

# GEANT4 Simulation Report

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GDML File Name : **LEM.GAGG-worldVOL.DummyMaterials.Parsed.gdml**

#### NTuple Info:

- Ntuple ID: 0 Ntuple Name: Edep
- Ntuple ID: 0 Ntuple Column ID: 0 Ntuple Column Name: RandEnergy
- Ntuple ID: 0 Ntuple Column ID: 1 Ntuple Column Name: Xgen
- Ntuple ID: 0 Ntuple Column ID: 2 Ntuple Column Name: Ygen
- Ntuple ID: 0 Ntuple Column ID: 3 Ntuple Column Name: Zgen
- Ntuple ID: 0 Ntuple Column ID: 4 Ntuple Column Name: pDirX
- Ntuple ID: 0 Ntuple Column ID: 5 Ntuple Column Name: pDirY
- Ntuple ID: 0 Ntuple Column ID: 6 Ntuple Column Name: pDirZ
- Ntuple ID: 0 Ntuple Column ID: 7 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thin\_0
- Ntuple ID: 0 Ntuple Column ID: 8 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thin\_2
- Ntuple ID: 0 Ntuple Column ID: 9 Ntuple Column Name: Ed\_LV\_PlasticVetoBottom
- Ntuple ID: 0 Ntuple Column ID: 10 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thin\_3
- Ntuple ID: 0 Ntuple Column ID: 11 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thin\_4
- Ntuple ID: 0 Ntuple Column ID: 12 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thick\_4
- Ntuple ID: 0 Ntuple Column ID: 13 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thick\_2
- Ntuple ID: 0 Ntuple Column ID: 14 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thick\_1
- Ntuple ID: 0 Ntuple Column ID: 15 Ntuple Column Name: Ed\_LV\_Calo
- Ntuple ID: 0 Ntuple Column ID: 16 Ntuple Column Name: Ed\_LV\_PlasticVetoTop
- Ntuple ID: 0 Ntuple Column ID: 17 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thin\_1
- Ntuple ID: 0 Ntuple Column ID: 18 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thick\_3
- Ntuple ID: 0 Ntuple Column ID: 19 Ntuple Column Name: Ed\_LV\_SiliconDetector\_Thick\_0

Volume	Material	Mass (g)
LV_AIScrew_Thick_3	G4_Galactic	9.05215e-26
LV_AITop	G4_Galactic	2.05874e-23
LV_AIFrame_Thin_0	G4_Galactic	4.81911e-26
LV_SiliconDetector_Thin_0	G4_Si	0.0104495
LV_AIFrame_Thin_1	G4_Galactic	8.49576e-26
LV_SiliconDetector_Thin_2	G4_Si	0.0325397
LV_BakeliteBoardMiddleLower	G4_Galactic	1.20638e-24
LV_AIScrew	G4_Galactic	1.95667e-25
LV_AIBottom	G4_Galactic	1.17351e-23
LV_BakeliteBoardTop	G4_Galactic	1.42262e-24
LV_PlasticVetoBottom	G4_PLASTIC_SC_VINYLTOLUENE	100.1
LV_AIScrew_1	G4_Galactic	1.95667e-25
LV_AIScrew_3	G4_Galactic	1.95667e-25
LV_AICoverUpper	G4_Galactic	8.13683e-25
LV_SiliconDetector_Thin_3	G4_Si	0.0325397
LV_AIFrame_Thin_3	G4_Galactic	8.49576e-26
LV_SiliconDetector_Thin_4	G4_Si	0.0325397
LV_AIFrame_Thin_2	G4_Galactic	8.49576e-26
LV_AIFrame_Thin_4	G4_Galactic	8.49576e-26
LV_AIScrew_Thick_2	G4_Galactic	9.05215e-26
LV_SiliconDetector_Thick_4	G4_Si	0.135903
LV_AIScrew_Thick_1	G4_Galactic	9.05215e-26
LV_AIFrame_Thick_1	G4_Galactic	1.10354e-25
LV_AIFrame_Thick_4	G4_Galactic	1.10354e-25
LV_AIFrame_Thick_2	G4_Galactic	1.10354e-25
LV_SiliconDetector_Thick_2	G4_Si	0.135903
LV_AIScrew_Thick_4	G4_Galactic	9.05215e-26
LV_SiliconDetector_Thick_1	G4_Si	0.135903
LV_BakeliteCable	G4_Galactic	2.23231e-26
LV_BakeliteCable_2	G4_Galactic	2.81814e-26
LV_BakeliteCable_4	G4_Galactic	2.81814e-26
LV_BakeliteCable_3	G4_Galactic	2.81814e-26
LV_BakeliteCable_1	G4_Galactic	2.81814e-26
LV_Calo	GAGG	82.875
LV_AIScrew_2	G4_Galactic	1.95667e-25
LV_PlasticVetoTop	G4_PLASTIC_SC_VINYLTOLUENE	166.68
LV_AICoverLower	G4_Galactic	8.24204e-25
LV_BakeliteBoardCalo	G4_Galactic	6.393e-25
LV_BakeliteBoardMiddleUpper	G4_Galactic	1.51833e-24
LV_BakeliteBoardBottom	G4_Galactic	1.52827e-24
LV_SiliconDetector_Thin_1	G4_Si	0.0325397
LV_AIFrame_Thick_3	G4_Galactic	1.10354e-25
LV_AIFrame_Thick_0	G4_Galactic	8.11217e-26
LV_SiliconDetector_Thick_3	G4_Si	0.135903
LV_AIScrew_Thick_0	G4_Galactic	5.42892e-26
LV_SiliconDetector_Thick_0	G4_Si	0.0439621

## hPID\_1

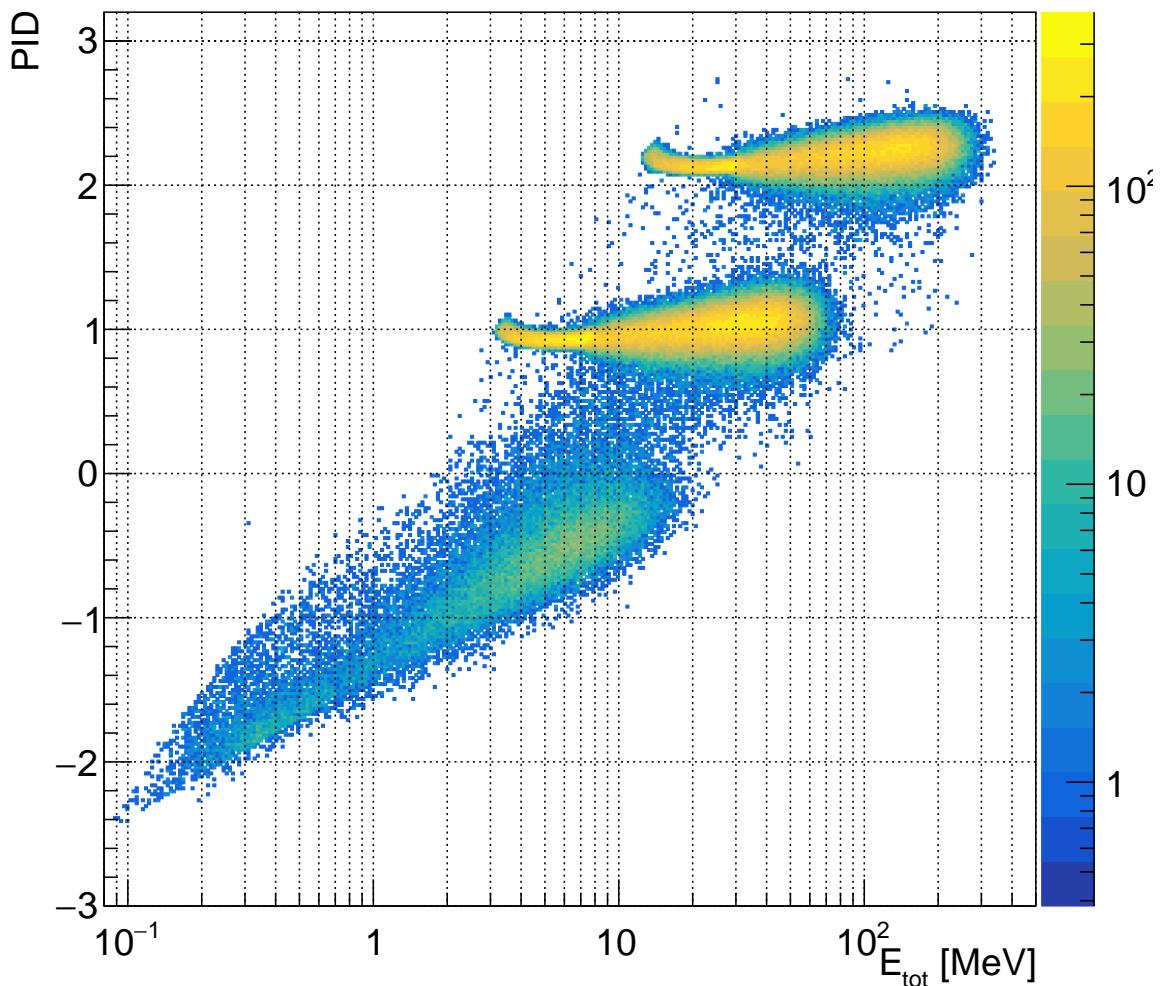


Figure: PID, No Gaussian Smearing, Total Energy is the Energy reconstructed.

## hPID\_2

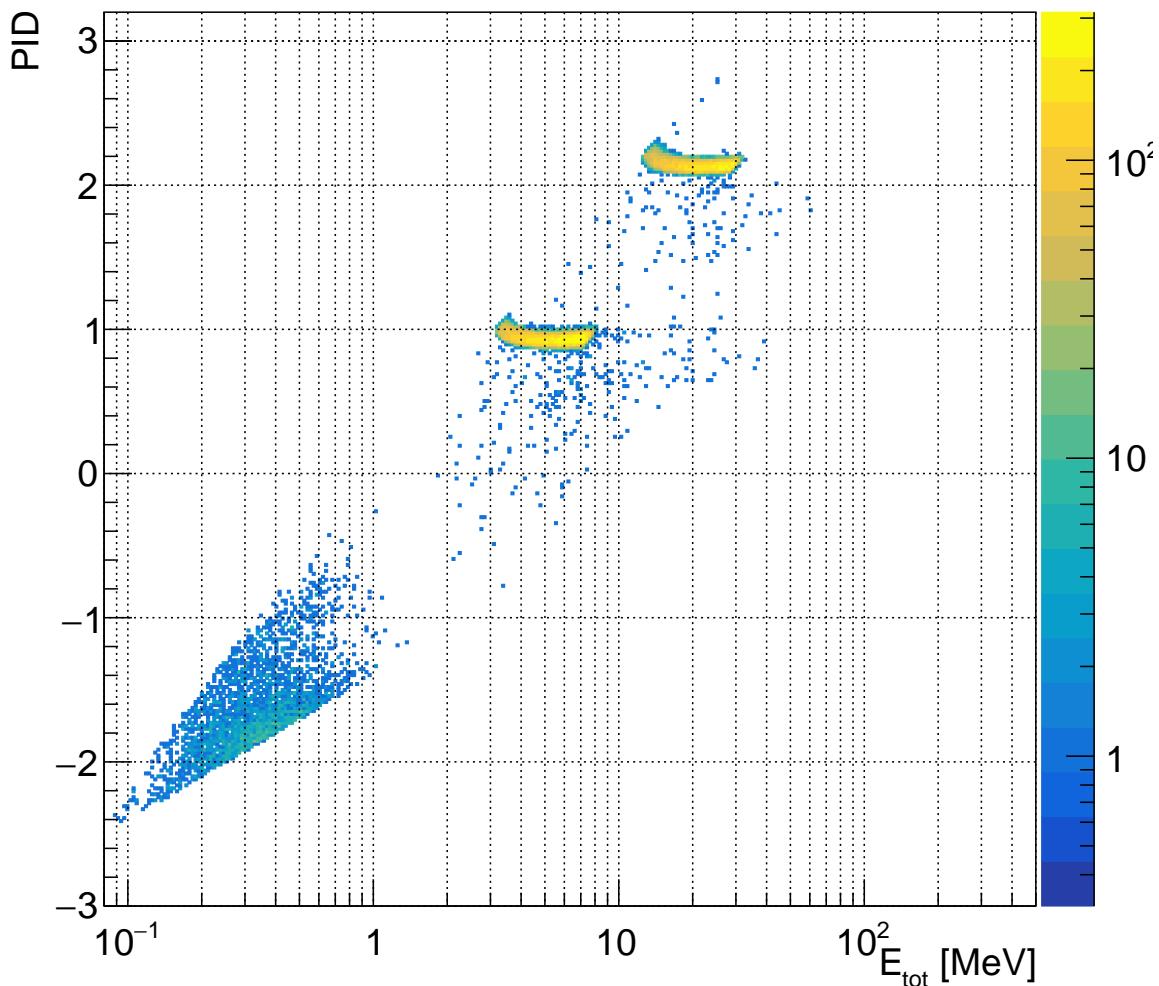


Figure: PID, No Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

## hPID2\_1

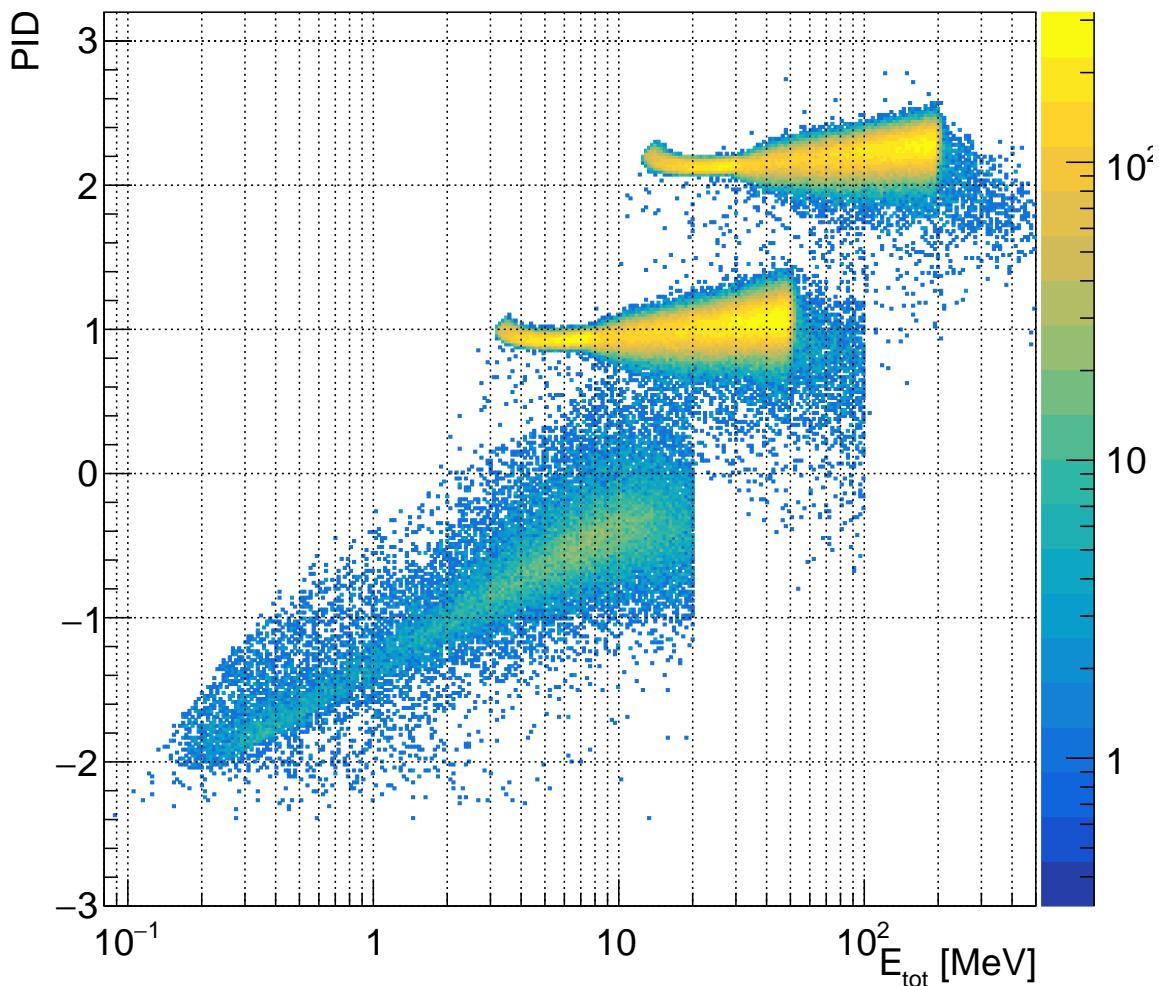


Figure: PID, No Gaussian Smearing, Total Energy is the MC Energy.

