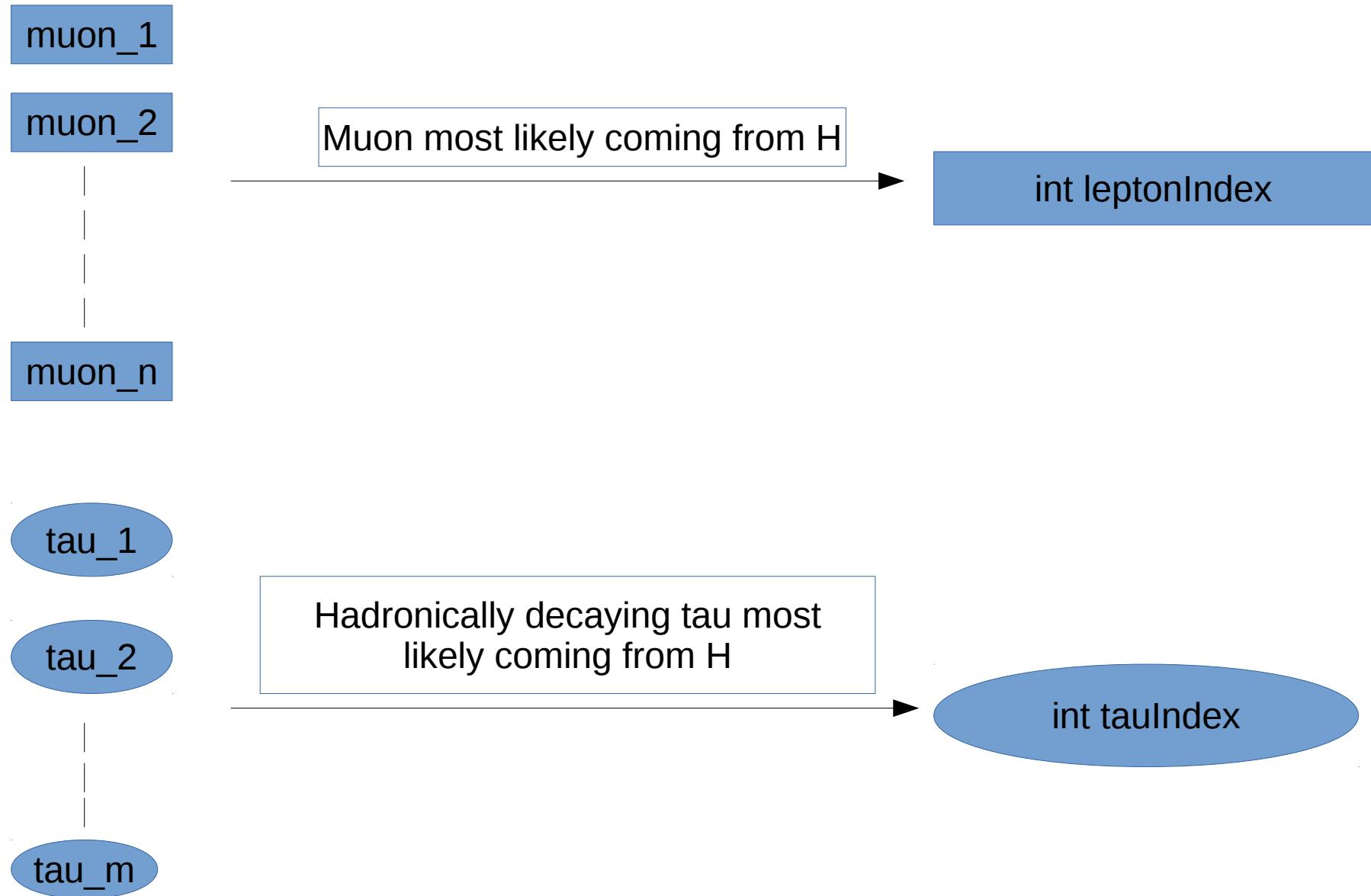


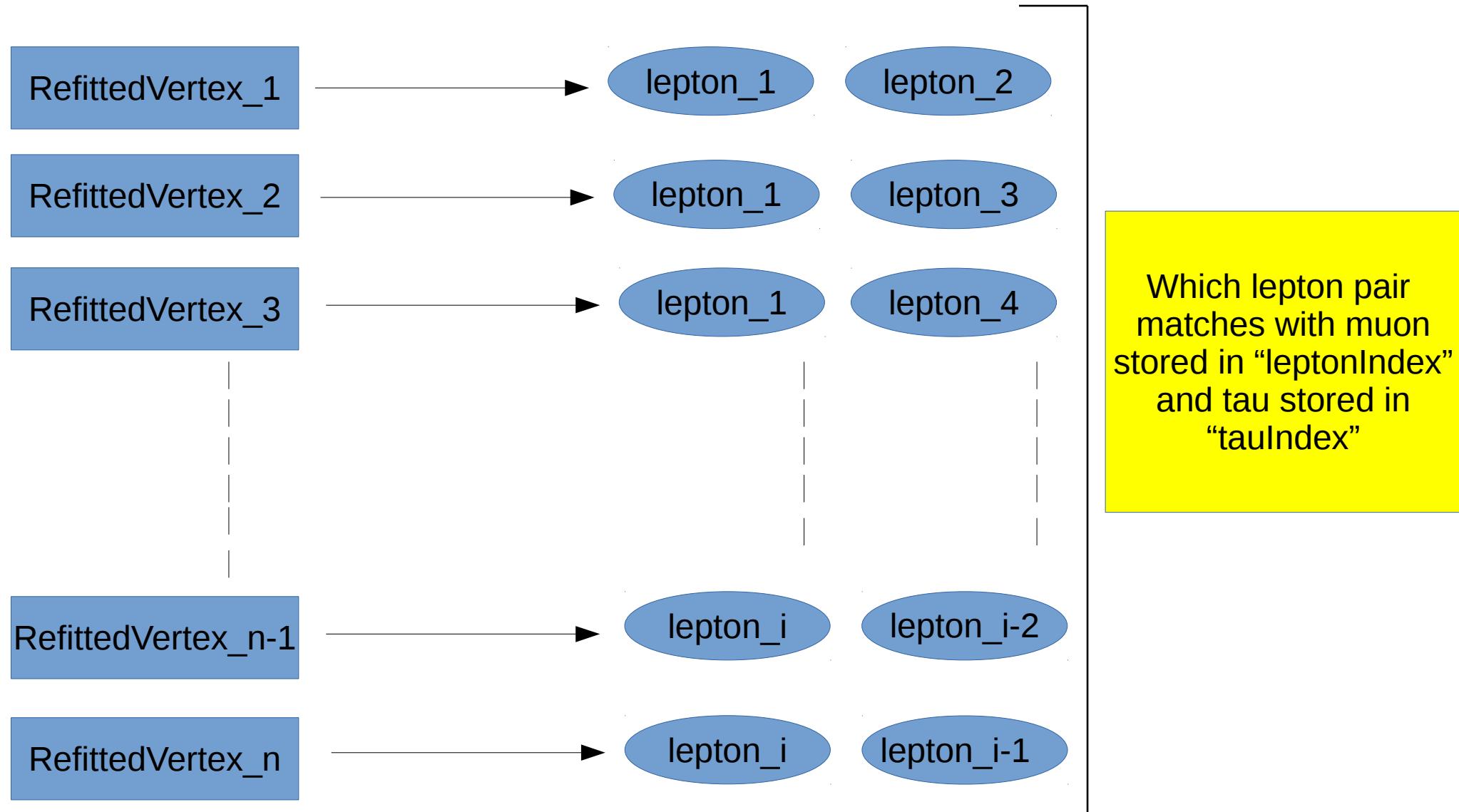
PV resolution study using SynchNTuples in mt decay channel of Higgs boson

