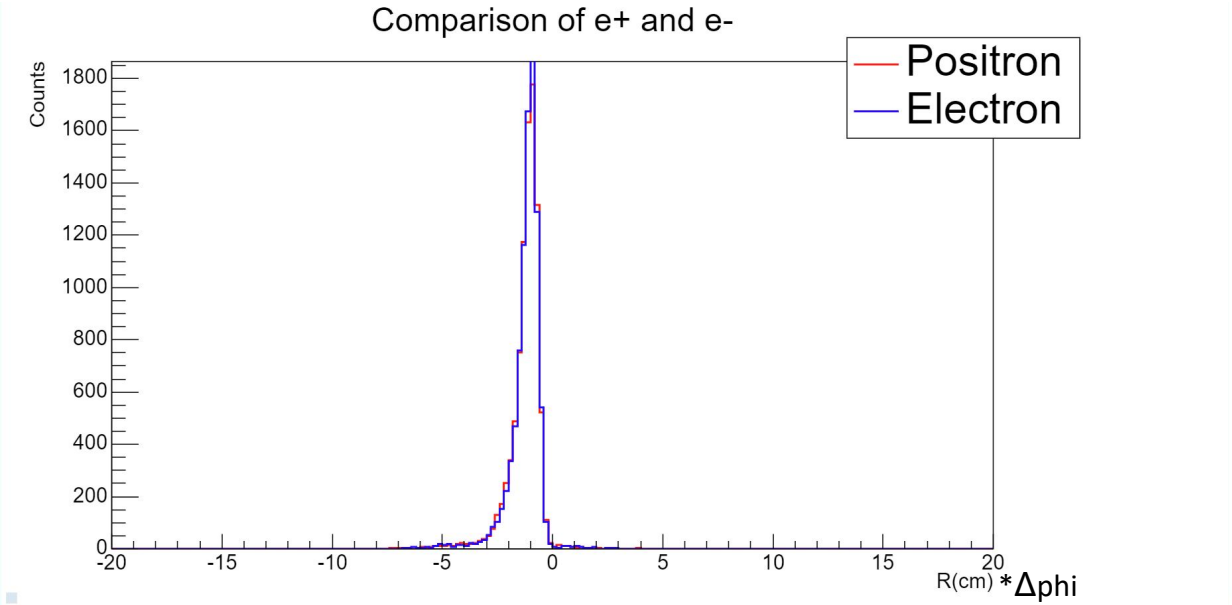
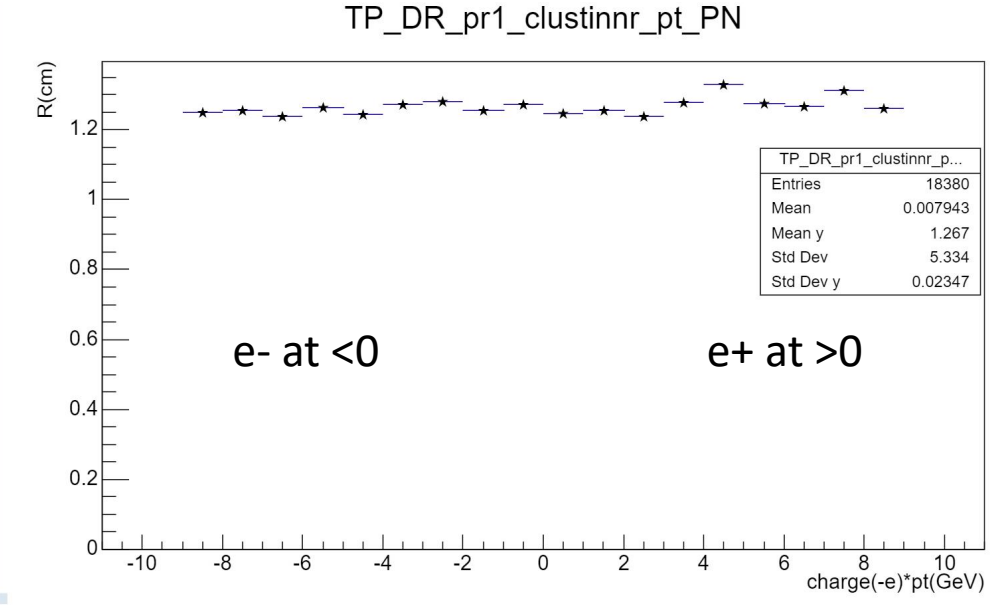
make reco close to truth

