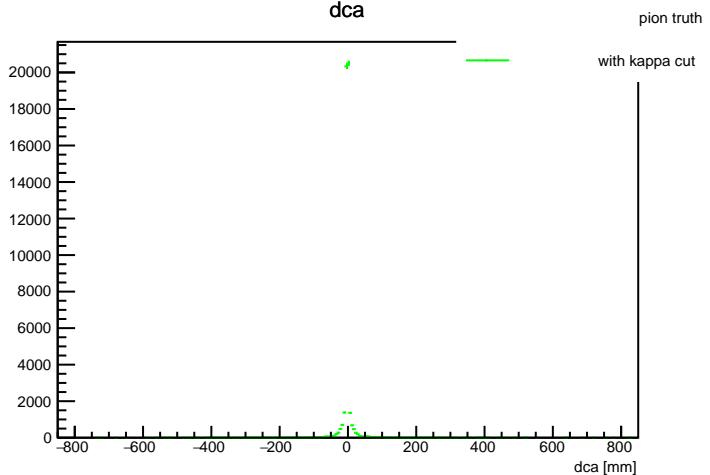
dca



muon matched_rec

w/o kappa cut

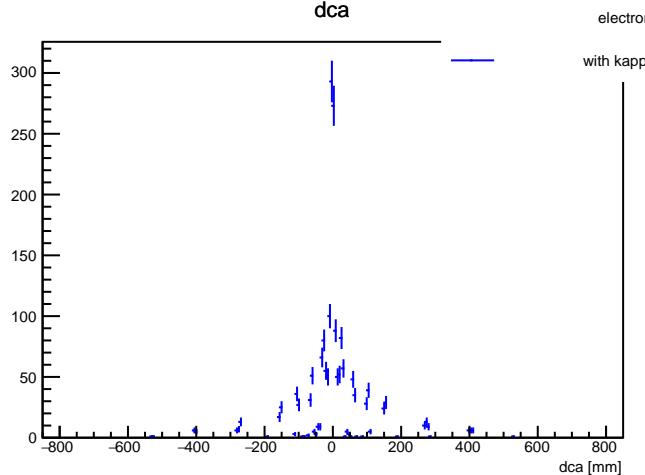
dca



pion truth

with kappa cut

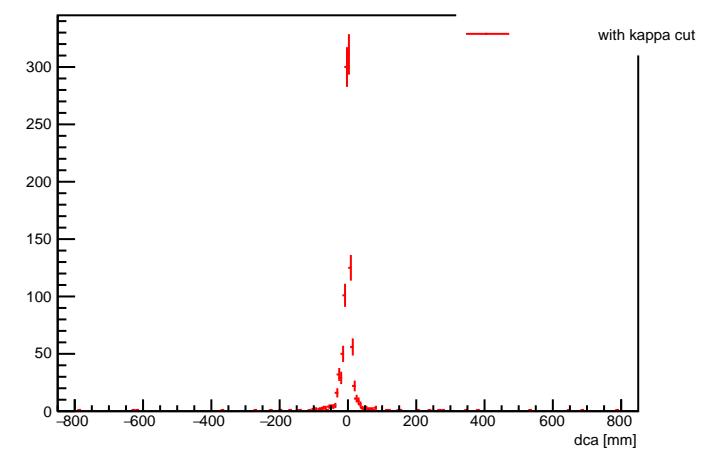
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electron truth

with kappa cut

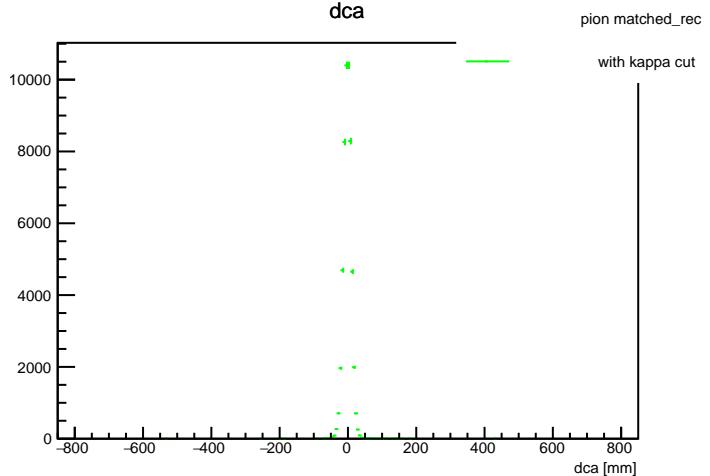
dca



muon truth

with kappa cut

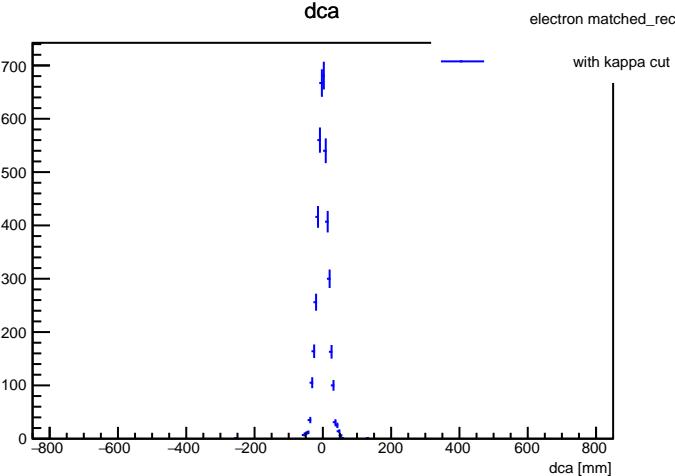
dca



pion matched_rec

with kappa cut

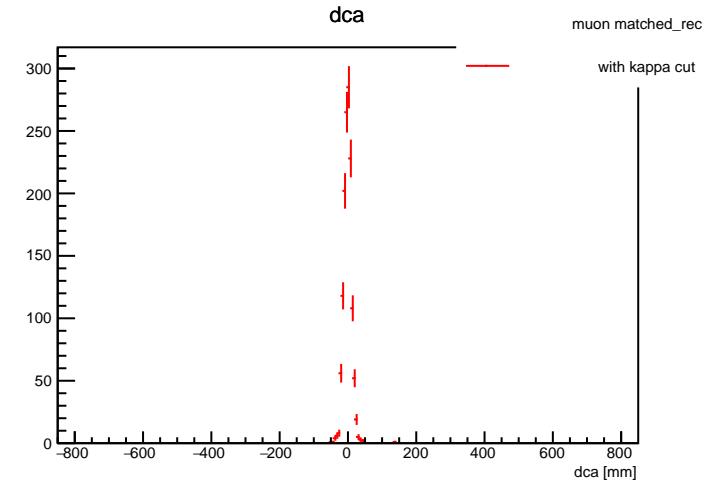
dca



electron matched_rec

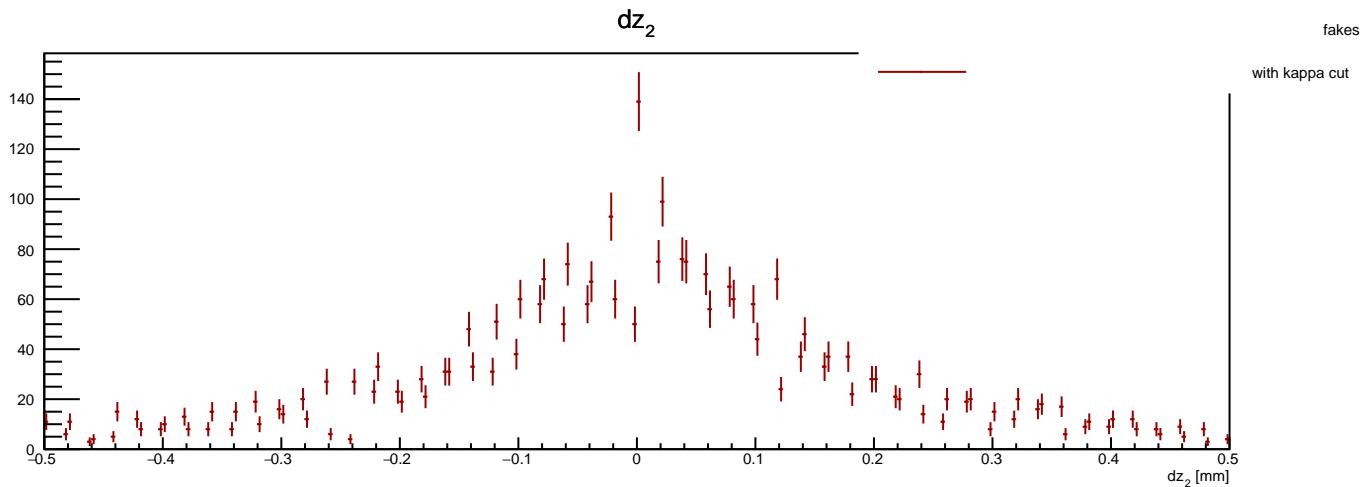
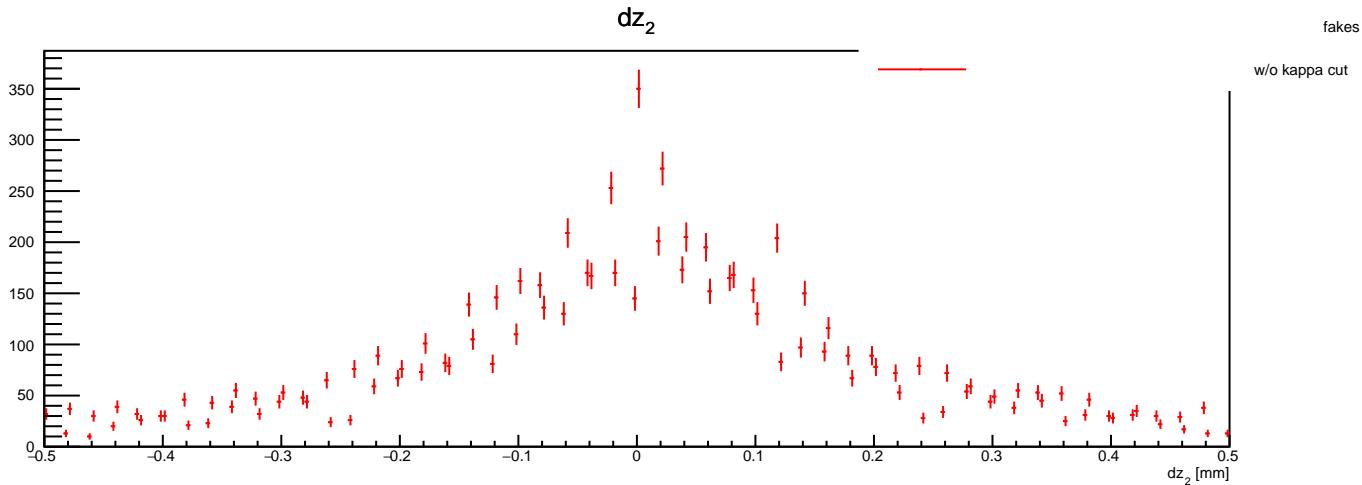
with kappa cut