Diwakar , Vinay
4/12/18

Finding the Higgs decay products



Finding the correct refitted vertex

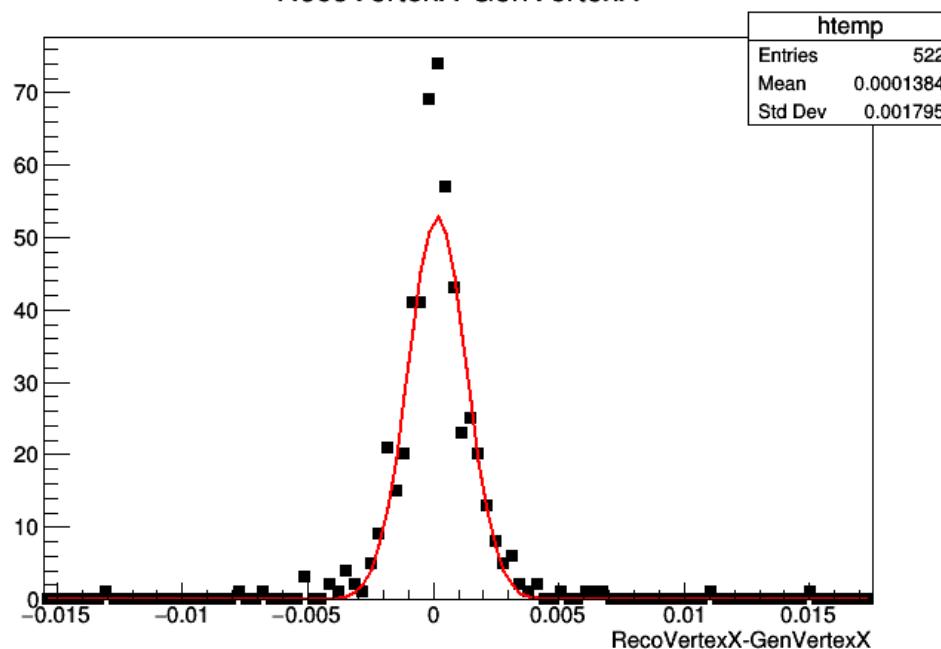


Results

- 10,000 events in bigNTuple
- 522 events selected in mt channel into synchNTuple.
- No refitted vertex matched for 7 events out of the 522 (Not understood yet)