Jingyu

electron and positron



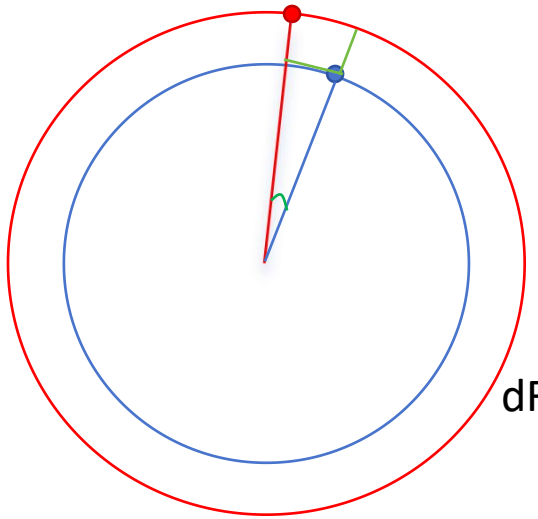


sign from phi_truth - phi_reco to mark reco on the left/right of truth

positron and electron have similar behavior

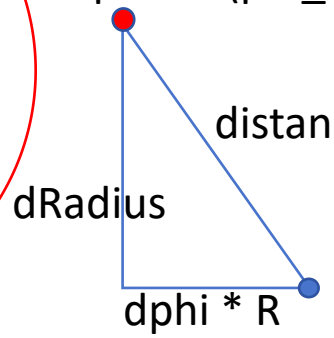
dphiR and dR

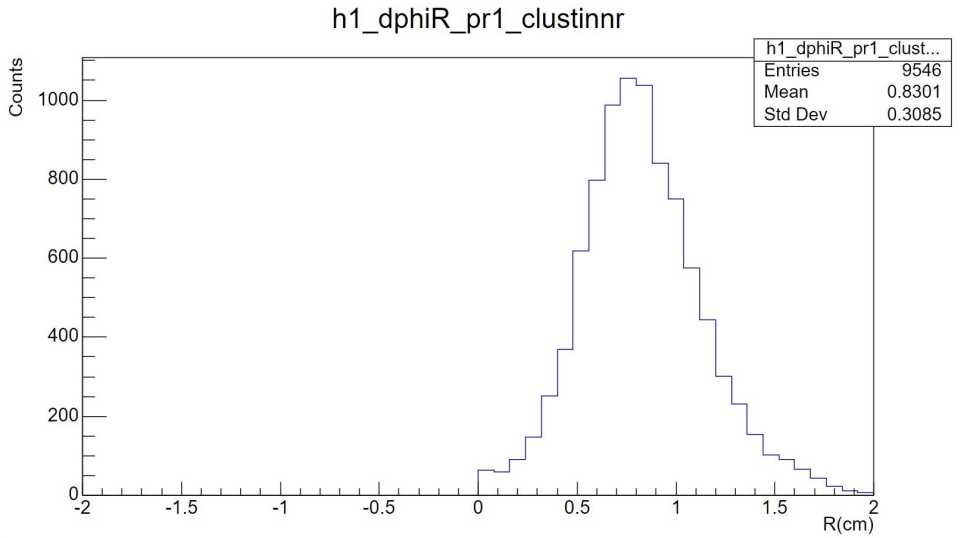
In the tangential direction, the truth-reco distribution shows a deflection of -0.0083 rad, then dphi*R have a ~0.8cm shift

