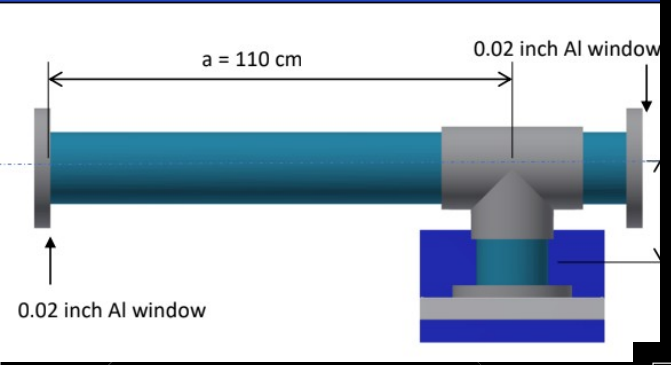
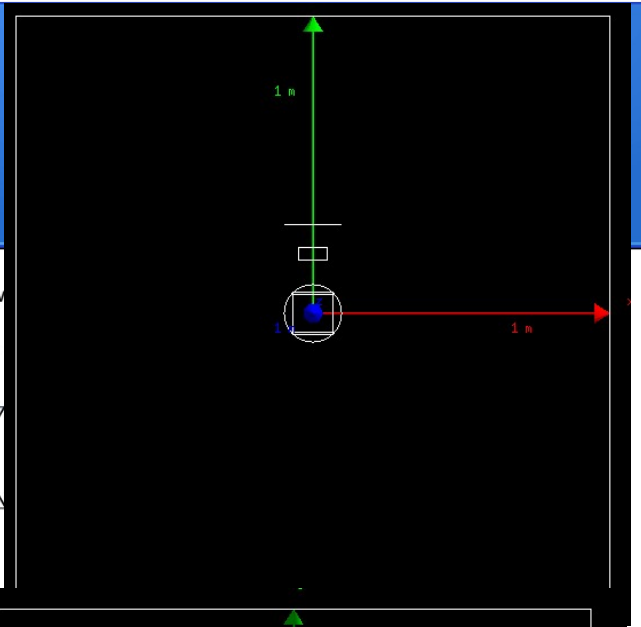
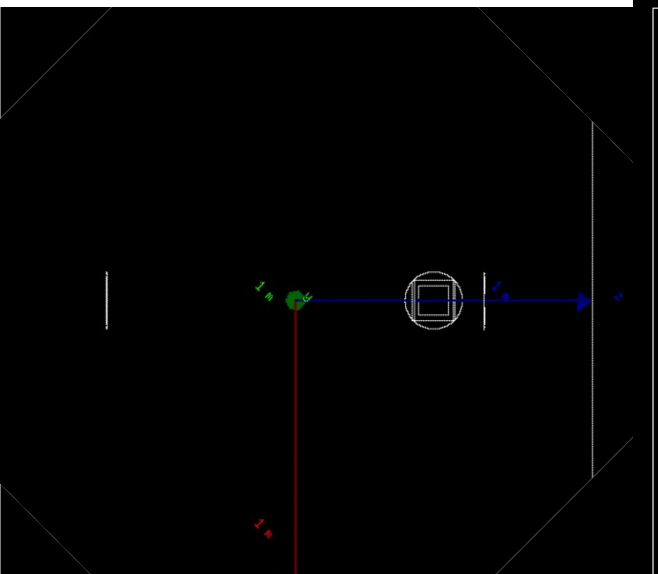
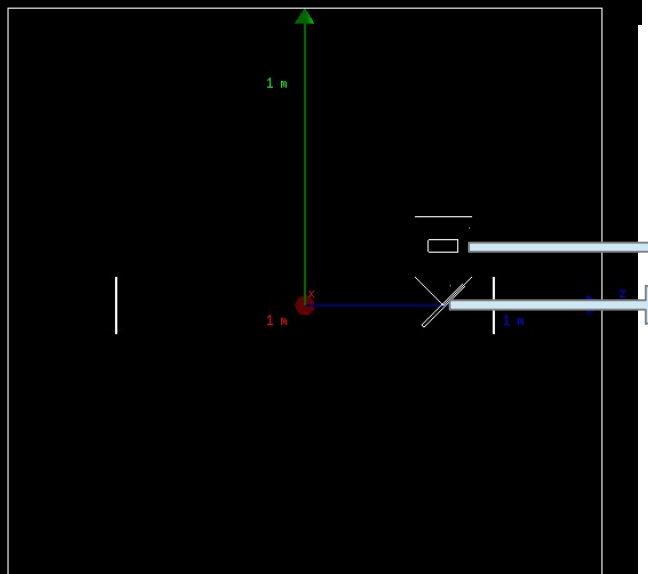
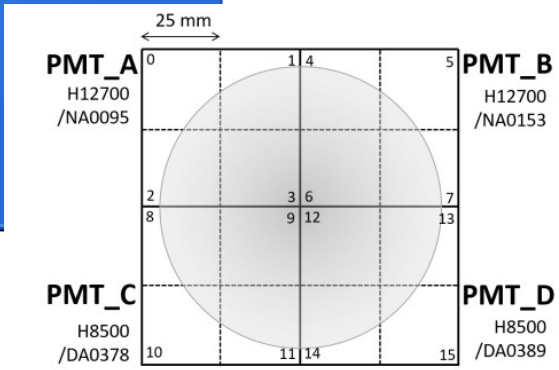
Cherkov prototype