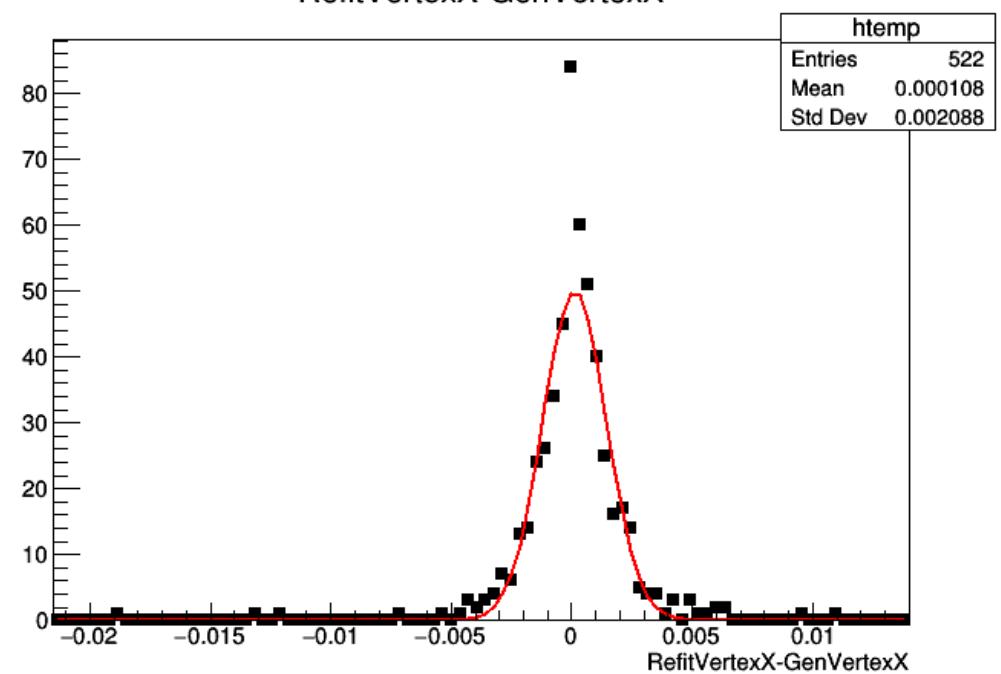
Plots in x

RecoVertexX-GenVertexX



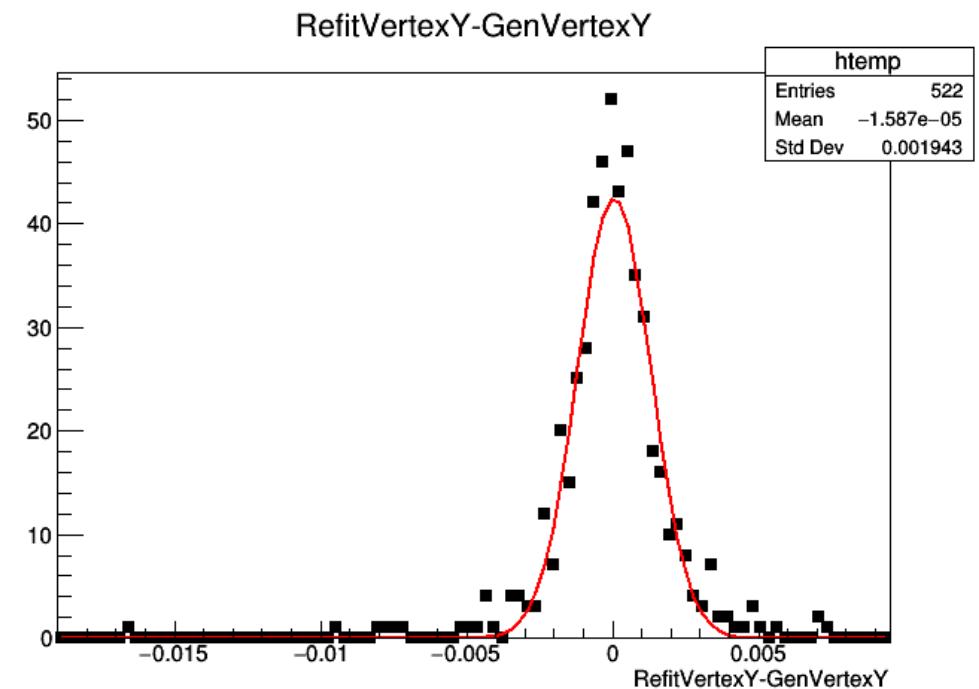
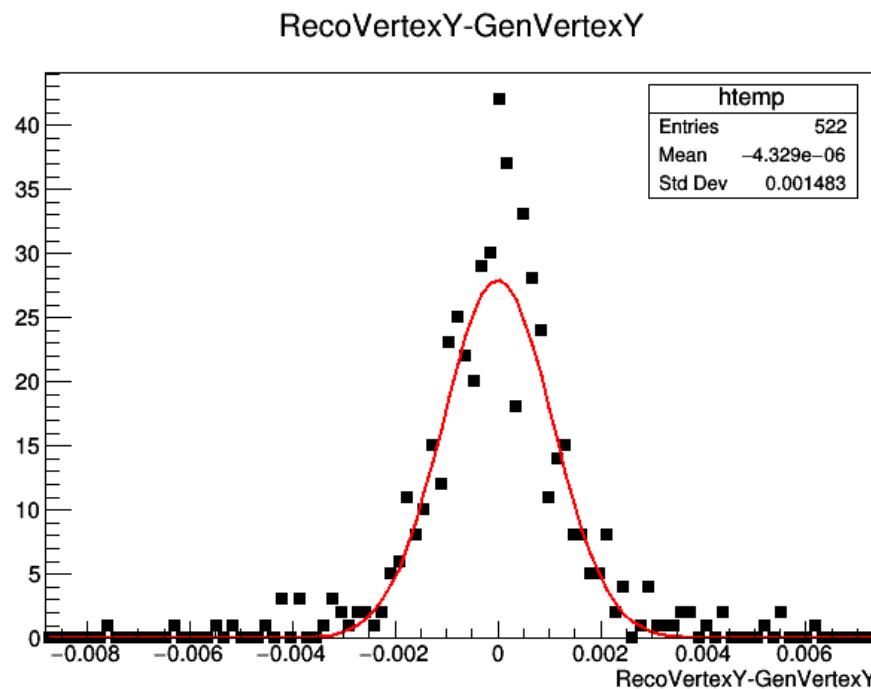
1.167×10^{-3}
(error= 5.180×10^{-5})

RefitVertexX-GenVertexX



1.326×10^{-3}
(error= 6.49×10^{-5})

Plots in y

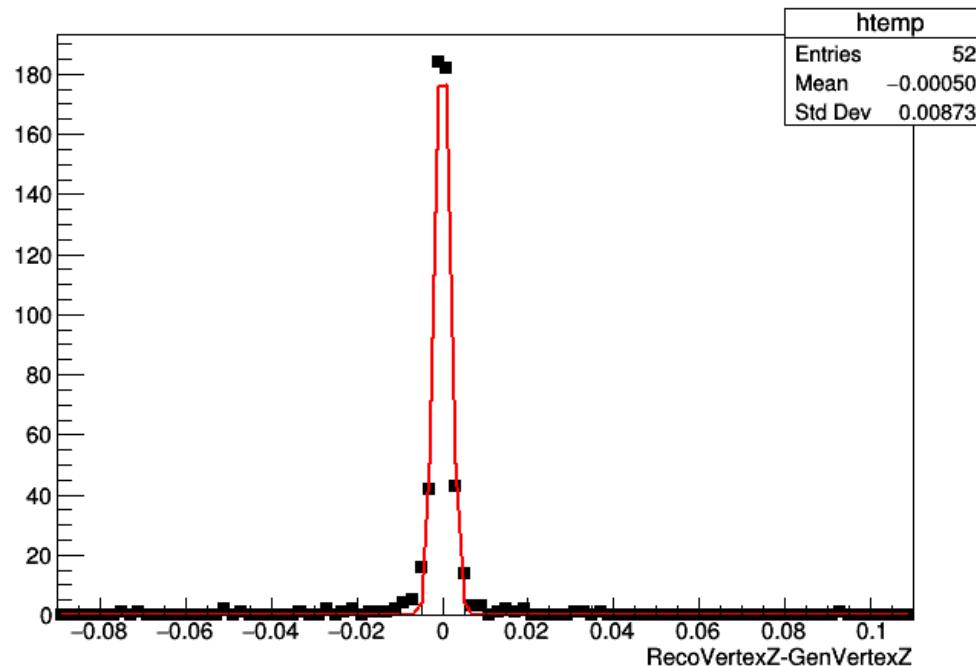


1.062×10^{-3}
(error = 4.568×10^{-5})