dca

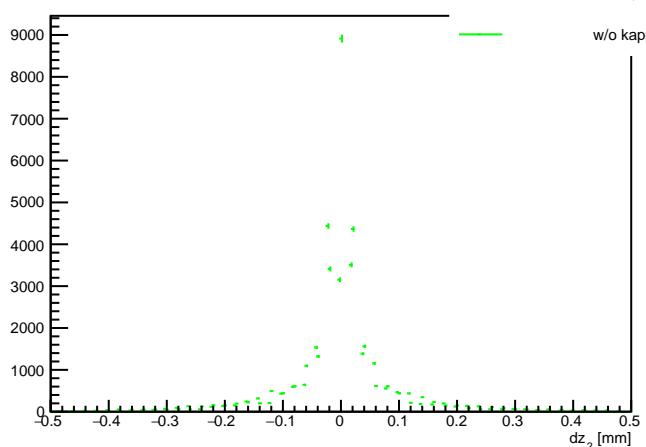


muon matched_rec

with kappa cut



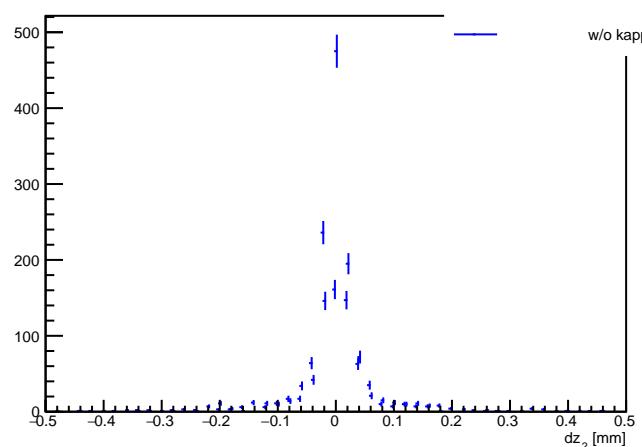
dz_2



pion truth

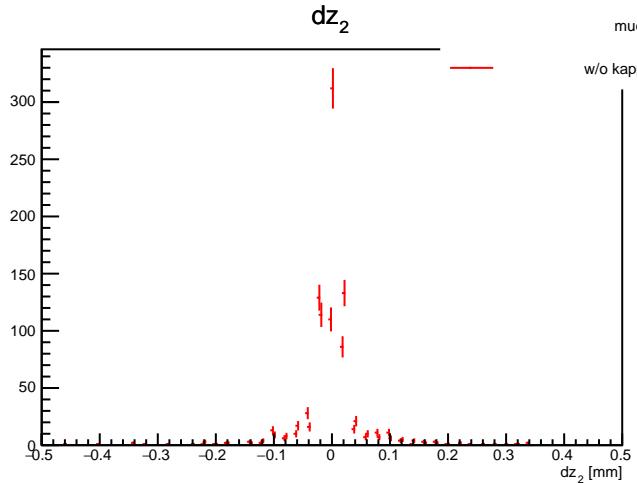
w/o kappa cut

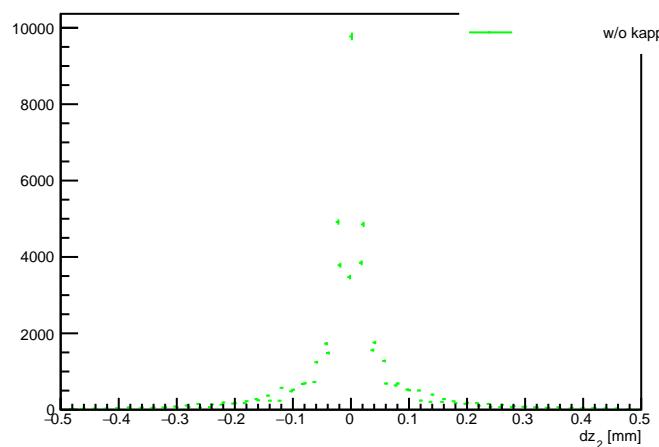
dz_2



electron truth

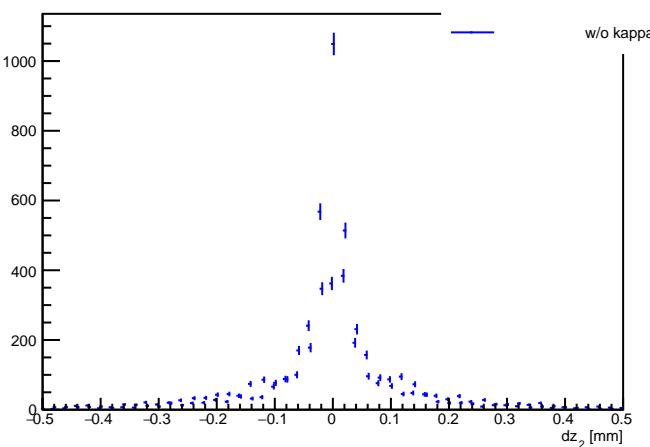
muon truth



dz_2 

pion matched_rec

w/o kappa cut

 dz_2 

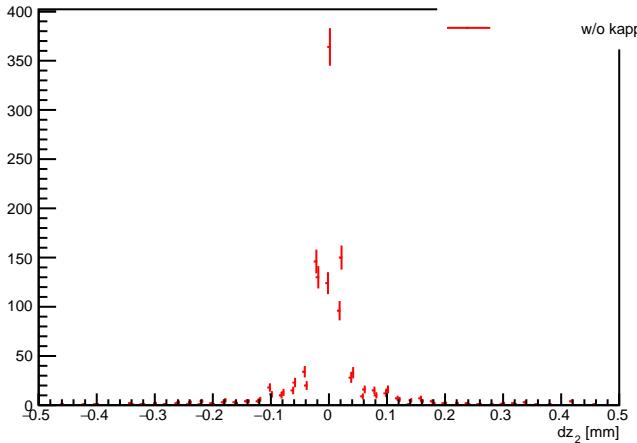
electron matched_rec

w/o kappa cut

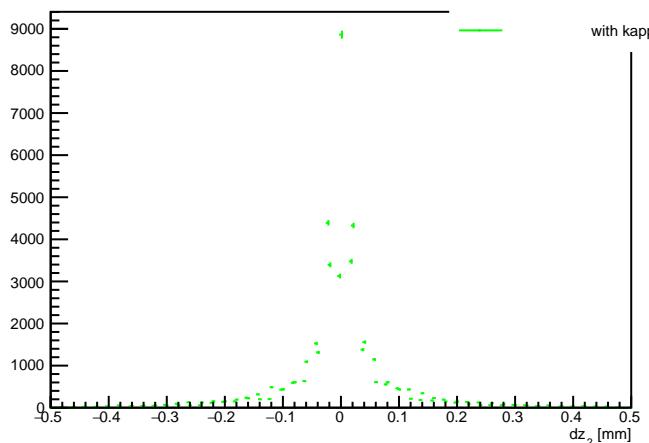
 dz_2

muon matched_rec

w/o kappa cut



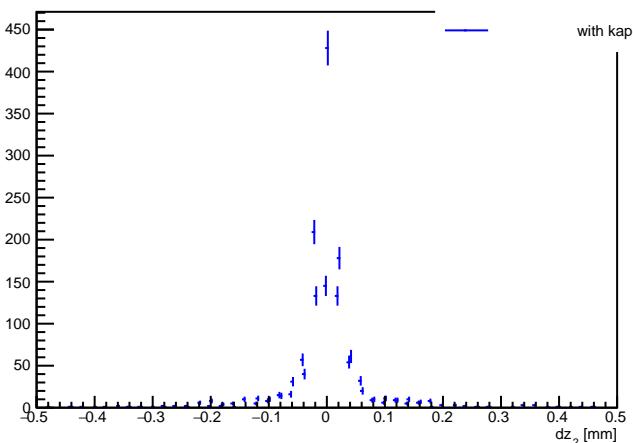
dz_2



pion truth

with kappa cut

dz_2

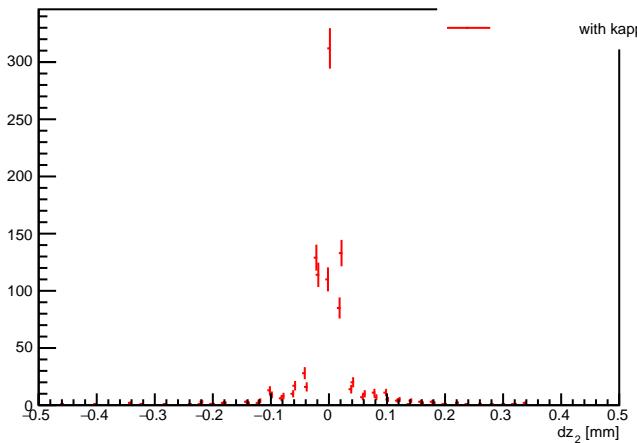


electron truth

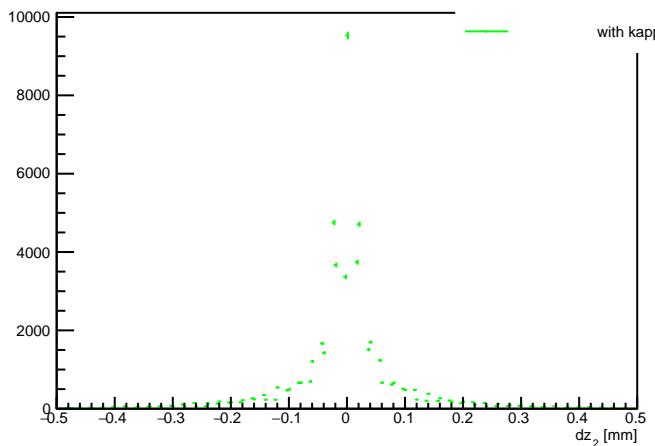
muon truth

with kappa cut

dz_2



dz_2



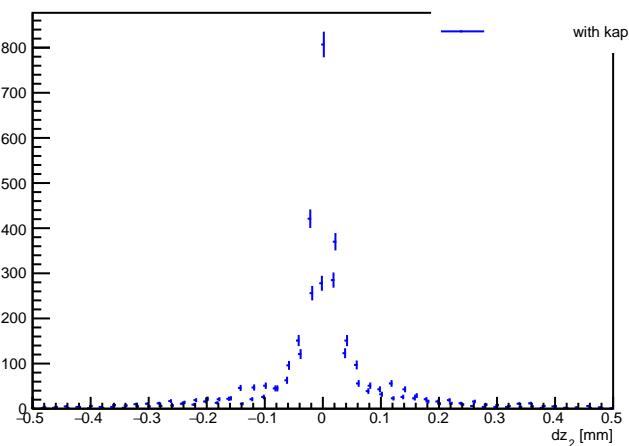
pion matched_rec

with kappa cut

dz_2

electron matched_rec

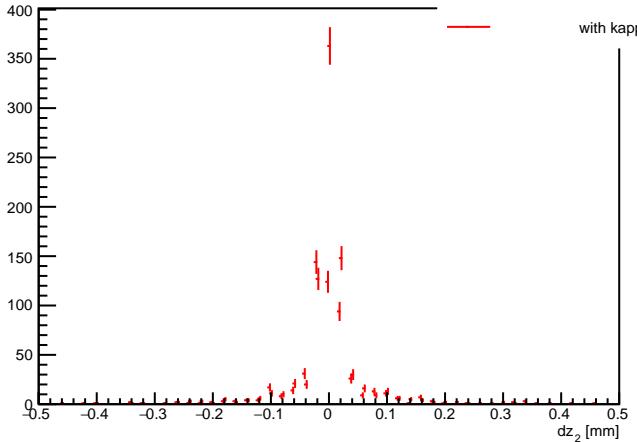
with kappa cut

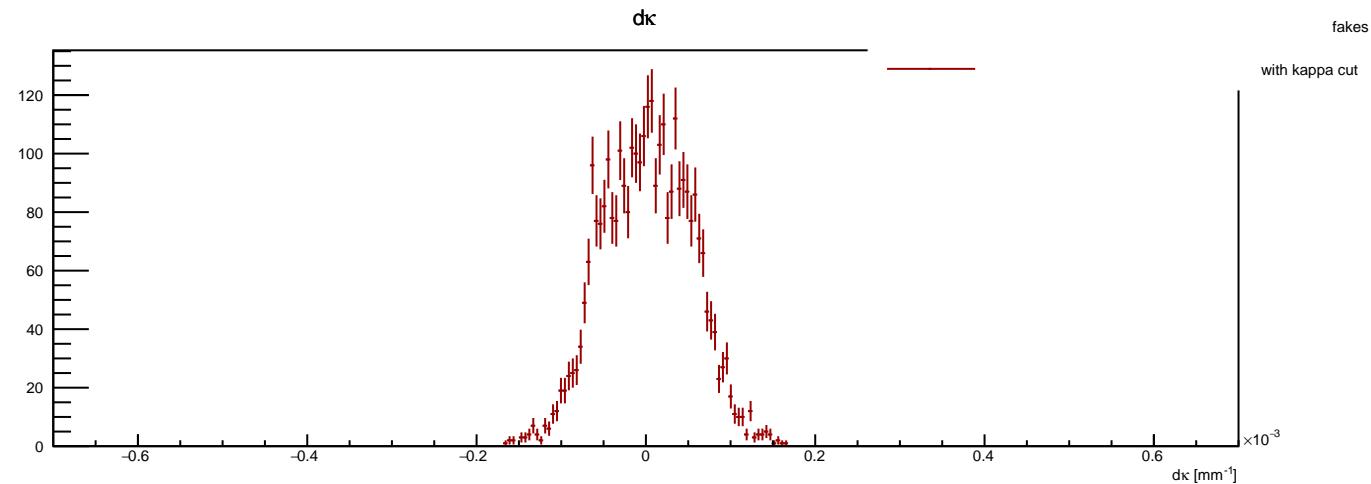
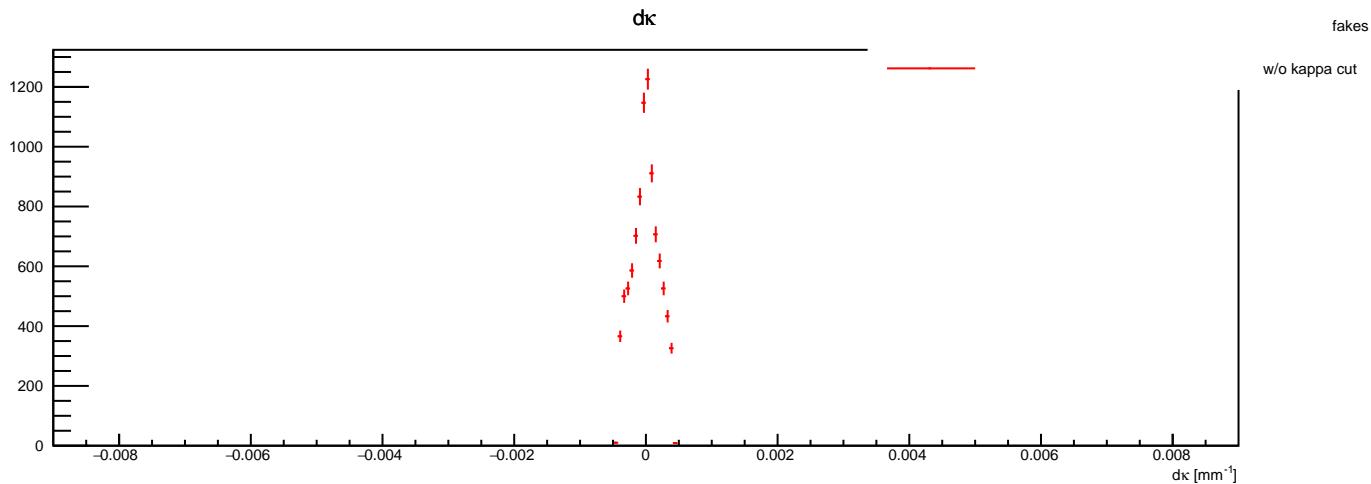


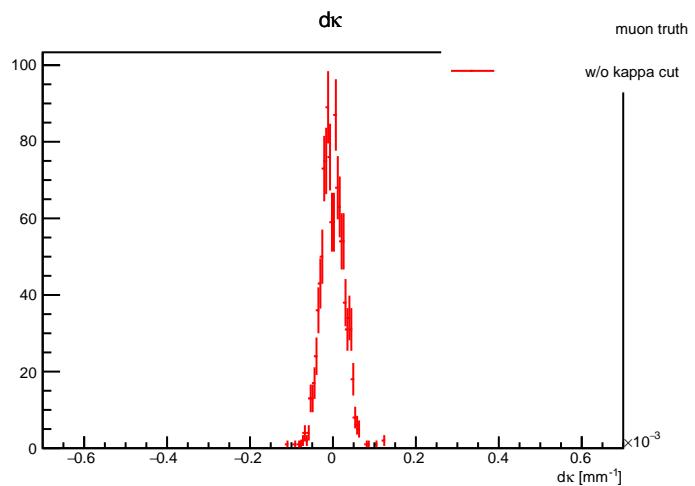
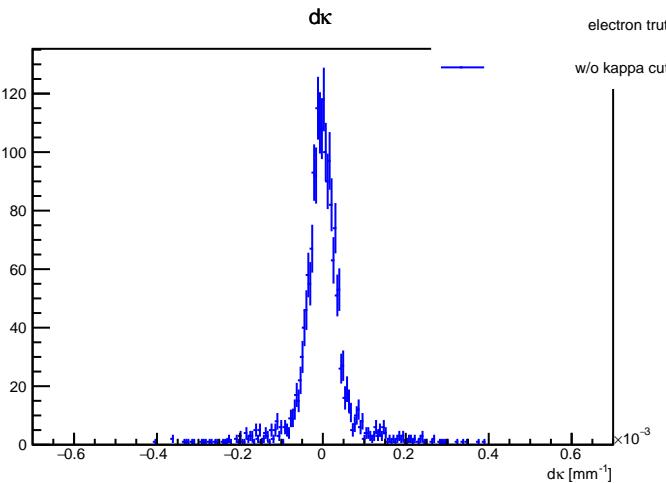
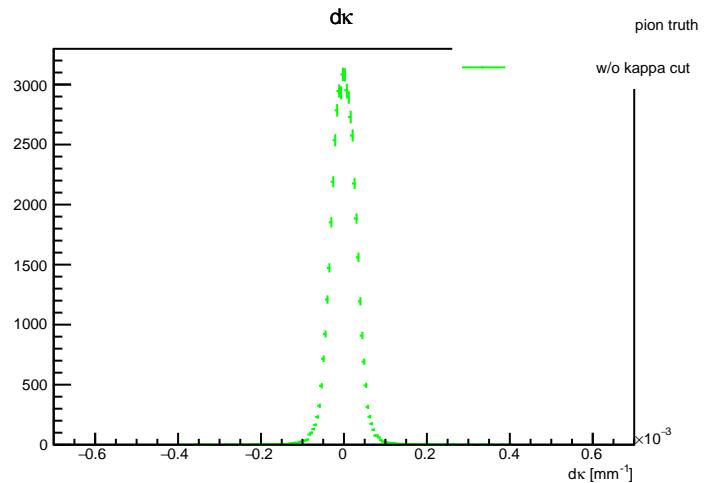
dz_2

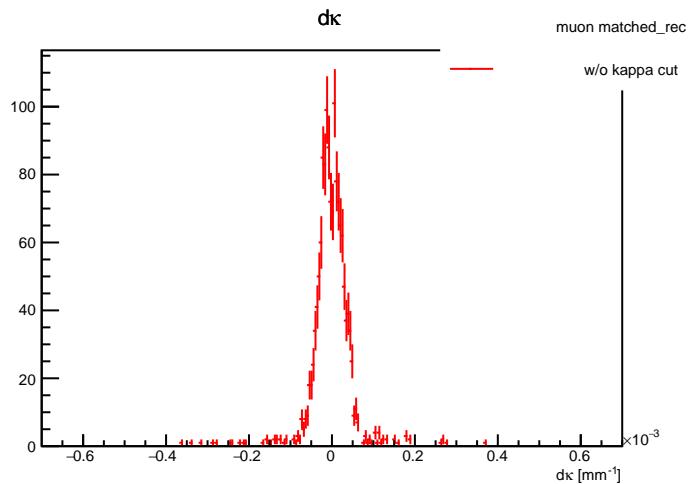
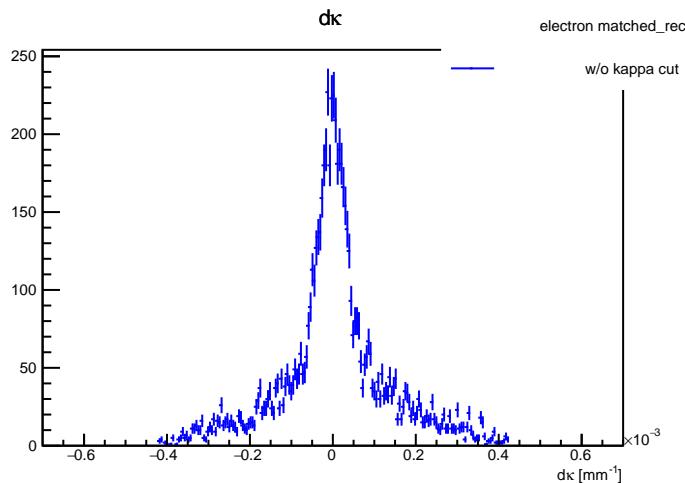
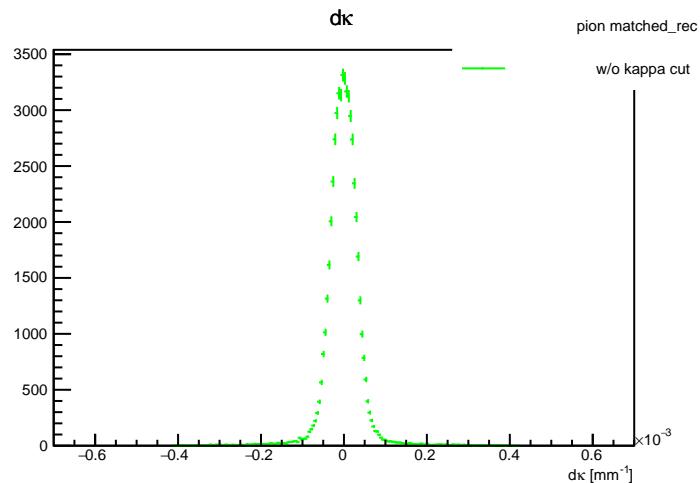
muon matched_rec

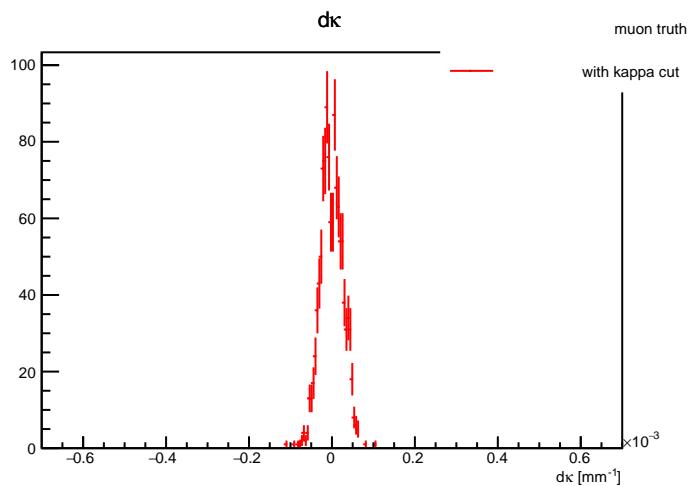
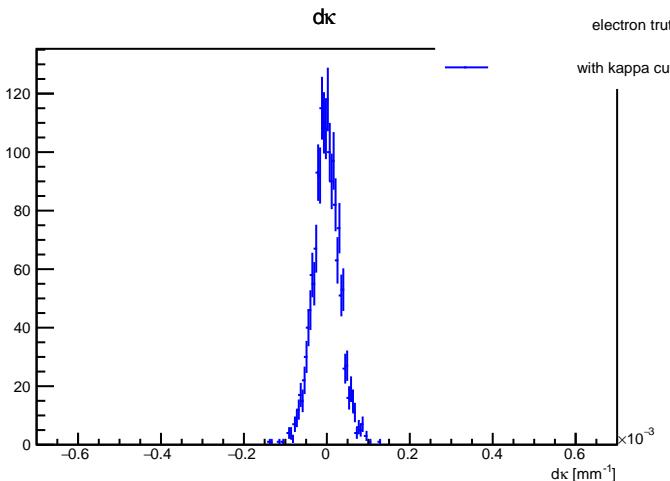
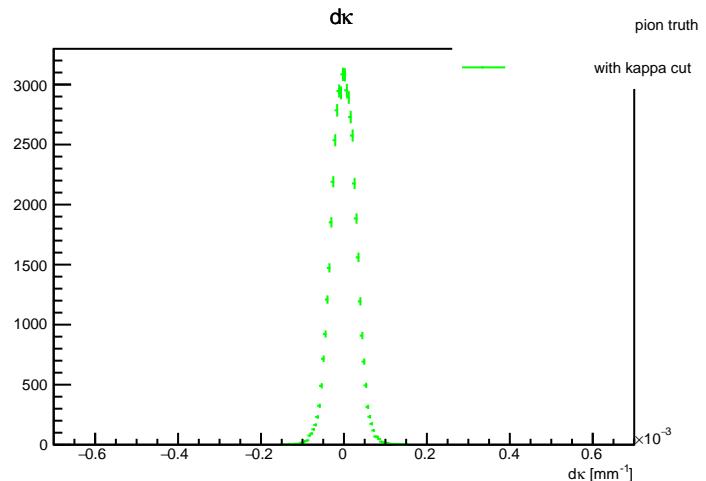
with kappa cut

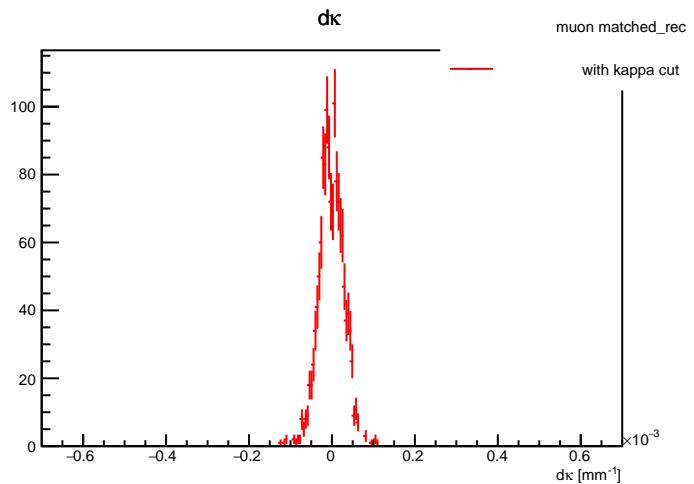
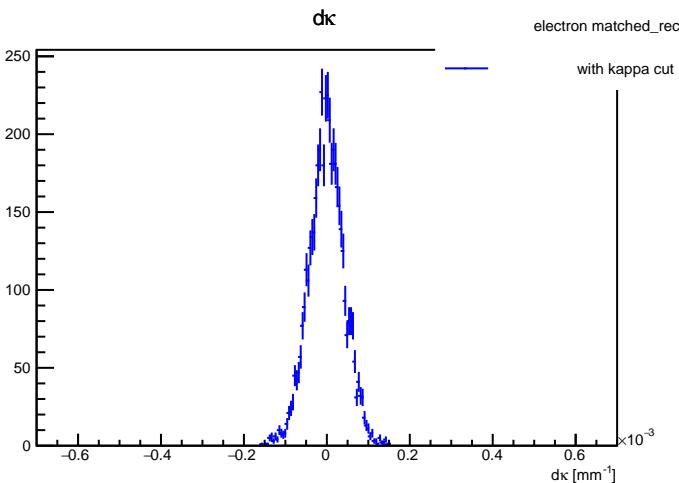
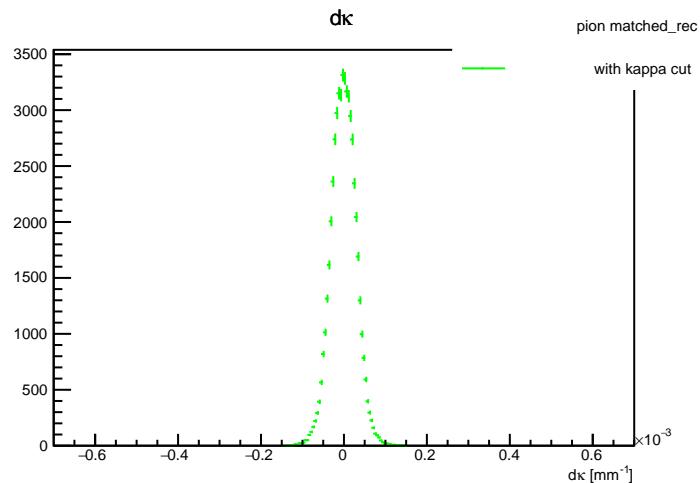