## hPID2\_2

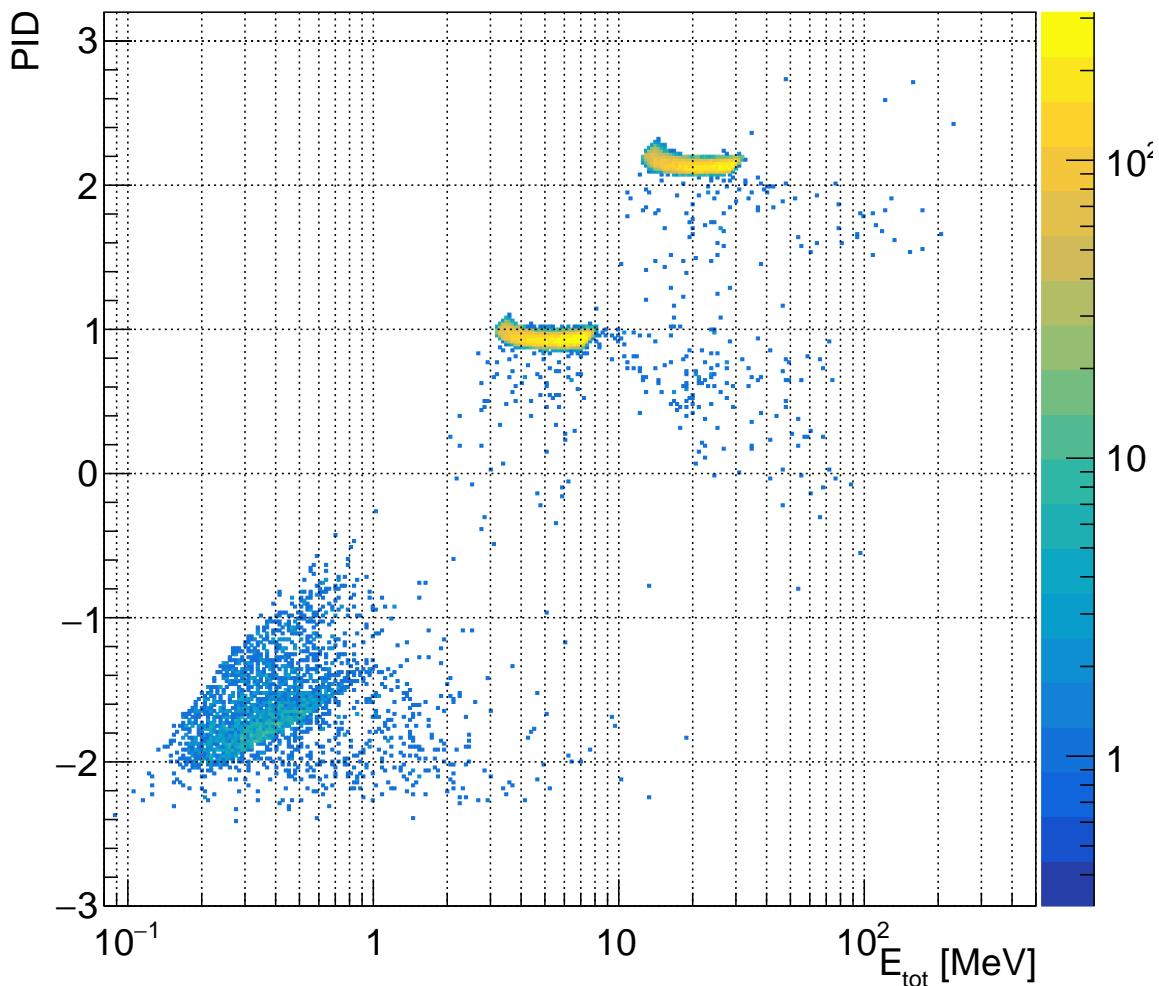


Figure: PID, No Gaussian Smearing, Total Energy is the MC Energy, No Calorimeter.

## hPID\_1

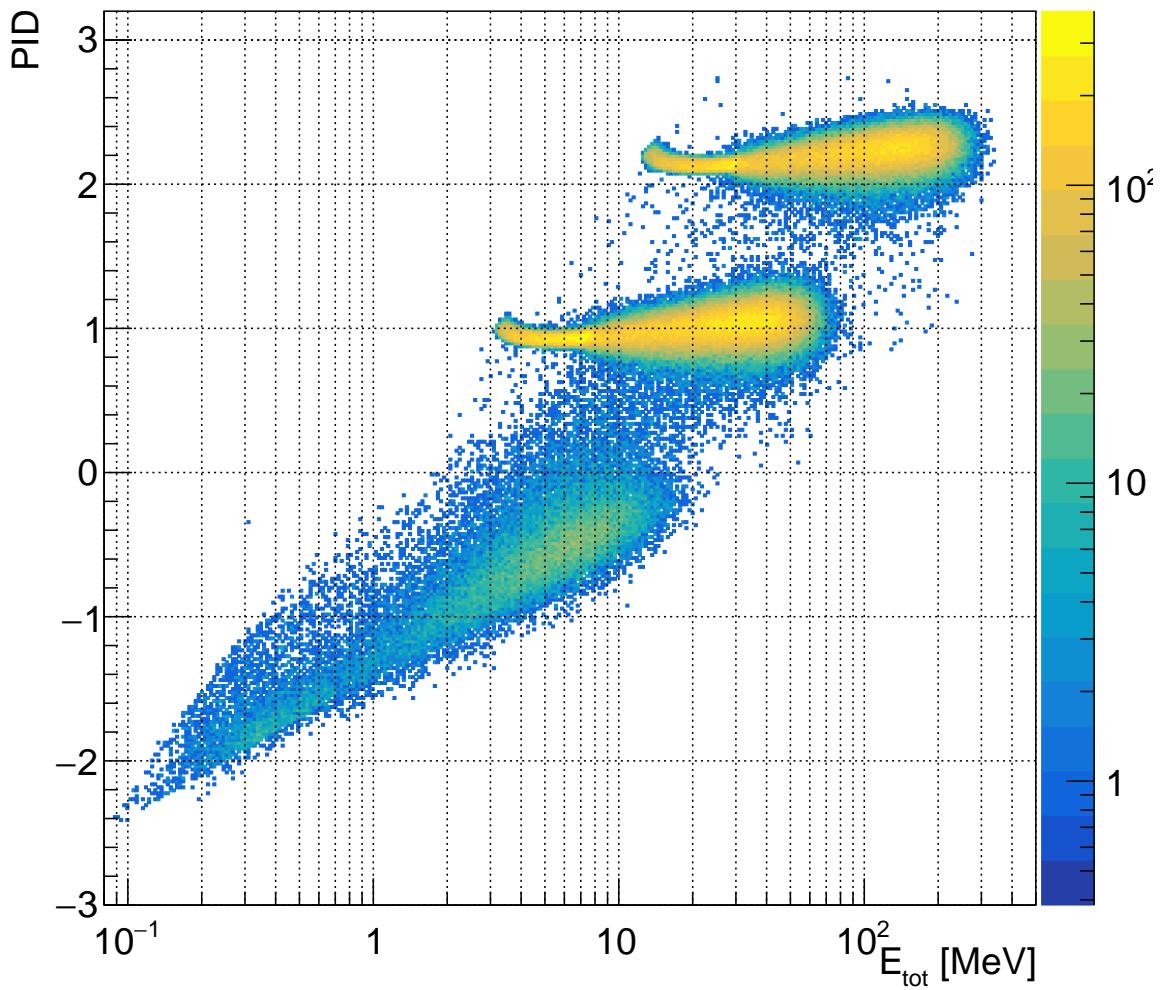


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed.

## hPID\_3

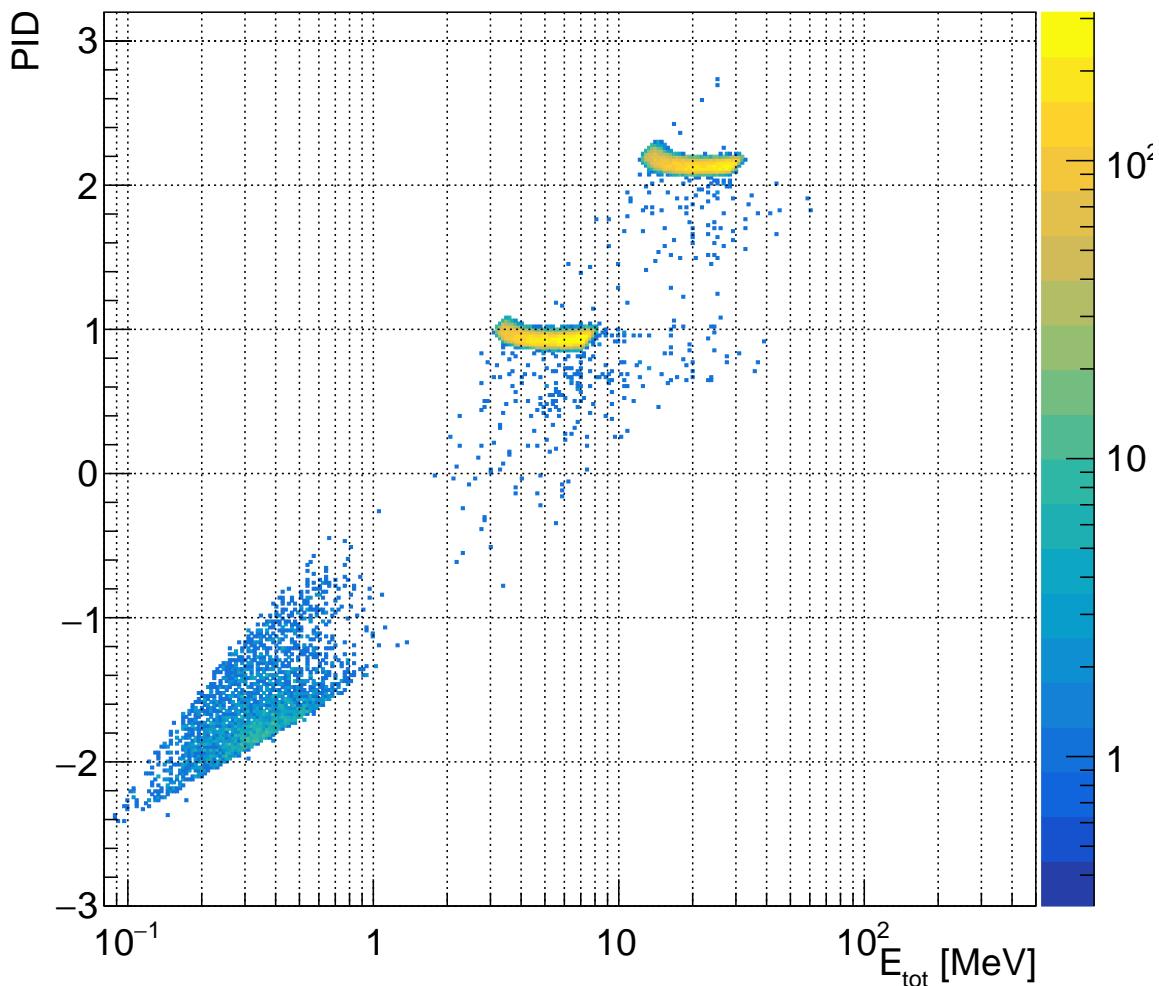


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

## hPID2\_1

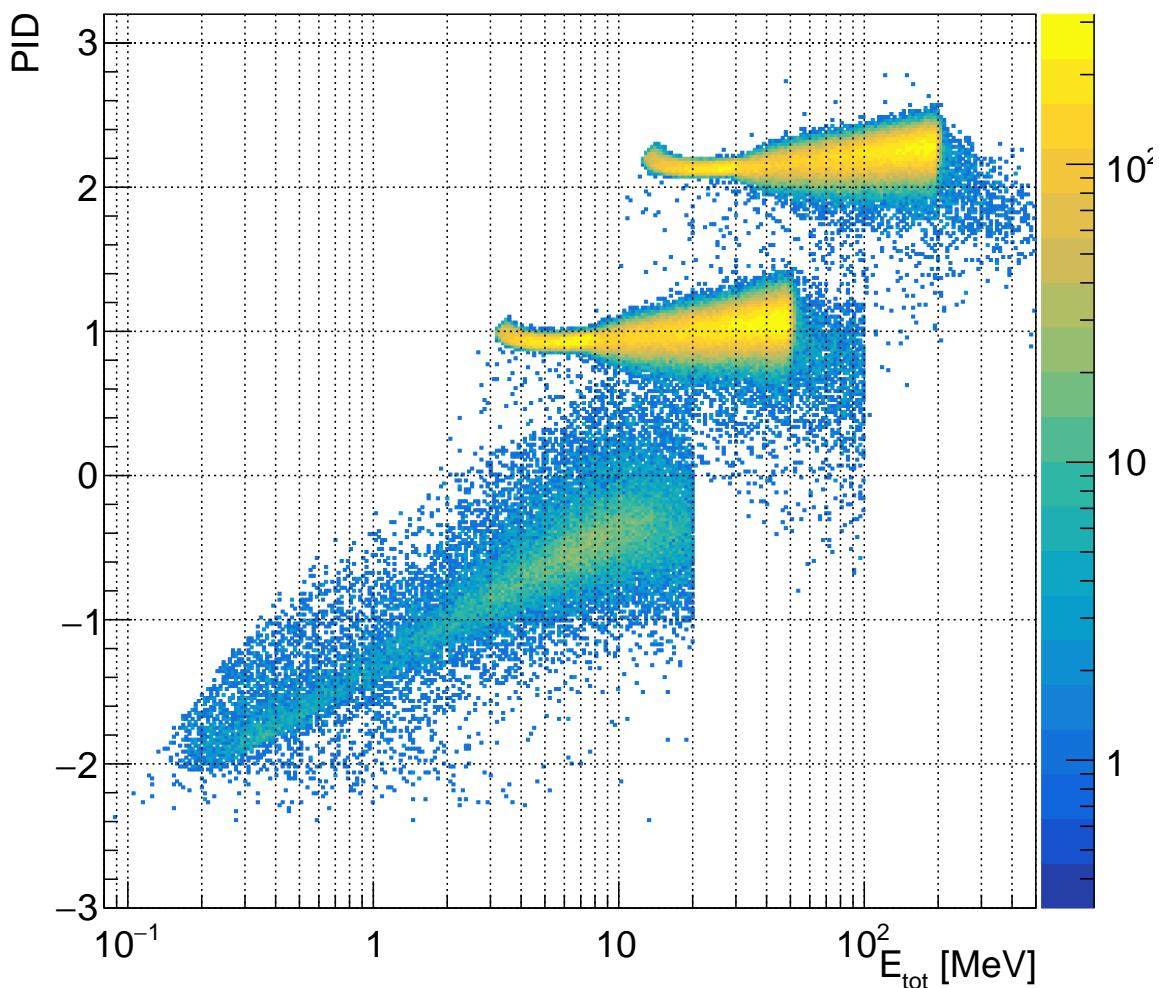


Figure: PID, Gaussian Smearing, Total Energy is the MC Energy.

## hPID2\_3

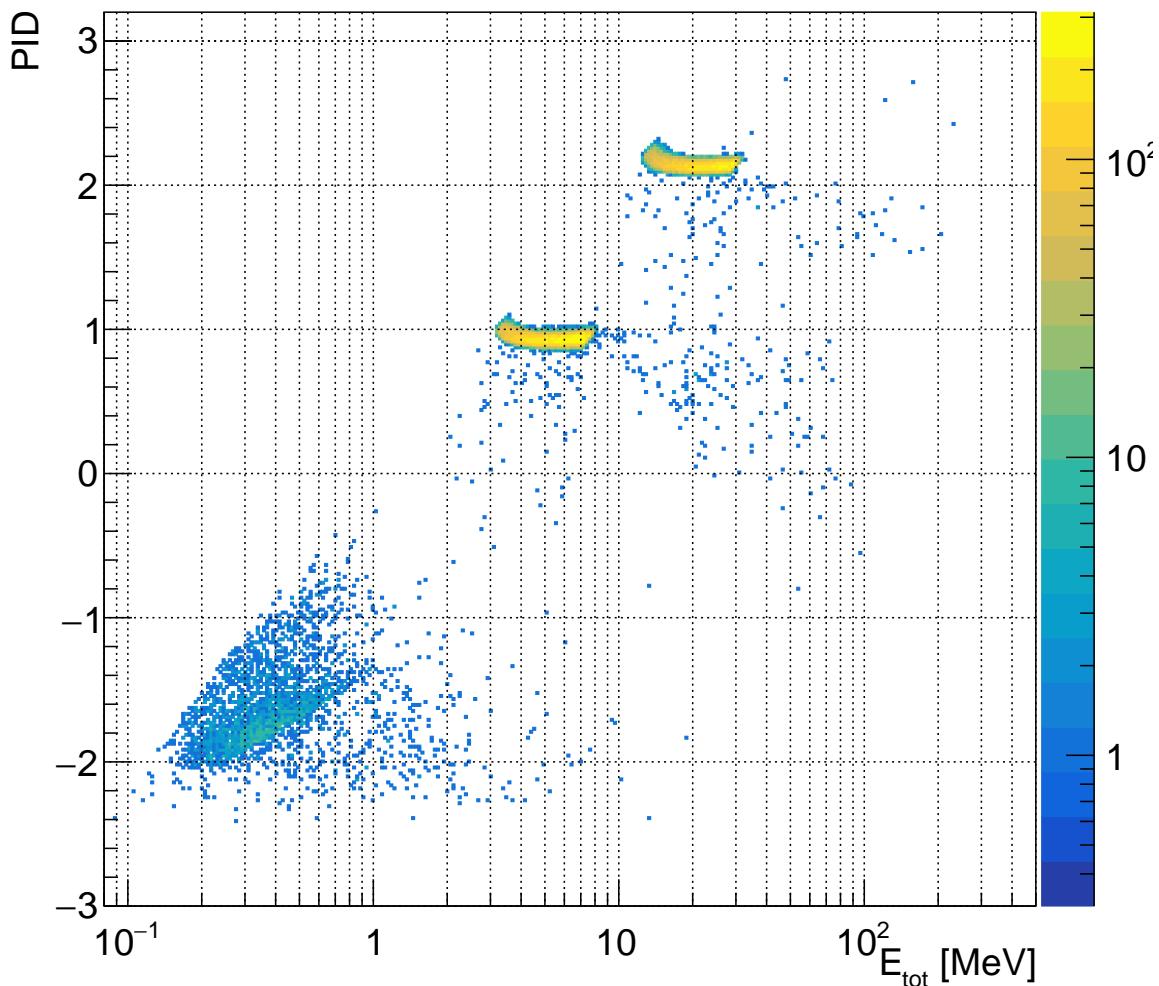


Figure: PID, Gaussian Smearing, Total Energy is the MC Energy, No Calorimeter.