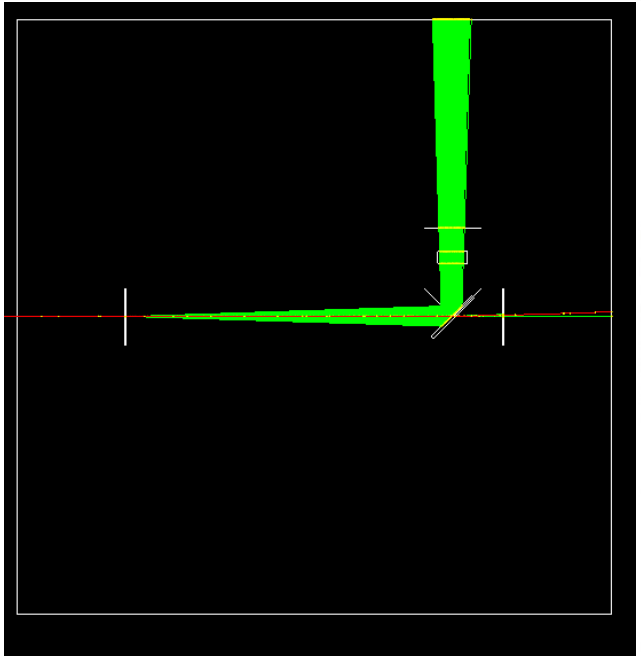


CO2 Tub: d 0.1937*m
Mirror and PMT are put at 1.1*m(z)
PMT at 0.2(y)
Two 0.02inch Al window at each end of Tub