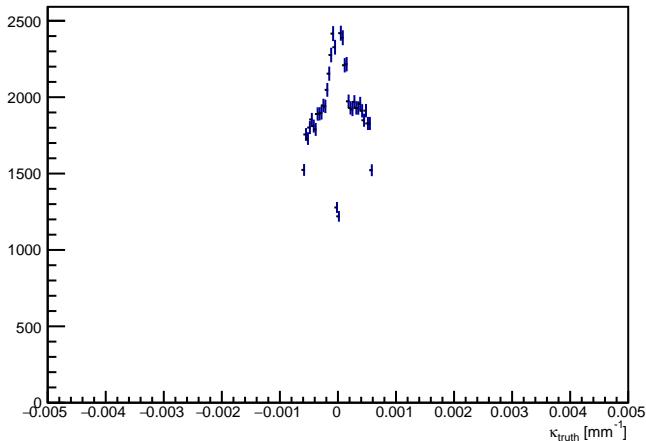




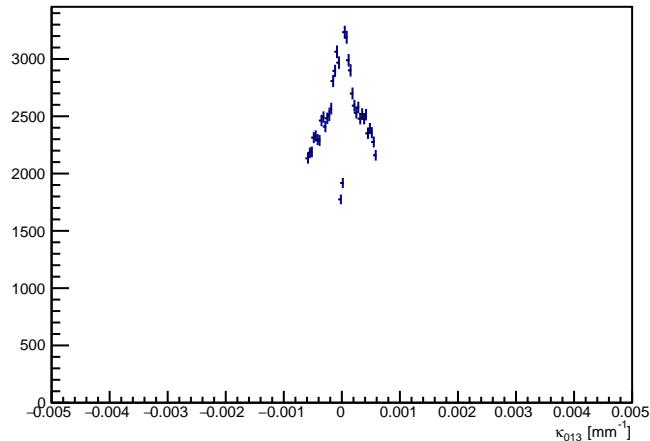




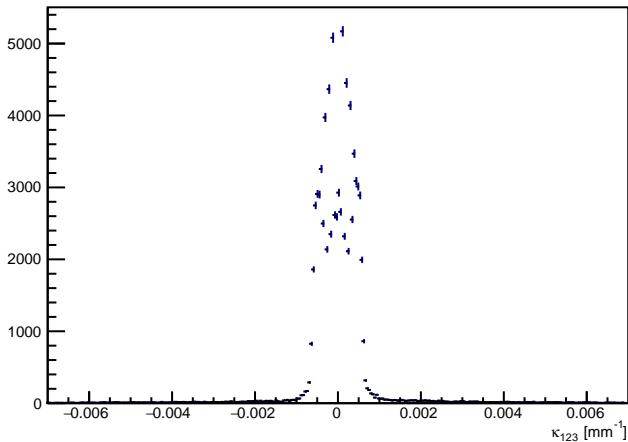
kappa truth



kappa rec with bml constraint

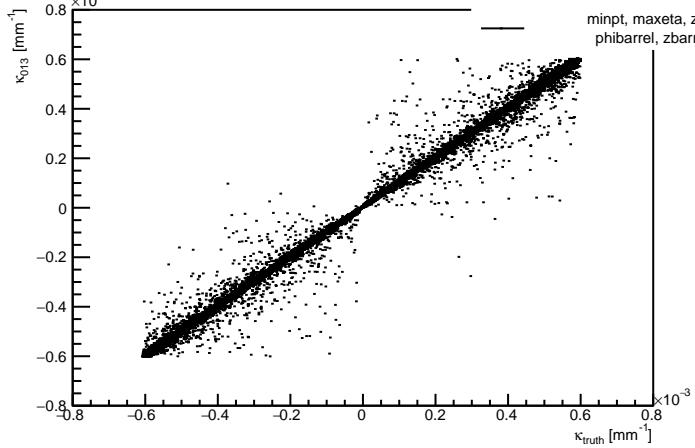


kappa rec w/o bml constraint

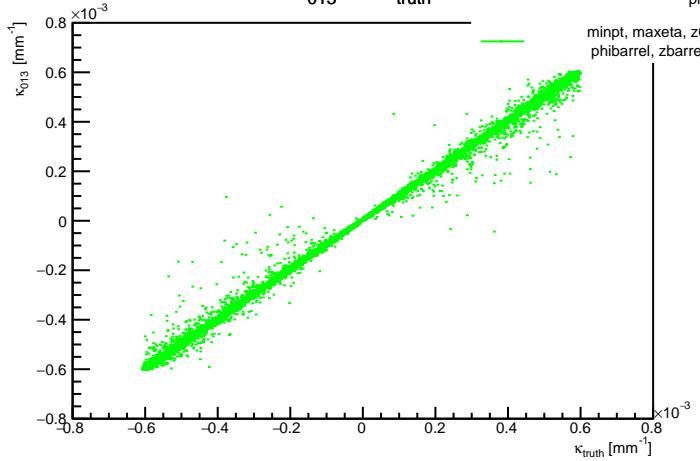


κ_{013} Vs κ_{truth}

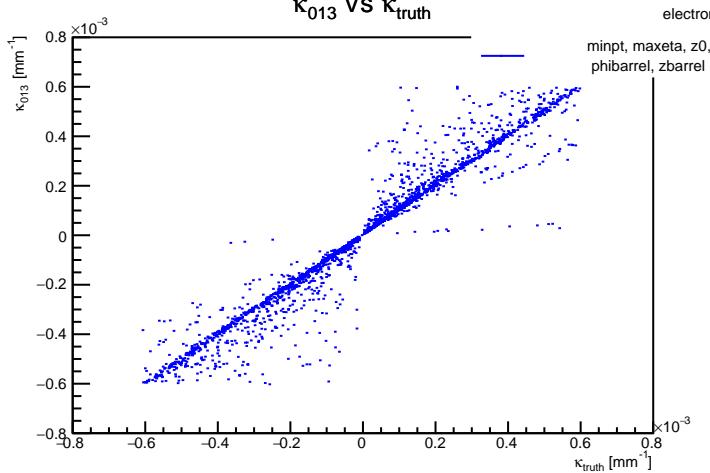
all

 κ_{013} Vs κ_{truth}

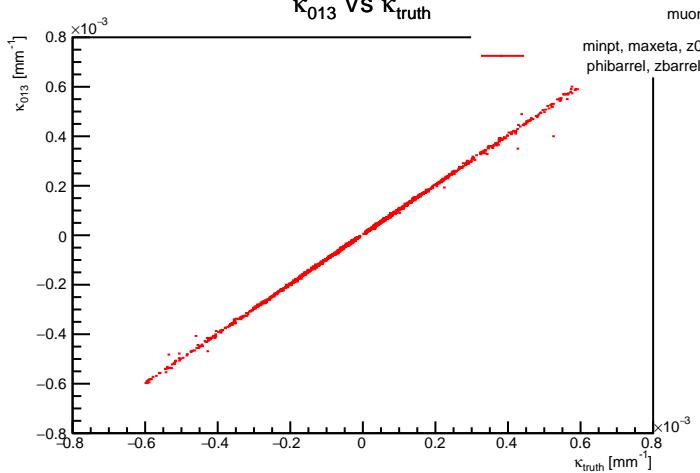
pion

 κ_{013} Vs κ_{truth}

electron

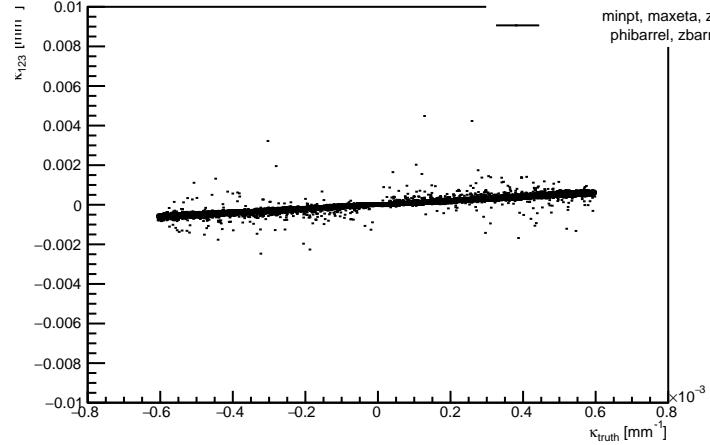
 κ_{013} Vs κ_{truth}

muon's

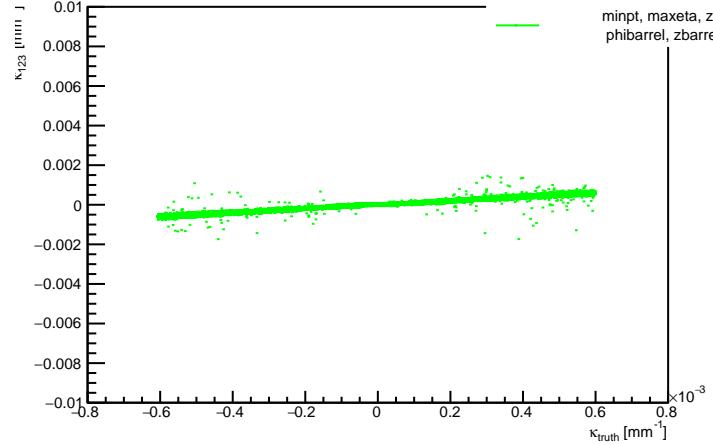


κ_{123} Vs κ_{truth}

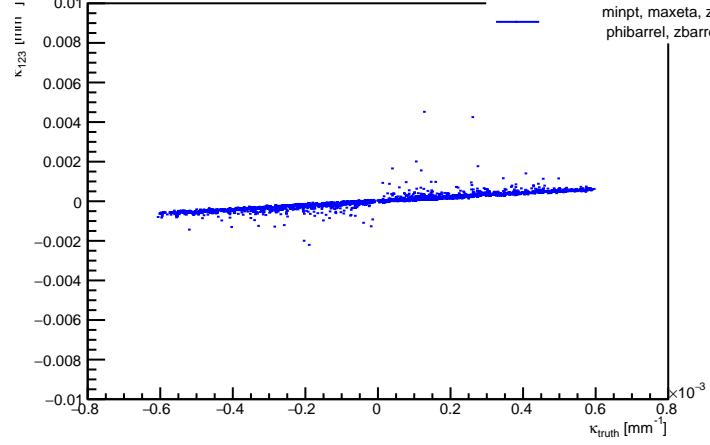
all

 κ_{123} Vs κ_{truth}

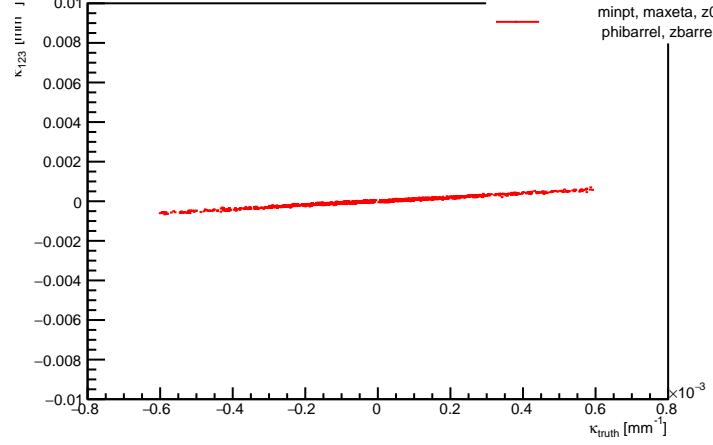
pion

 κ_{123} Vs κ_{truth}

electron

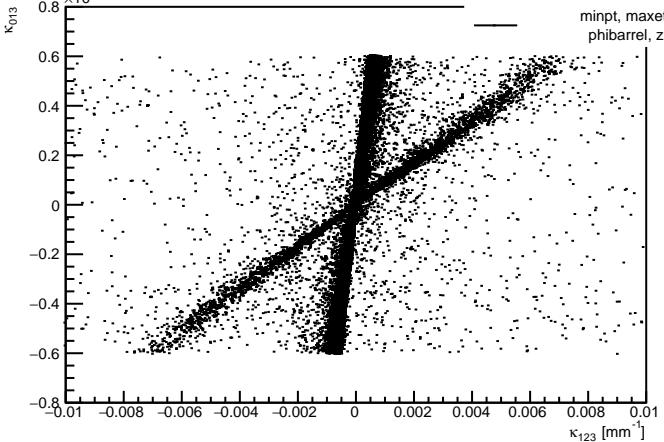
 κ_{123} Vs κ_{truth}

muon's

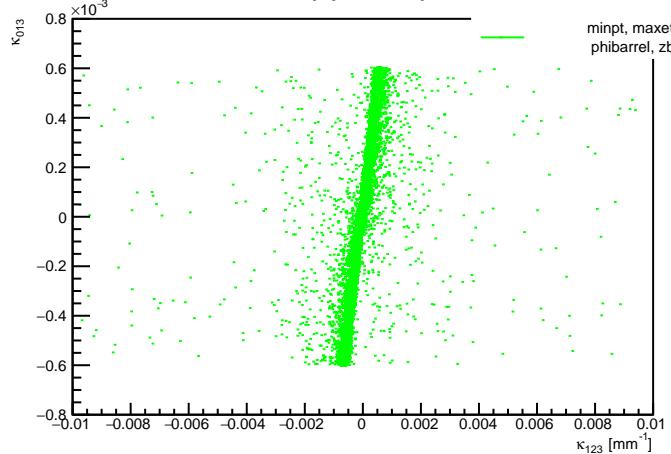


κ_{013} Vs κ_{123}

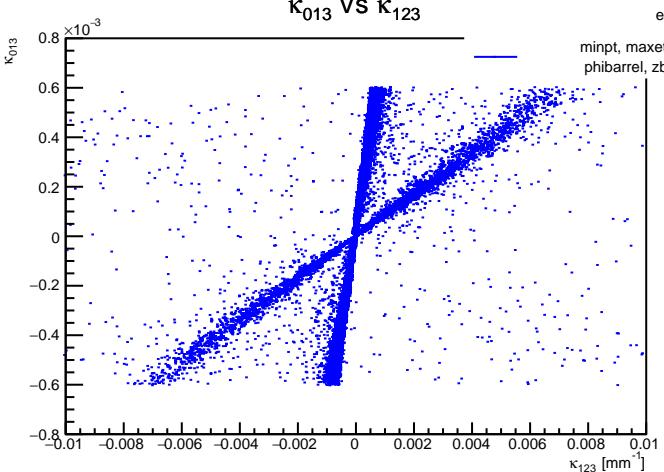
all

 κ_{013} Vs κ_{123}

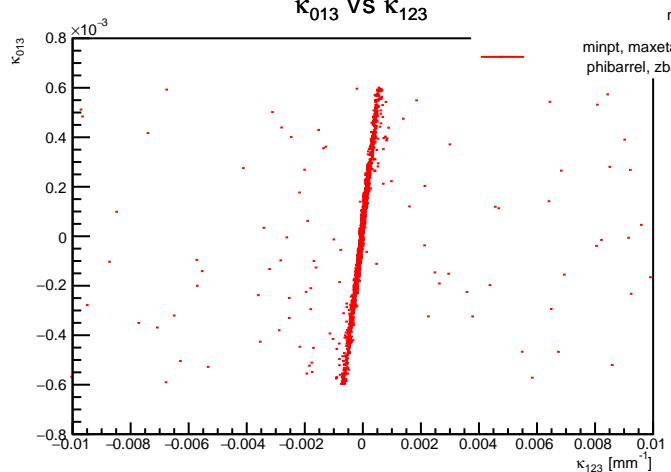
pion

 κ_{013} Vs κ_{123}

electron

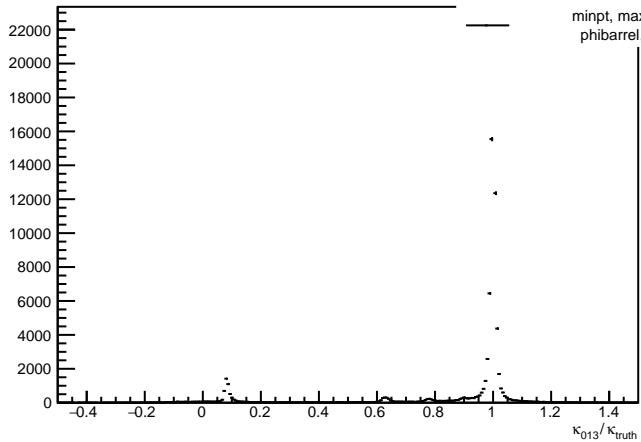
 κ_{013} Vs κ_{123}

muon's

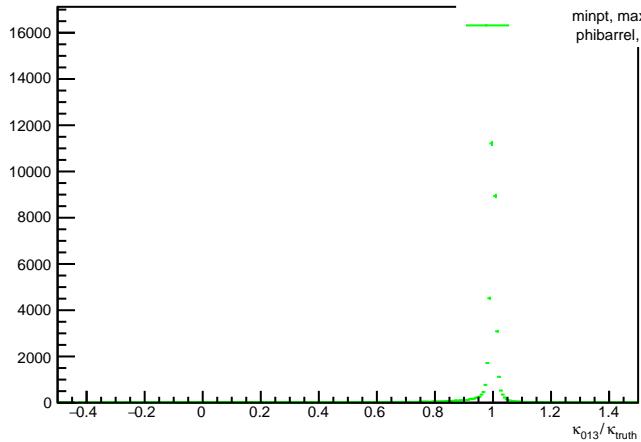


$\kappa_{013}/\kappa_{\text{truth}}$

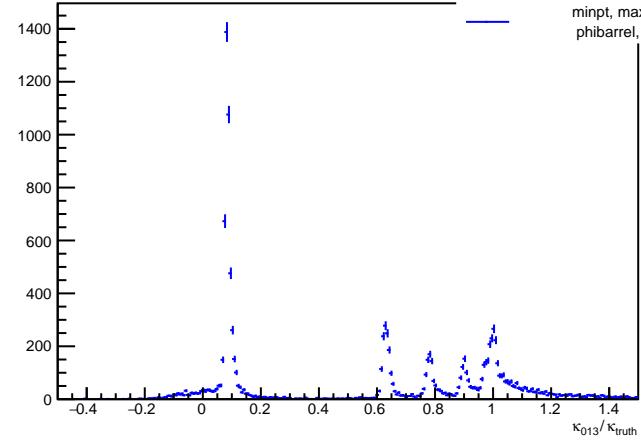
all

 $\kappa_{013}/\kappa_{\text{truth}}$

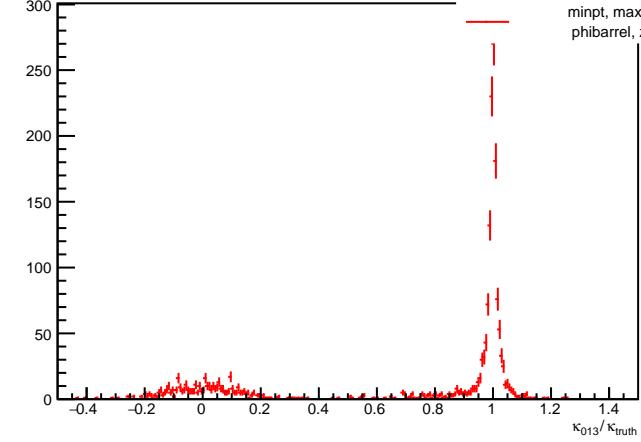
pion

 $\kappa_{013}/\kappa_{\text{truth}}$

electron

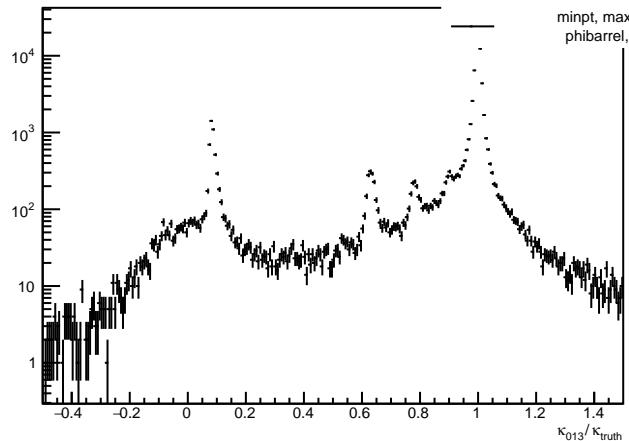
 $\kappa_{013}/\kappa_{\text{truth}}$

muon's

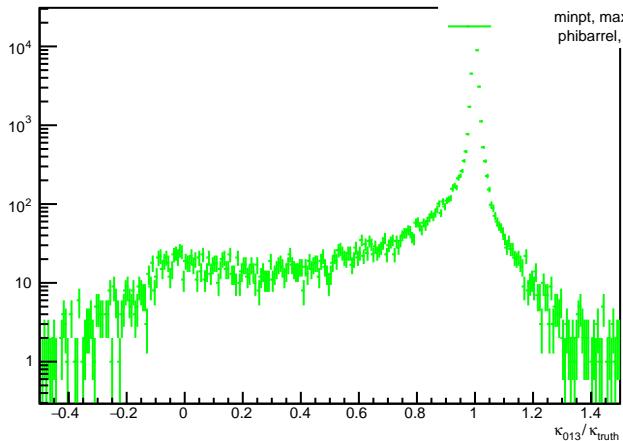


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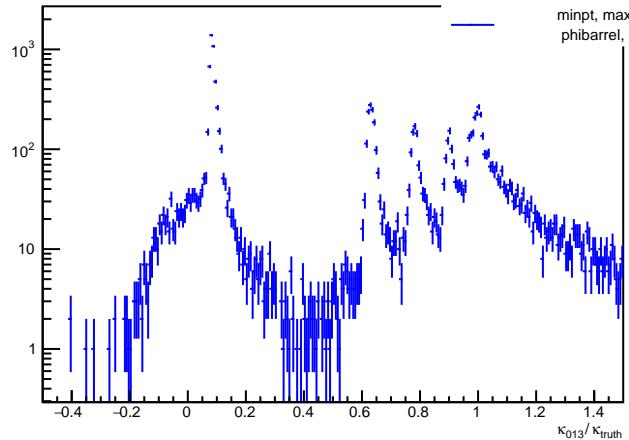
all