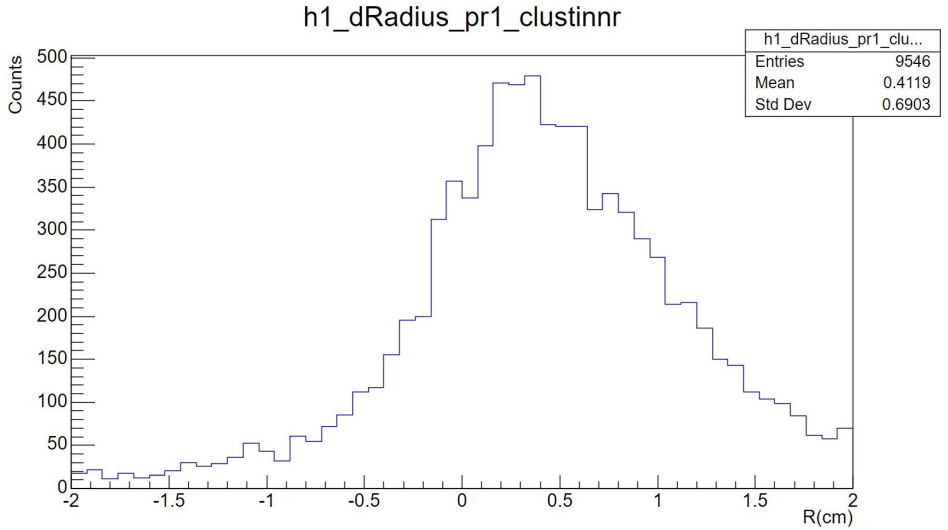


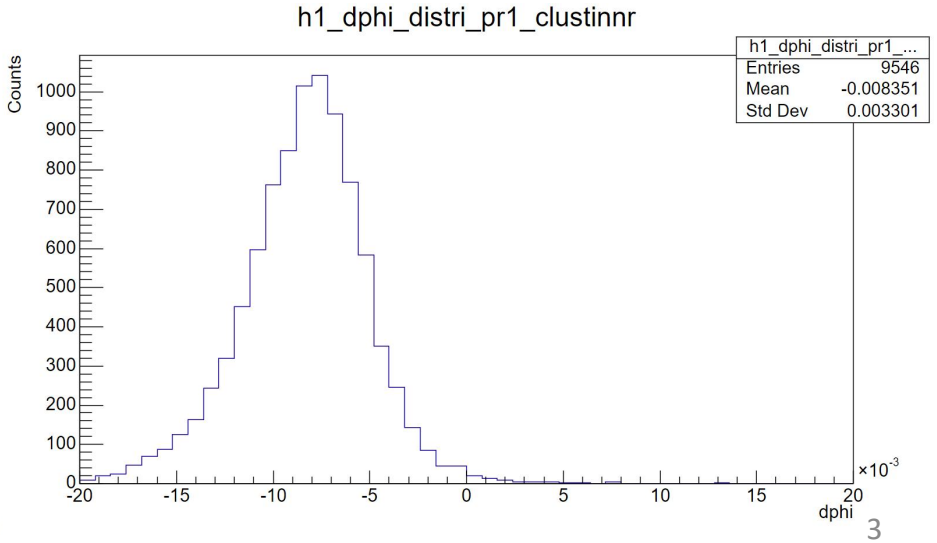
dRadius = Rradius_reco - Rradius_truth

dphiR = (phi_truth - phi_reco) * Rradius







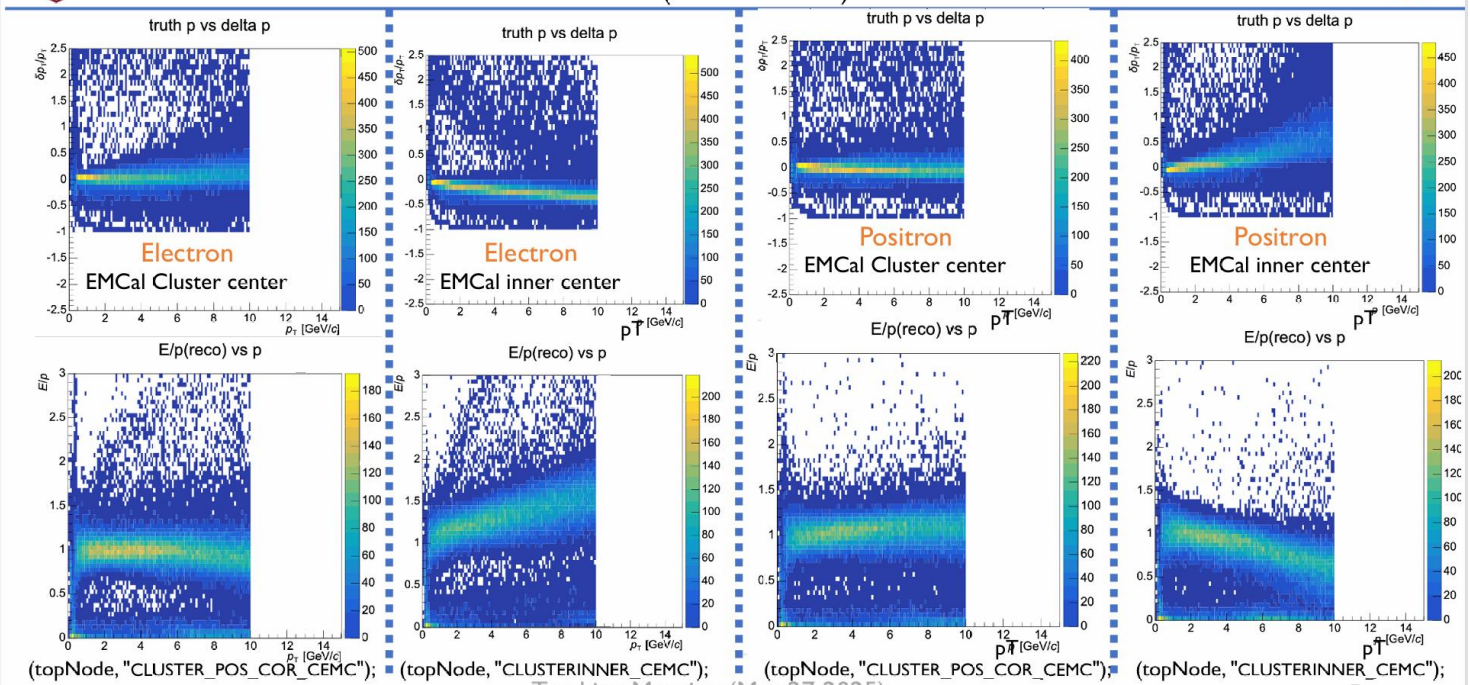


In the radial direction, the truth-reco peak is around 3 mm,