## mgrPID

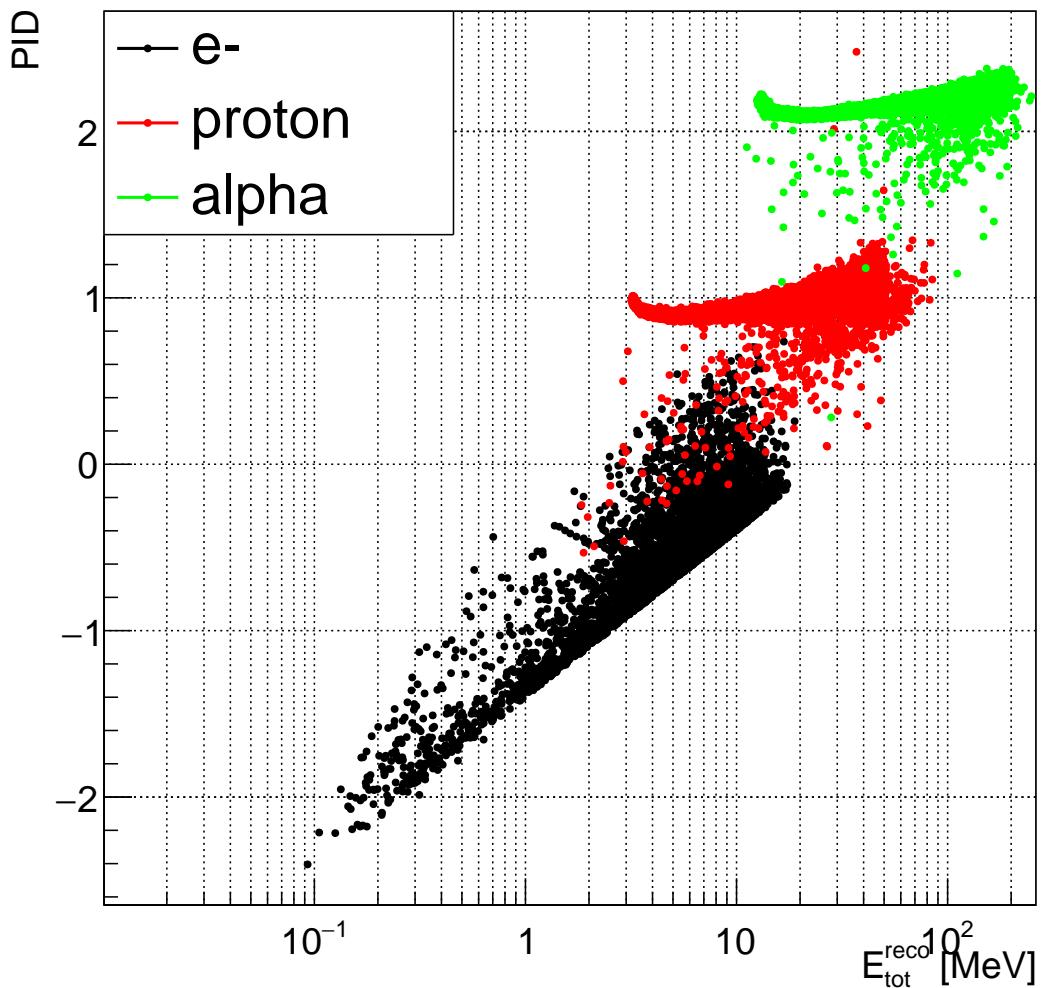


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

# MC quantities for e\_-t0

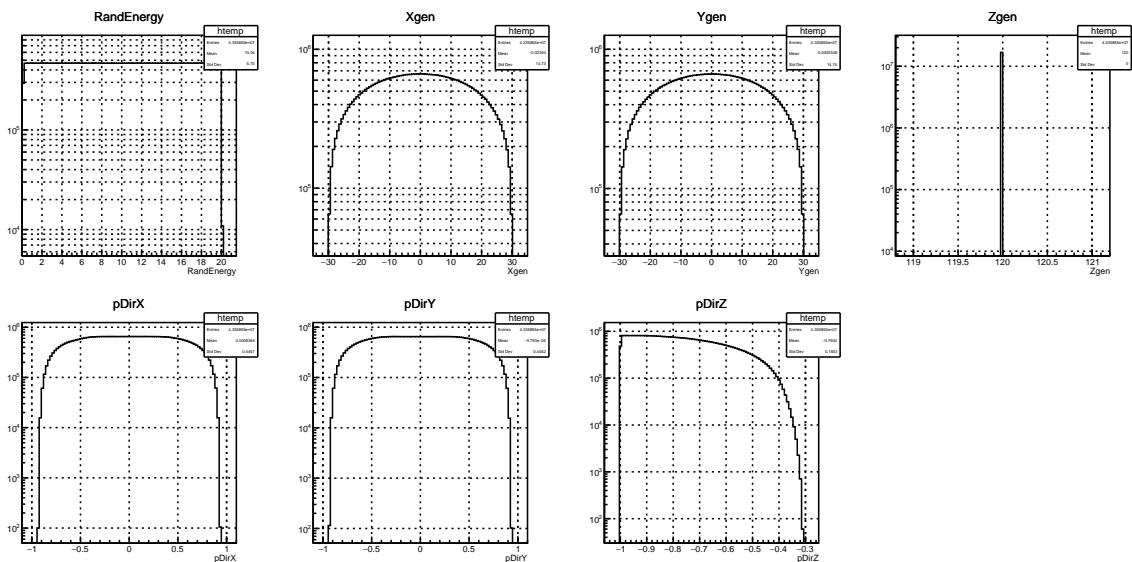


Figure: MC quantities

## Energies distribution for e-

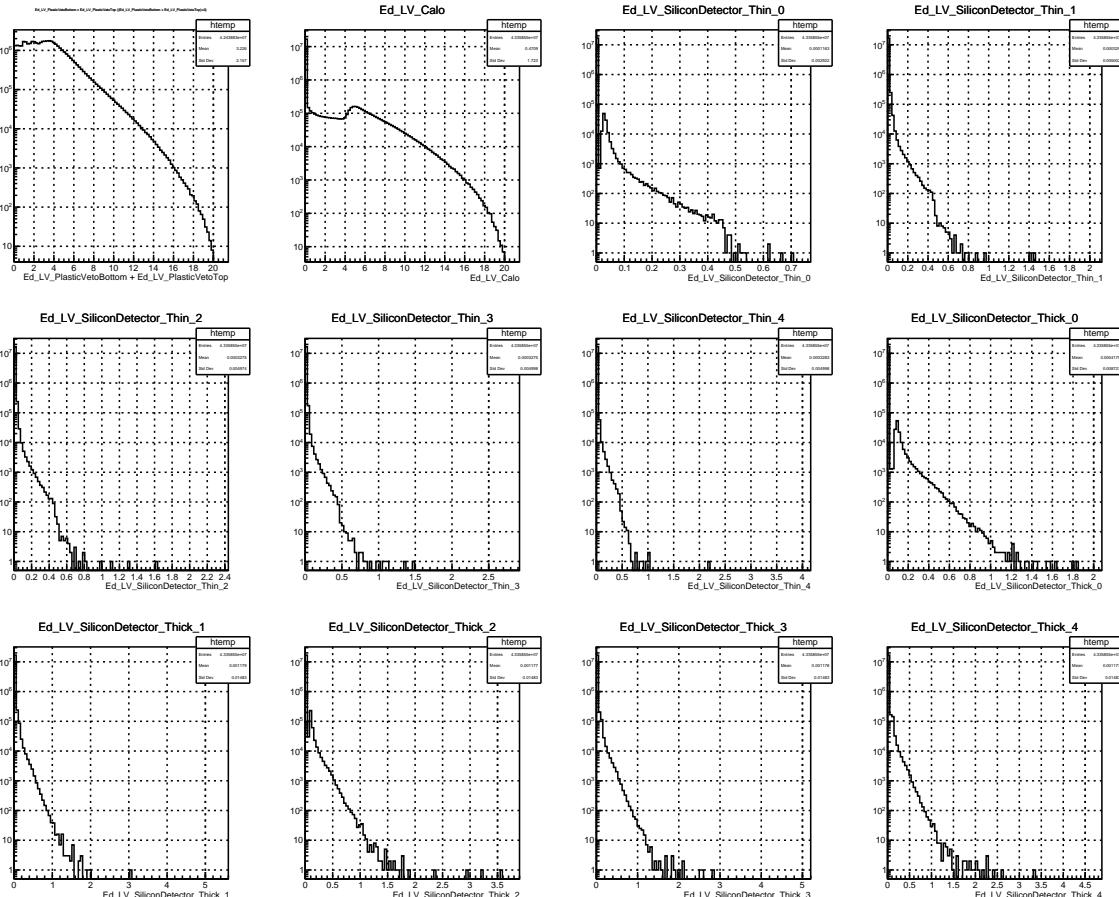


Figure: Detected energies

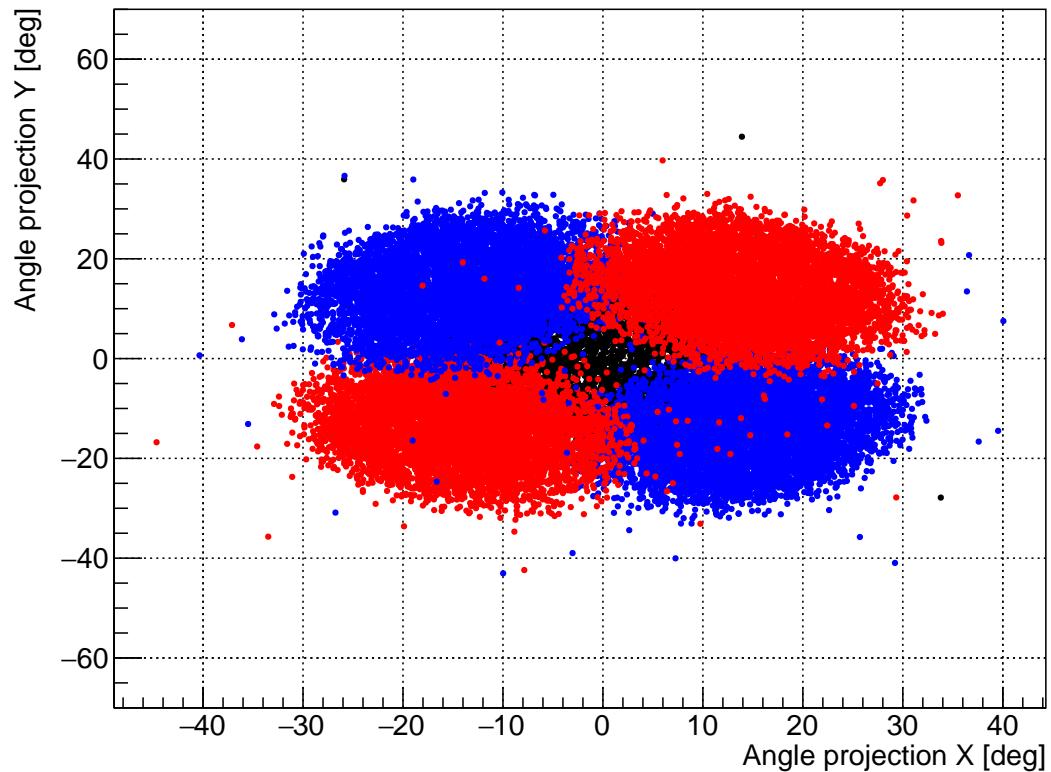


Figure: Angles distribution

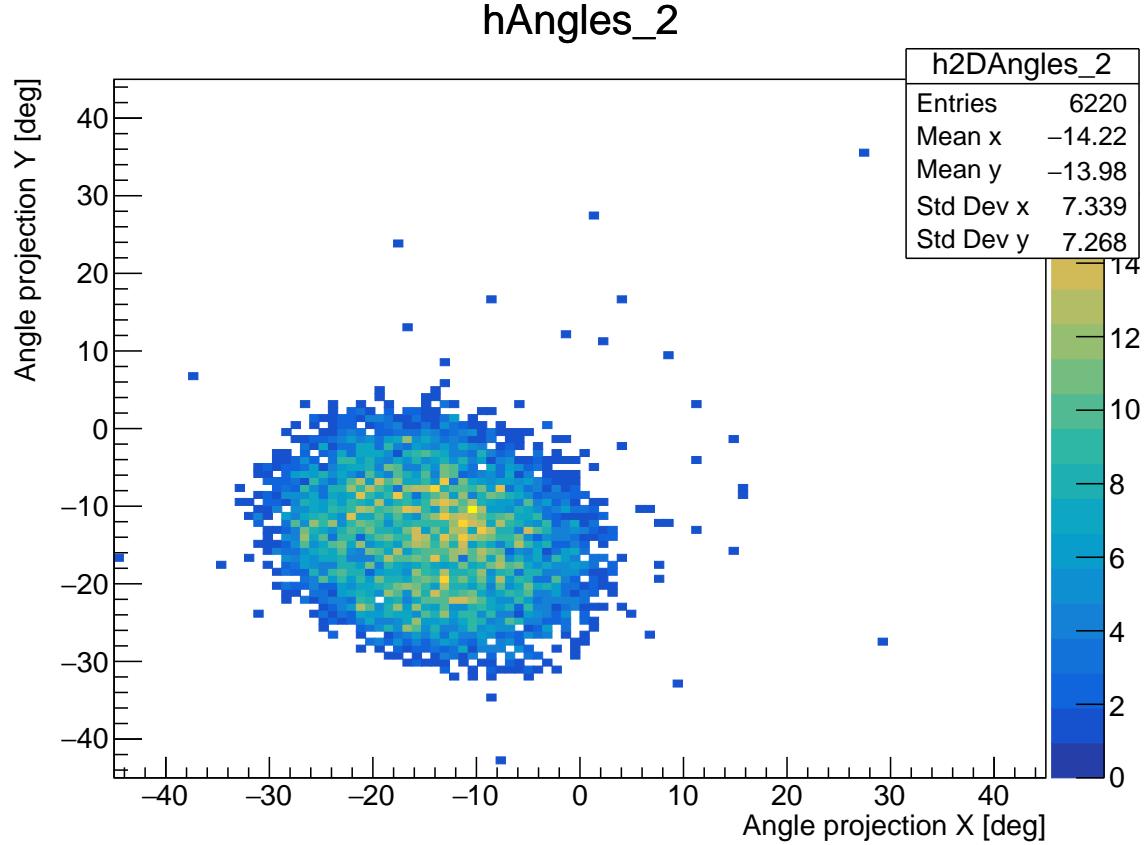


Figure: Angles distribution