 $\kappa_{013}/\kappa_{\text{truth}}$

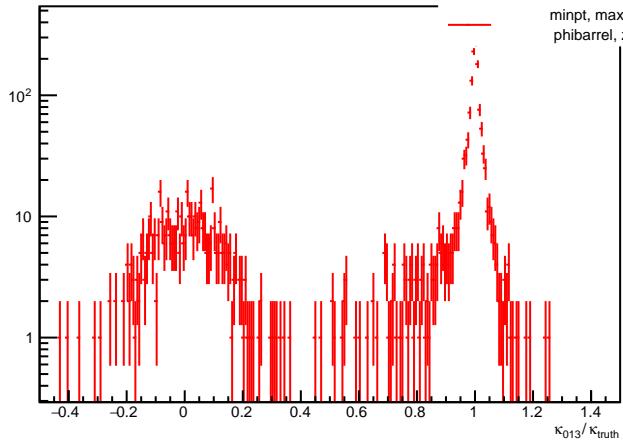
pion

 $\kappa_{013}/\kappa_{\text{truth}}$

electron

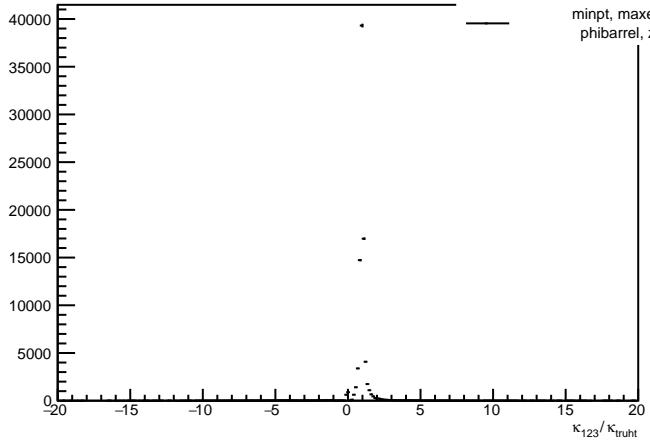
 $\kappa_{013}/\kappa_{\text{truth}}$

muon's

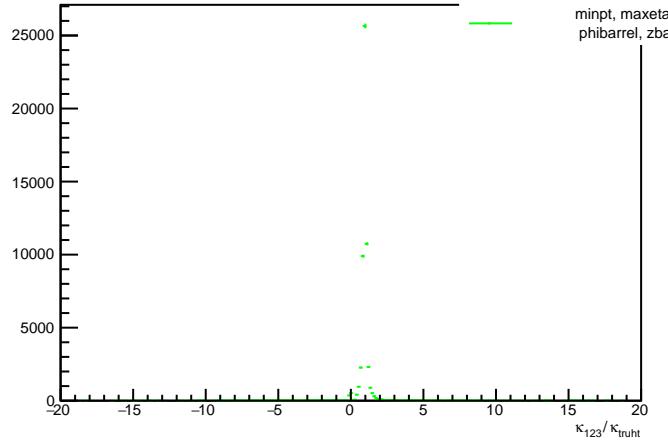


$\kappa_{123}/\kappa_{\text{truth}}$

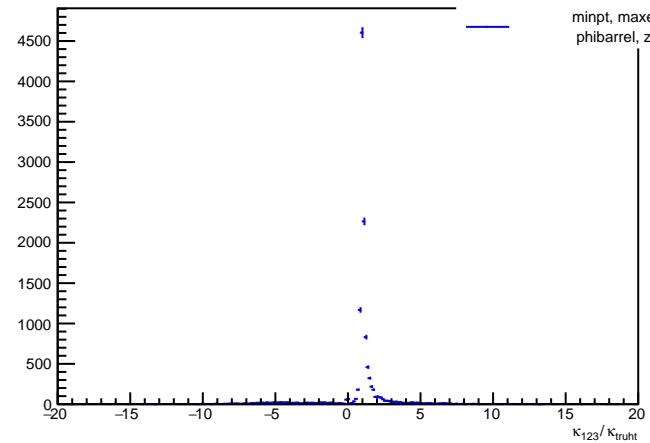
all

 $\kappa_{123}/\kappa_{\text{truth}}$

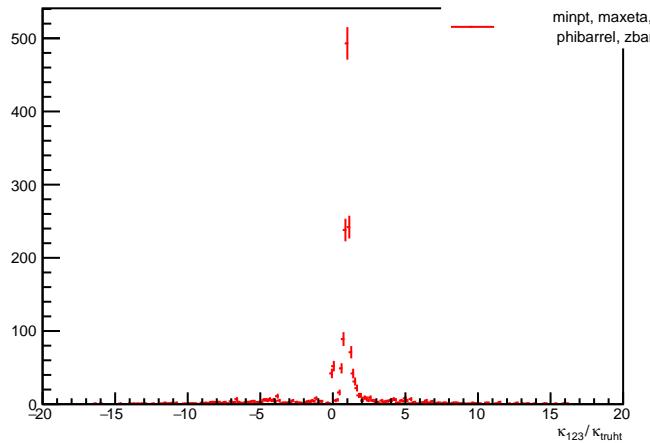
pion

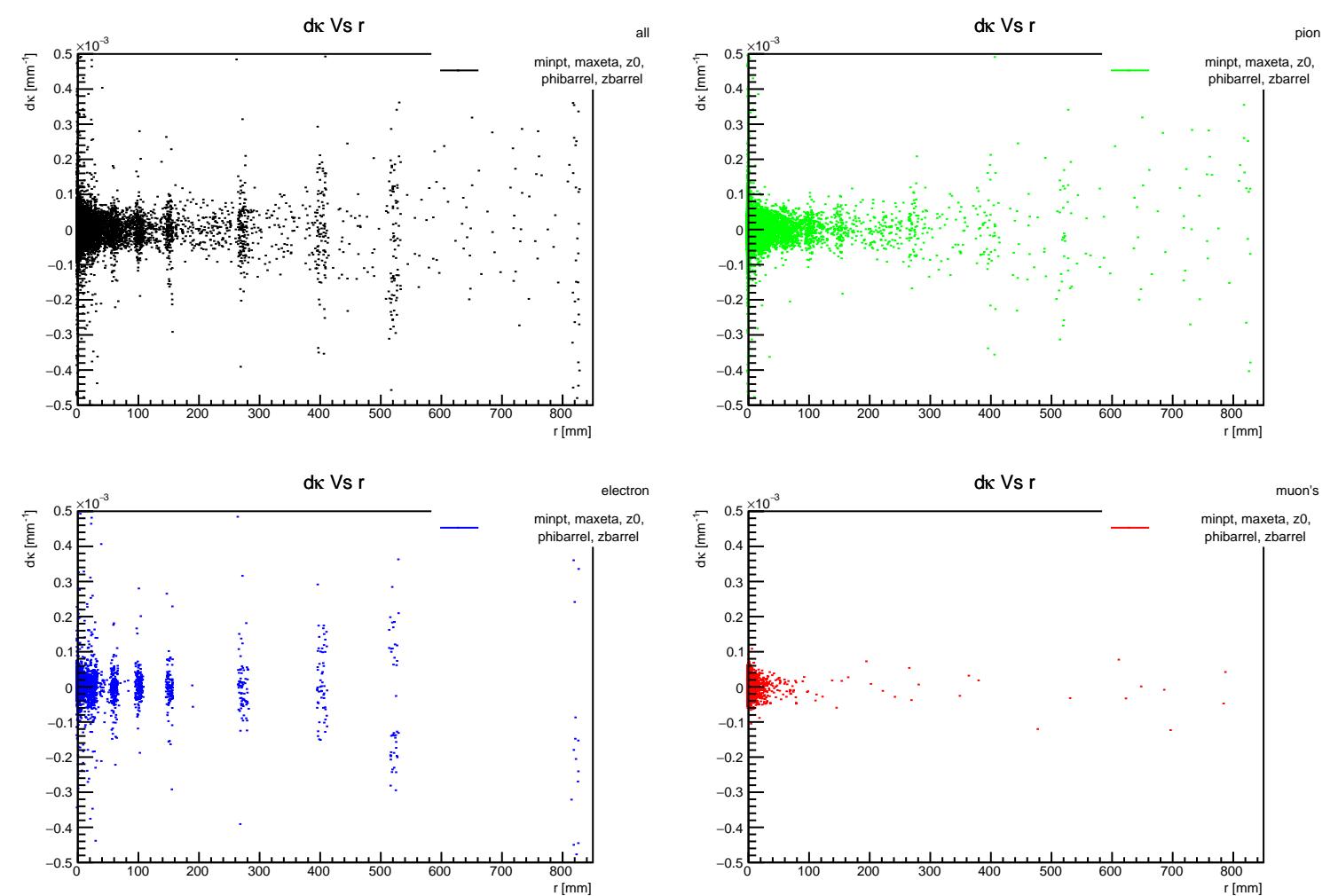
 $\kappa_{123}/\kappa_{\text{truth}}$

electron

 $\kappa_{123}/\kappa_{\text{truth}}$

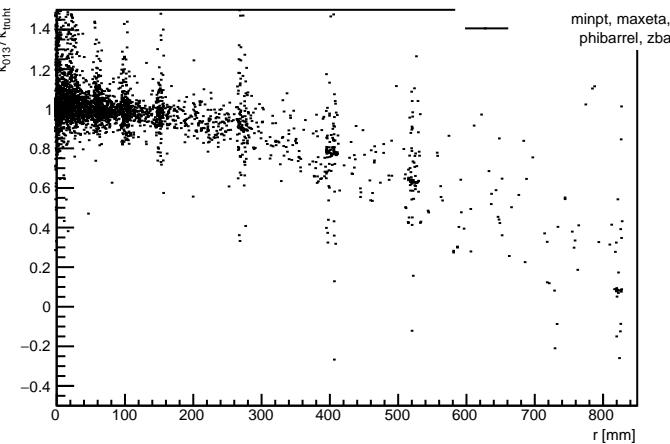
muon's



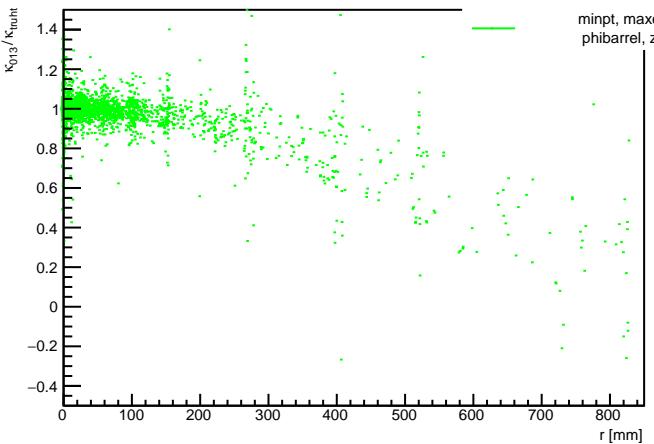


$\kappa_{013}/\kappa_{\text{truth}}$ Vs r

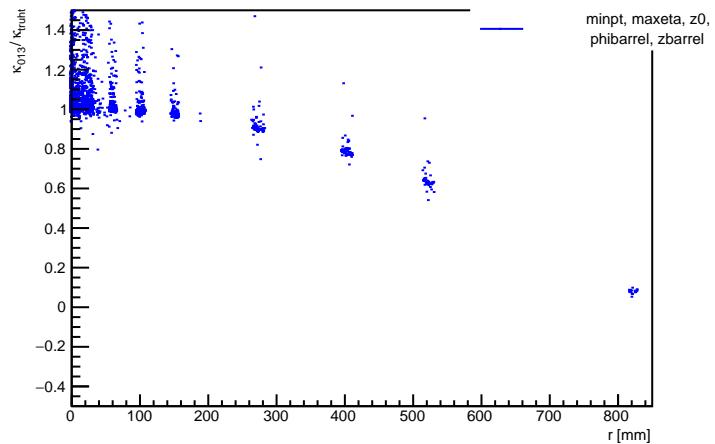
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 $\kappa_{013}/\kappa_{\text{truth}}$ Vs r

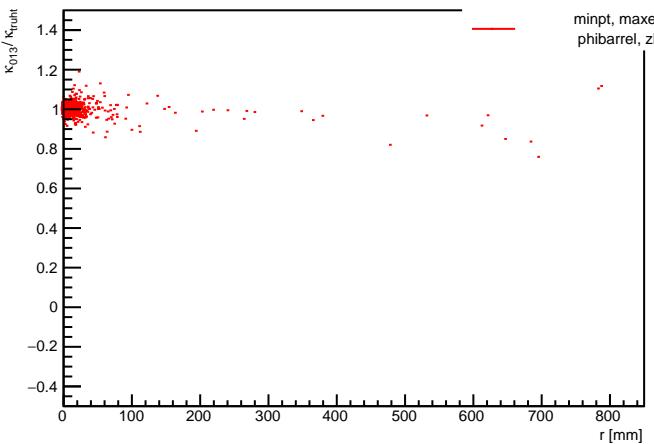
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 $\kappa_{013}/\kappa_{\text{truth}}$ Vs r

electron

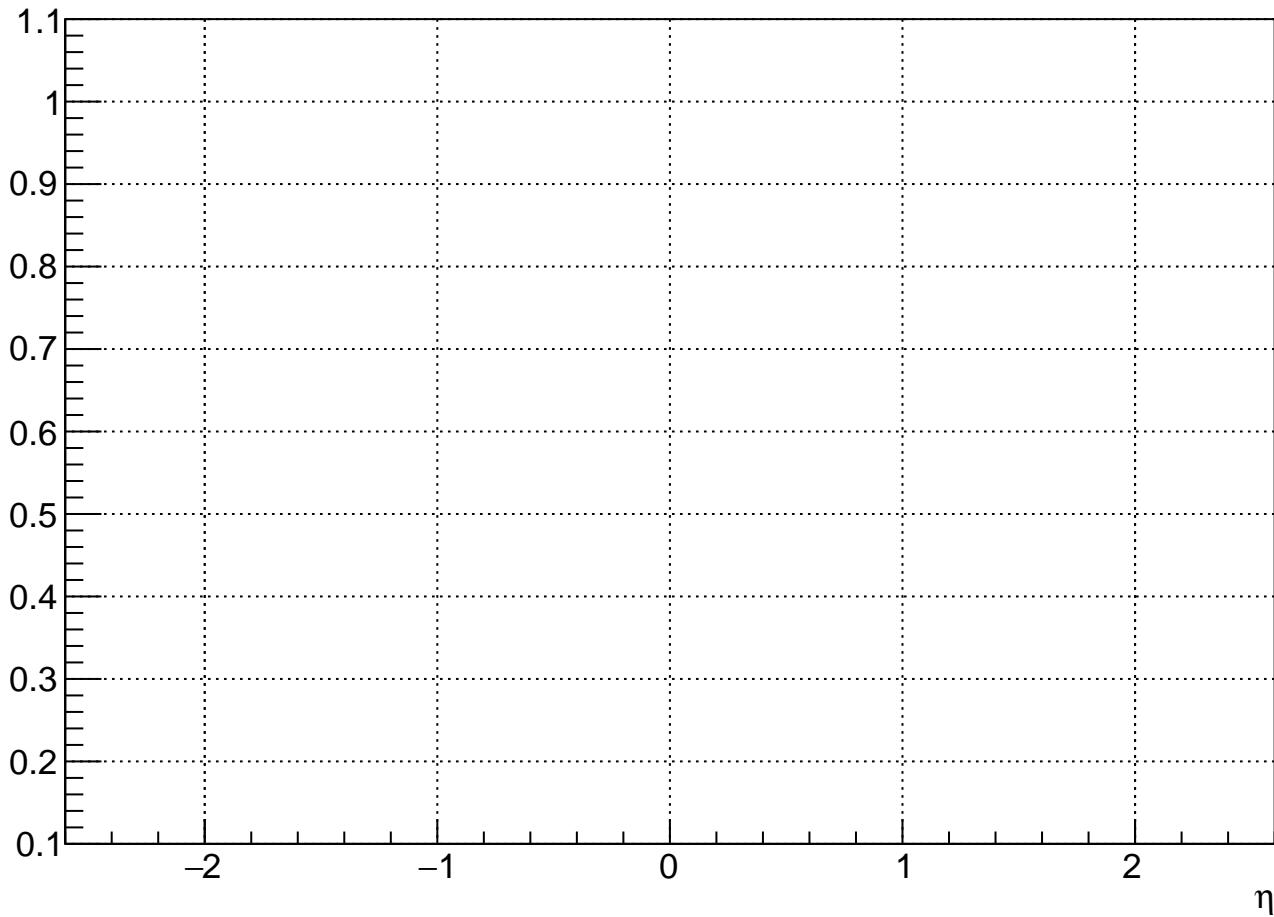
 $\kappa_{013}/\kappa_{\text{truth}}$ Vs r