the shift effect on pt resolution and E/p

Comparison between two different Geo setting

Delta Pt = (recoPt- truthPt)/truthPt

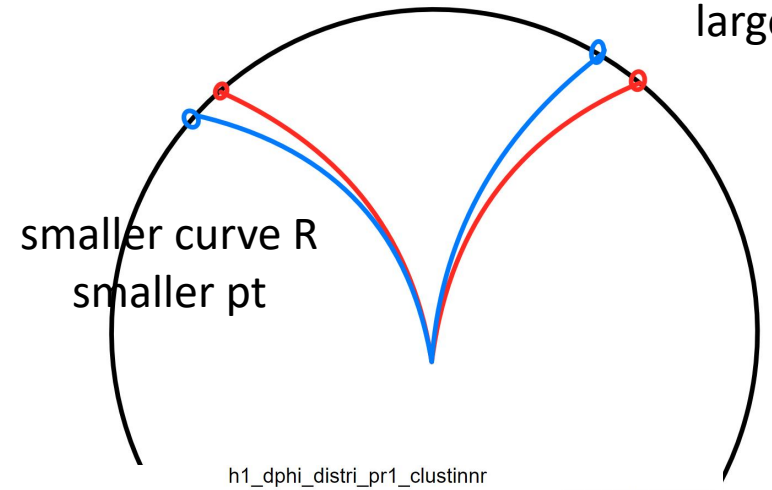


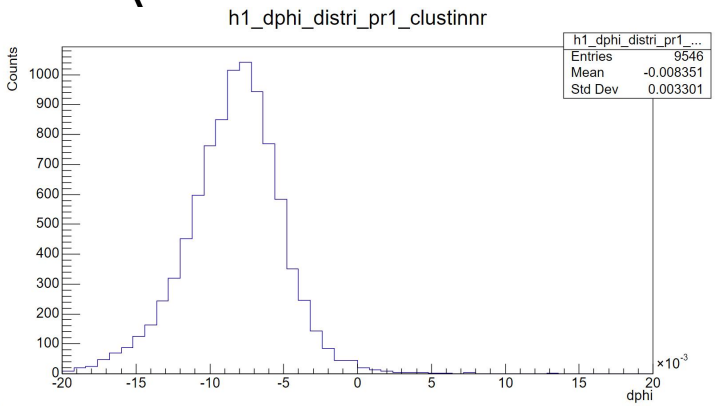
Pt = qBR

blue means a phi shift on reco