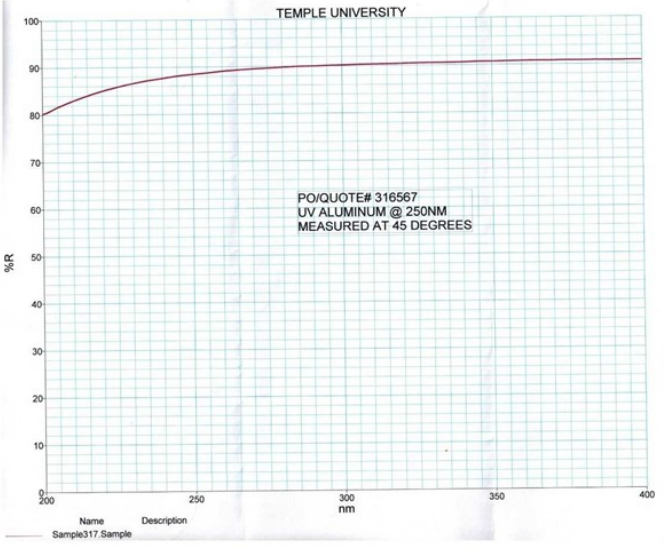
PMT size:0.1*m,0.1*m,0.02*m

Mirror:d/√2,d,0.005*m, rotate about x for 45 degree

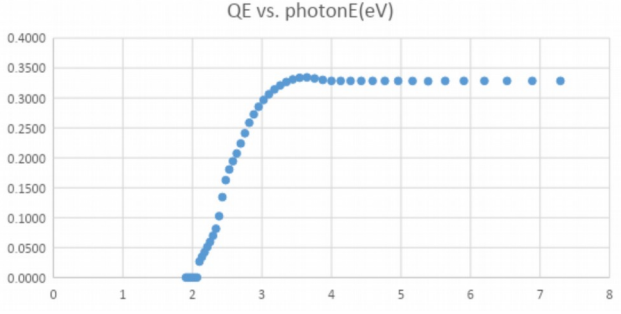
Shoot an electron



Shoot an electron at -10*m energy 3*GeV
Around 200 Cerenkov photons.
PMT recorded: around 50