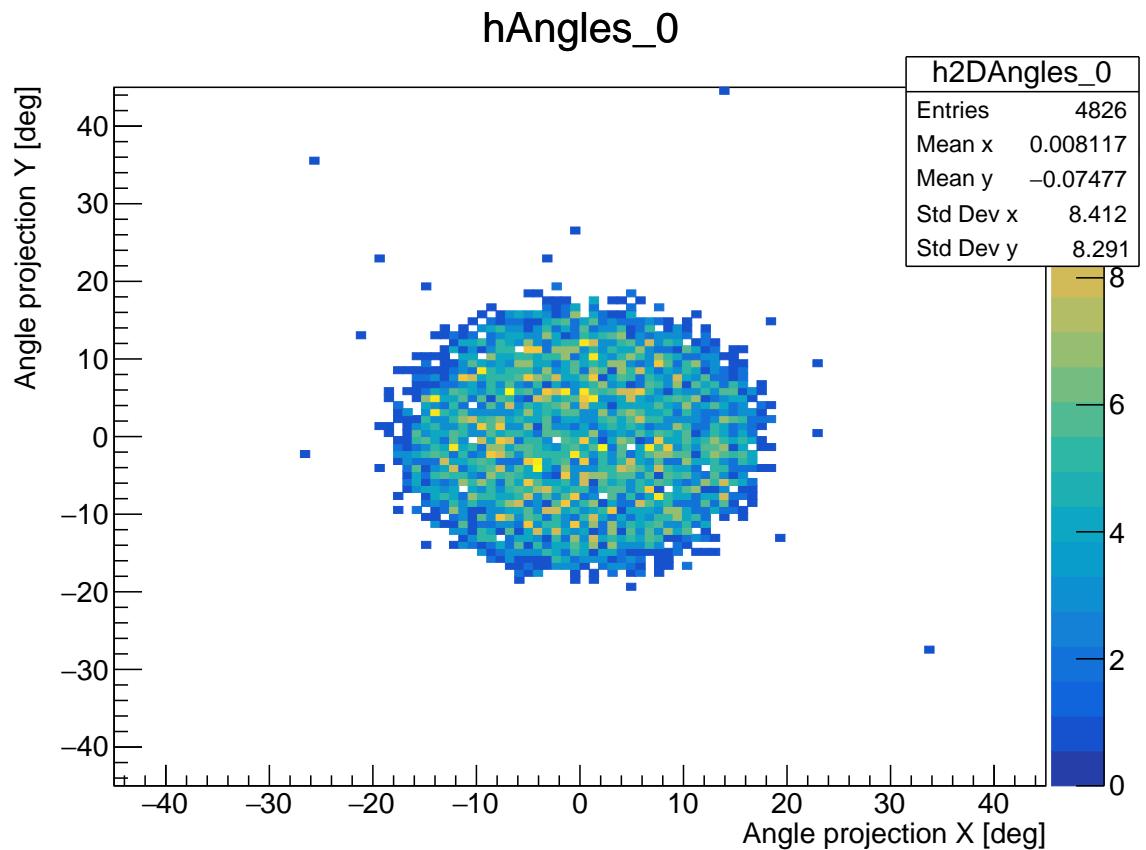


Figure: Angles distribution

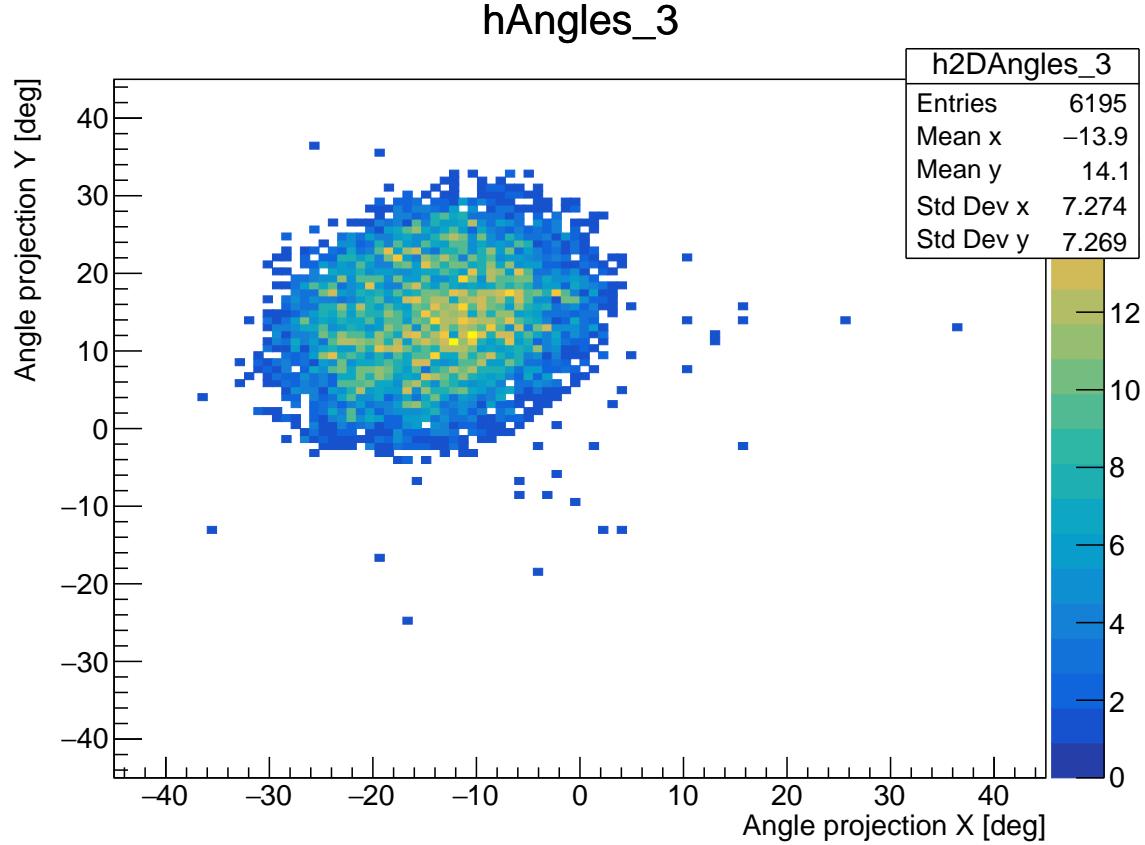


Figure: Angles distribution

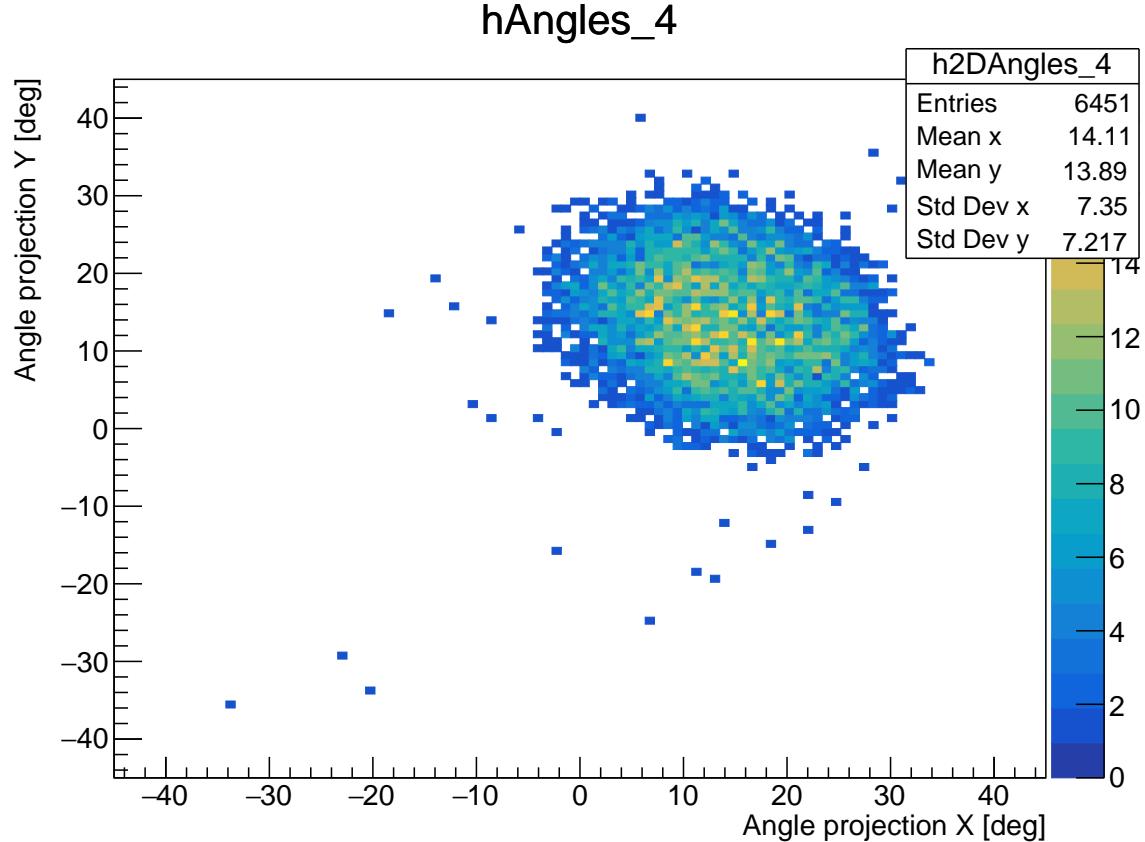


Figure: Angles distribution

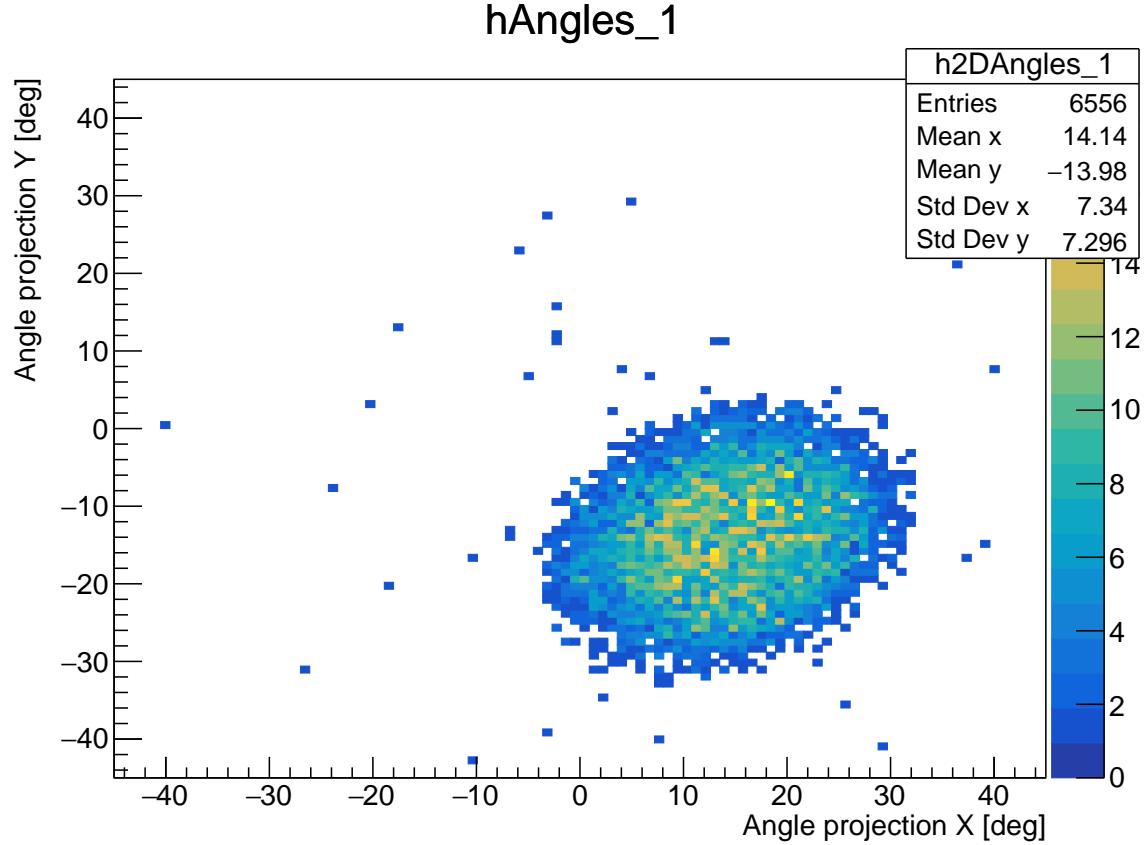


Figure: Angles distribution

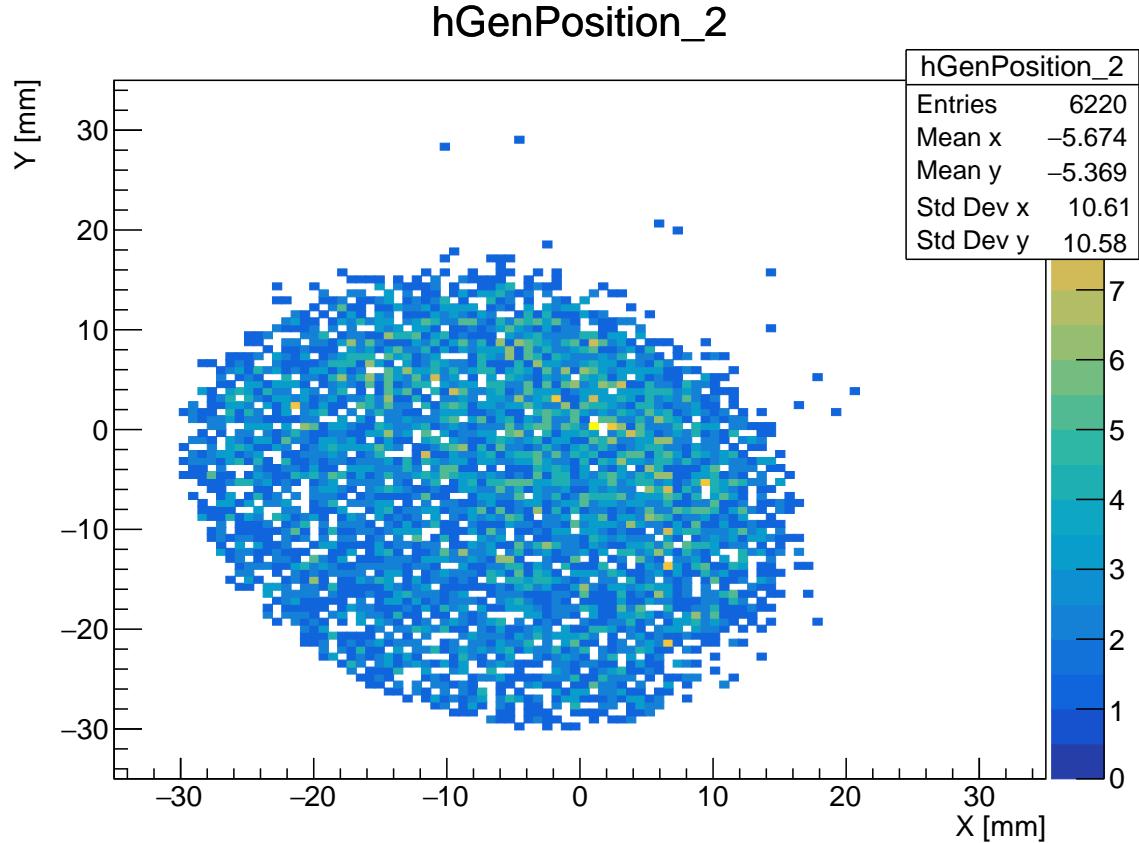


Figure: Generation Position

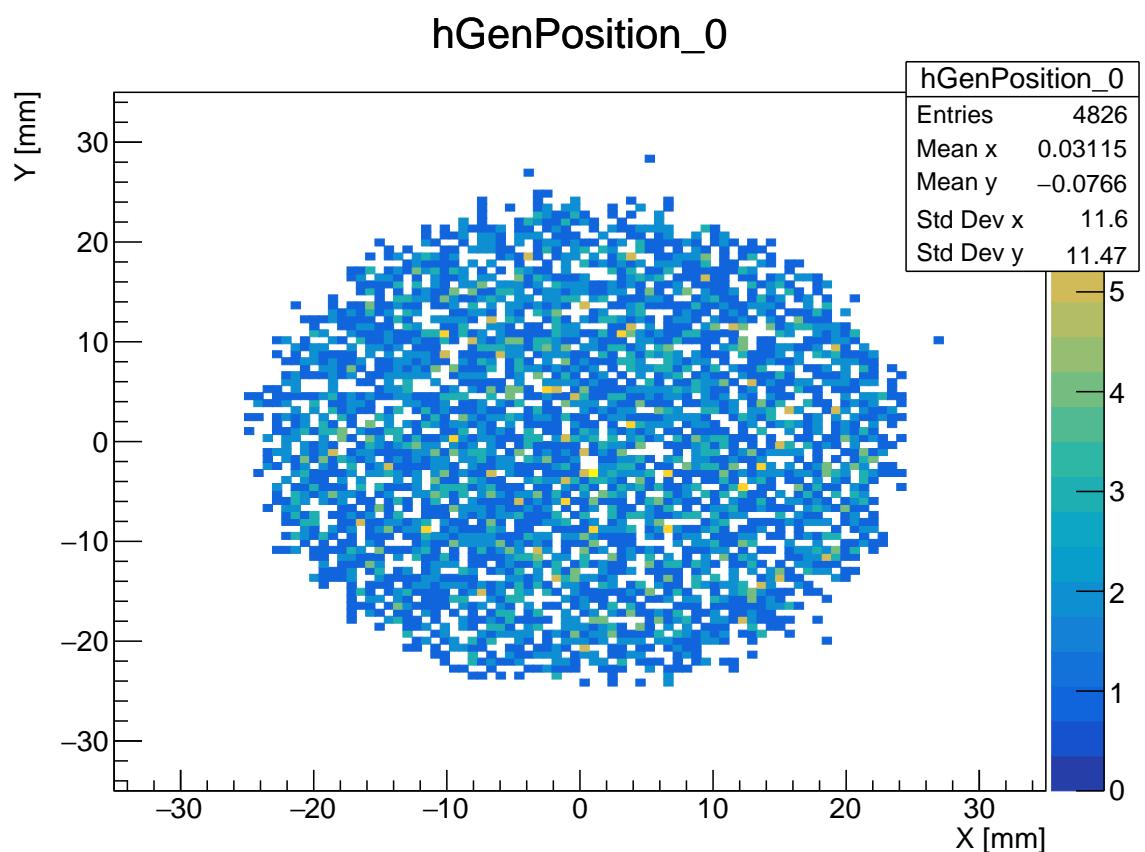


Figure: Generation Position