muon's



Purity vs η

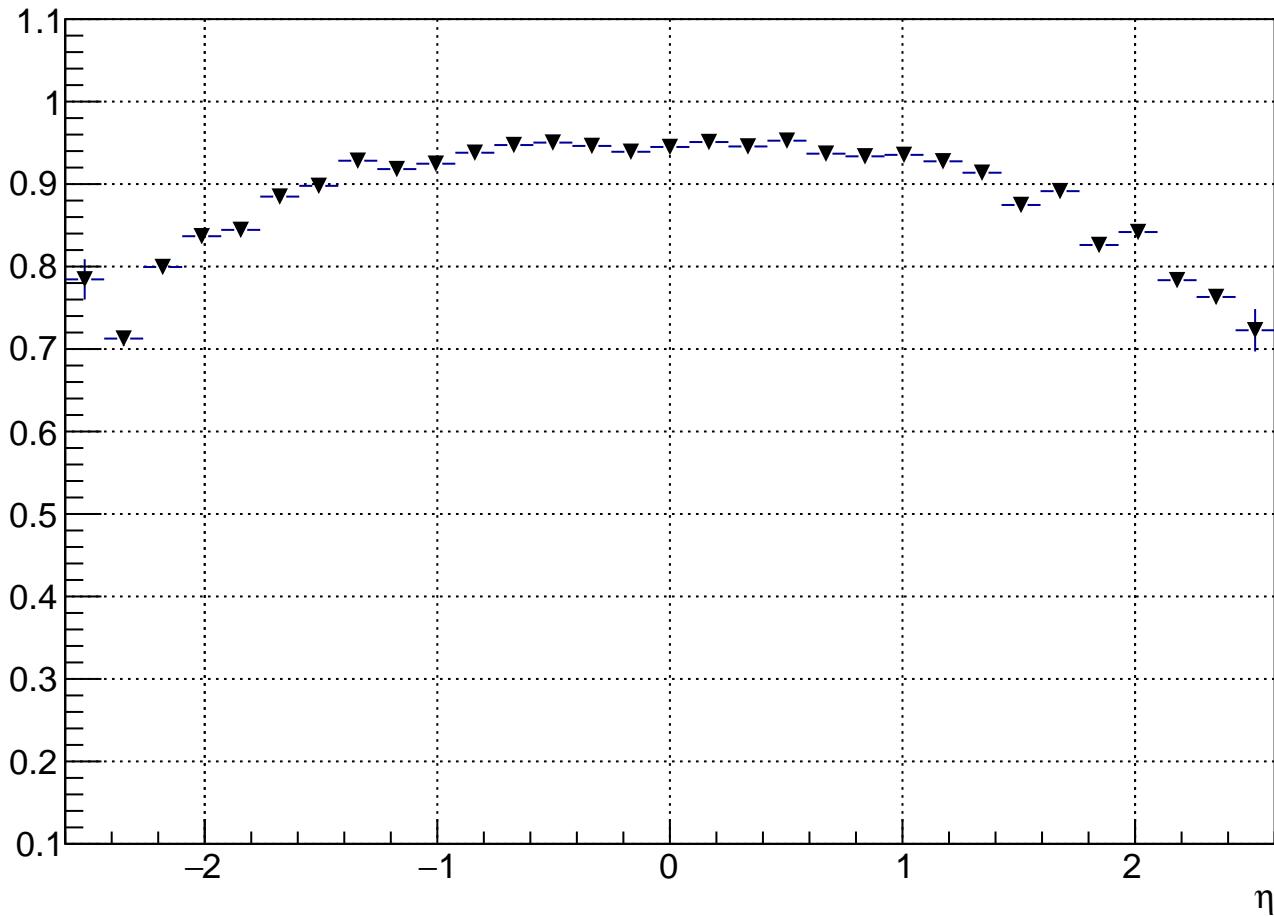
Purity



η

Purity vs η

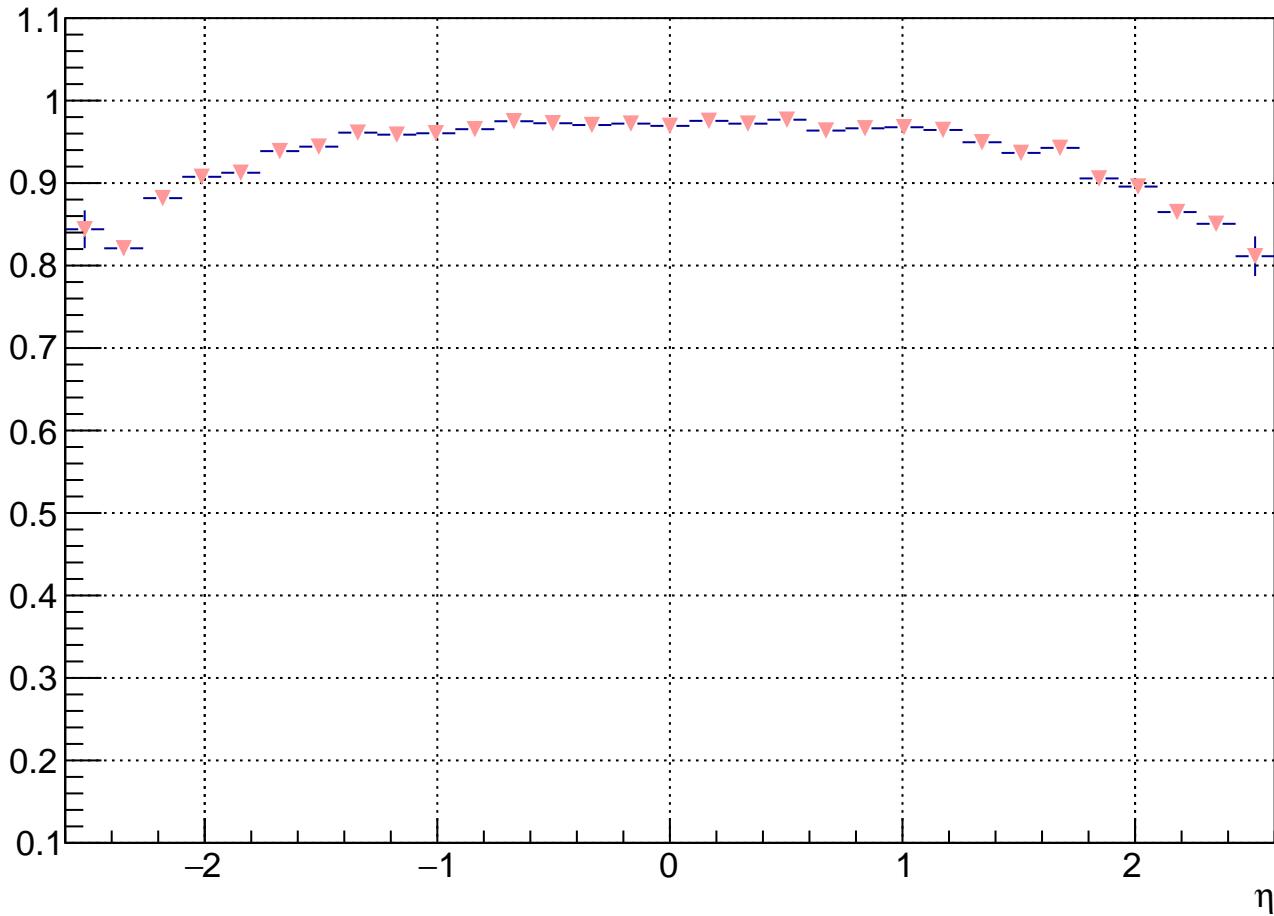
Purity



η

Purity vs η

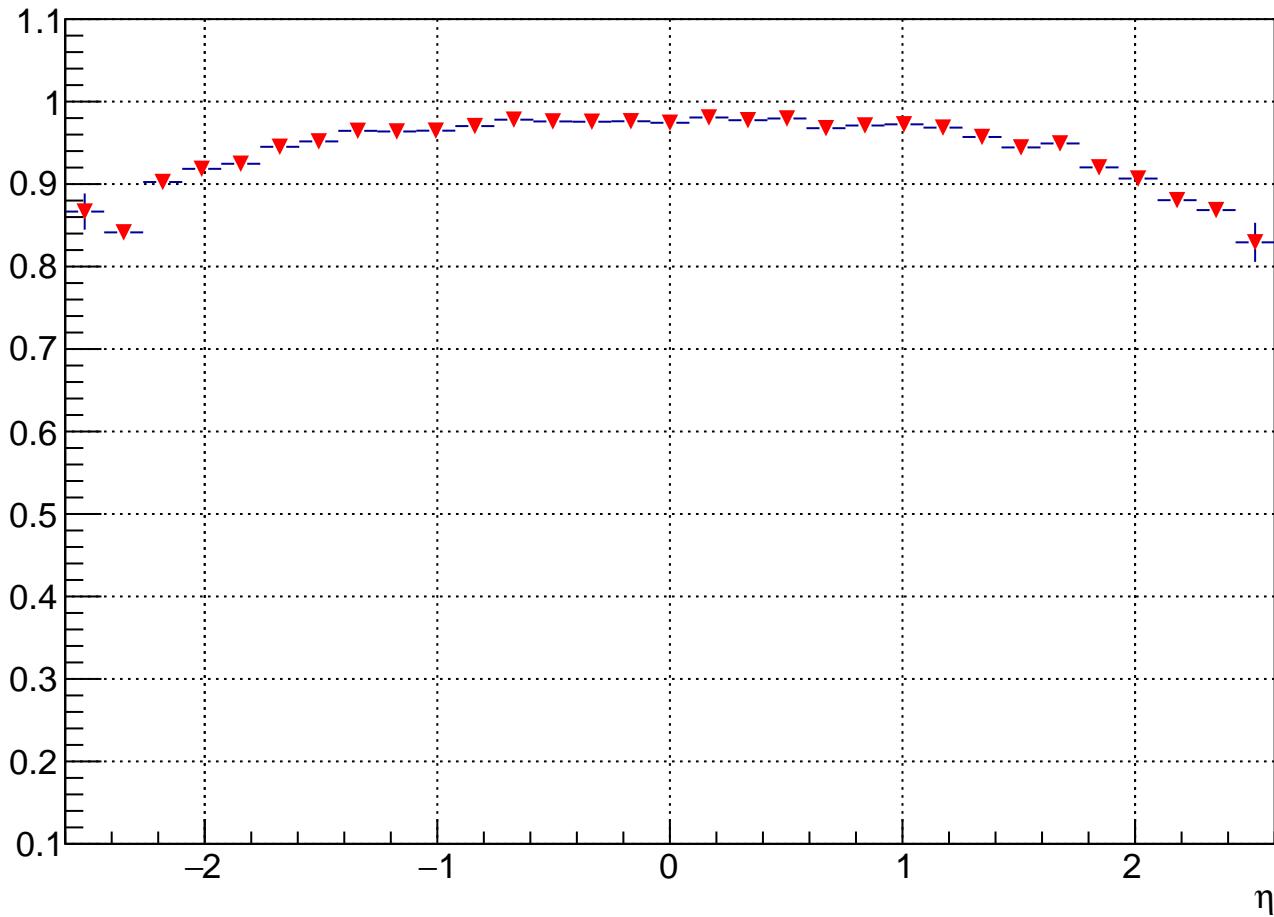
Purity



η

Purity vs η

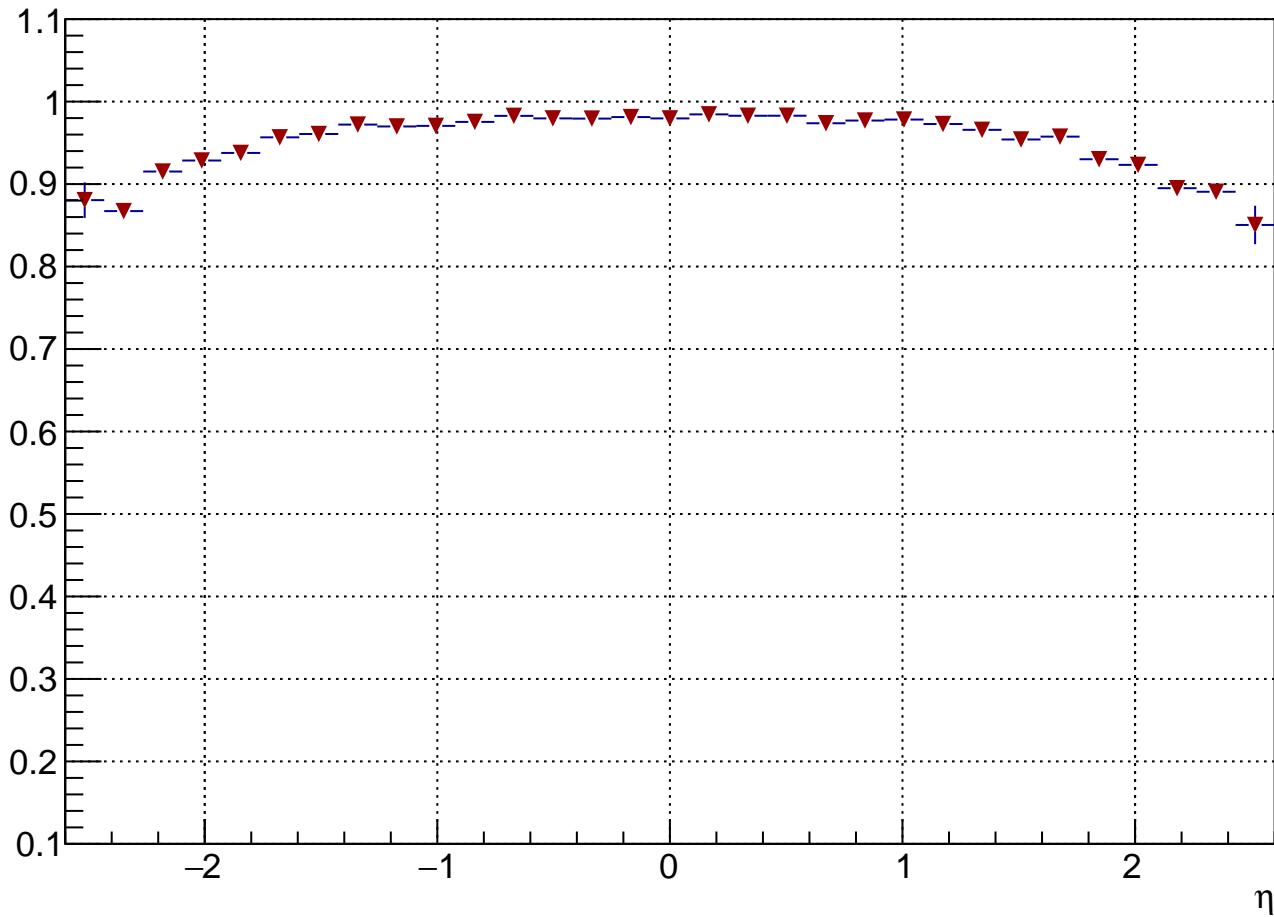
Purity



η

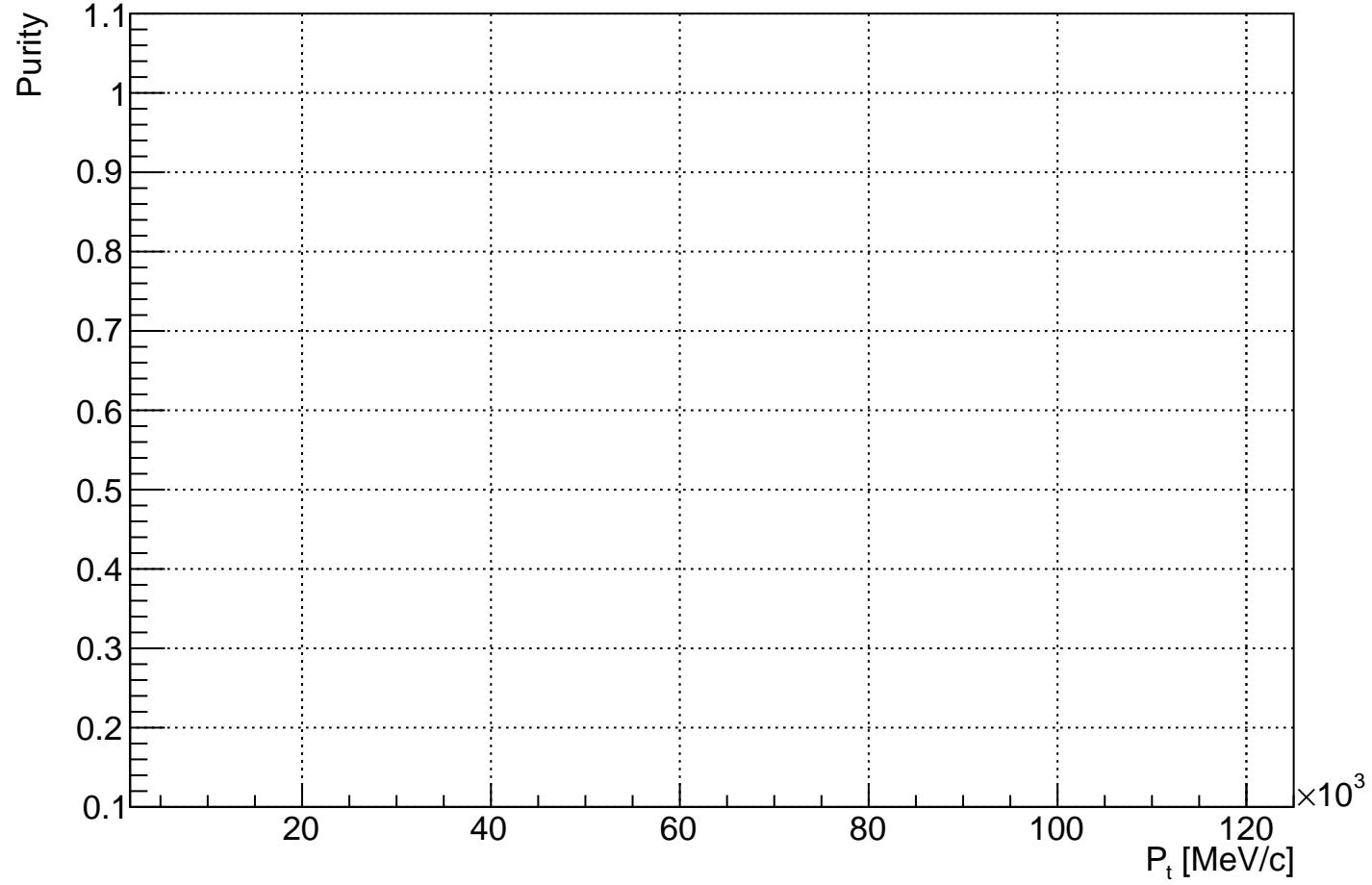
Purity vs η

Purity

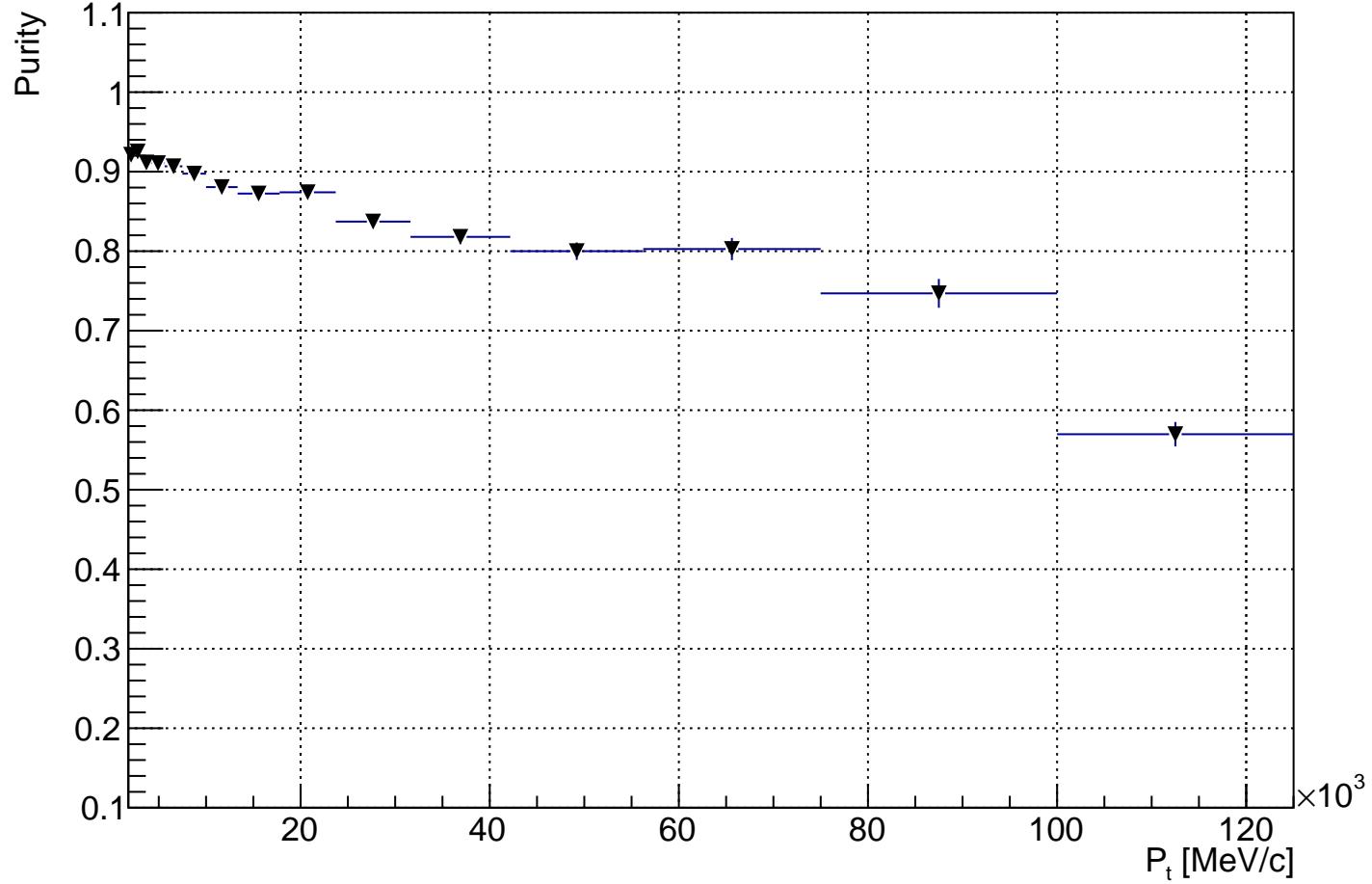


η

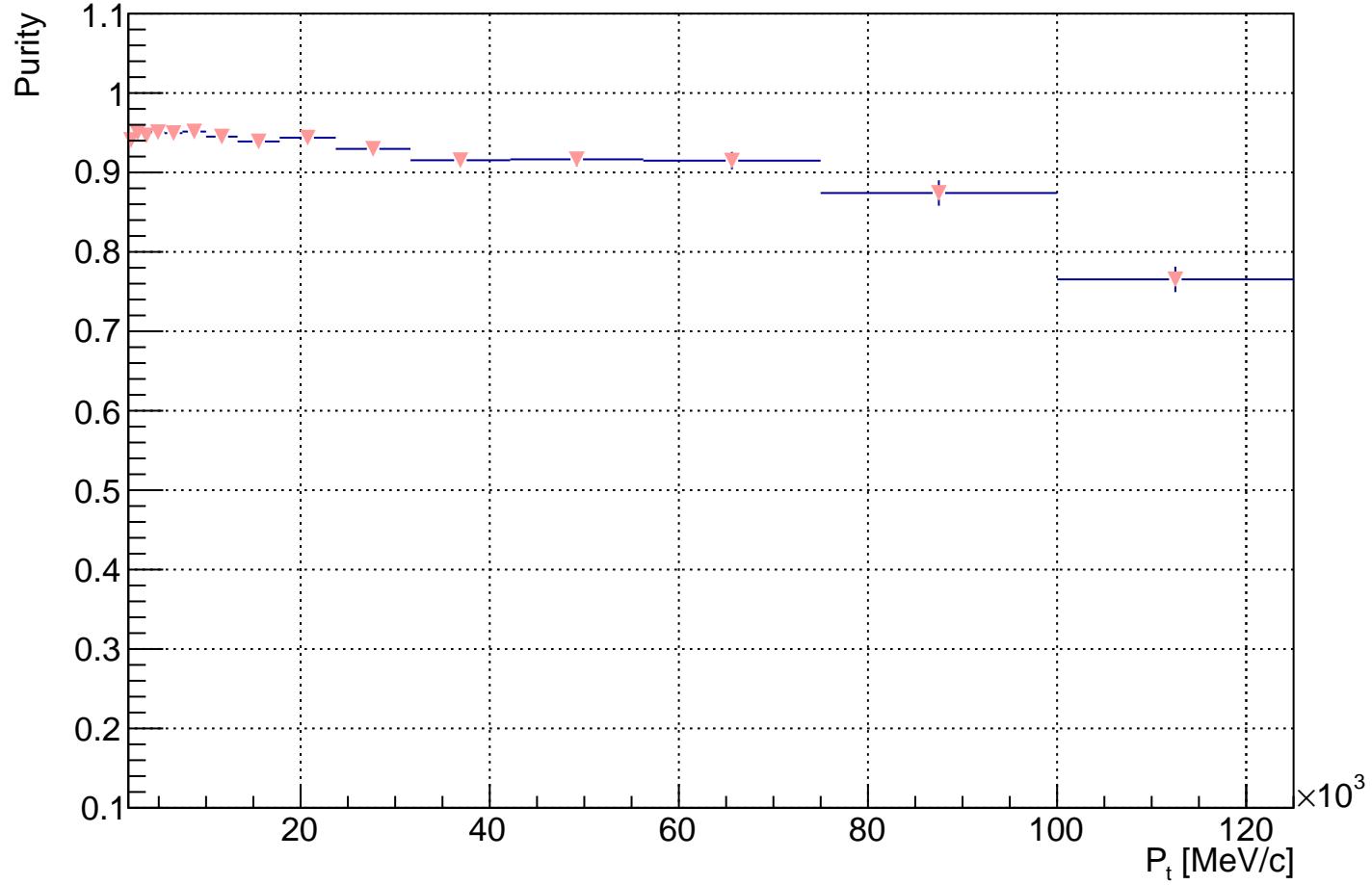
Purity vs P_t



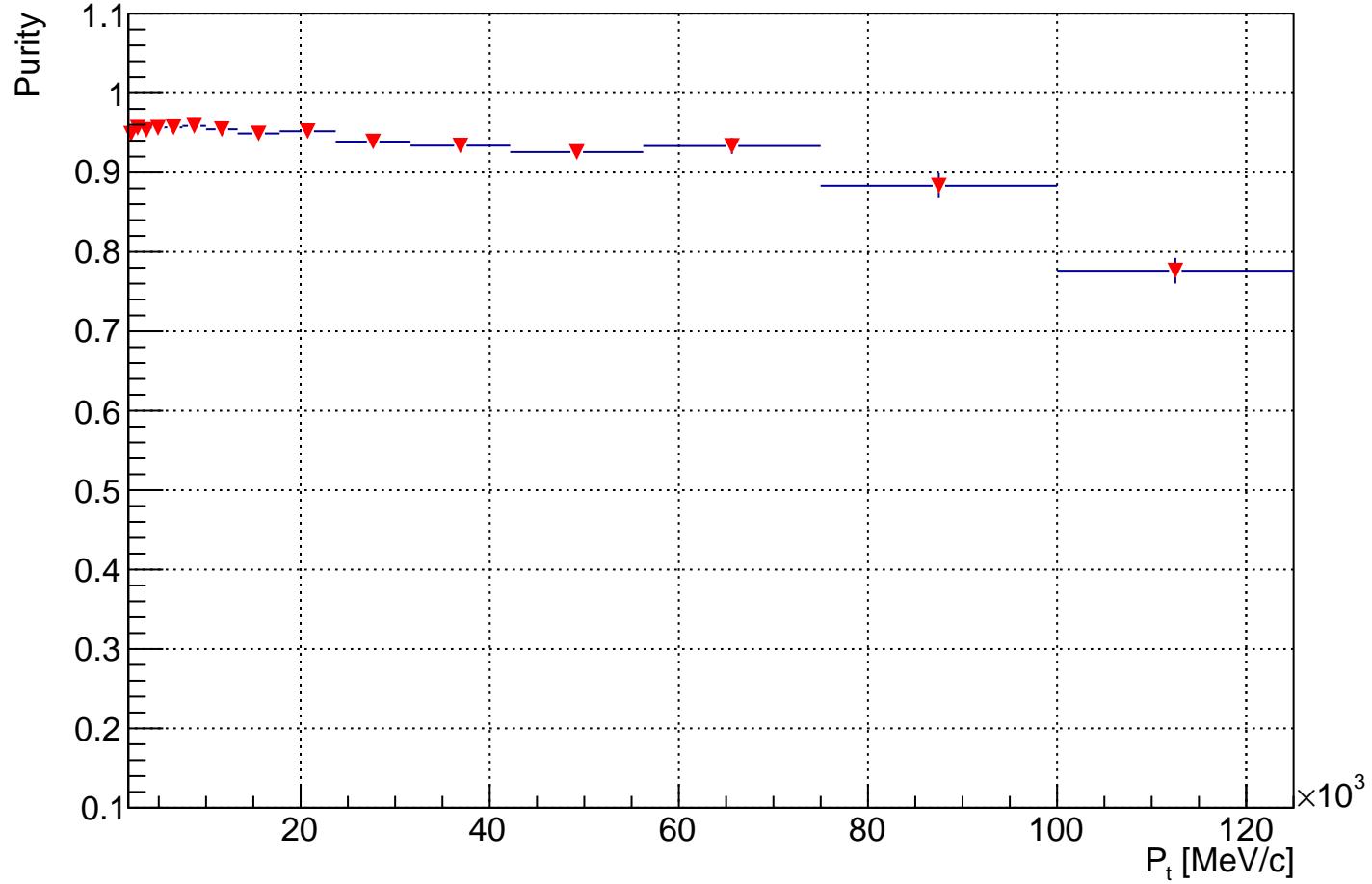
Purity vs P_t



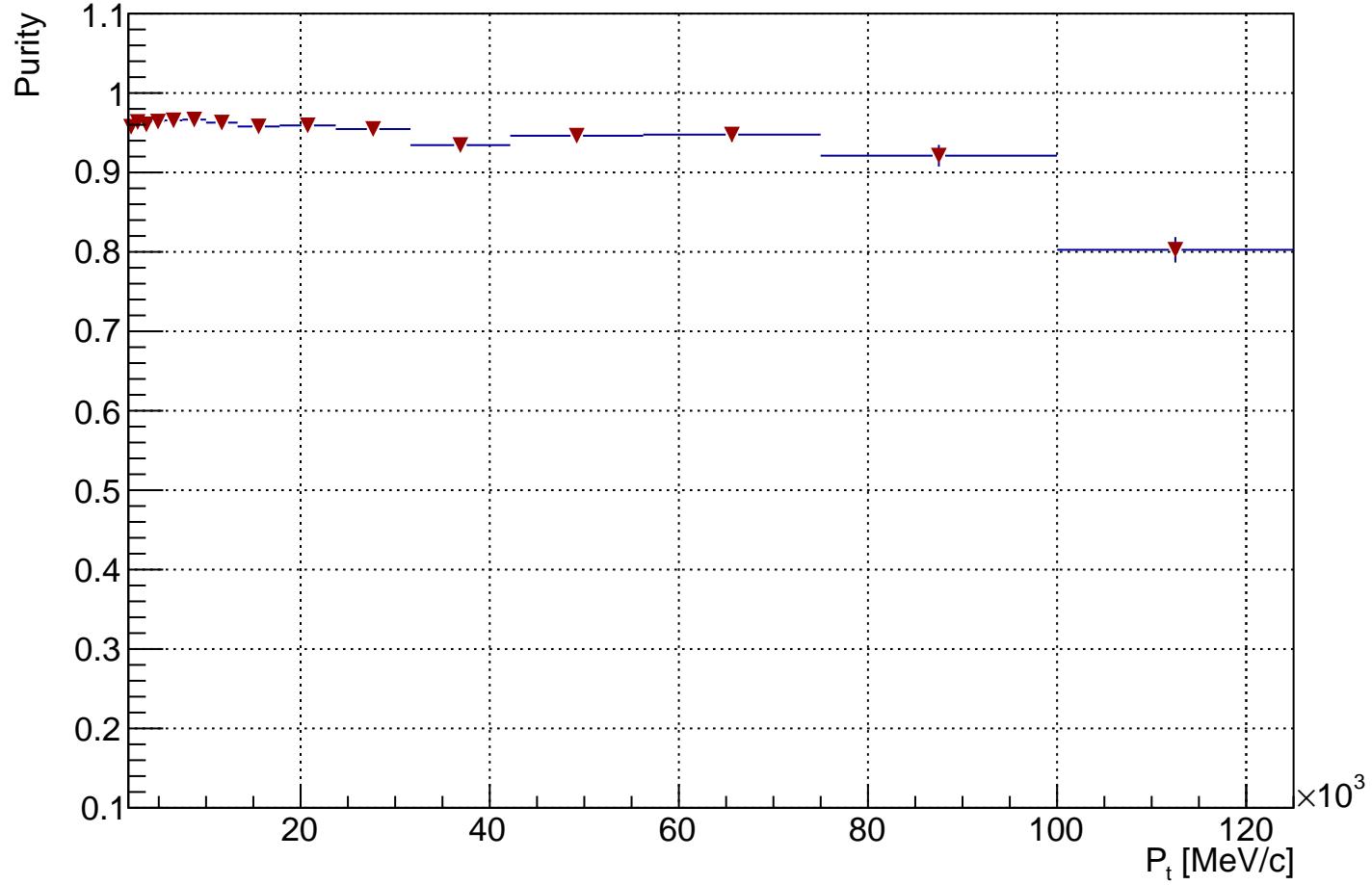