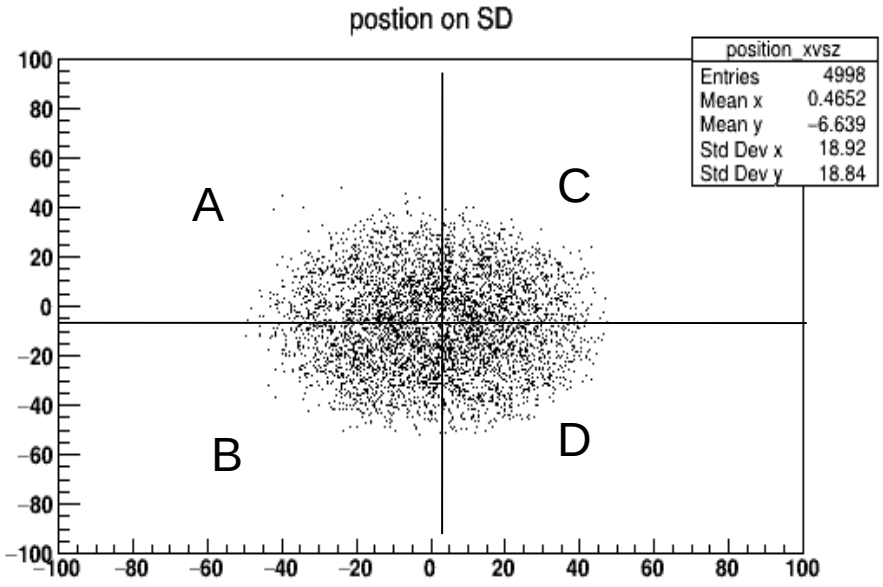


Mirror reflection

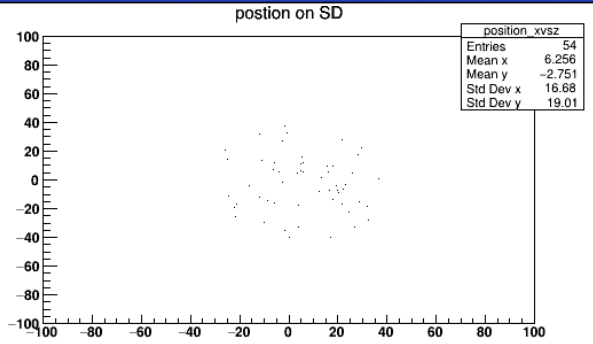


PMT Quantum Efficiency

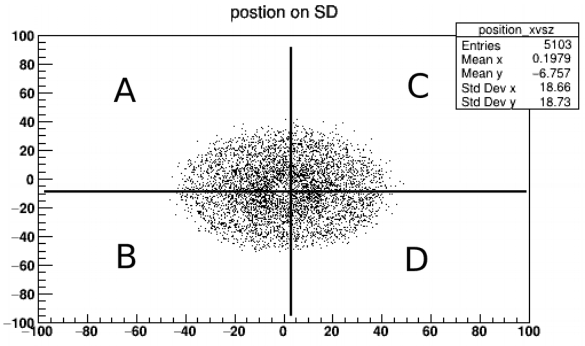
Position on PMT perfect condition



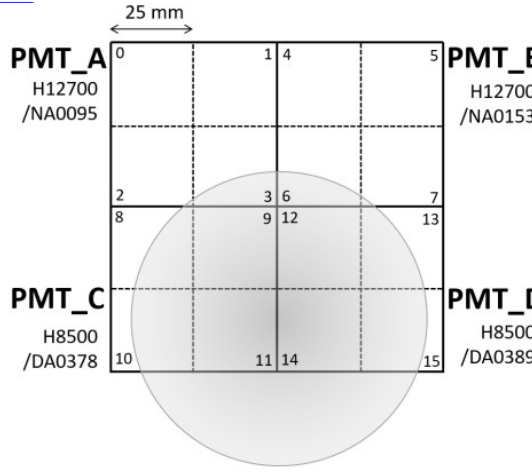
Shoot 100 electrons at 3GeV



Shoot 1 electron at 3GeV



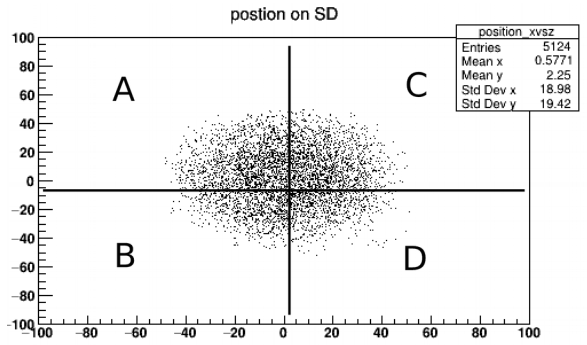
Shoot 100 electron at 5GeV