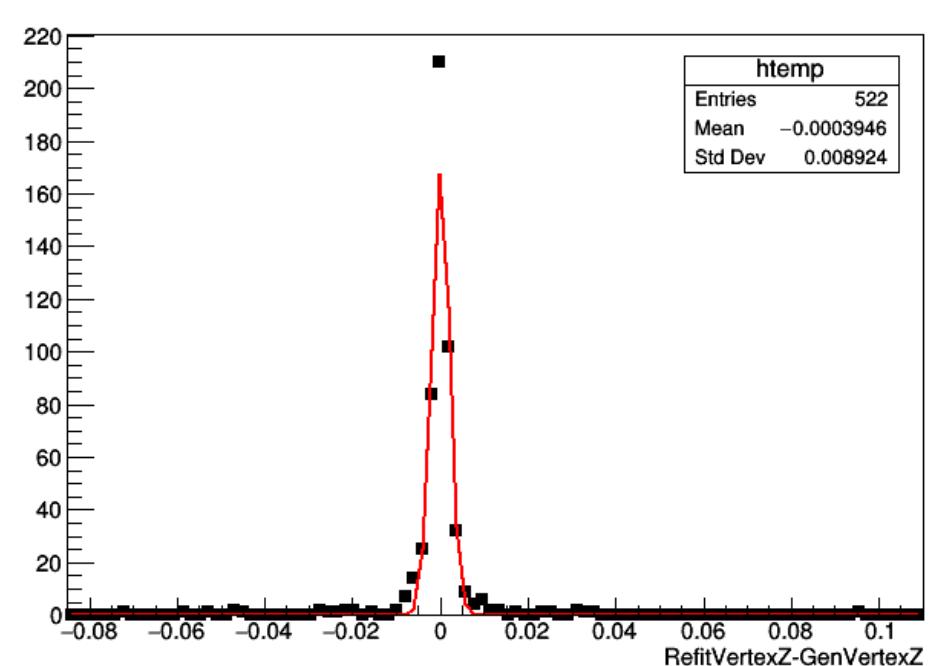
1.260×10^{-3}
(error = 6.072×10^{-5})

Plots in z

RecoVertexZ-GenVertexZ



RefitVertexZ-GenVertexZ



1.789×10^{-3}
(error = 9.048×10^{-5})

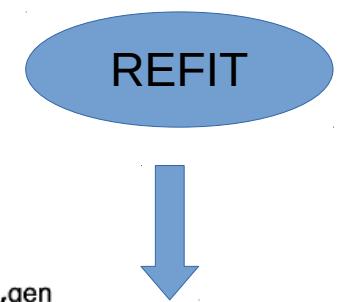
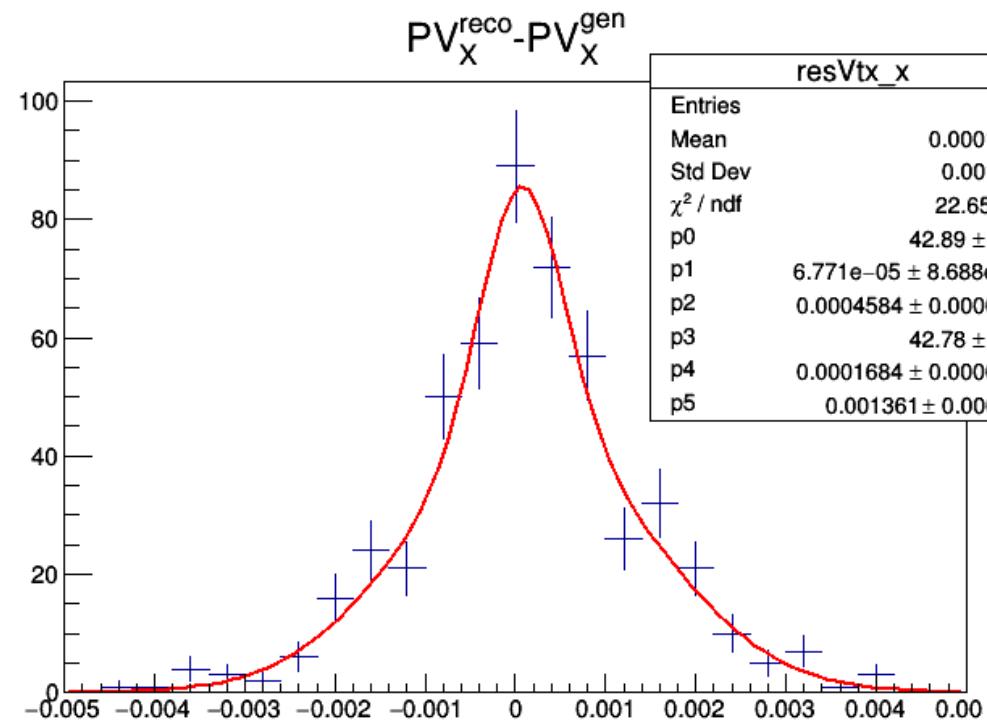
2.083×10^{-3}
(error = 1.136×10^{-4})