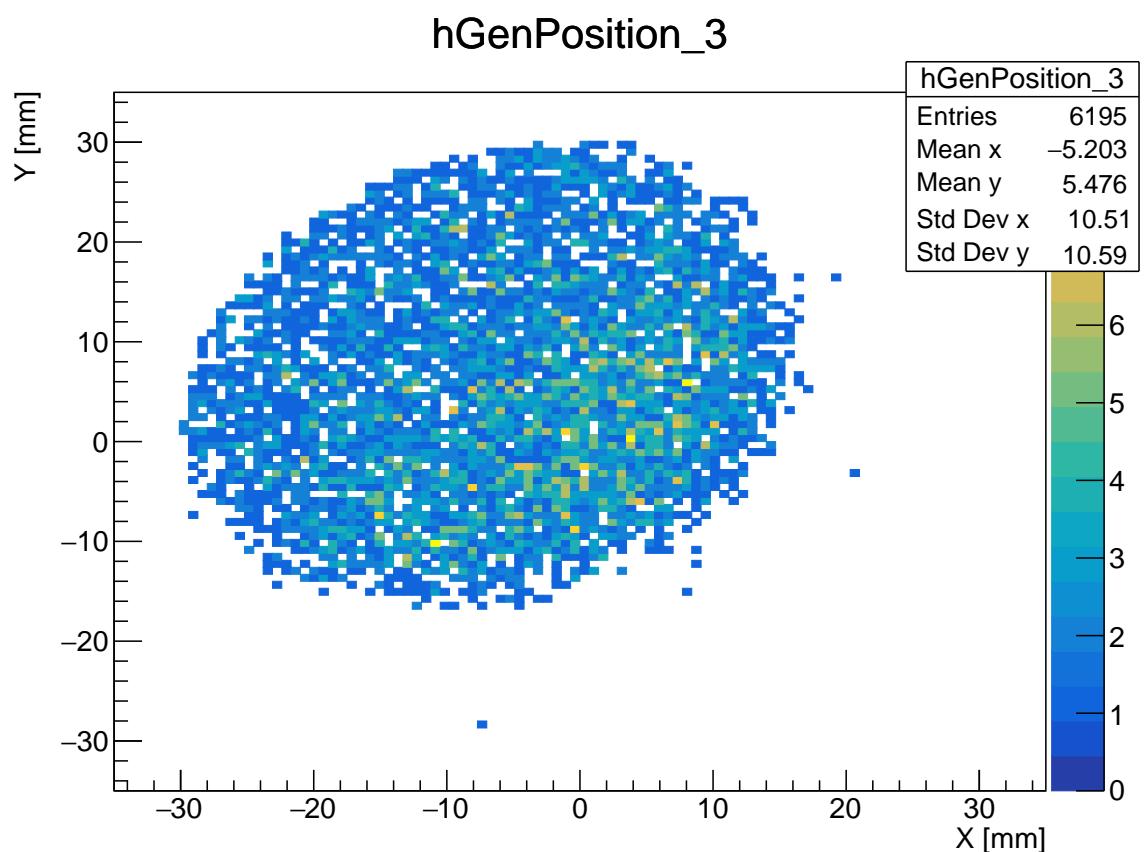


Figure: Generation Position

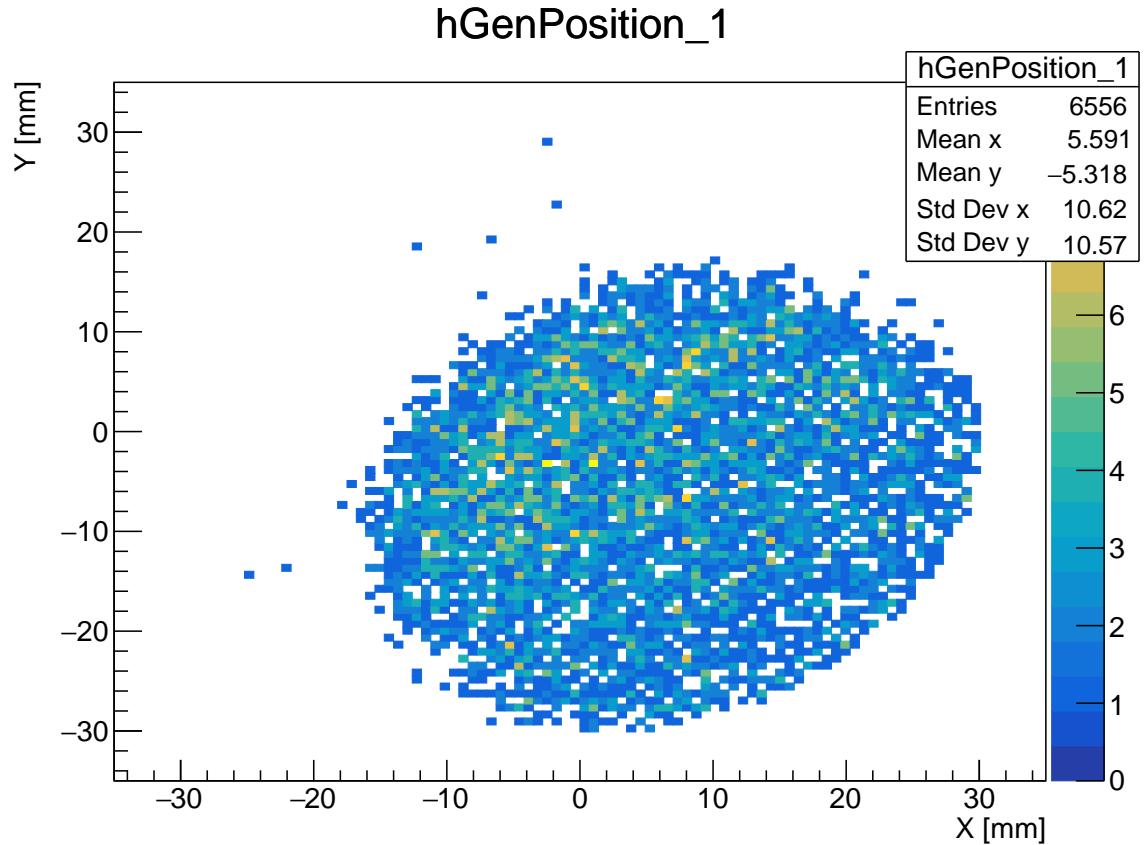


Figure: Generation Position

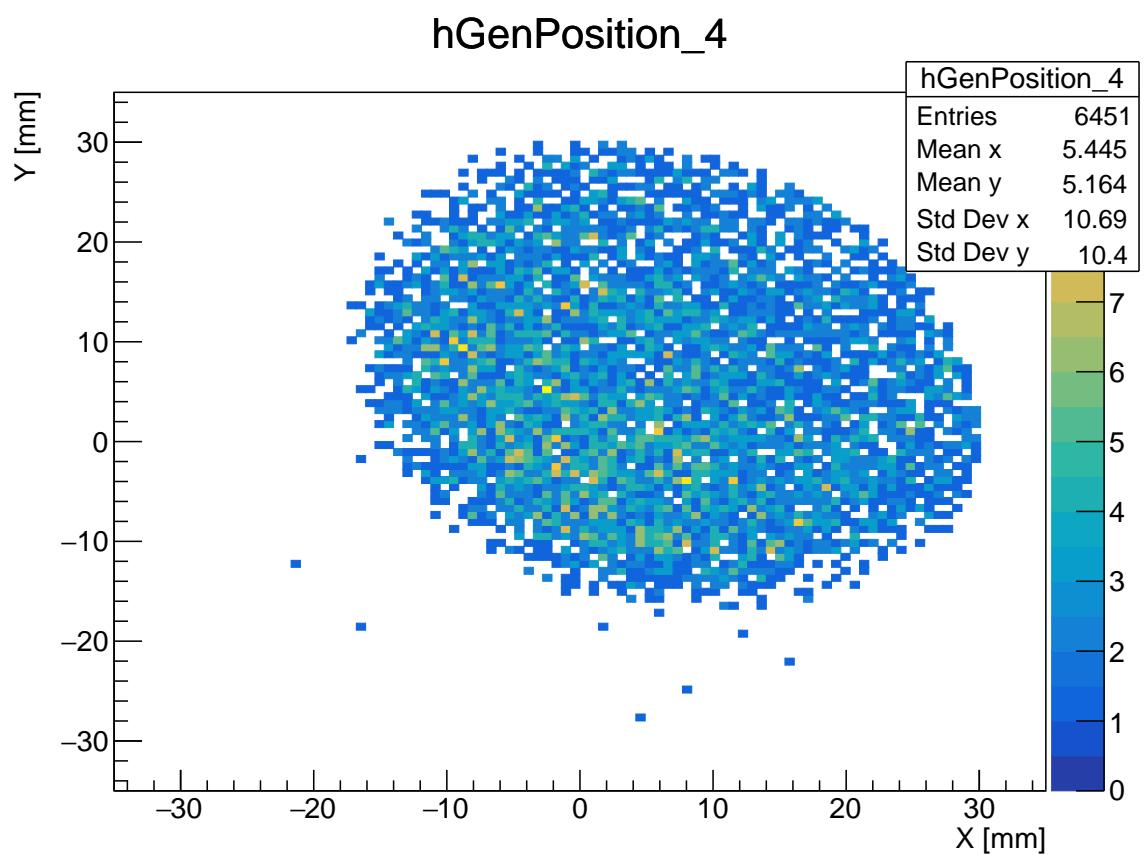


Figure: Generation Position





# MC quantities for proton\_t0

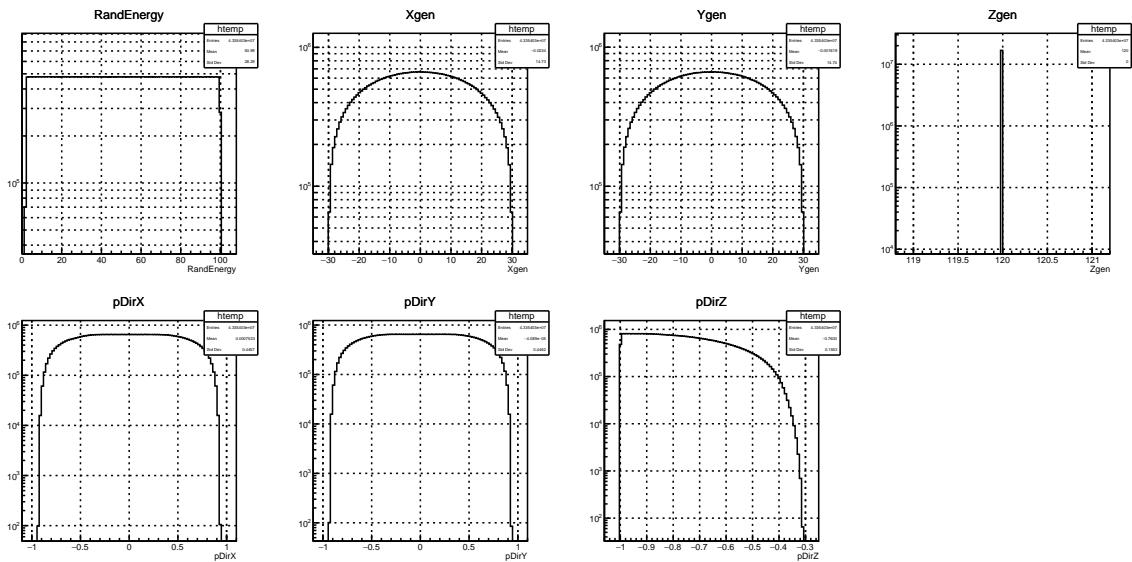


Figure: MC quantities

## Energies distribution for proton

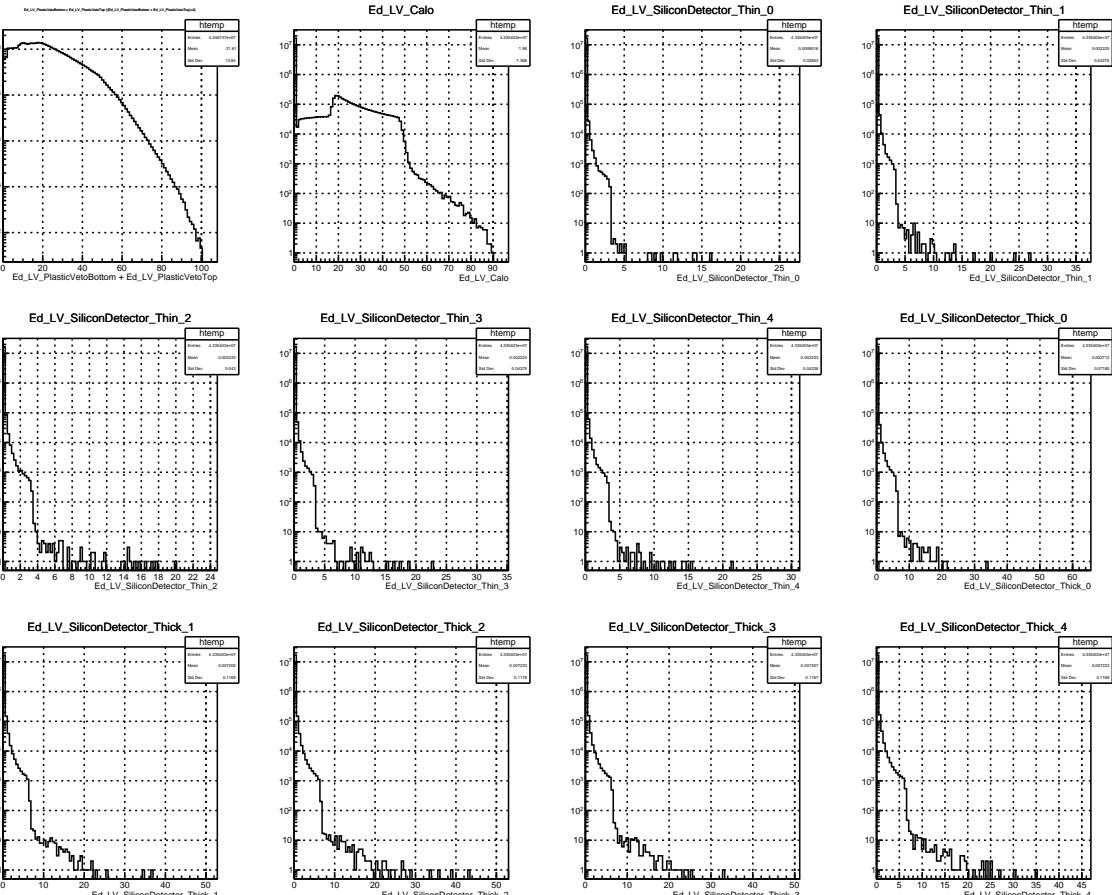


Figure: Detected energies

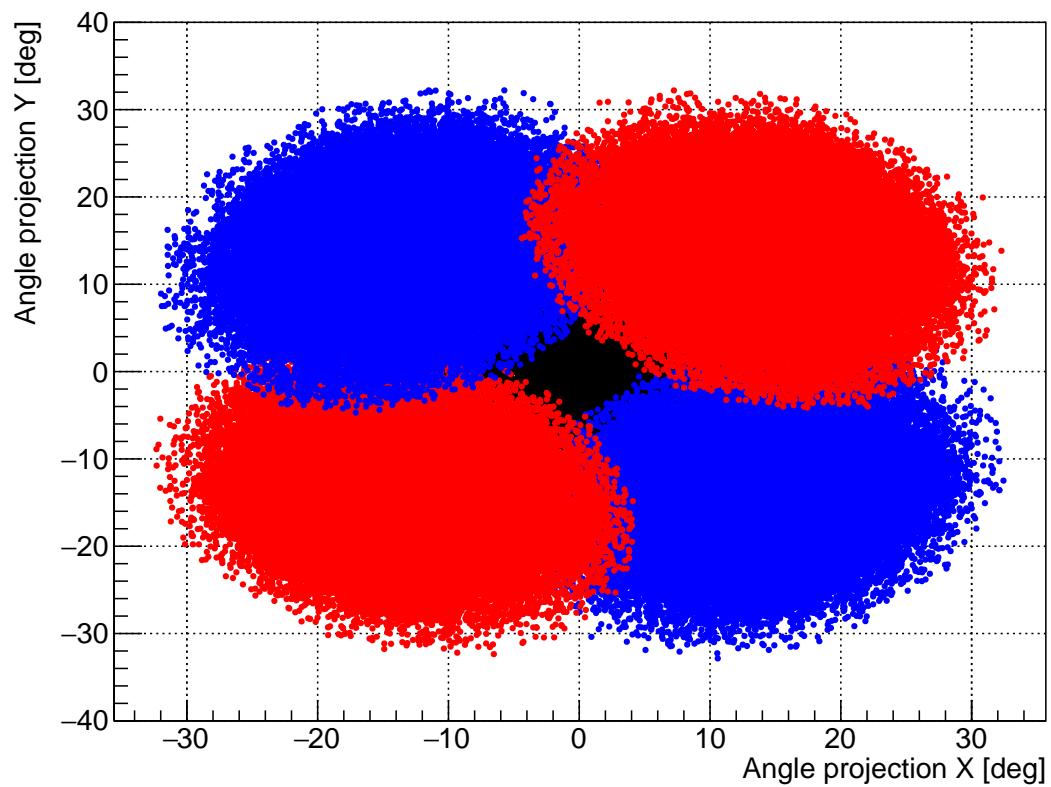