Purity vs P_t



Purity vs P_t

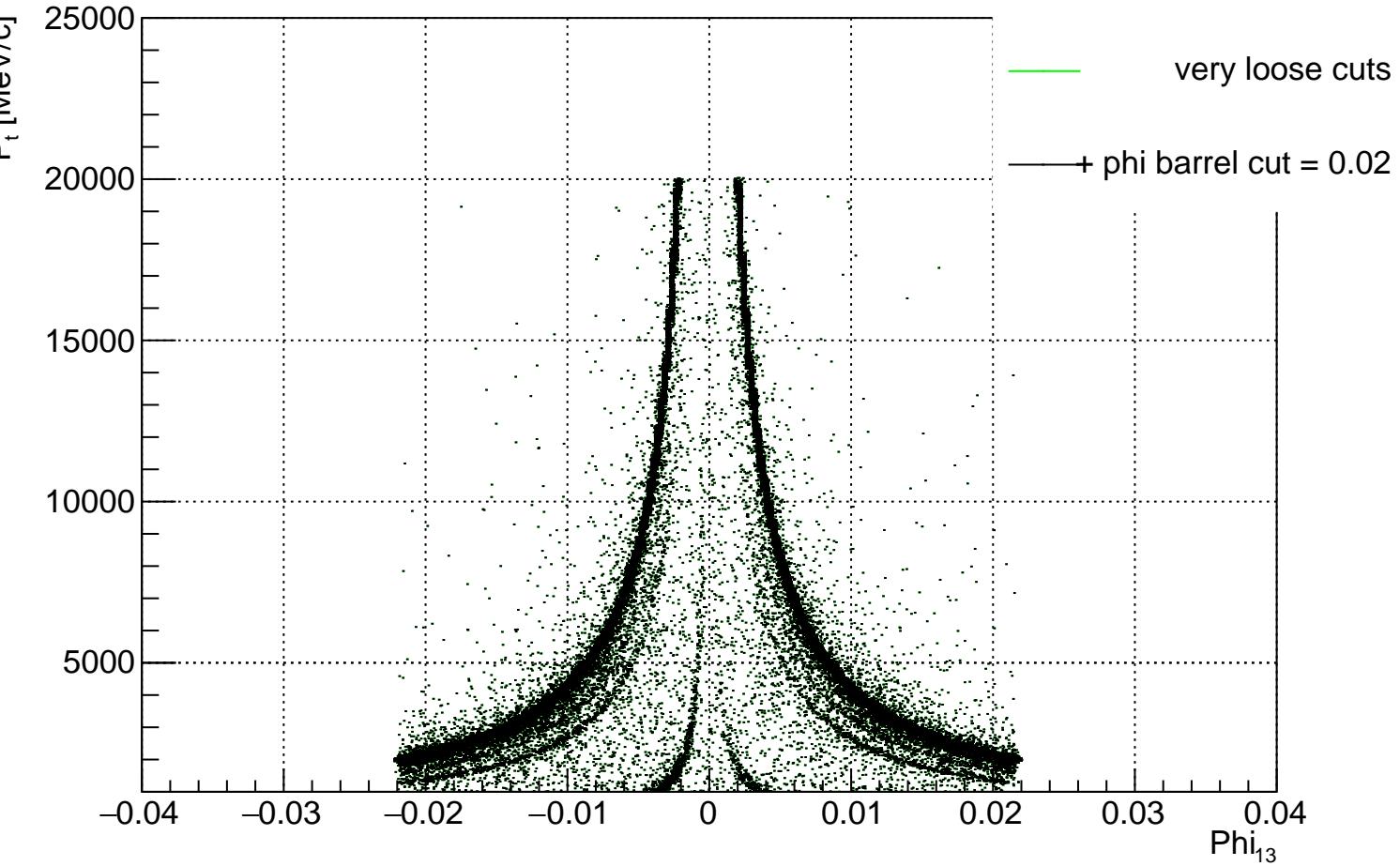


Purity vs P_t

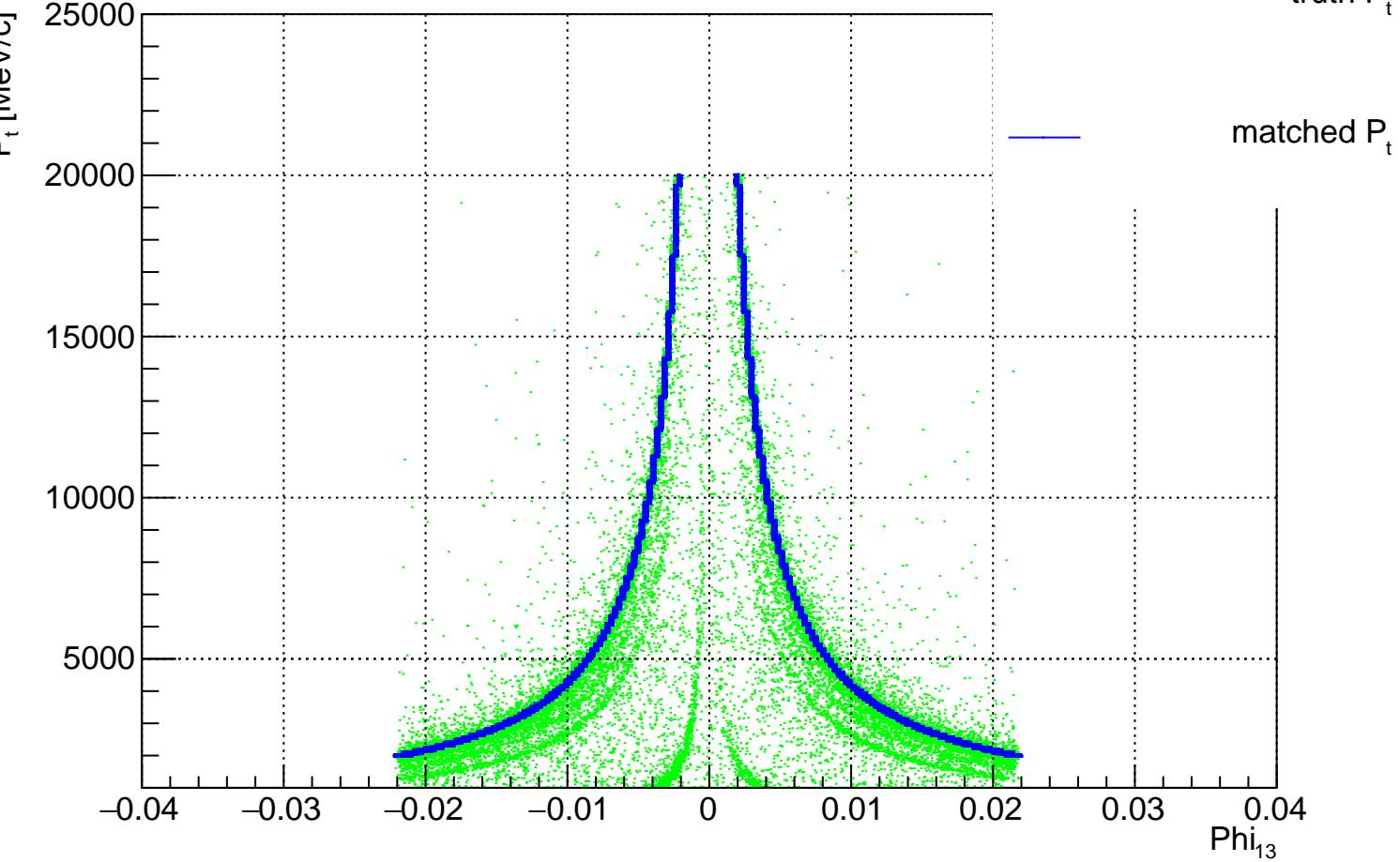


P_t Vs Φ_{13}

truth P_t

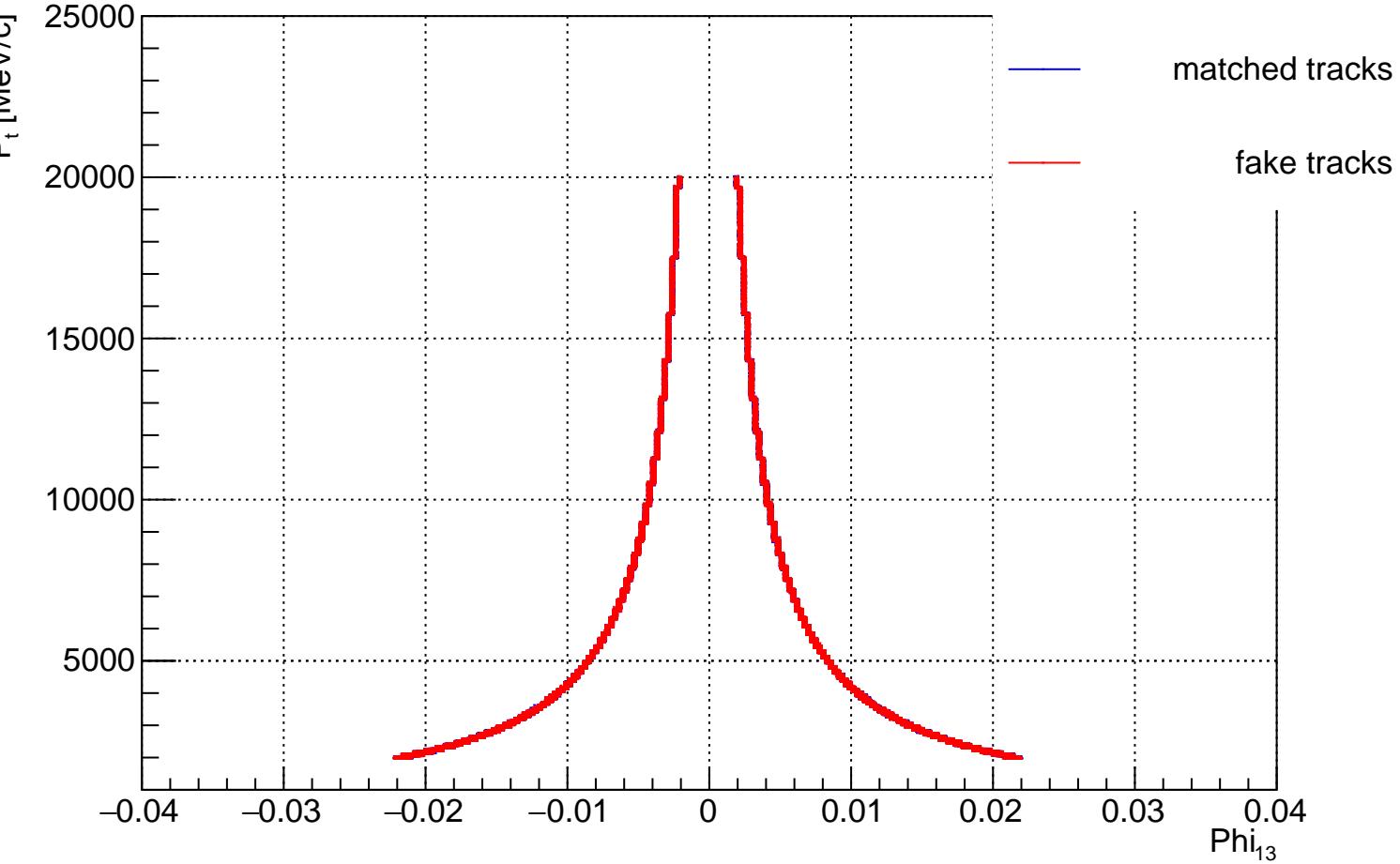


P_t Vs Φ_{13}

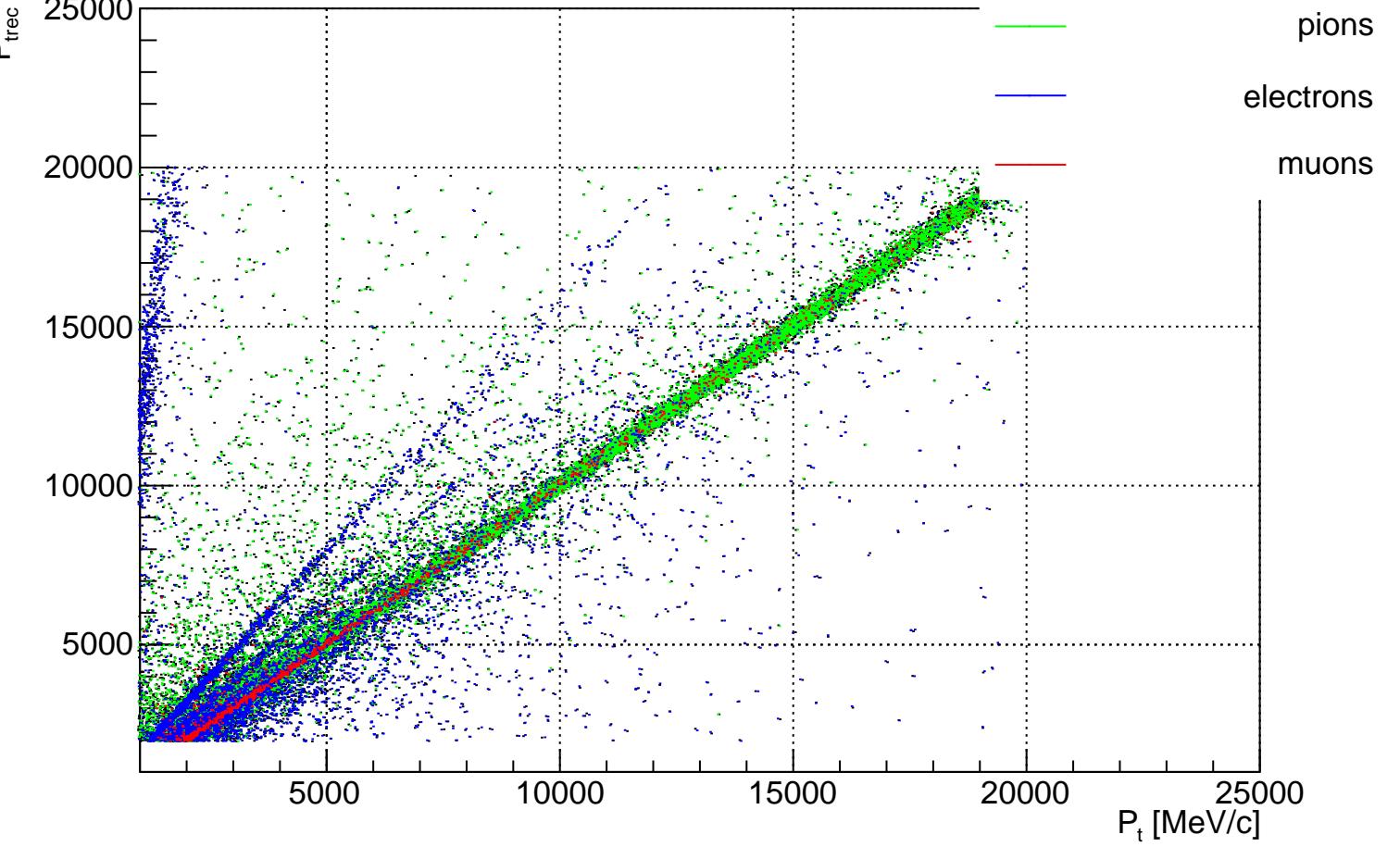


P_t Vs Φ_{13}

rec P_t

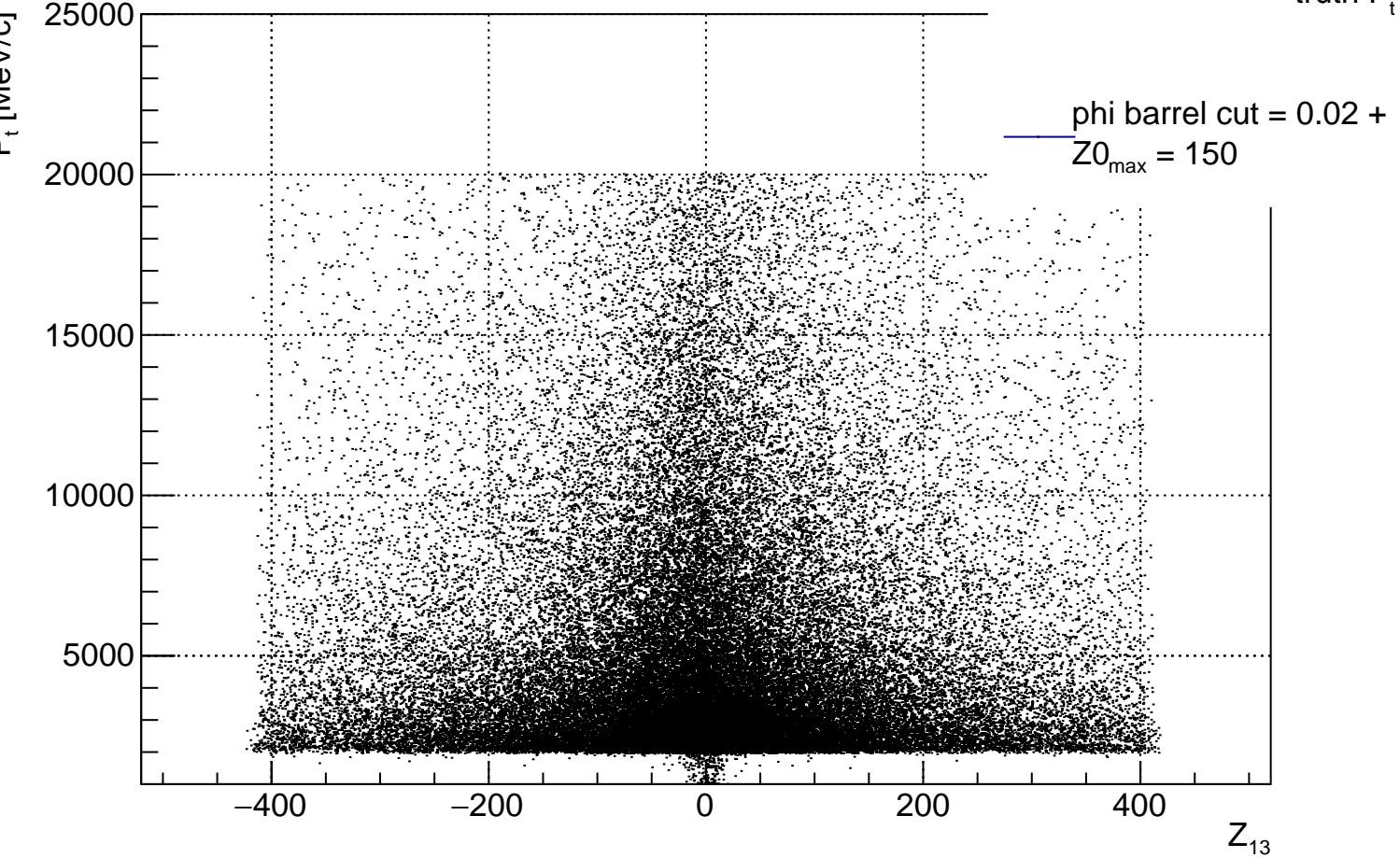


P_{trec} Vs P_t



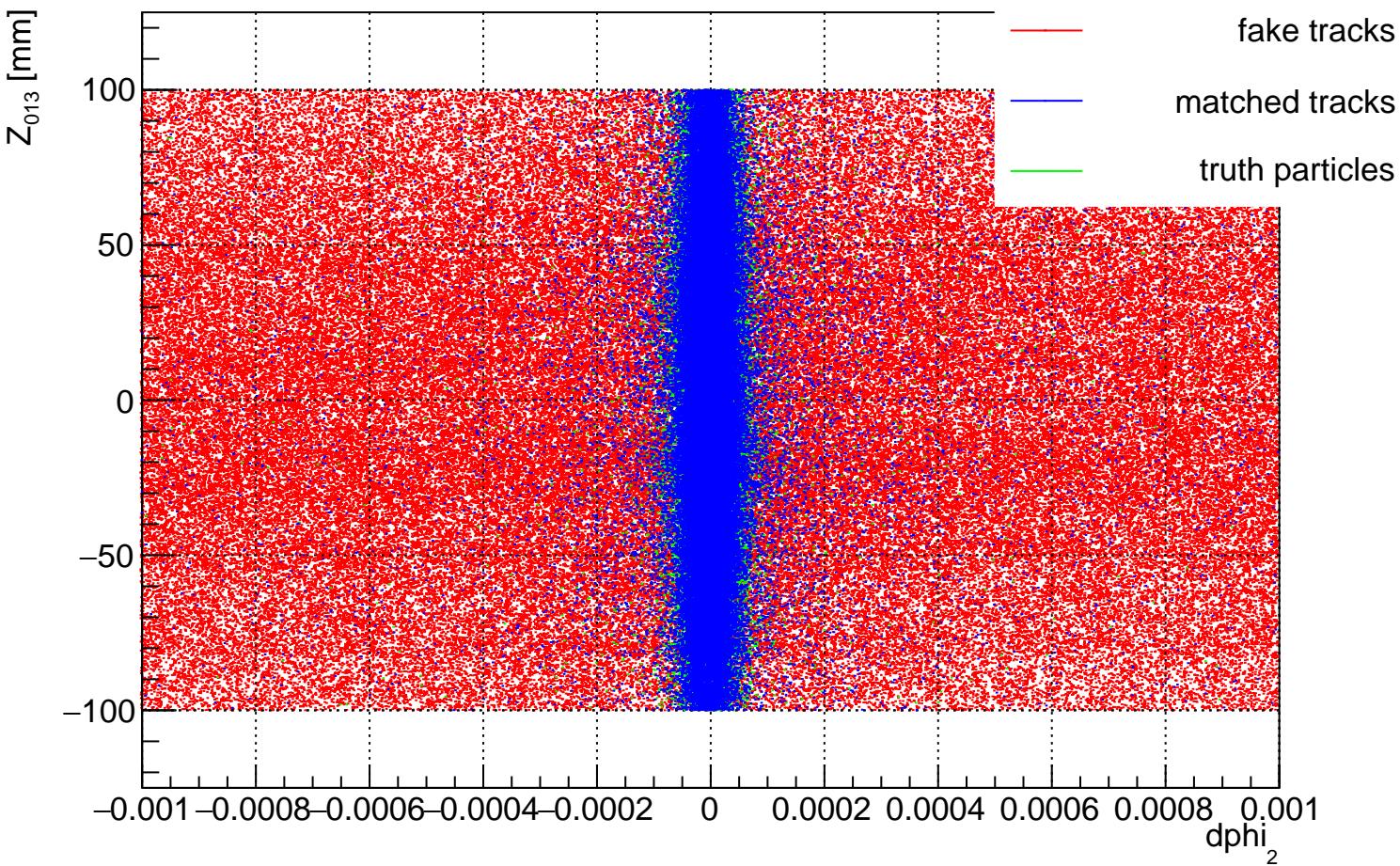
P_t Vs Z_{13}

truth P_t



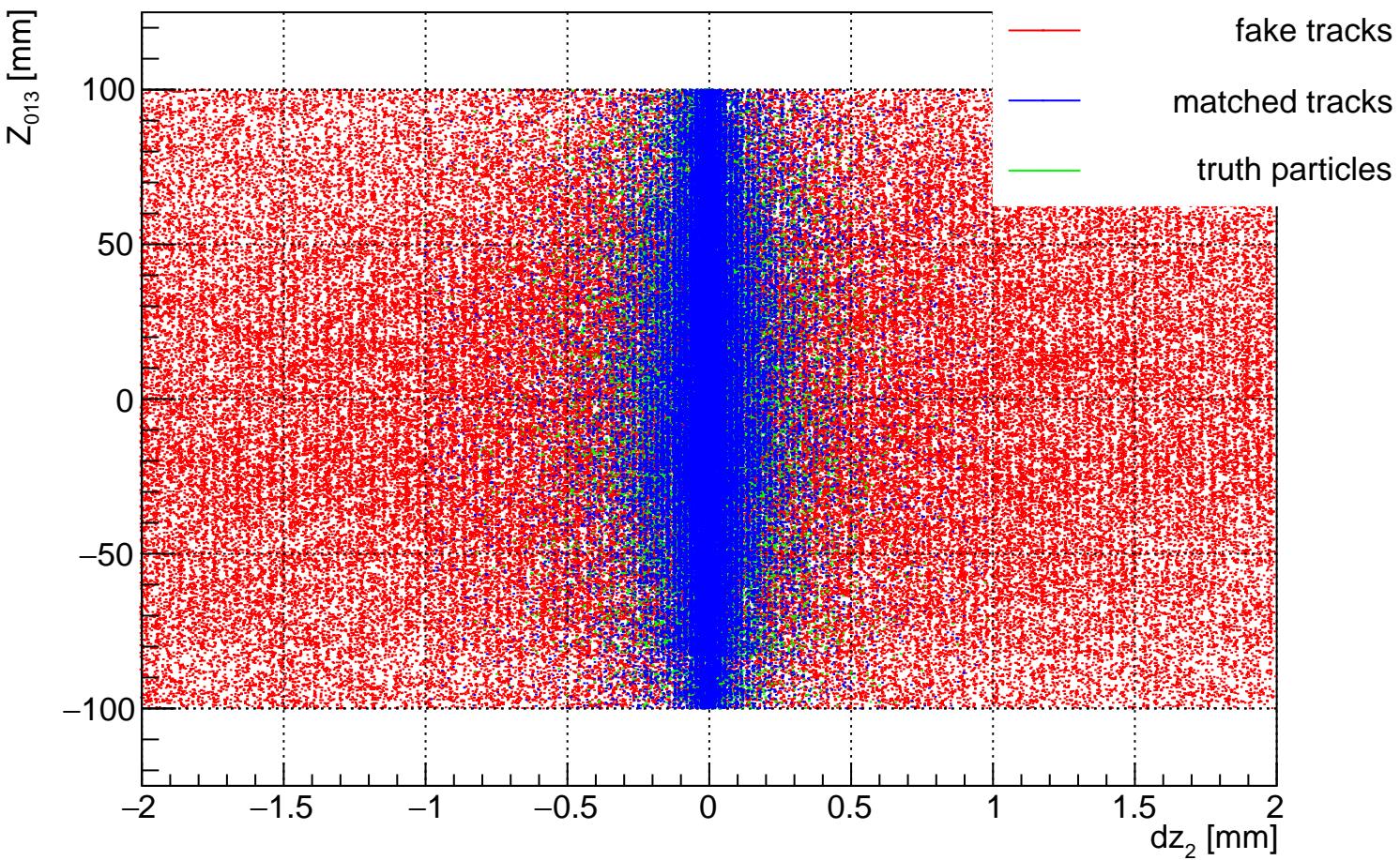
Z_{013} Vs $d\phi_i$

ϕ Barrel = 0.02 +
 $Z_{\text{barrel}} = 160 + Z_0_{\max} = 150$