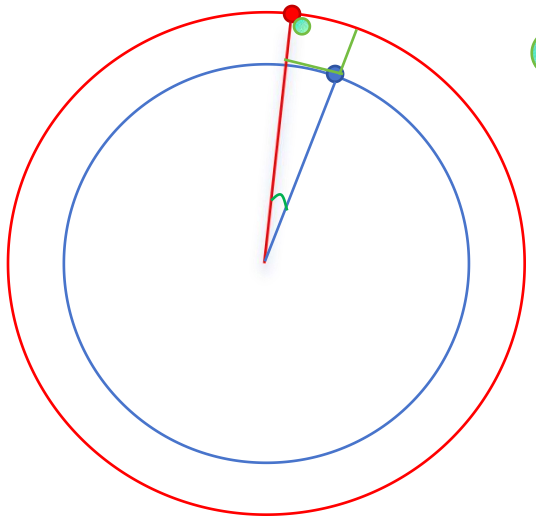
larger curve R
larger pt

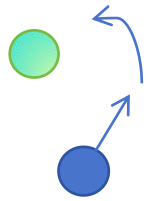
smaller curve R
smaller pt



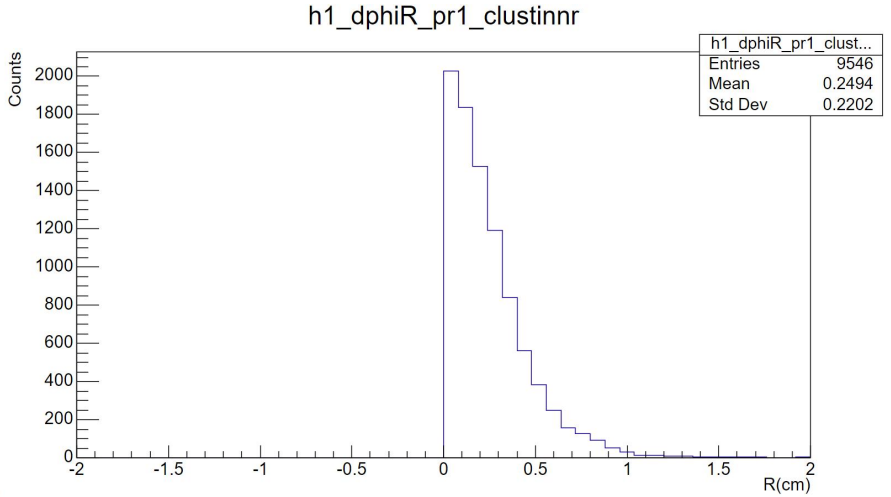


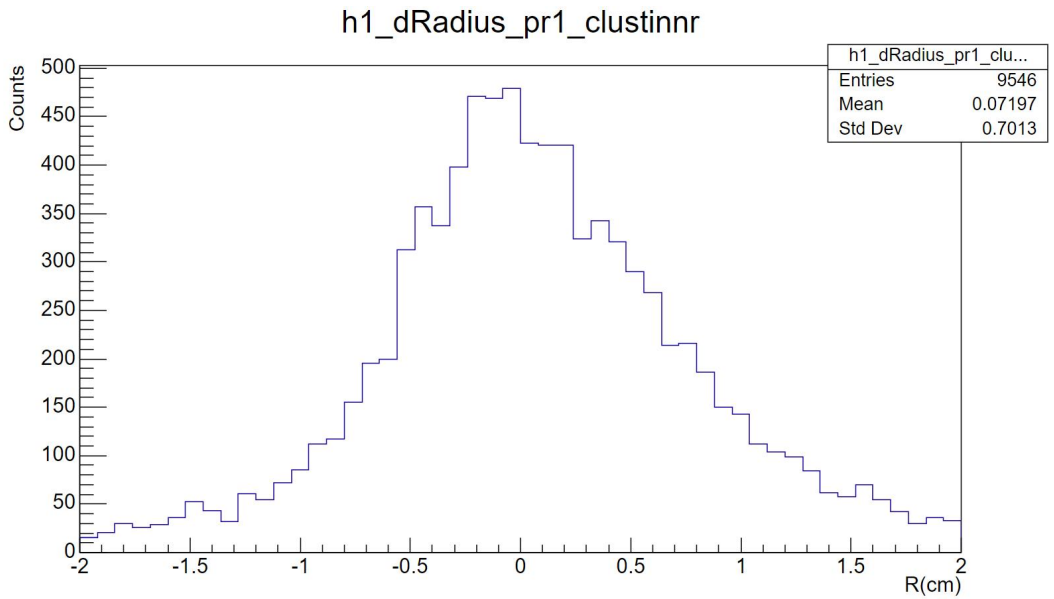
modify dphiR(rotation) and dRadius(shift)