Figure: Angles distribution

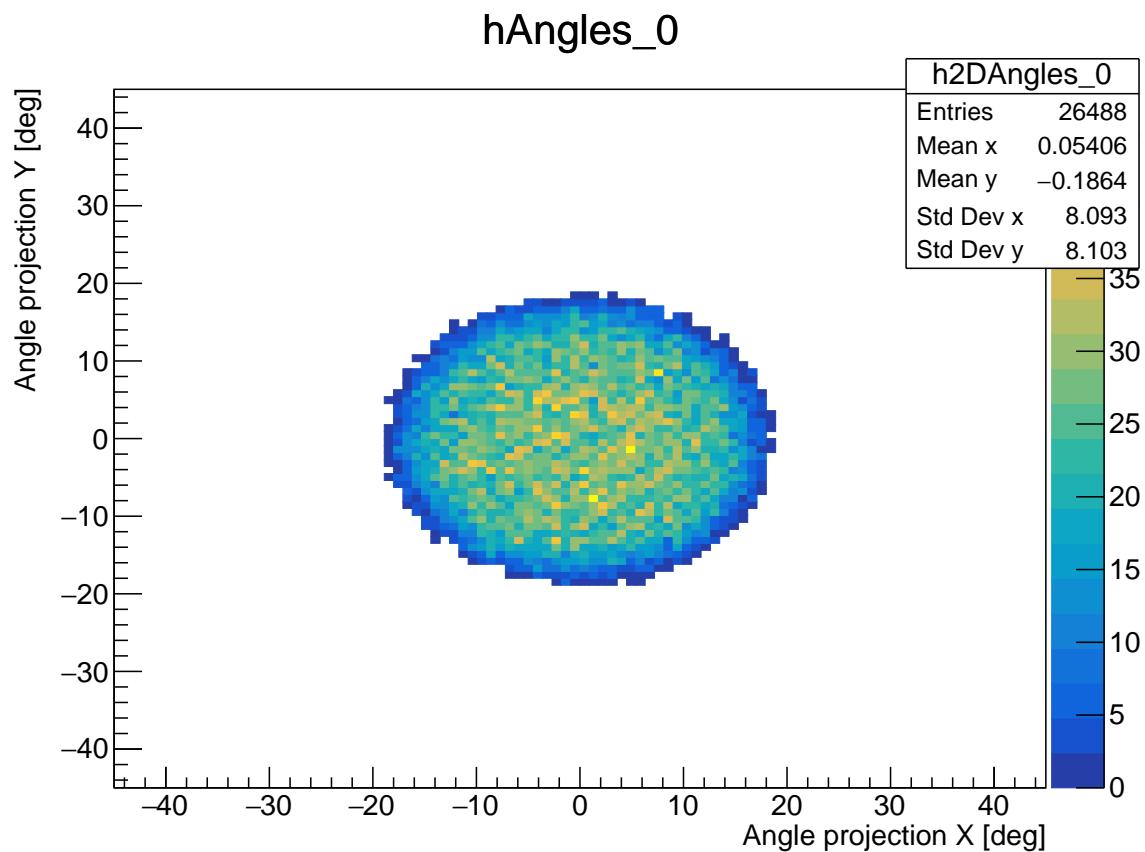


Figure: Angles distribution

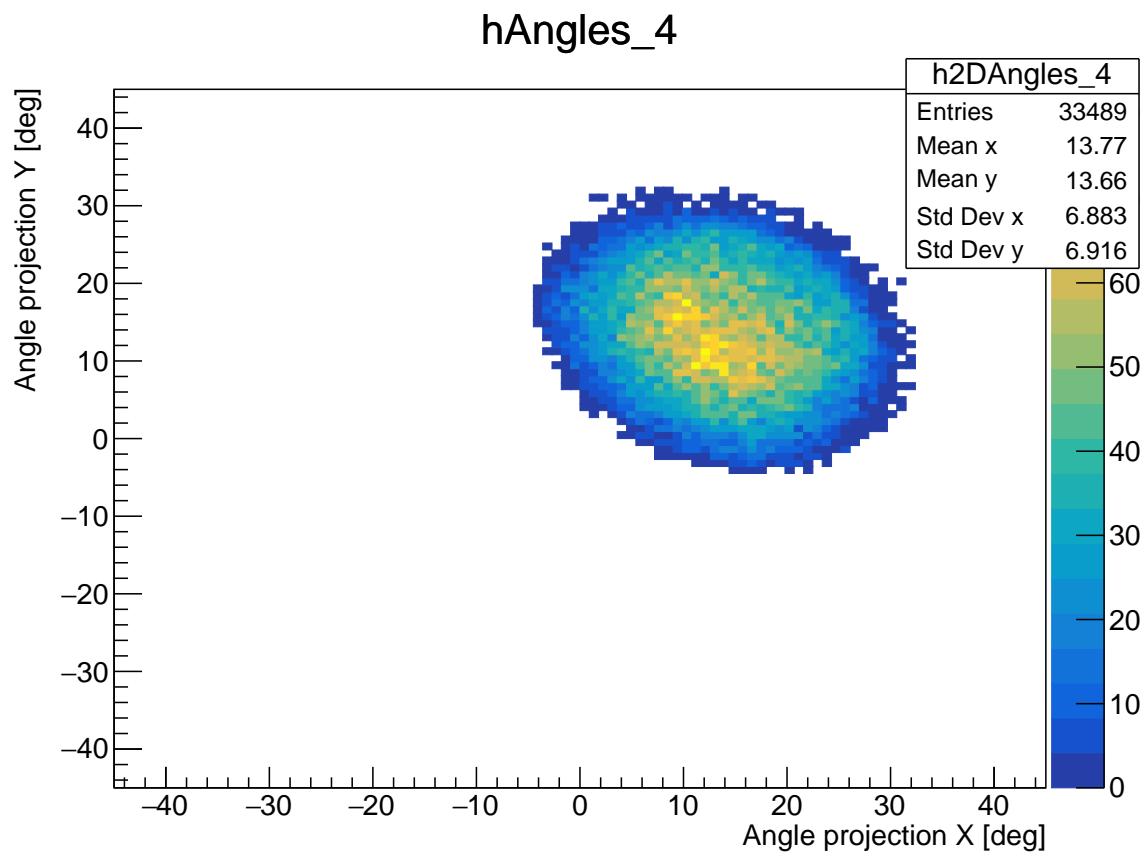


Figure: Angles distribution

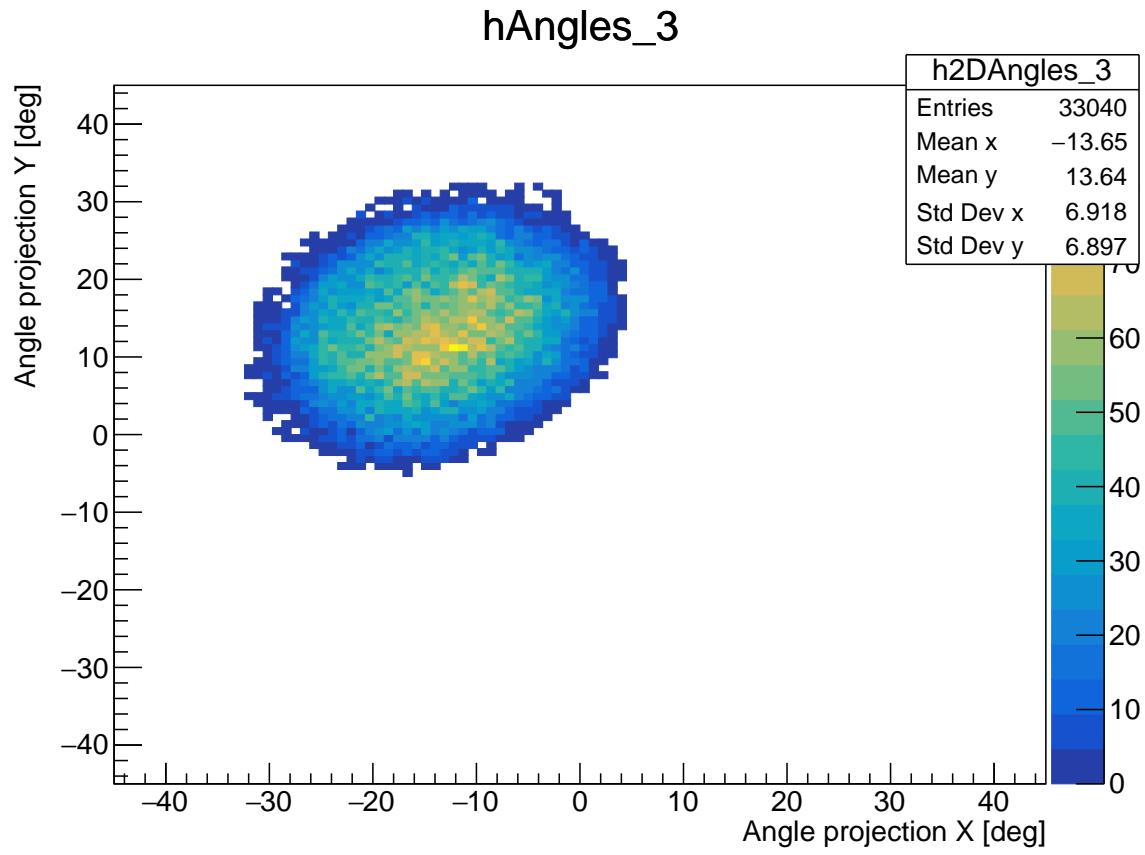


Figure: Angles distribution

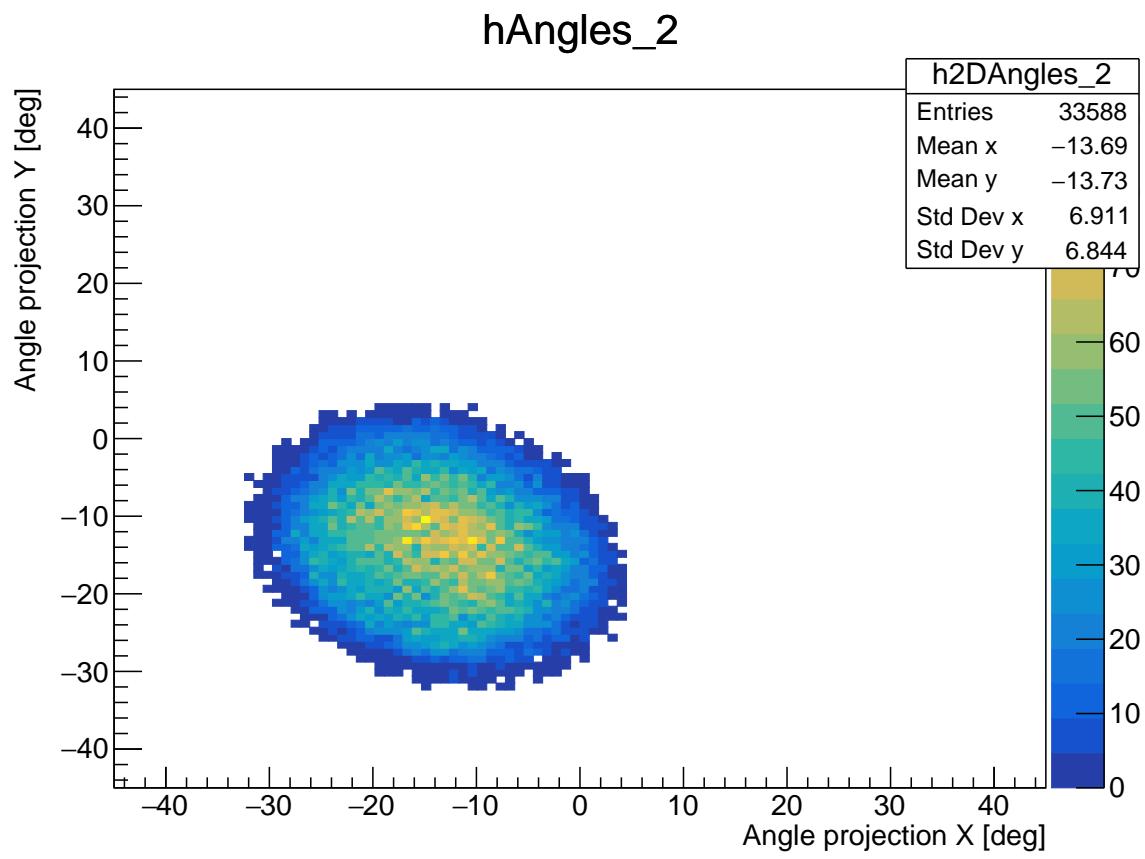


Figure: Angles distribution

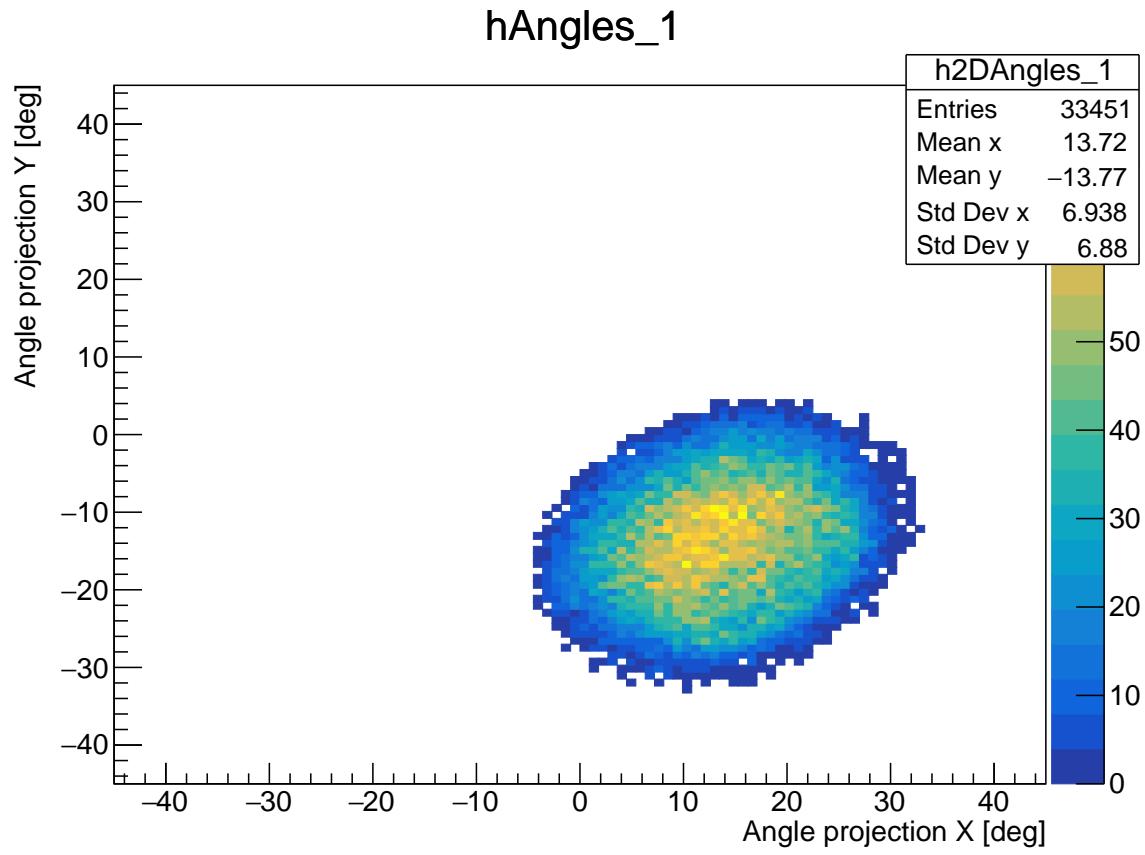


Figure: Angles distribution

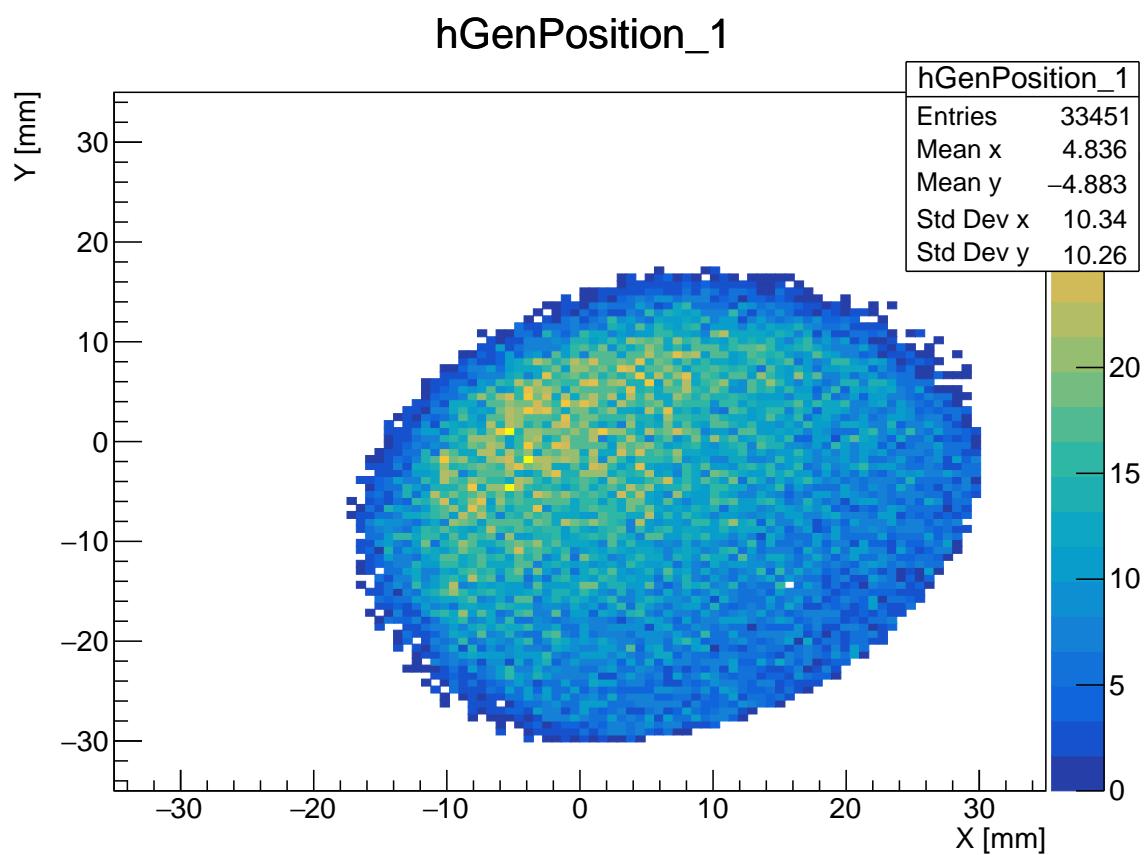