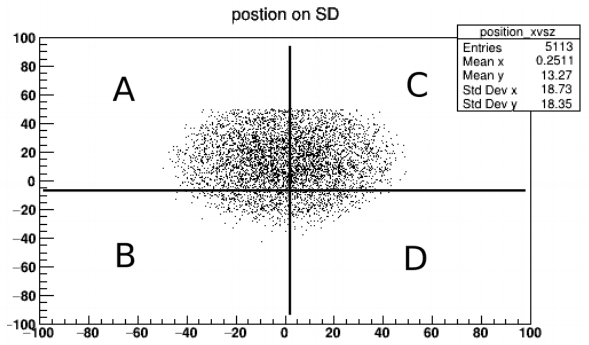


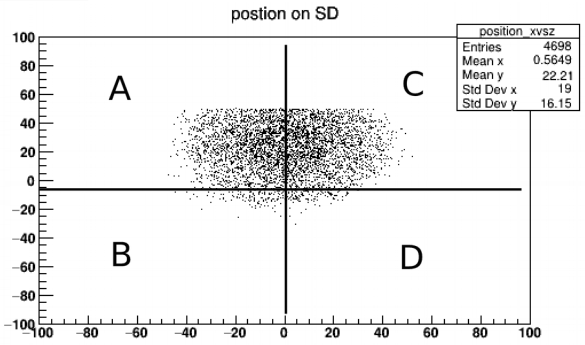
Small angle for electron

Reference:
Mean x: 0.46
Mean y: -6

along y







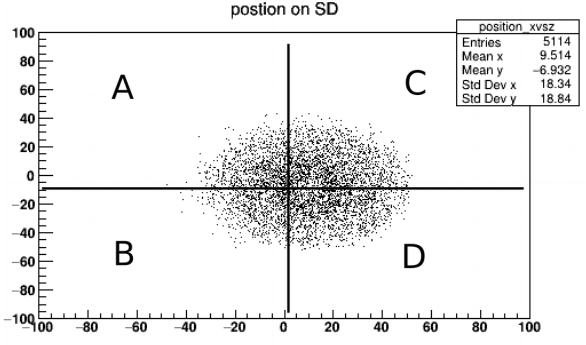
Shoot from 10*m away

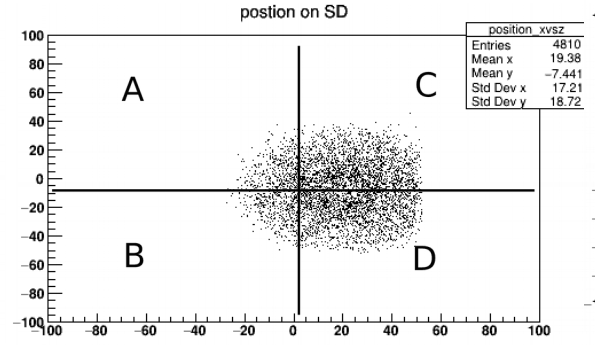
Θ = 0.18degree

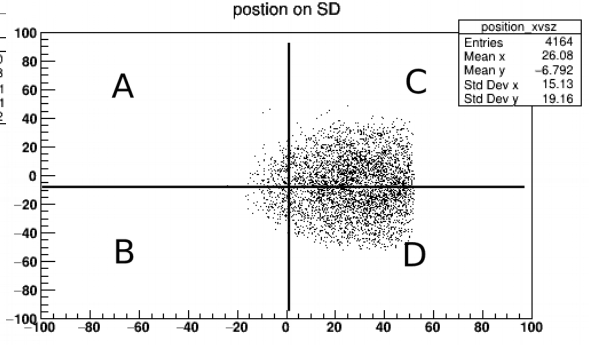
θ = 0.35degree

θ = 0.54degree

along x



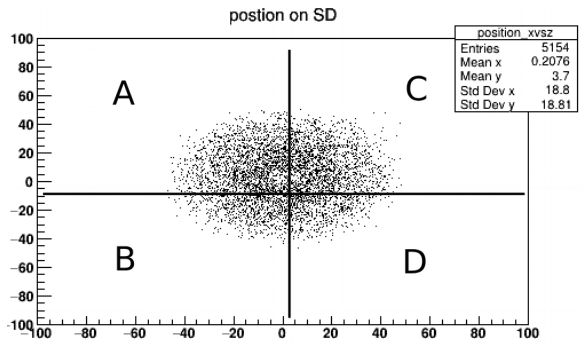