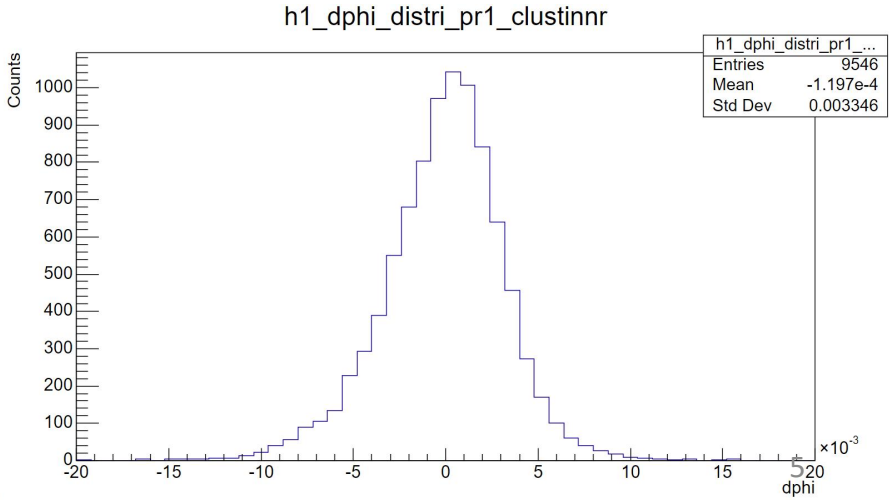




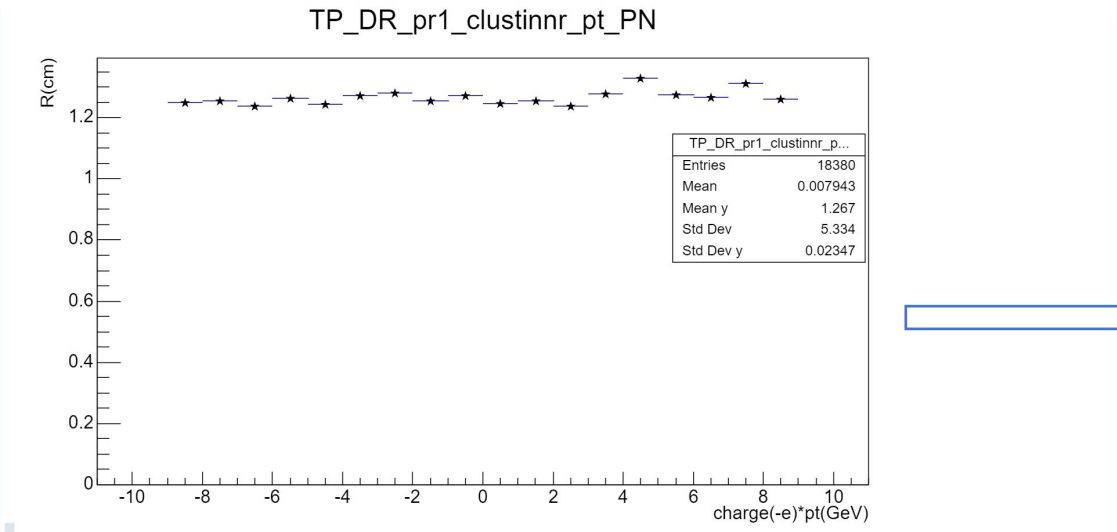
reco position: rotation -0.0083 rad
radius + 0.3cm