Figure: Generation Position

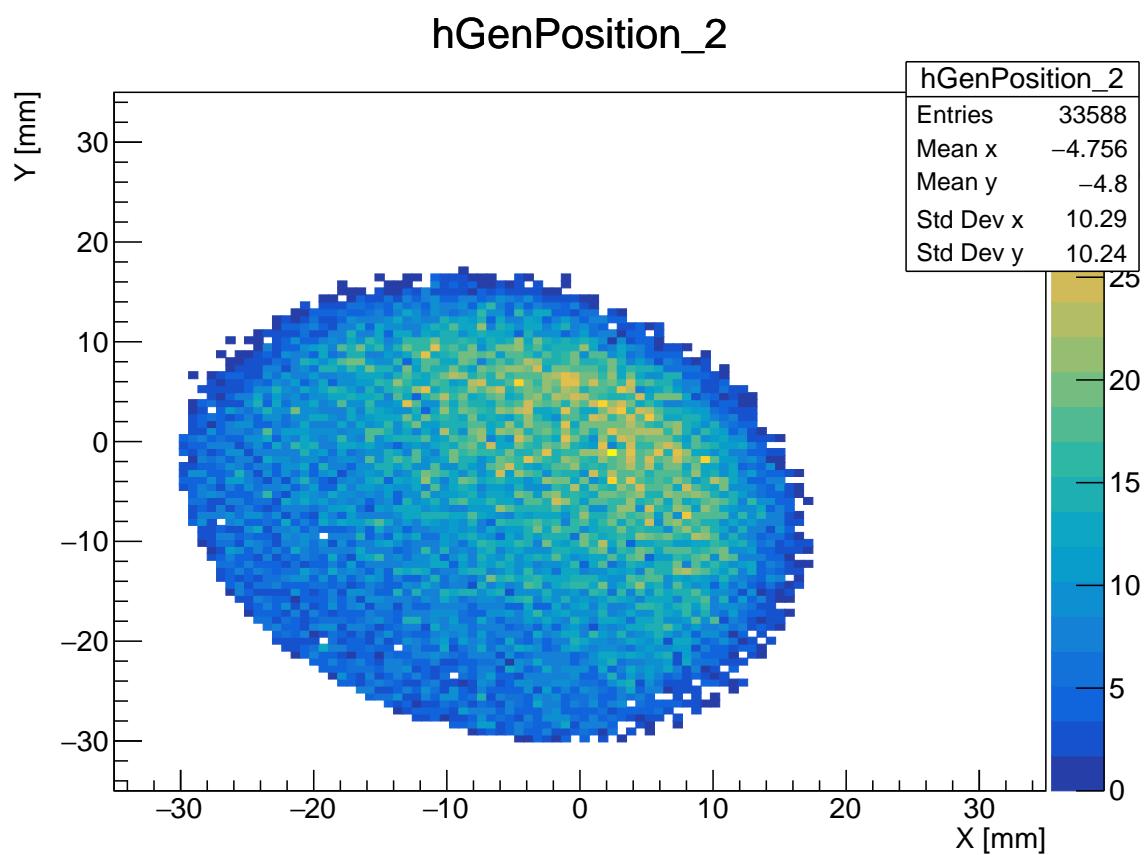


Figure: Generation Position

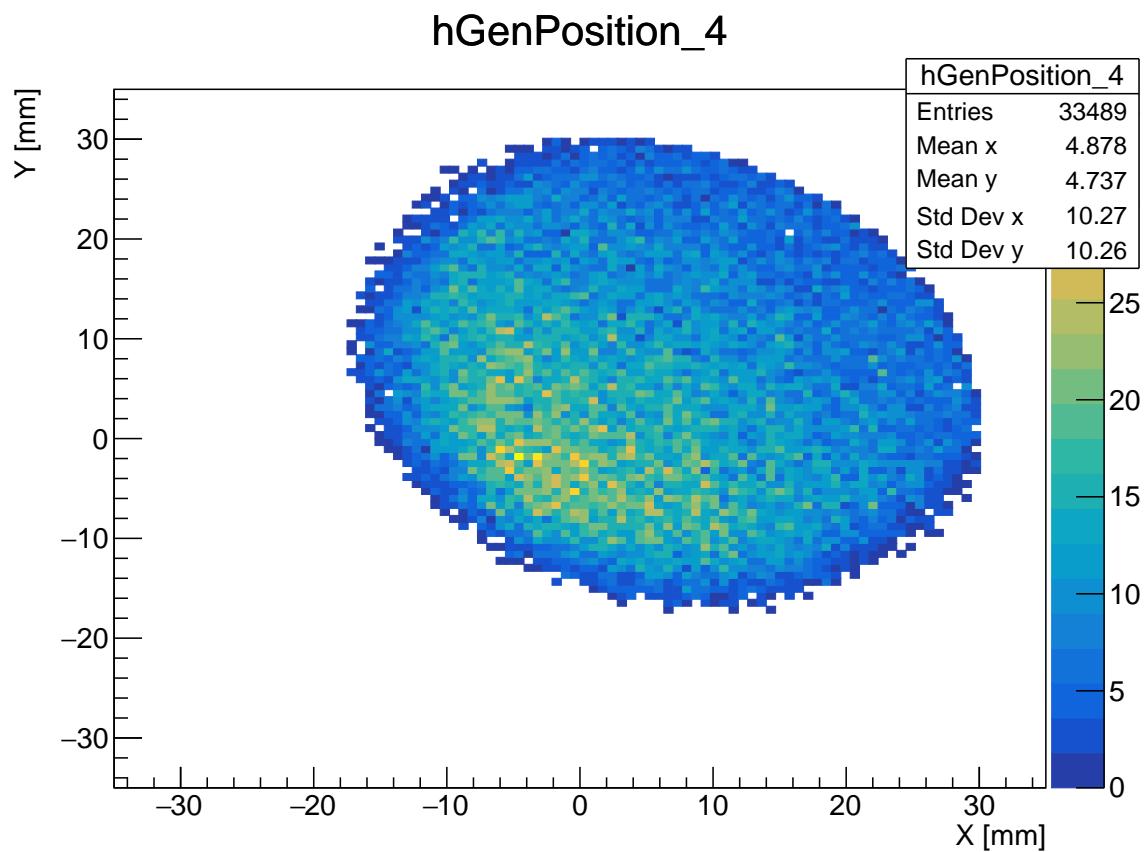


Figure: Generation Position

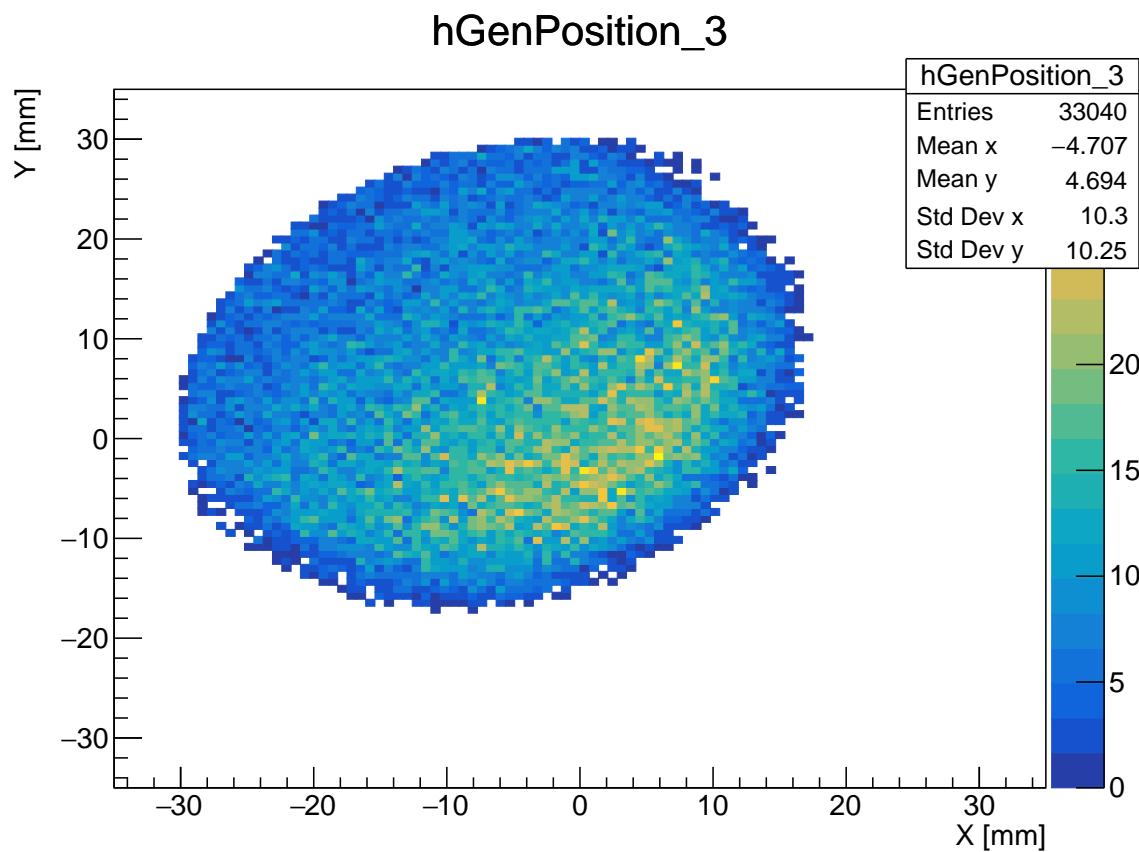


Figure: Generation Position

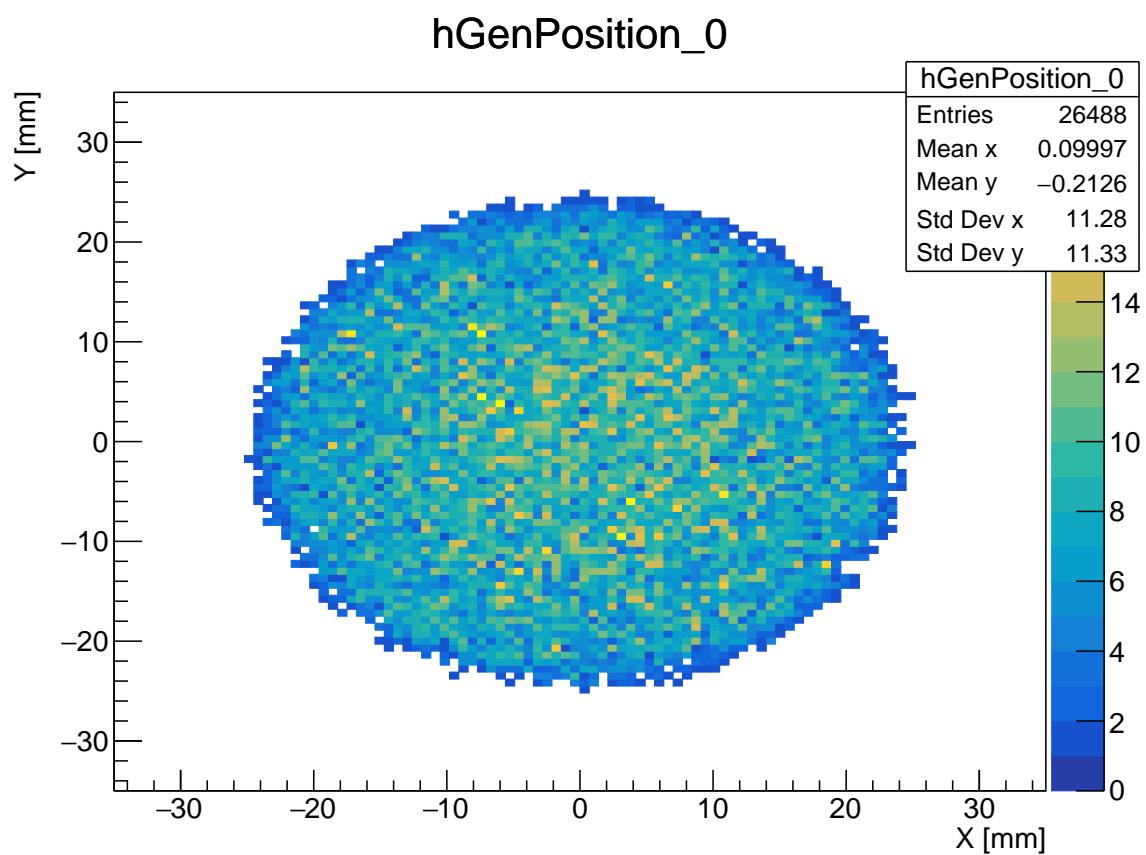


Figure: Generation Position





# MC quantities for alpha\_t0

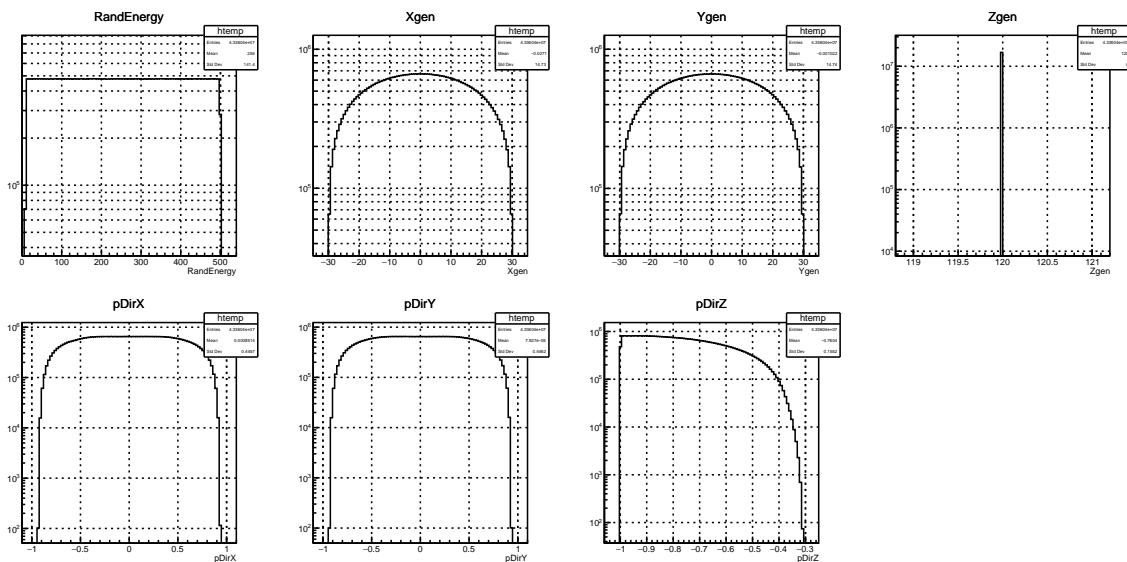


Figure: MC quantities