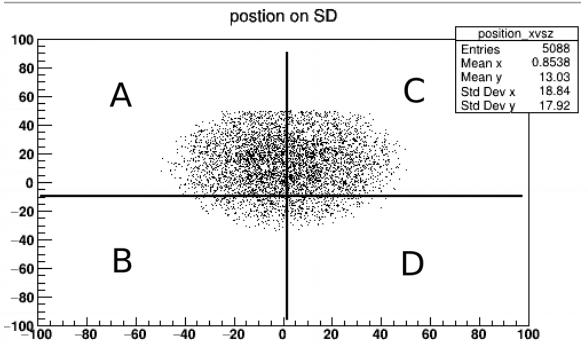
Small offset for electron

Reference:
Mean x: 0.46
Mean y: -6

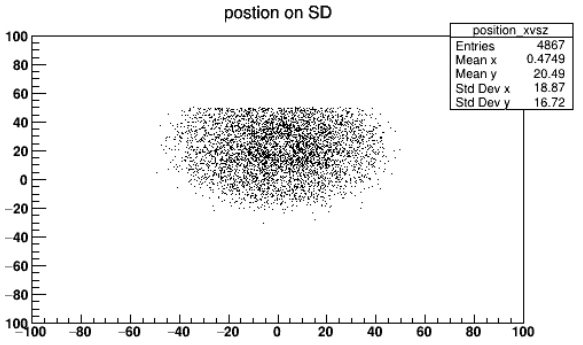
along y



offset = 1*cm

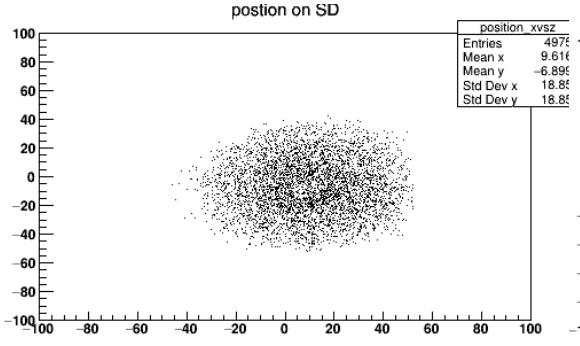


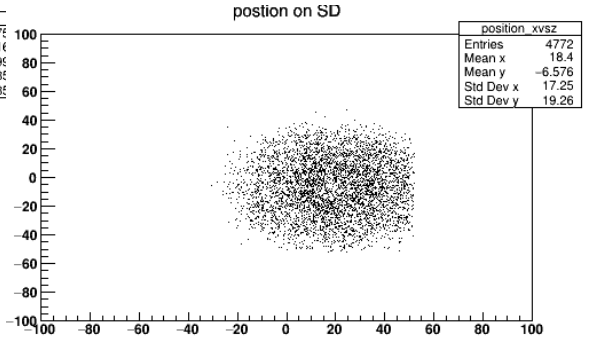
offset = 2*cm

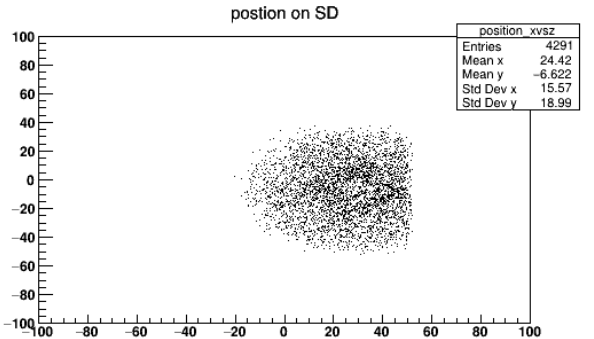


offset = 3*cm

along x



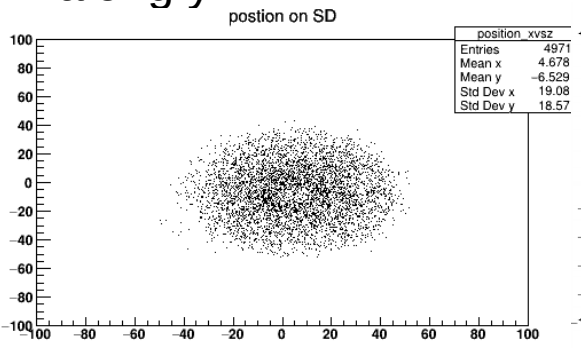