FITTING DOUBLE GAUSSIAN IN THE RESOLUTION PLOTS

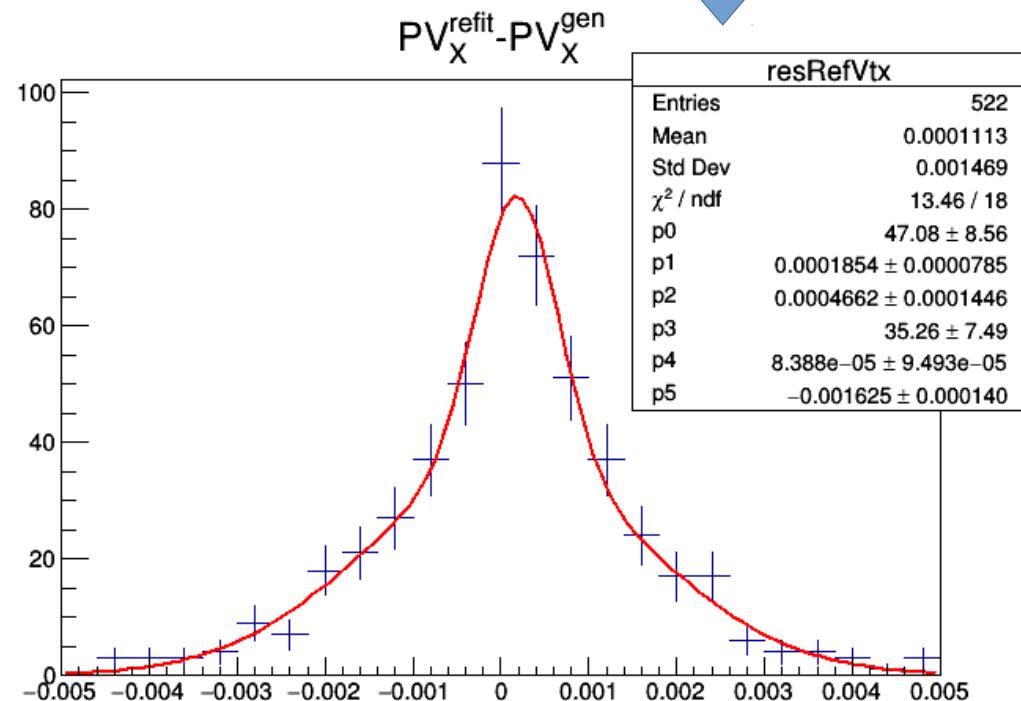
DIWAKAR

10/12/18

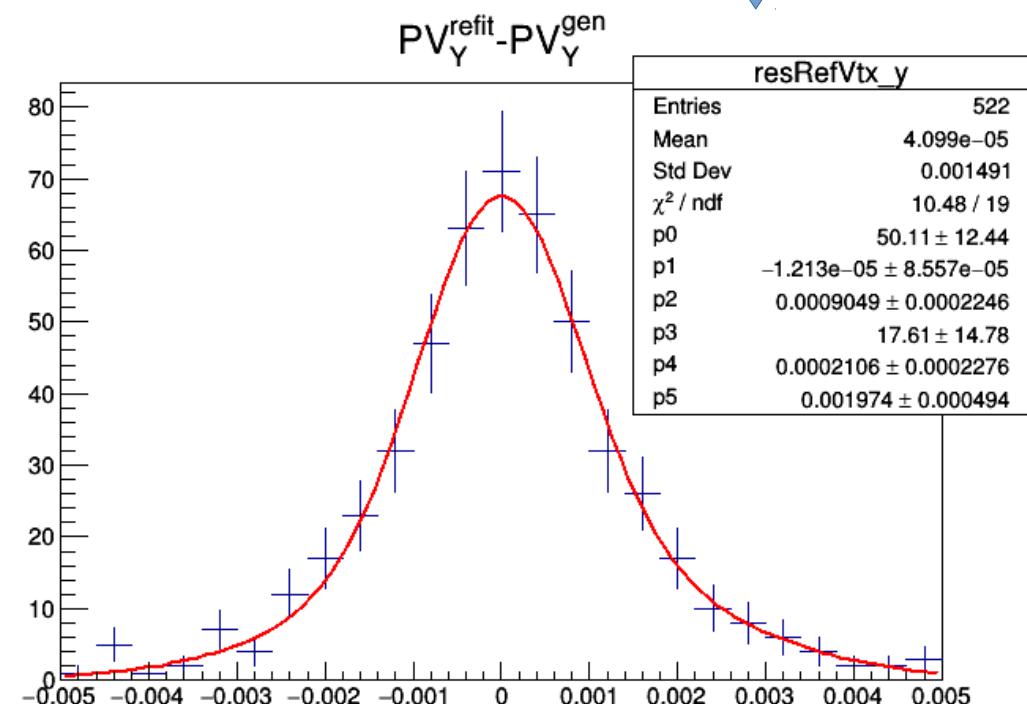
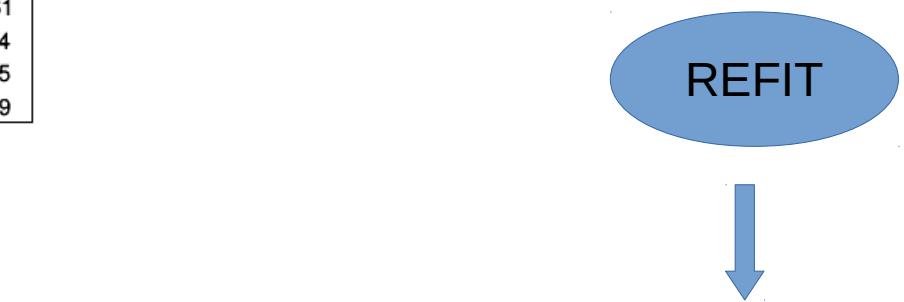
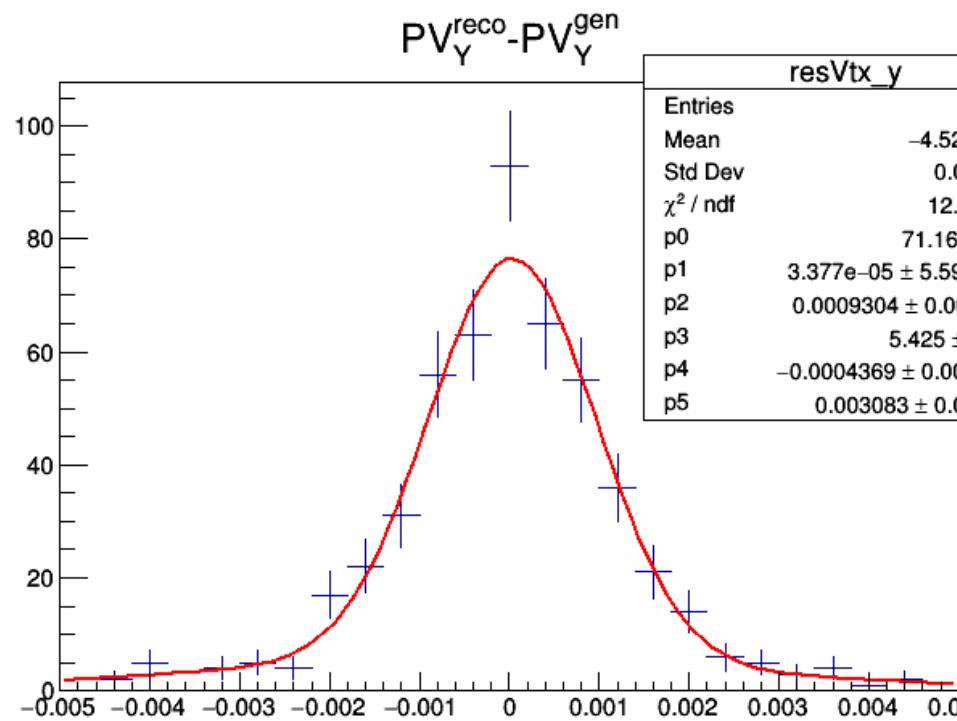
X-AXIS