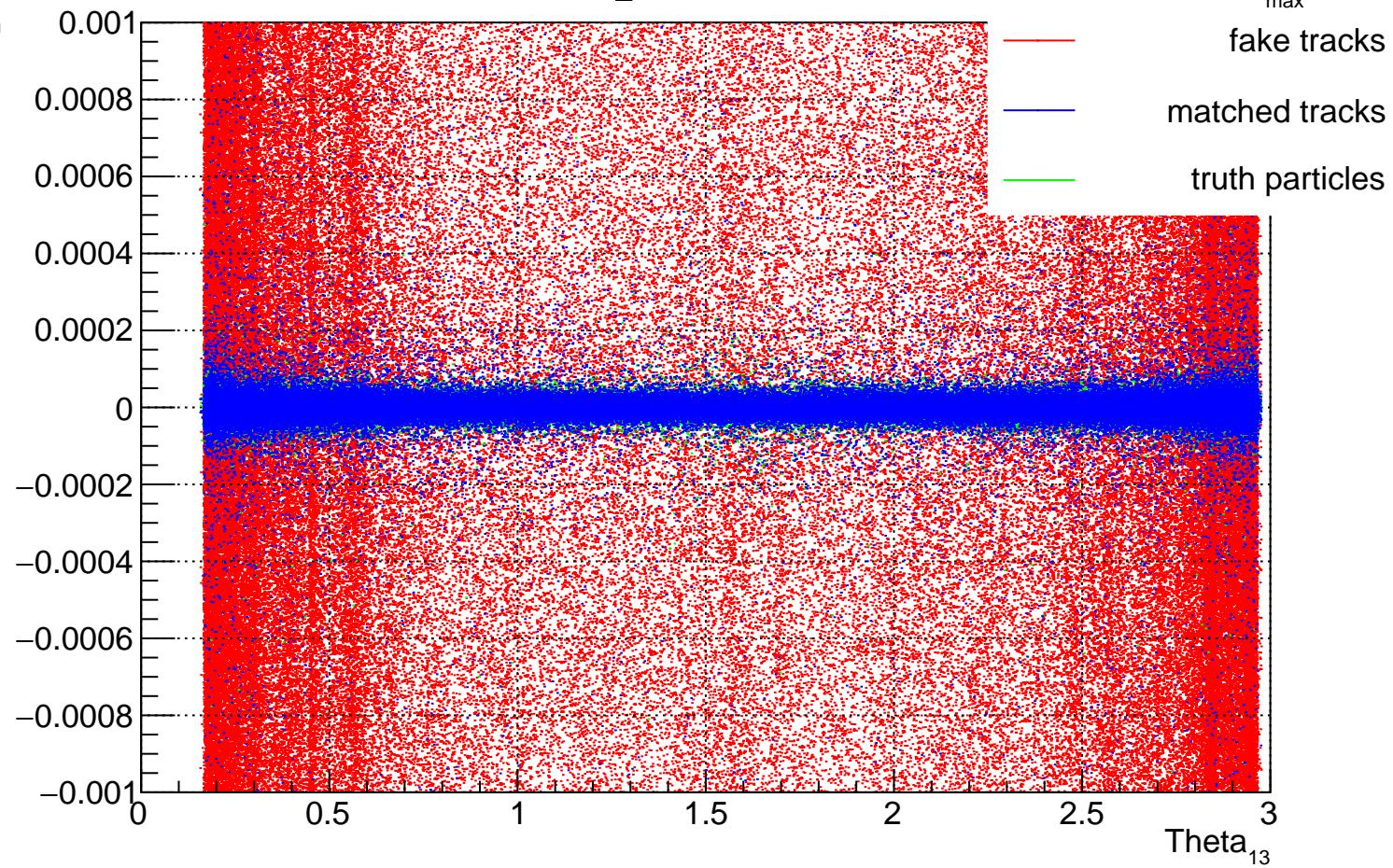
Z_{013} Vs dz_2

ϕ Barrel = 0.02 +
 $Z_{\text{barrel}} = 160 + Z_{0_{\text{max}}} = 150$



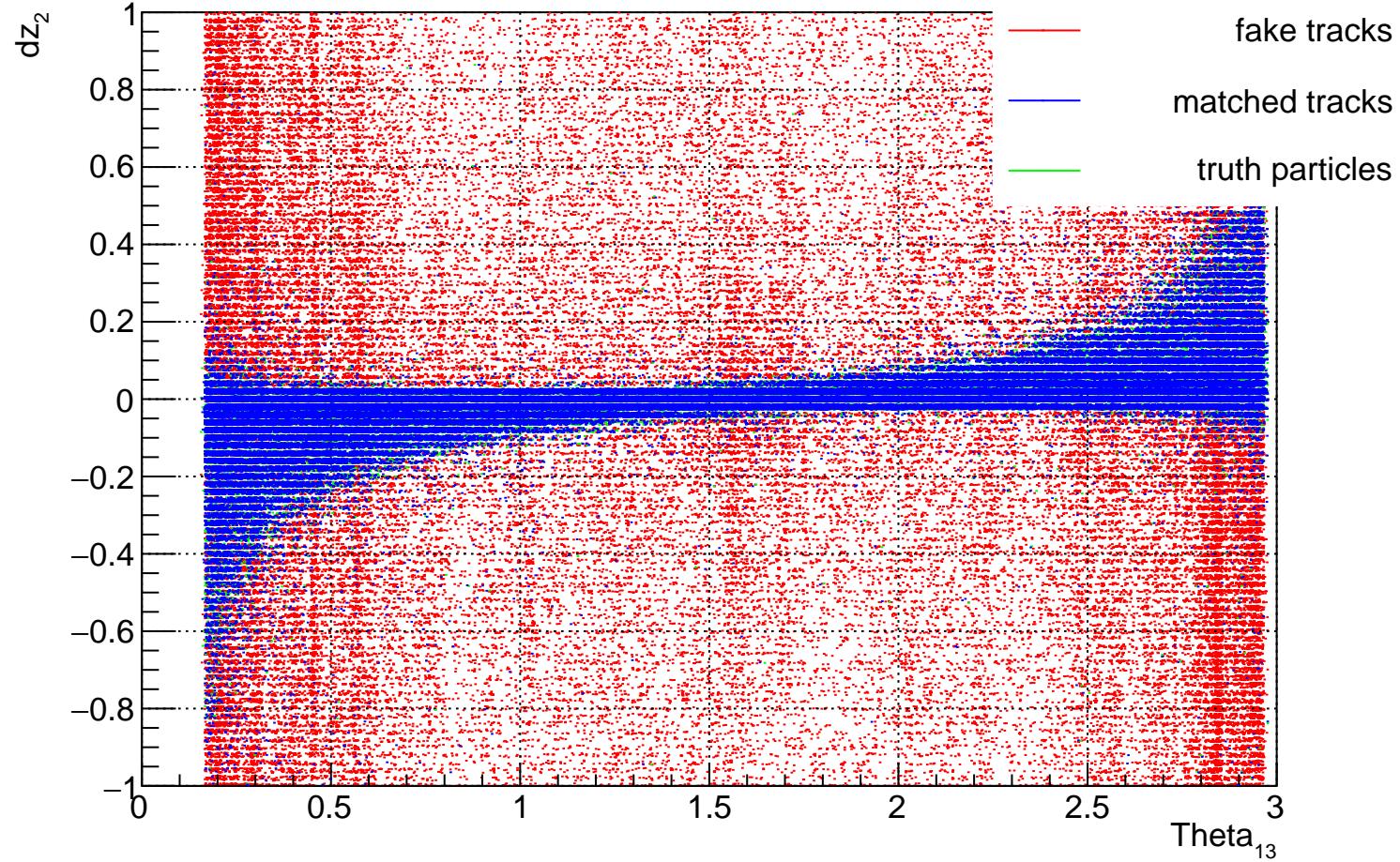
$d\phi_{2}$ Vs Θ_{13}

ϕ Barrel = 0.02 +
 $Z_{\text{barrel}} = 160 + Z_0^{\text{max}} = 150$



dz_2 Vs Θ_{13}

ϕ Barrel = 0.02 +
 $Z_{\text{barrel}} = 160 + Z_0^{\text{max}} = 150$



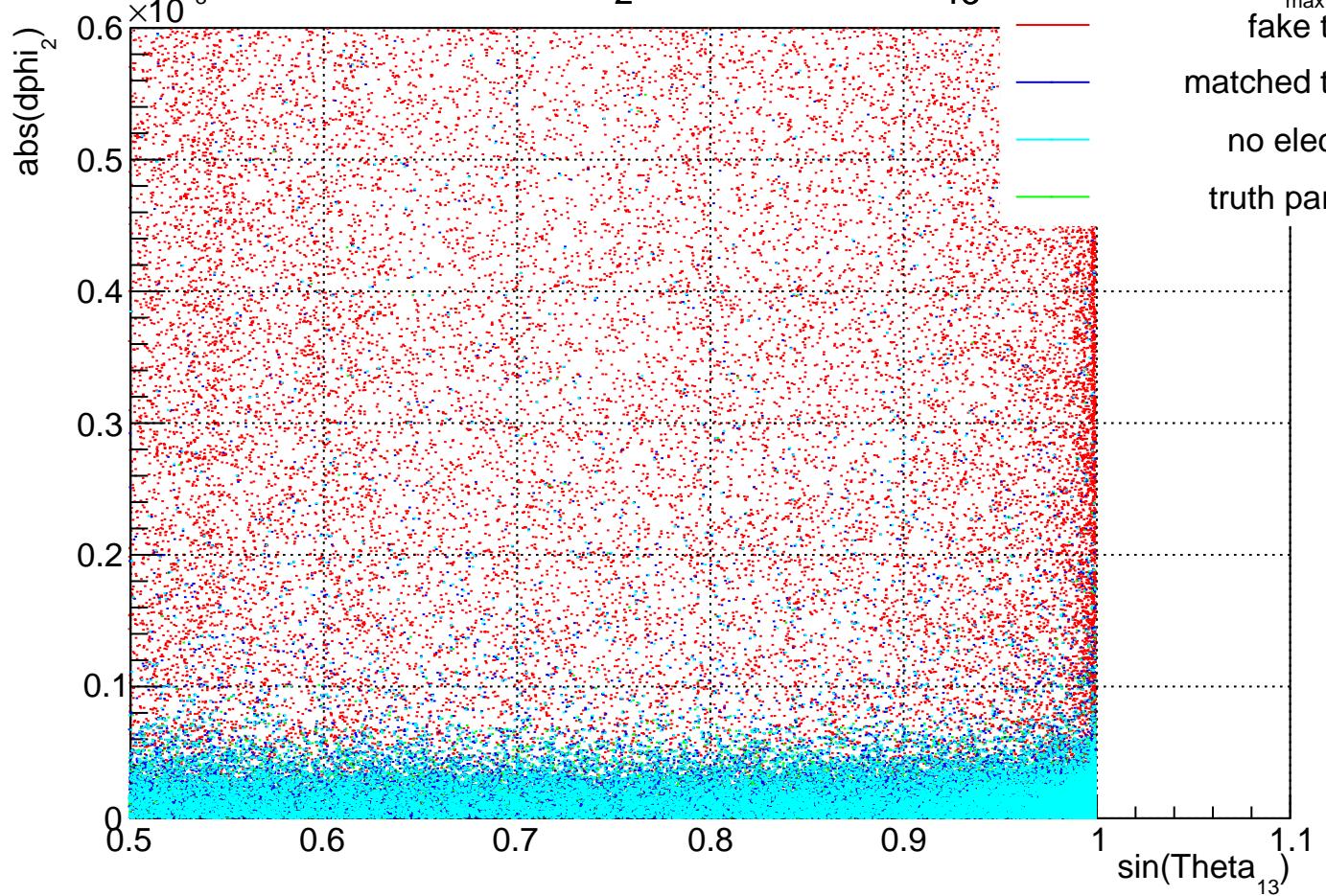
$\text{abs}(\text{dphi}_2)$ Vs $\sin(\Theta_{13})$

ϕ Barrel = 0.02 +
 $Z_{\text{barrel}} = 160 + Z_0^{\text{max}} = 150$
fake tracks