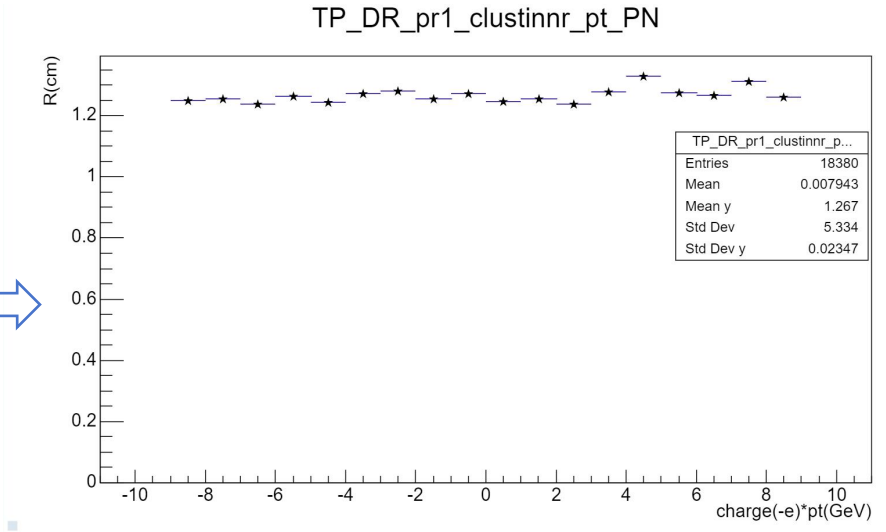


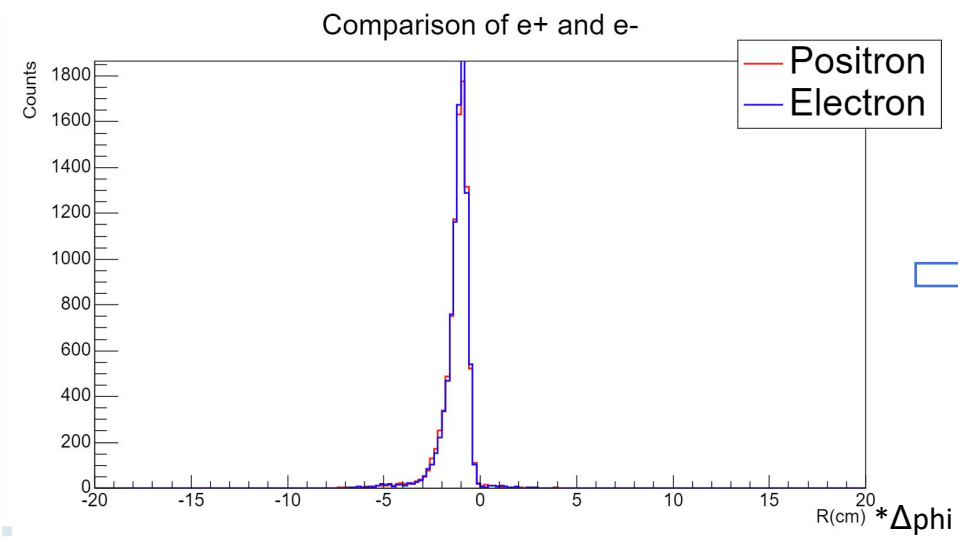


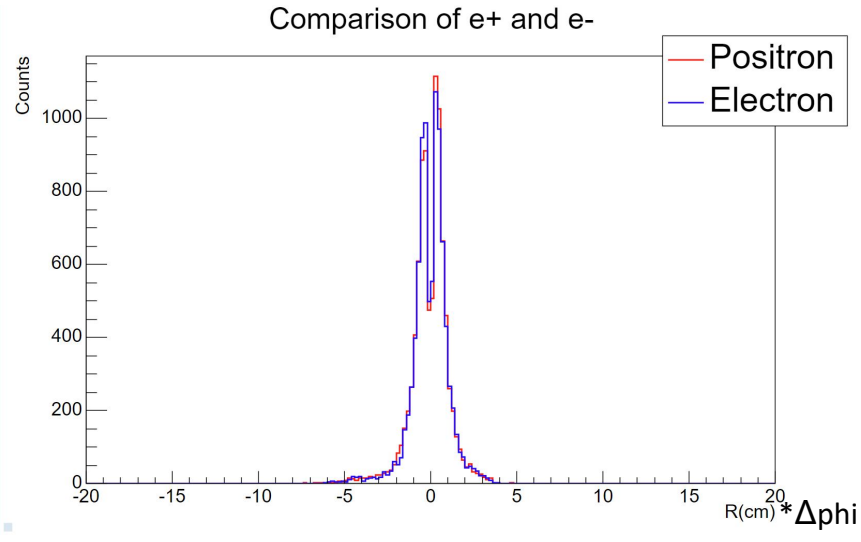


more close to the truth position

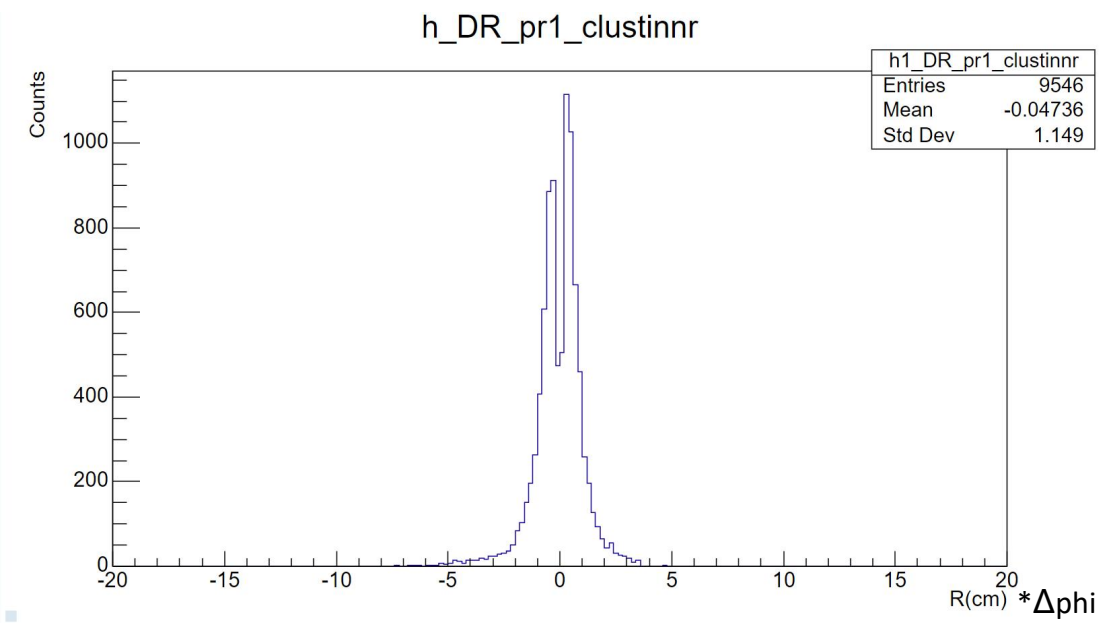


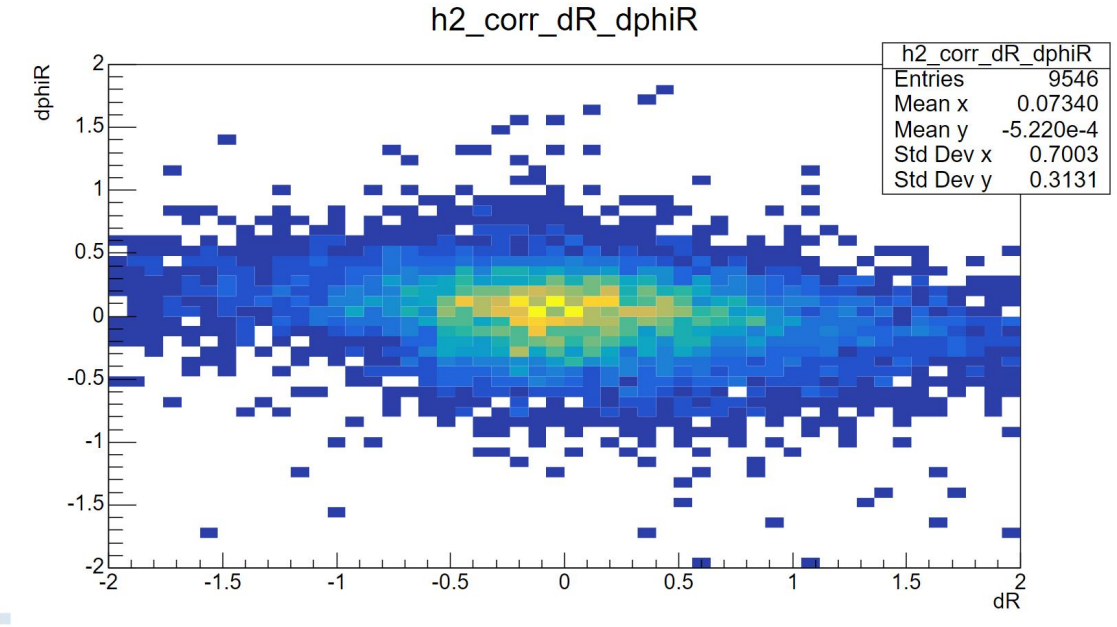






Problem and plan





where is the little shift from? are the deviations in these two directions not independent?
But from the 2D plot, I still can't see why the peak isn't at 0 cm. Z><0 seperate
<
how to get smaller width ? for single particle reco-truth: pt/energy dependent? have correlation with others varible? particle-by-particle modify the reco position