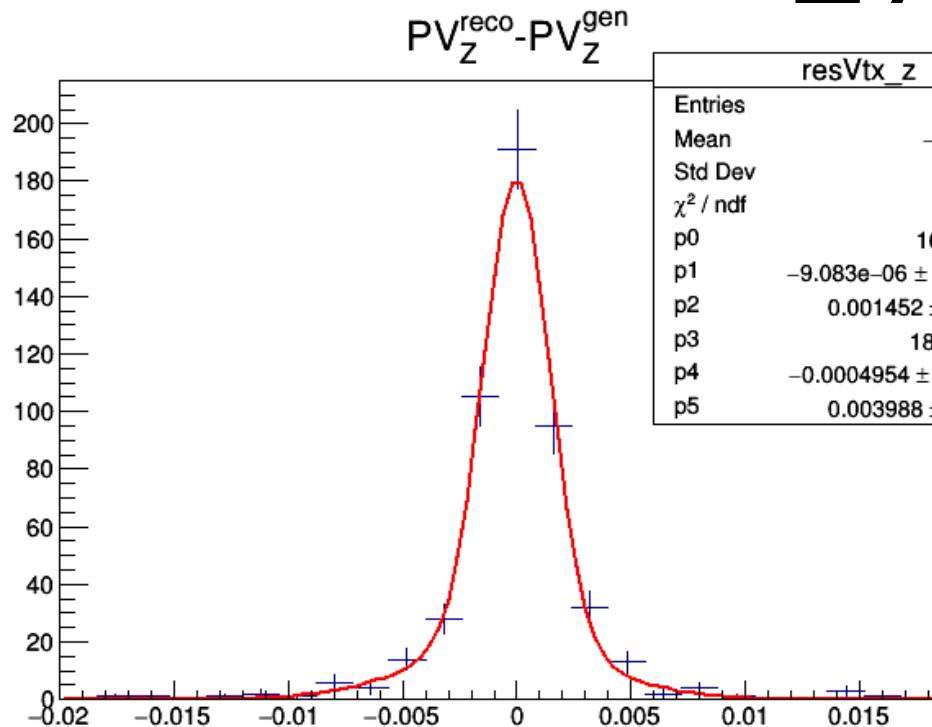
p2 and p5 are SD for the 2 gaussians



Y AXIS

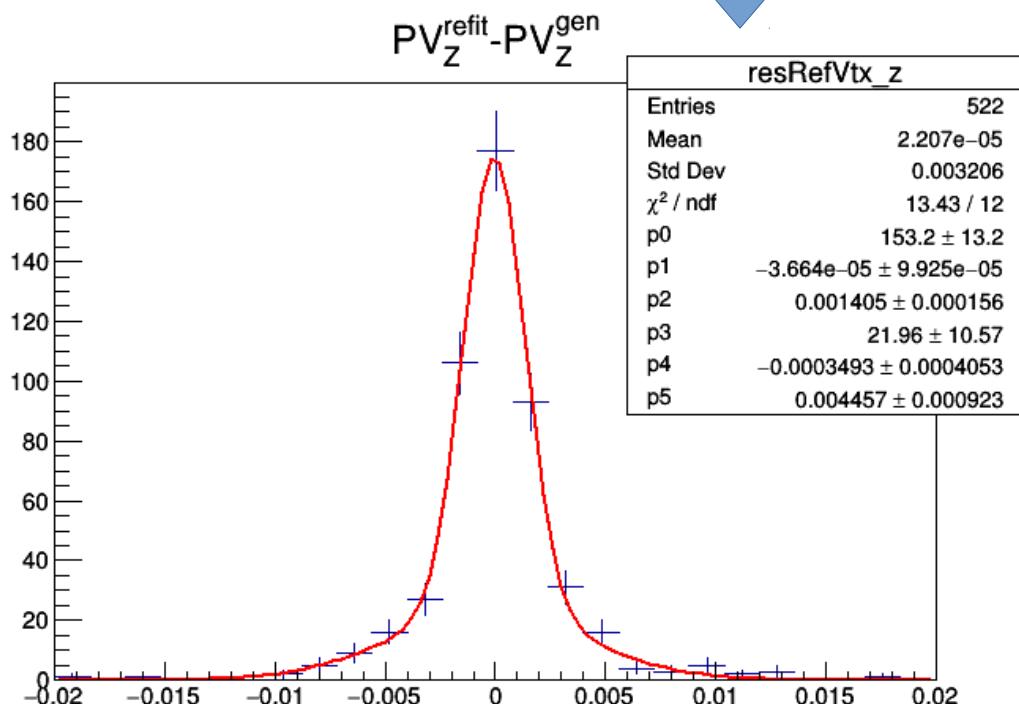
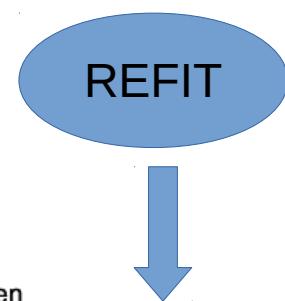