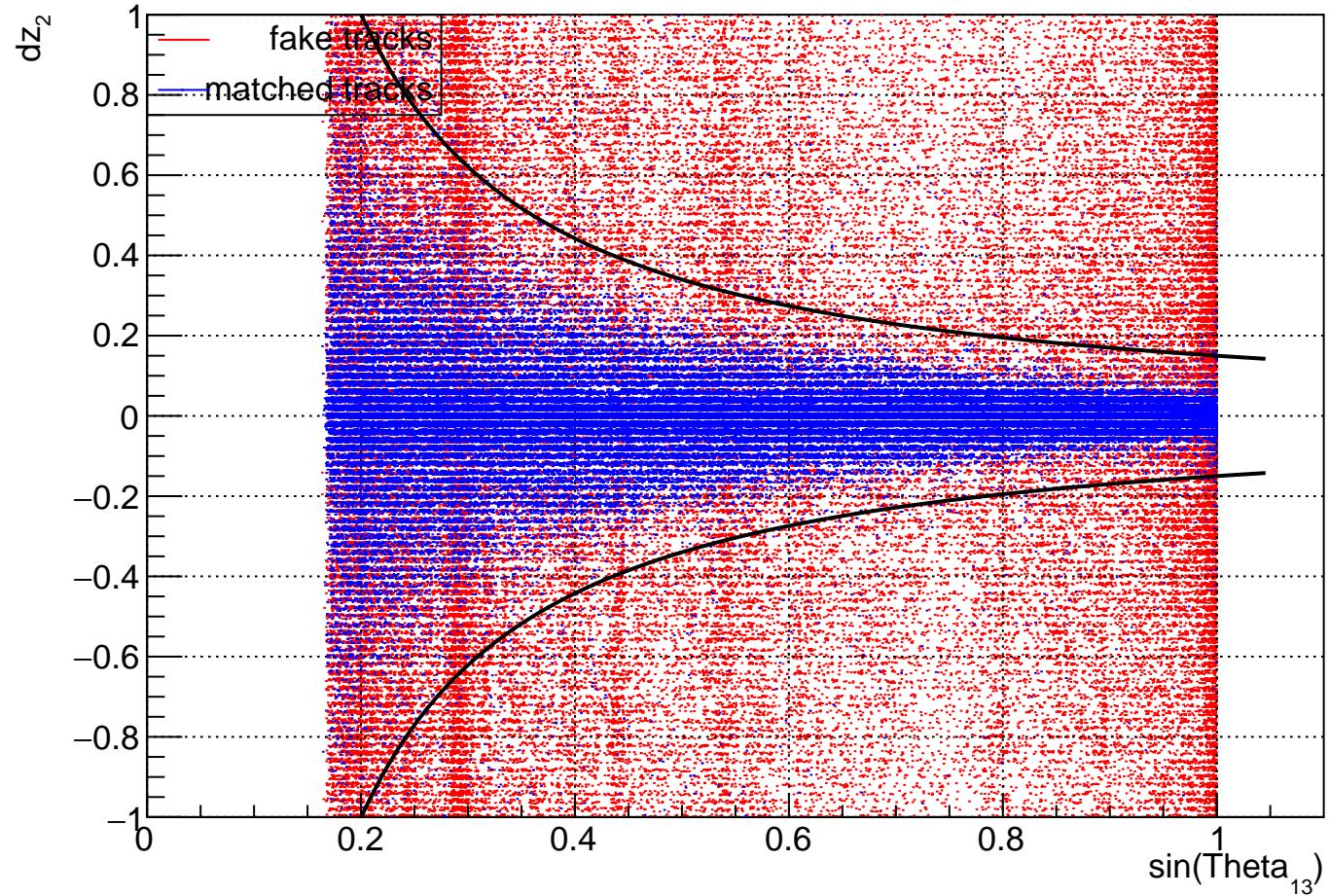
matched tracks

no electrons

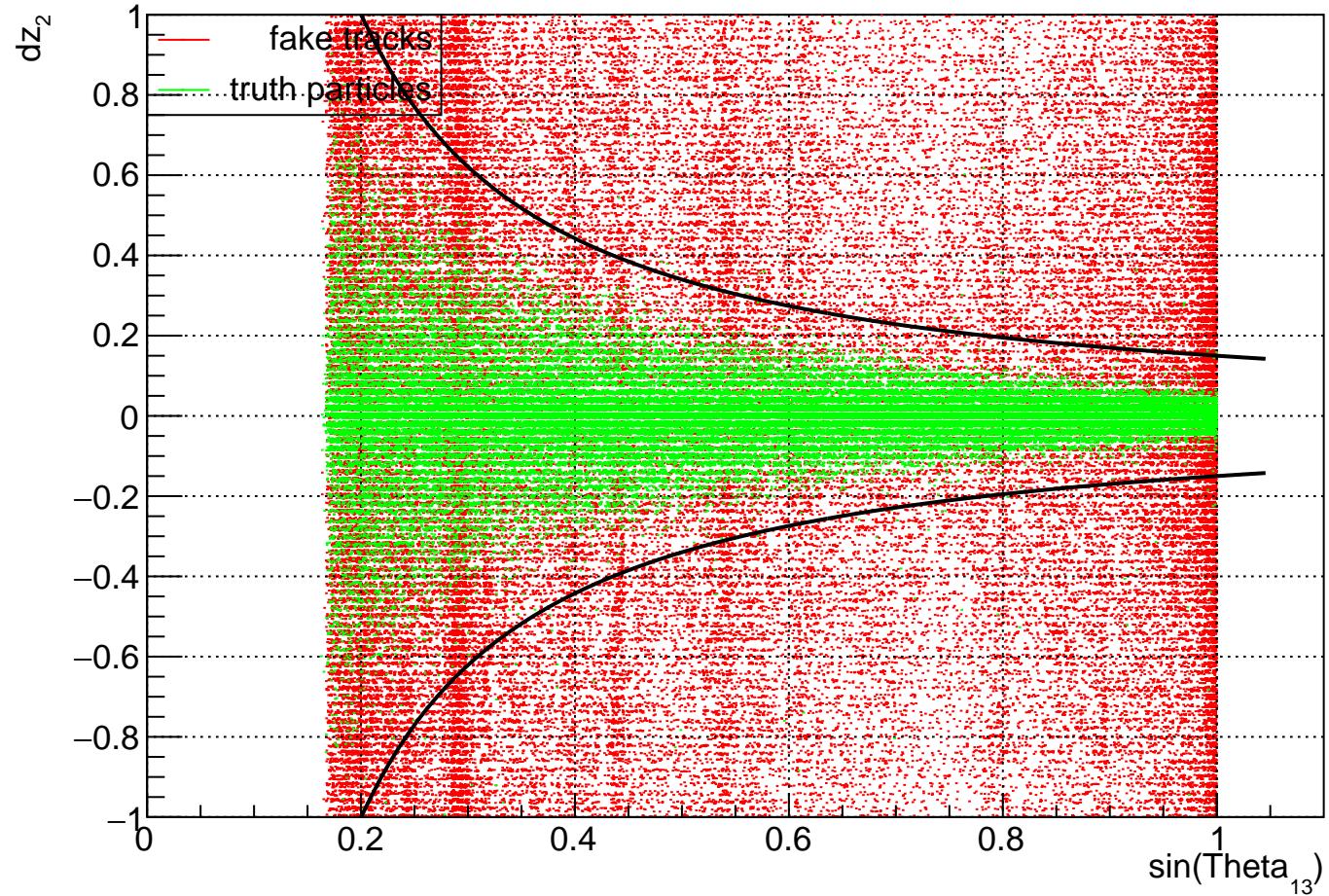
truth particles



dz_2 Vs $\sin(\Theta_{13})$

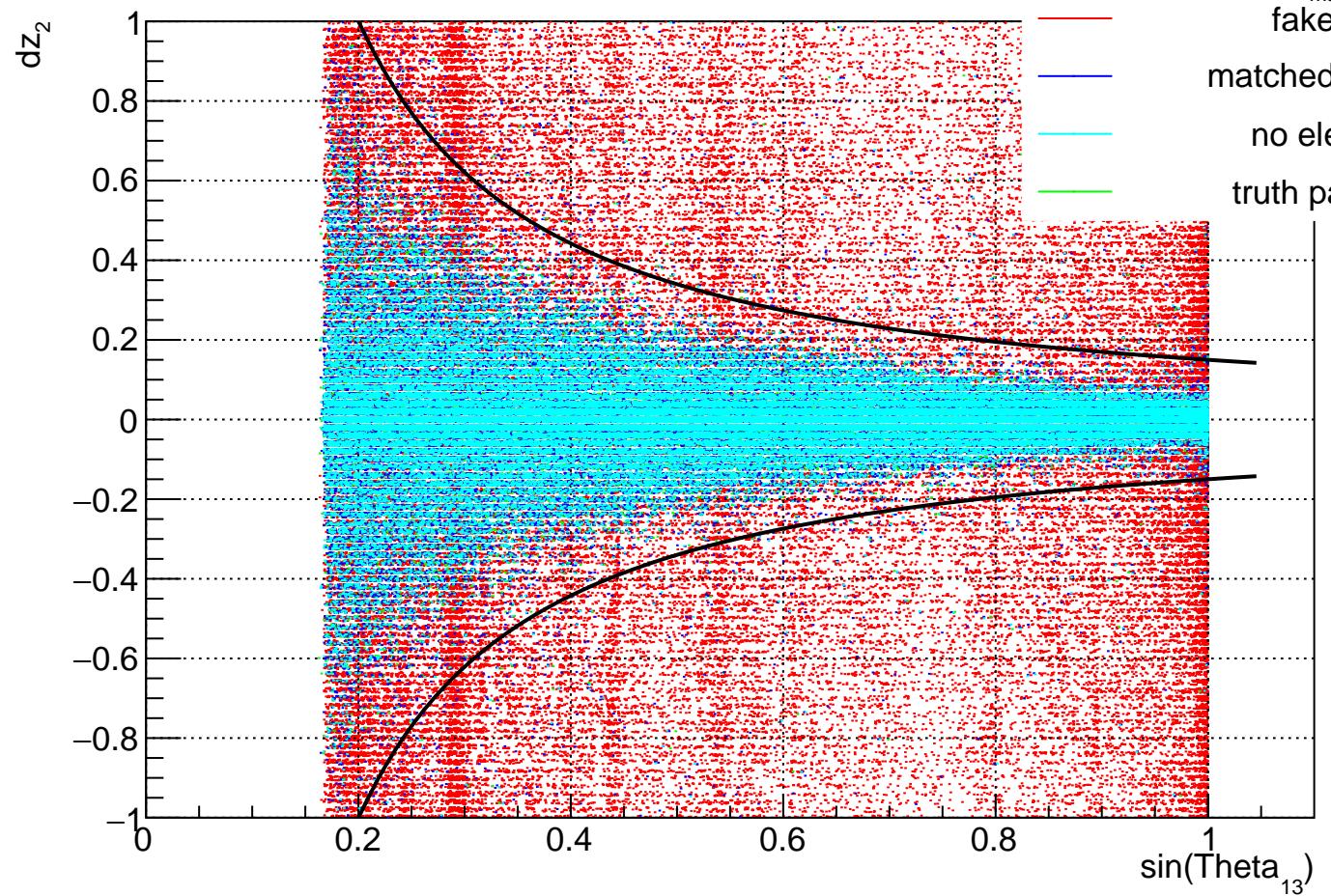


dz_2 Vs $\sin(\Theta_{13})$



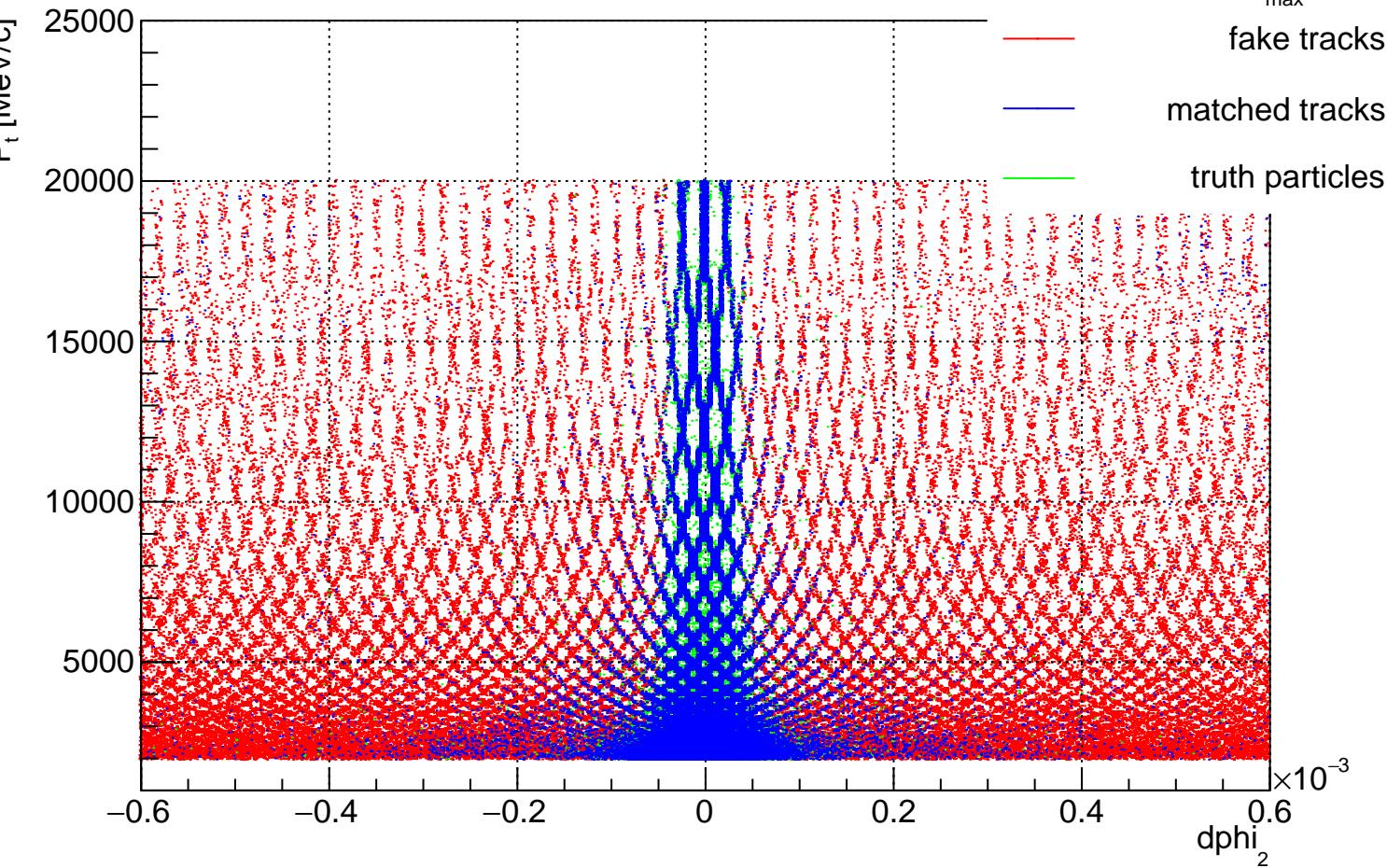
dz_2 Vs $\sin(\Theta_{13})$

$\phi_{\text{Barrel}} = 0.02 +$
 $Z_{\text{Barrel}} = 160 + Z_0^{\max} = 150$
fake tracks
matched tracks
no electrons
truth particles



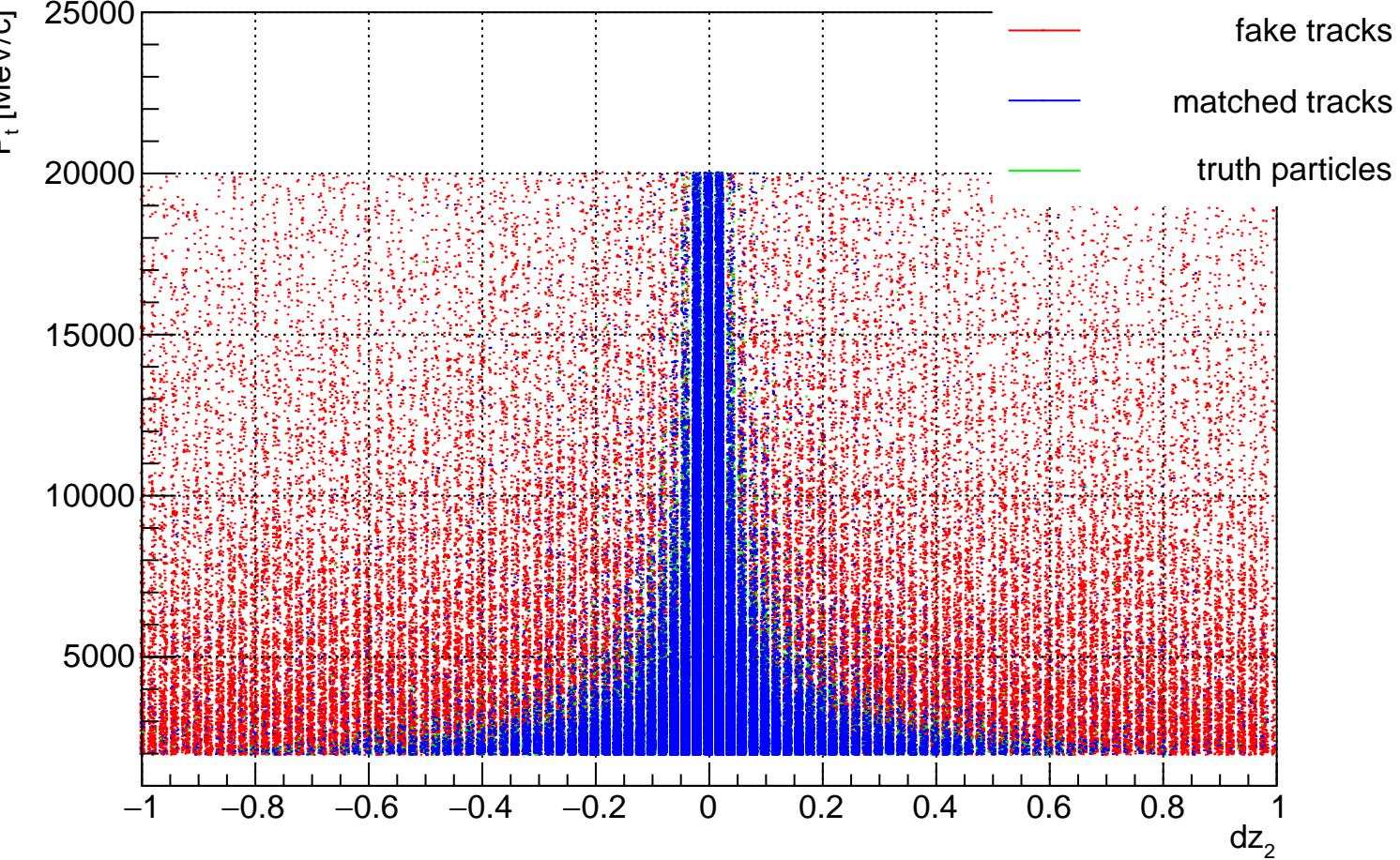
P_t Vs $d\phi_{2}$

phi Barrel = 0.02 +
Zbarrel = 160 + $Z_0_{max} = 150$



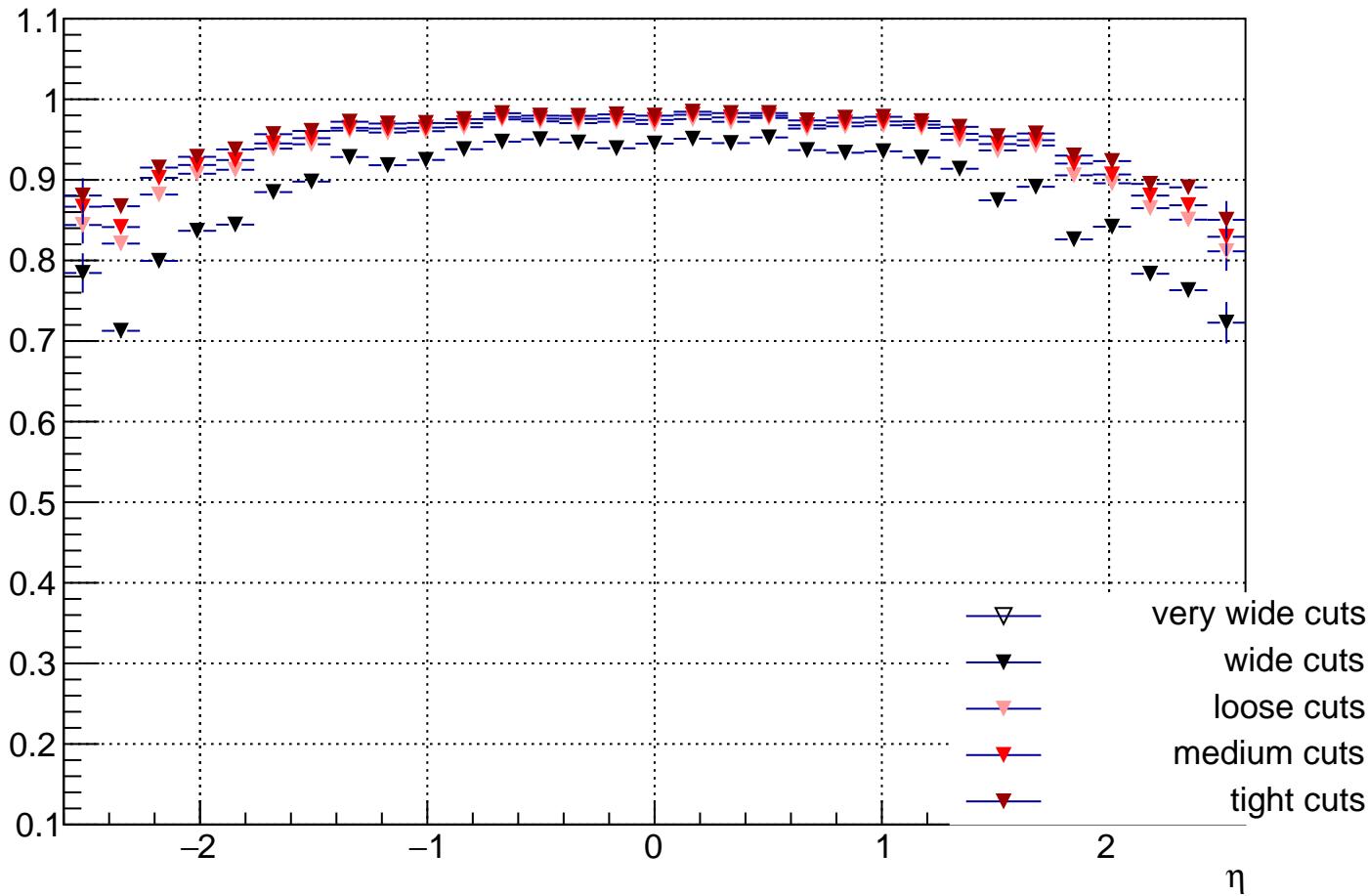
P_t Vs dz_2

phi Barrel = 0.02 +
Zbarrel = 160 + $Z_0_{\max} = 150$

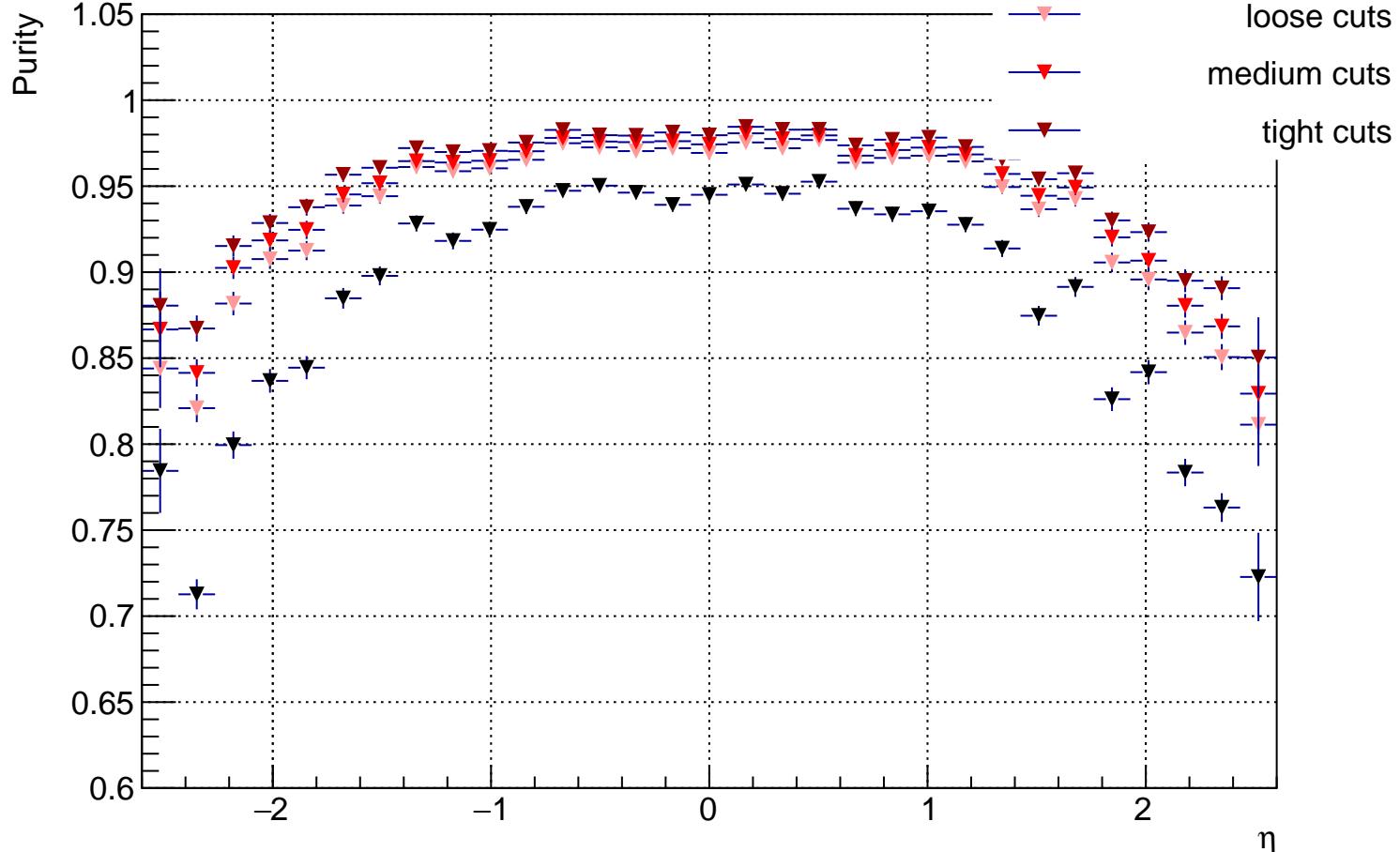


Purity vs η

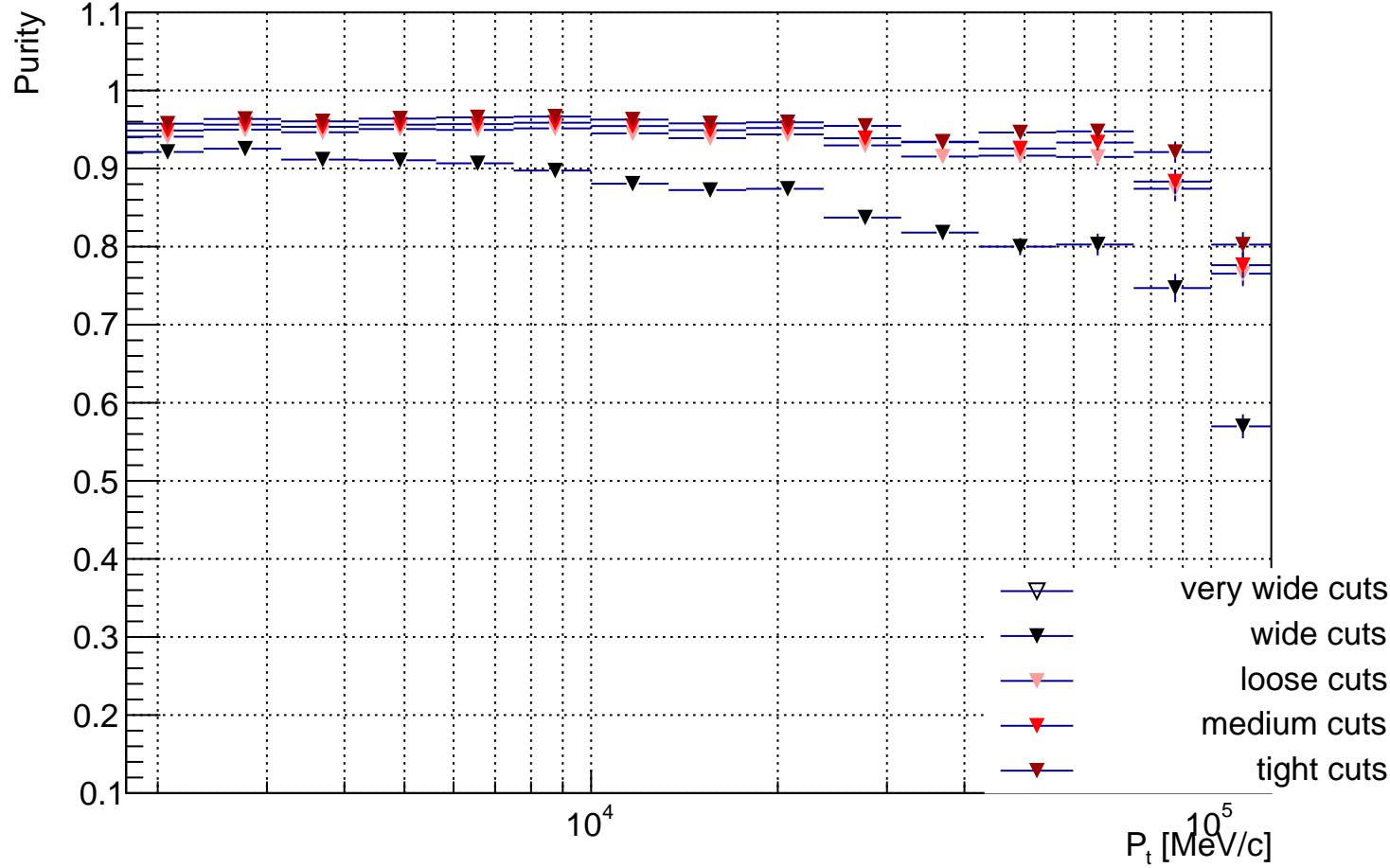
Purity



Purity vs η



Purity vs P_t



Purity vs P_t