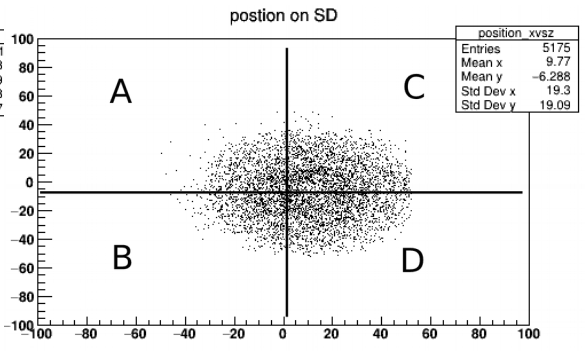
Mirror angle

Reference:
Mean x: 0.46
Mean y: -6

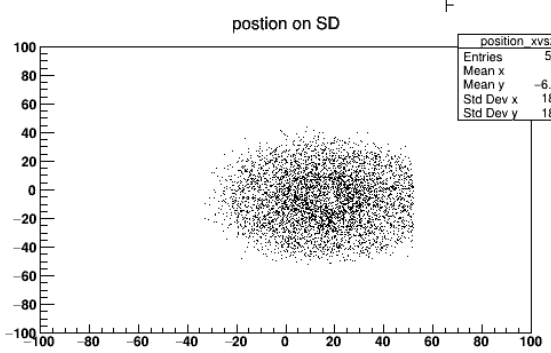
along y



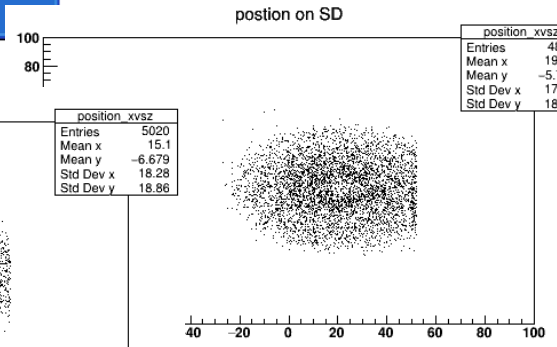
angle = 1*degree



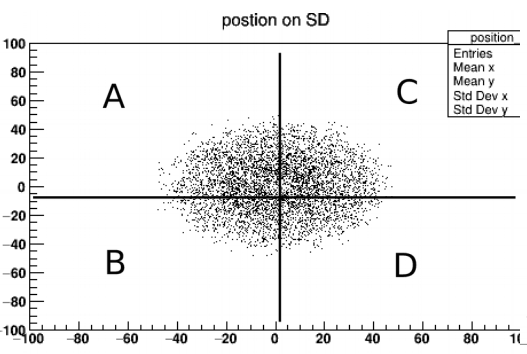
angle = 2*degree

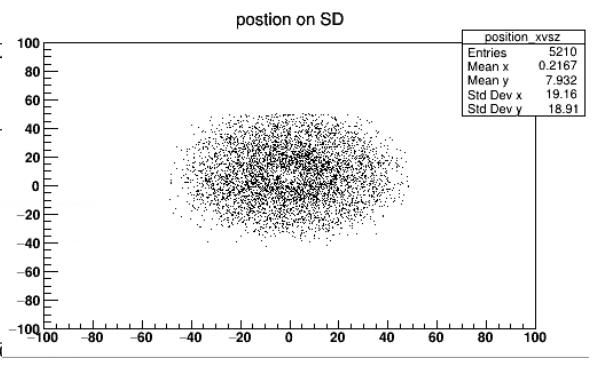


angle = 3*degree

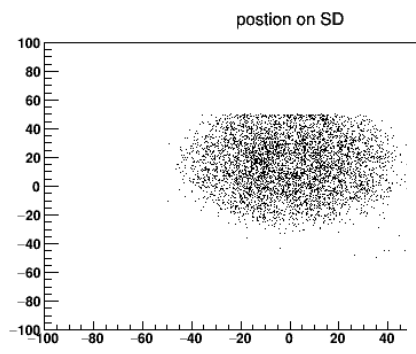