Z AXIS

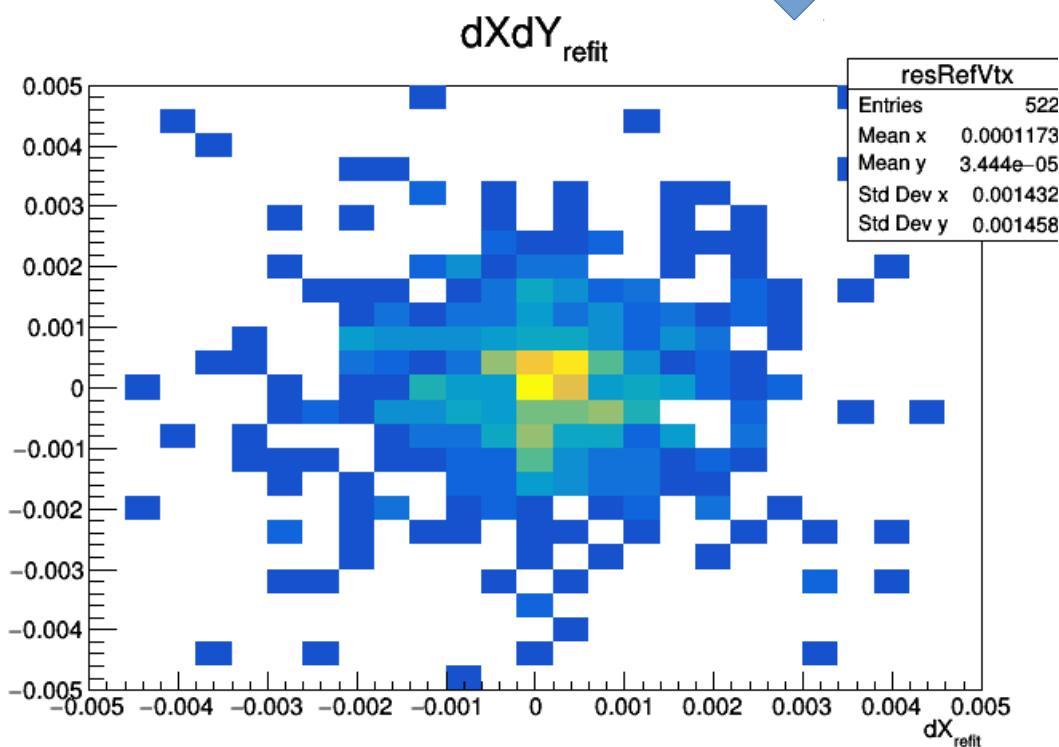
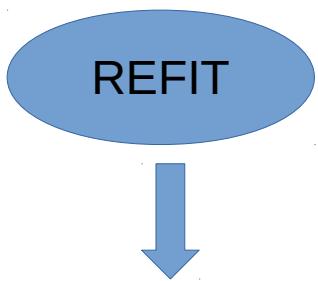
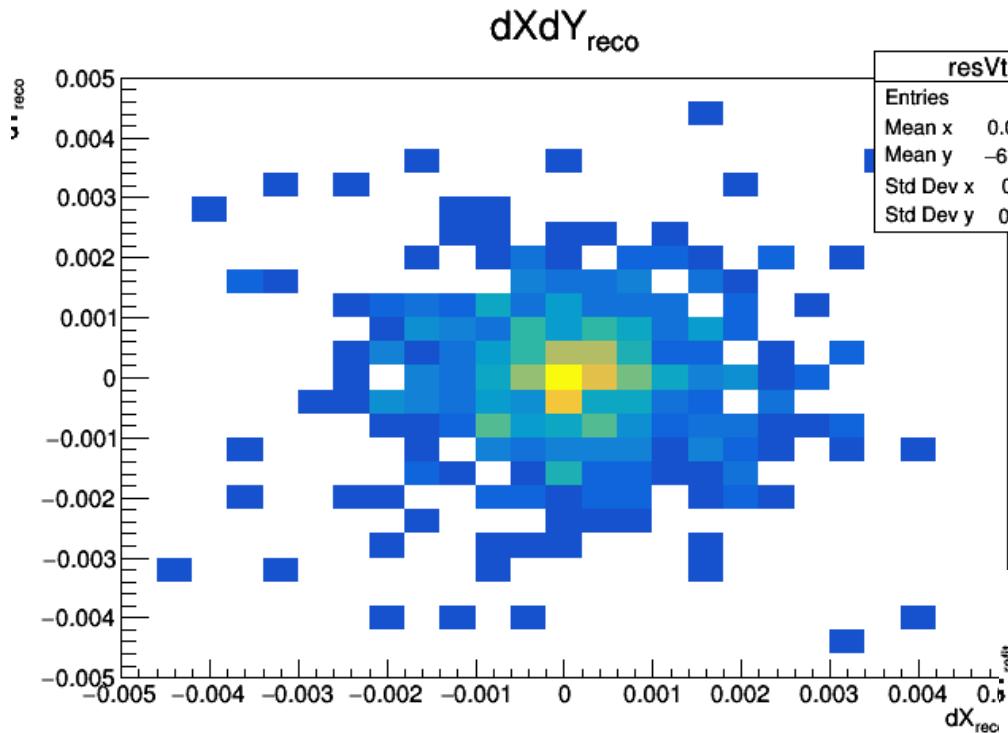


p2 and p5 are SD for the 2 gaussians

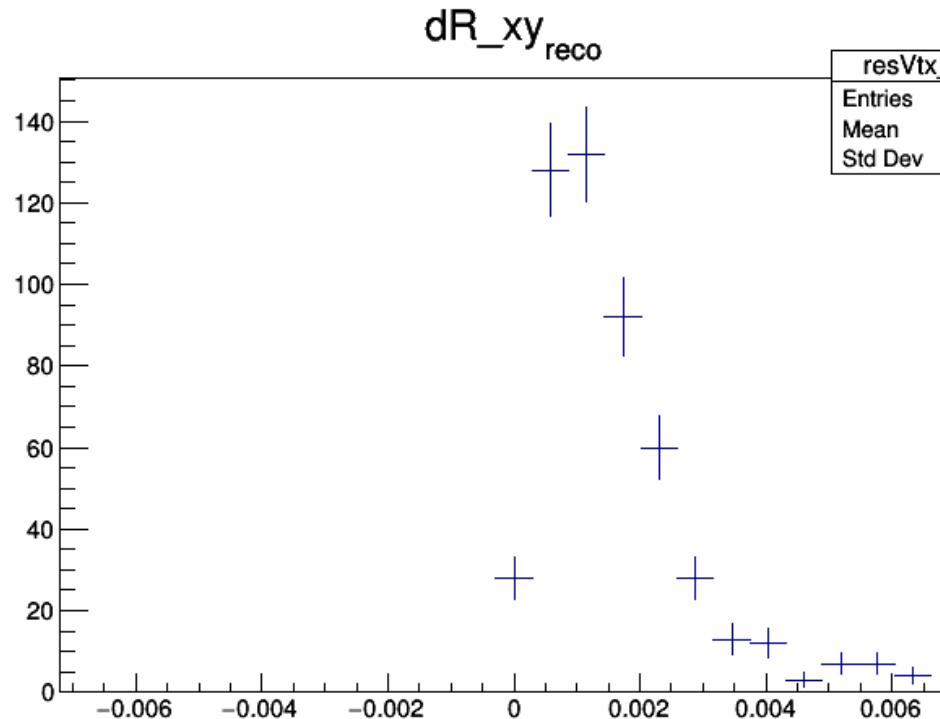
resVtx_z	
Entries	522
Mean	-1.885e-05
Std Dev	0.003224
χ^2 / ndf	20.78 / 14
p0	162.8 ± 14.8
p1	$-9.083e-06 \pm 9.406e-05$
p2	0.001452 ± 0.000239
p3	18.61 ± 18.51
p4	-0.0004954 ± 0.0005645
p5	0.003988 ± 0.001416