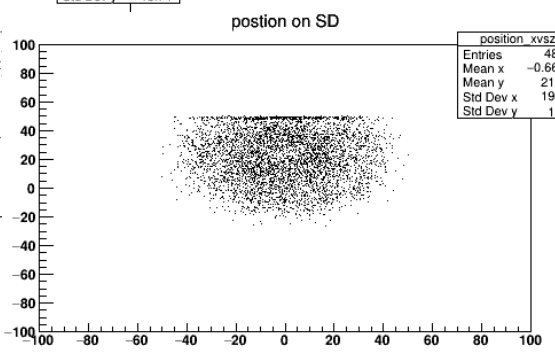
angle = 4*degree



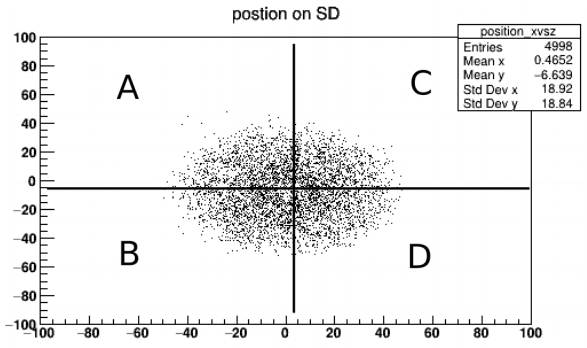


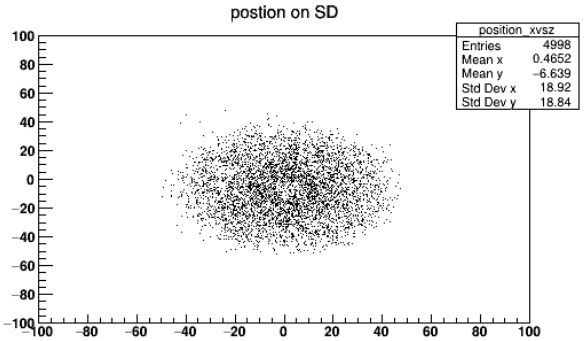
along x

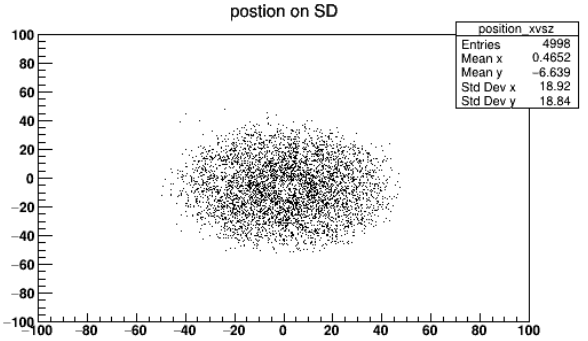




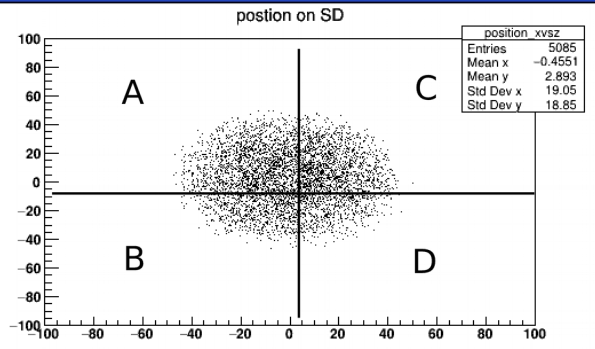
Mirror angle z



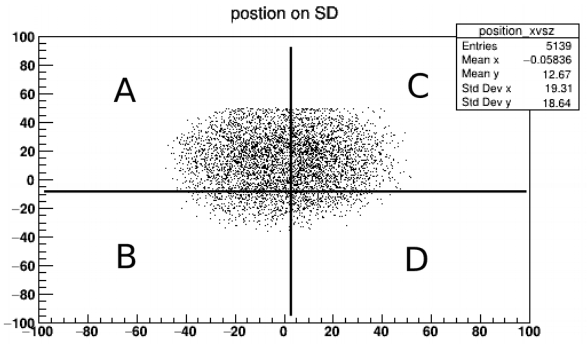




Mirror position z



Offset 1*cm



Offset 2*cm

Mirror position x and y shouldn’t matter