2D PLOTS IN XY AXES

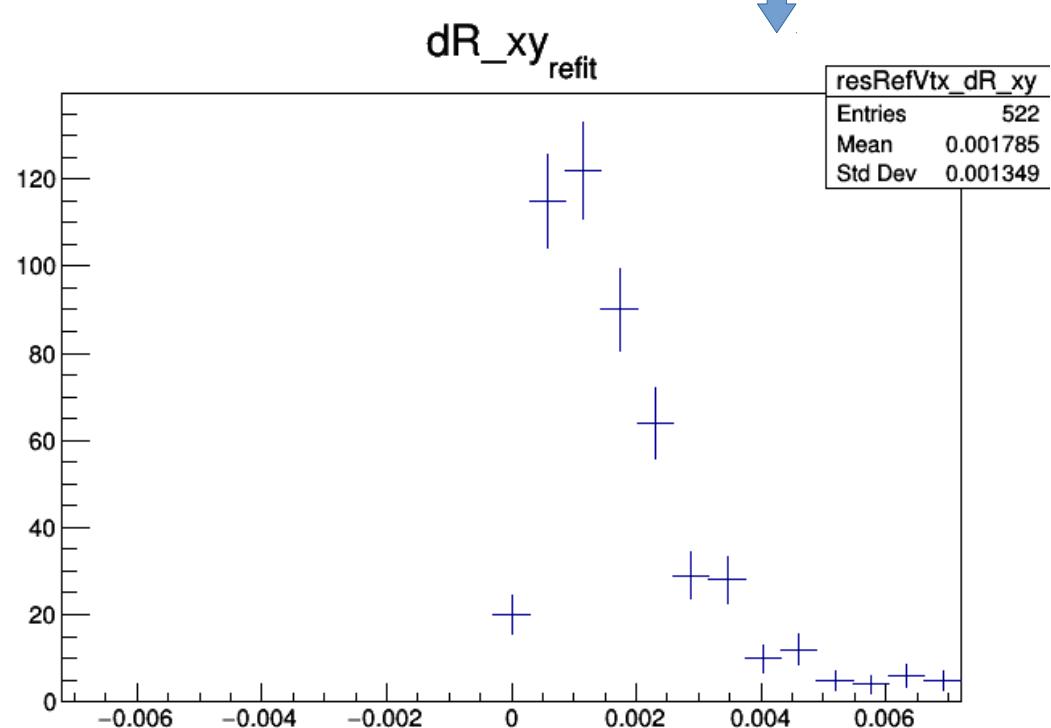


“dR” PLOTS IN XY

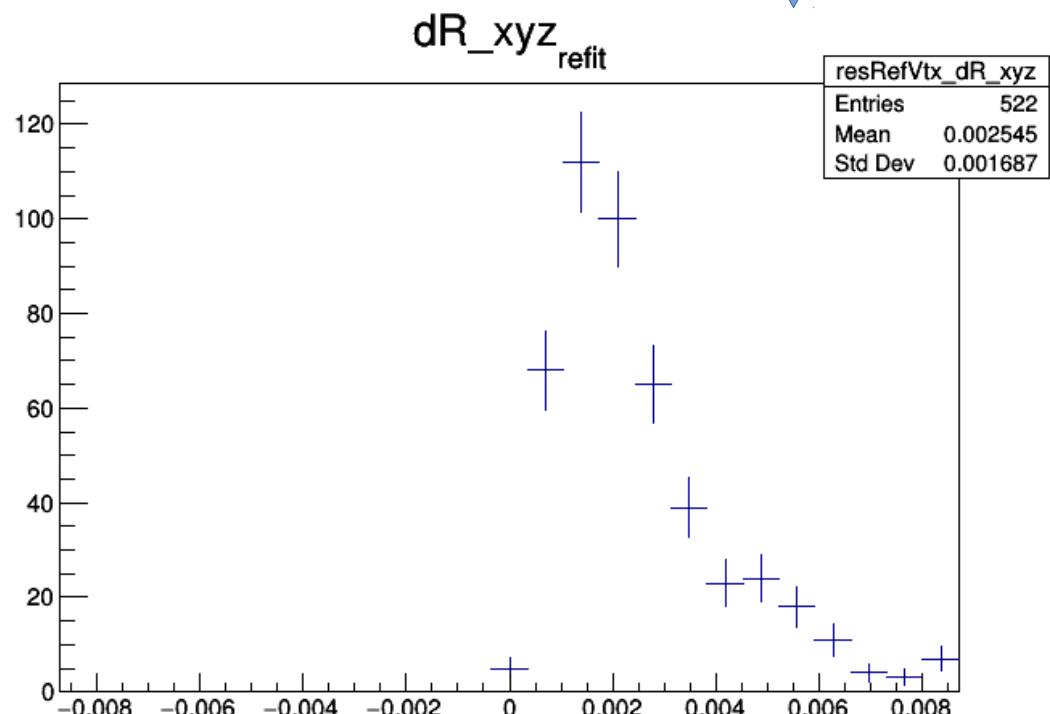
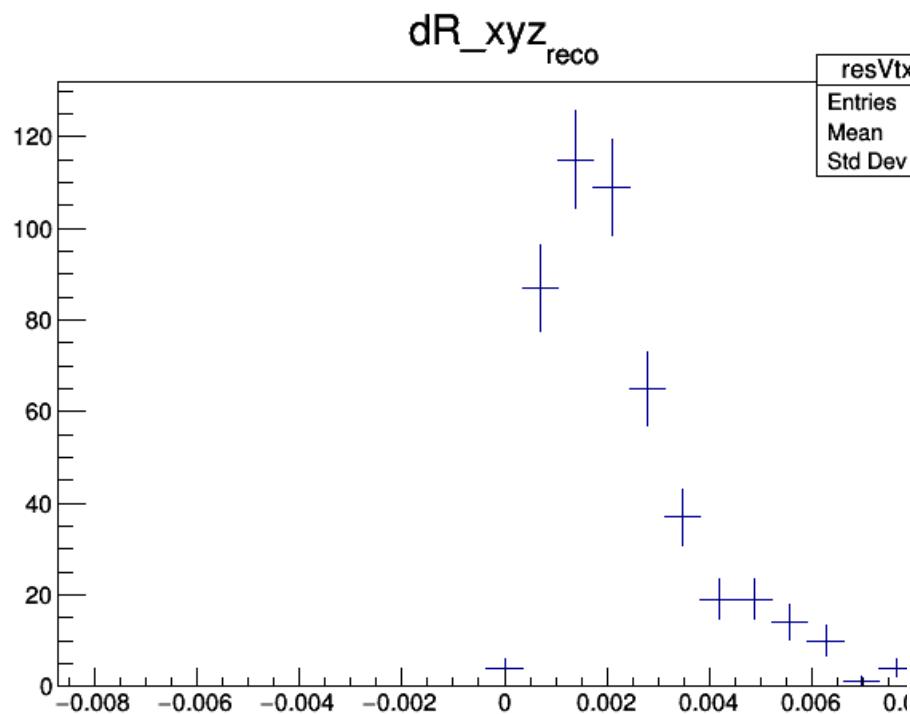


RECO

REFIT



“dR” PLOTS IN XYZ



RECO

REFIT