# Energies distribution for alpha

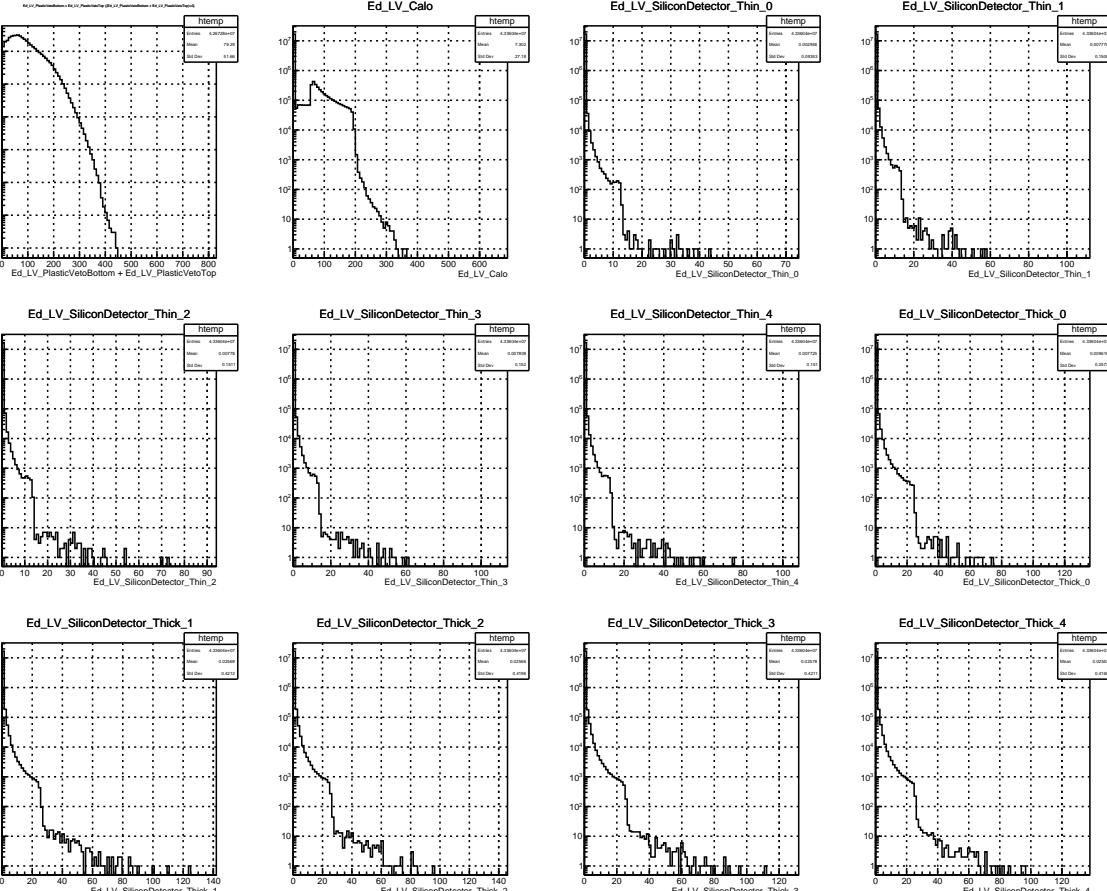


Figure: Detected energies

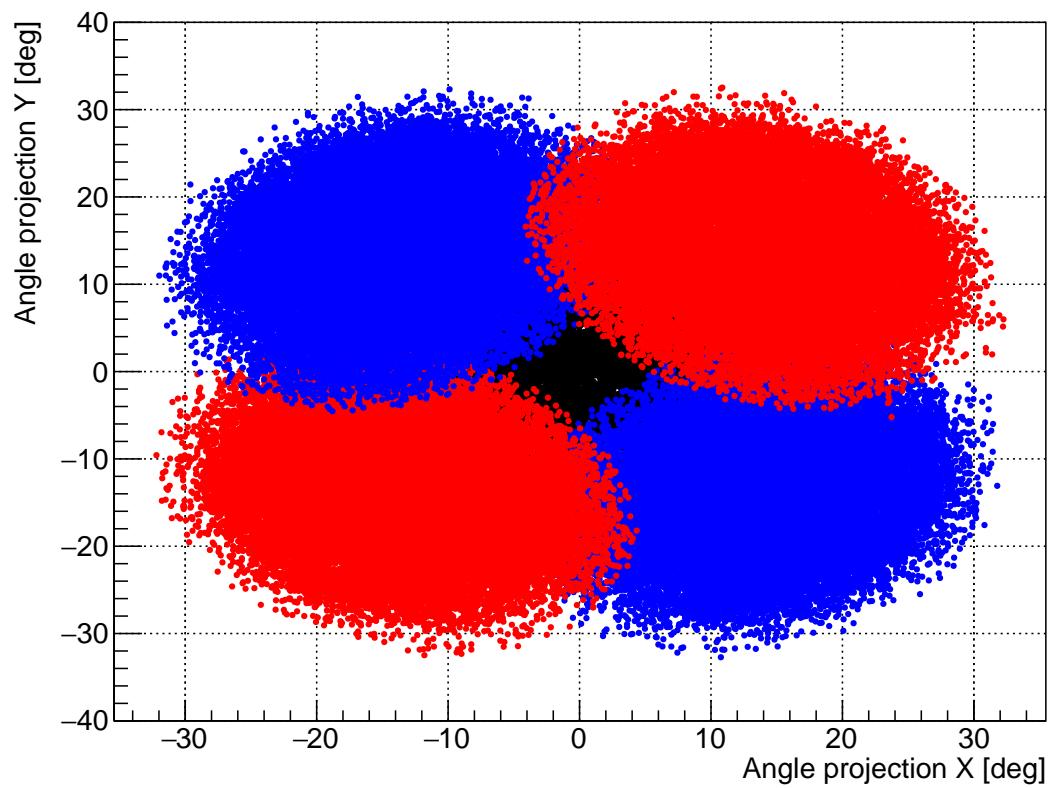


Figure: Angles distribution

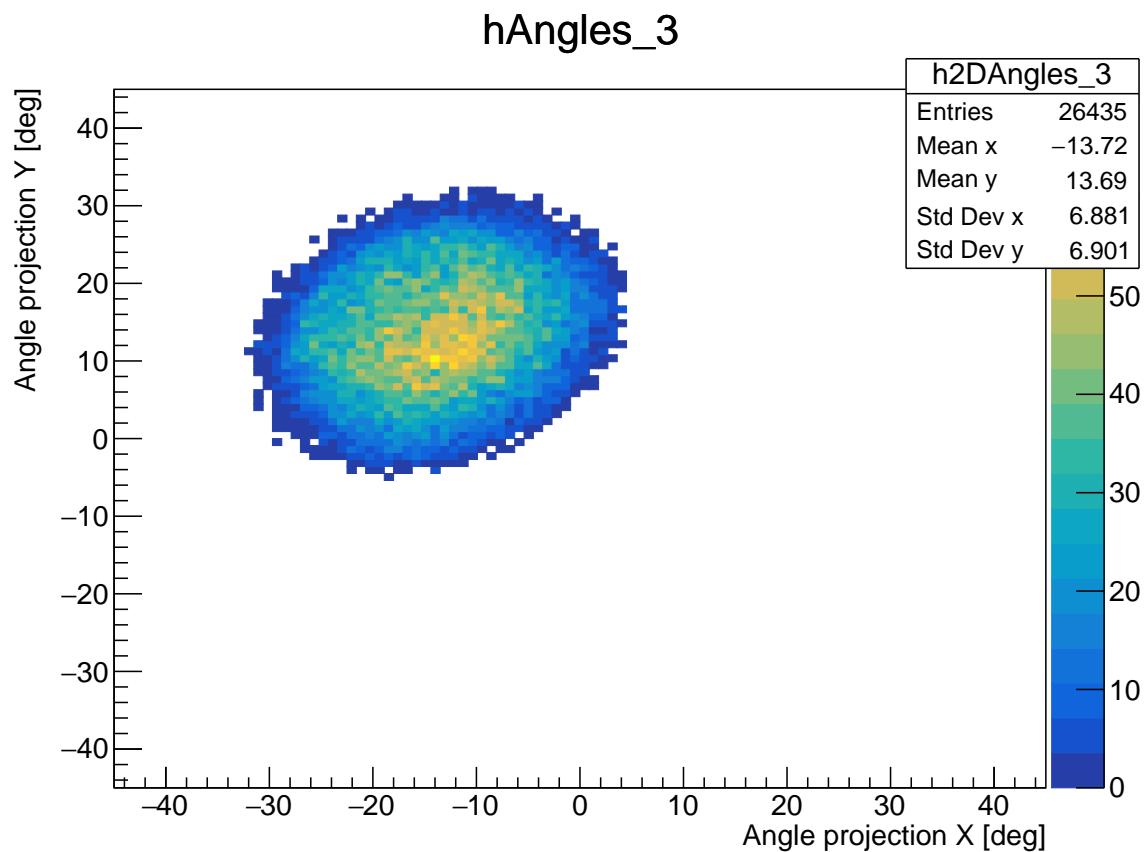


Figure: Angles distribution

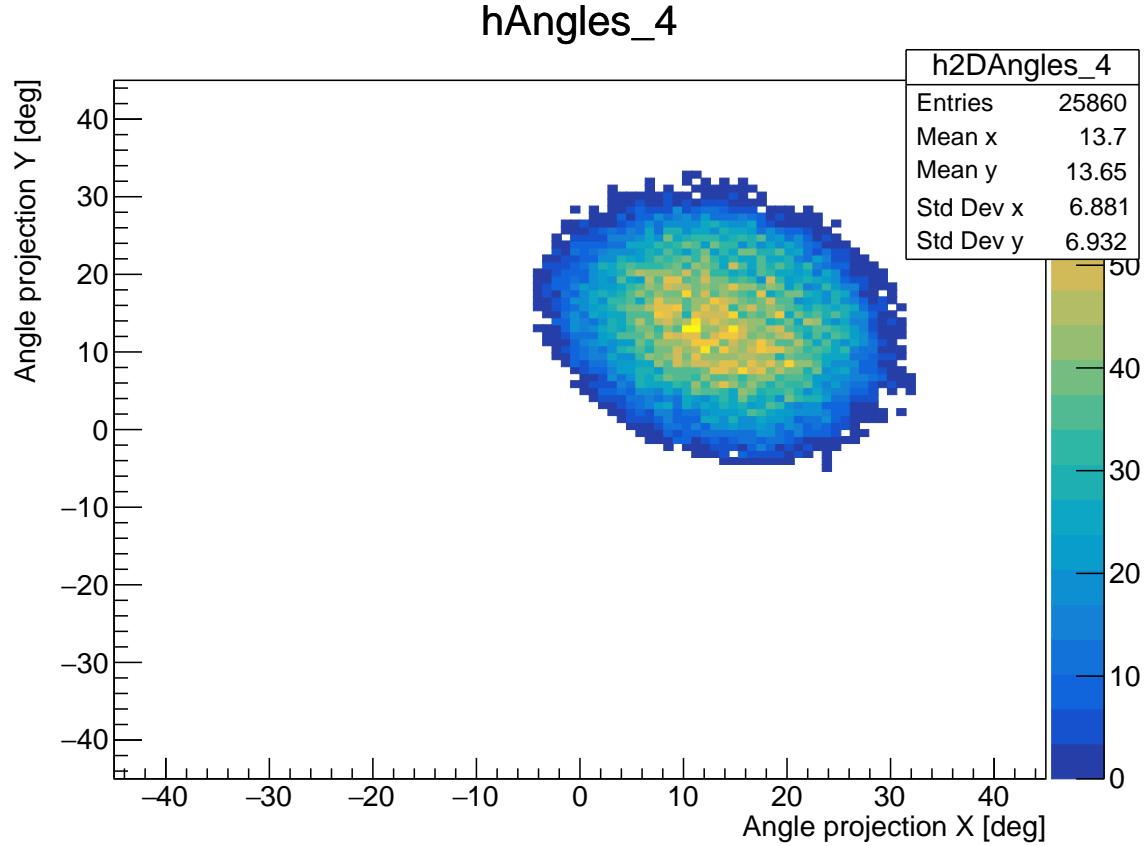


Figure: Angles distribution

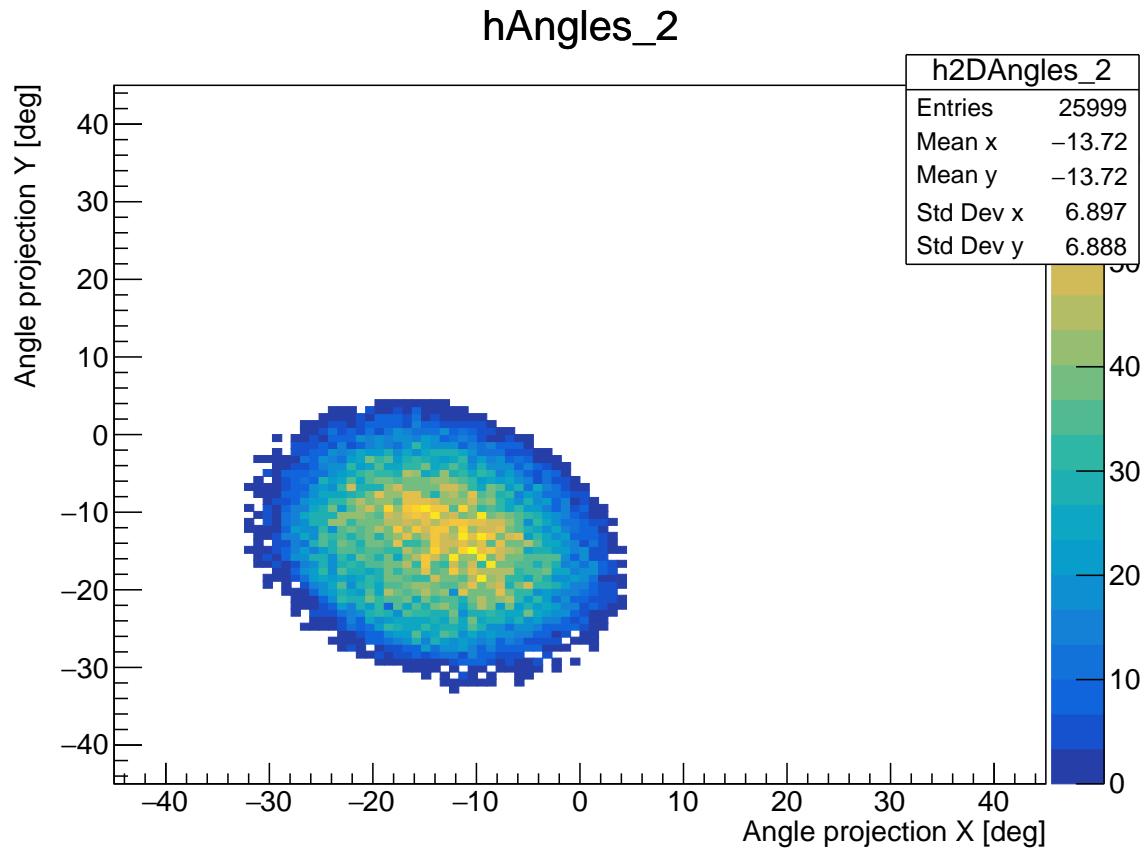


Figure: Angles distribution

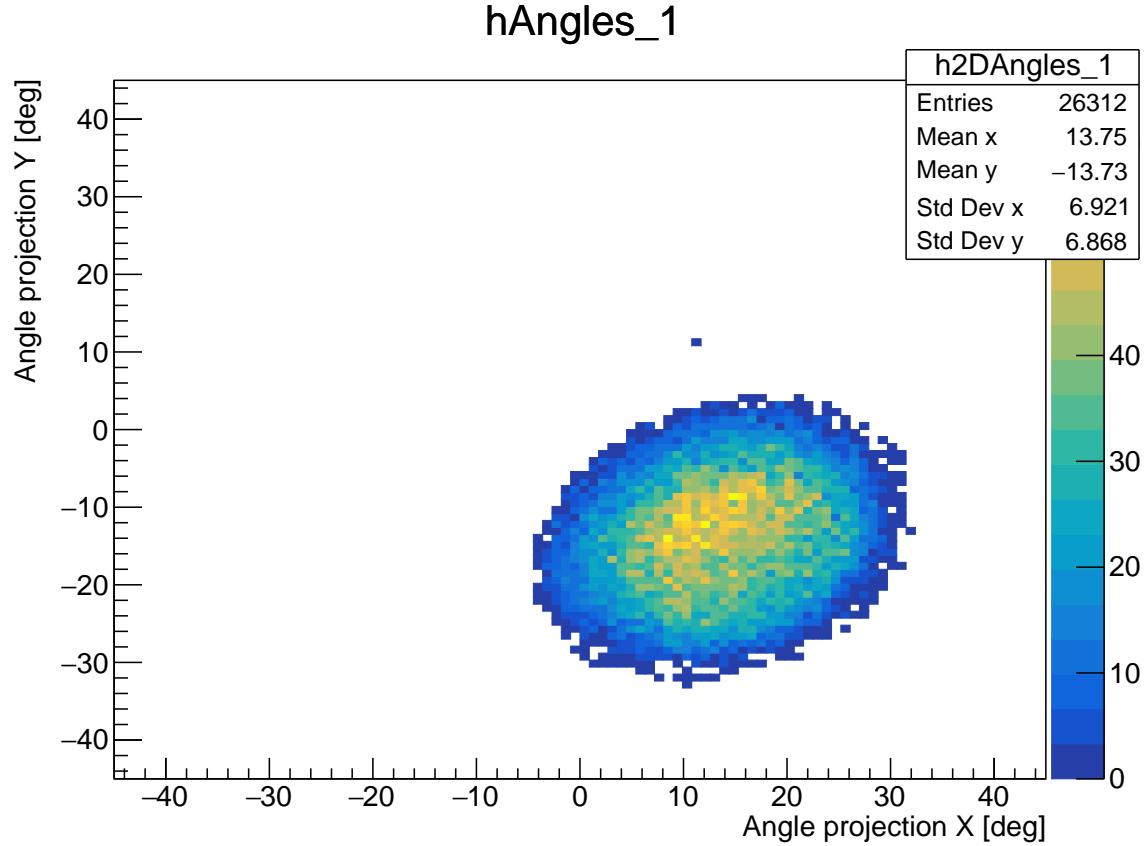


Figure: Angles distribution

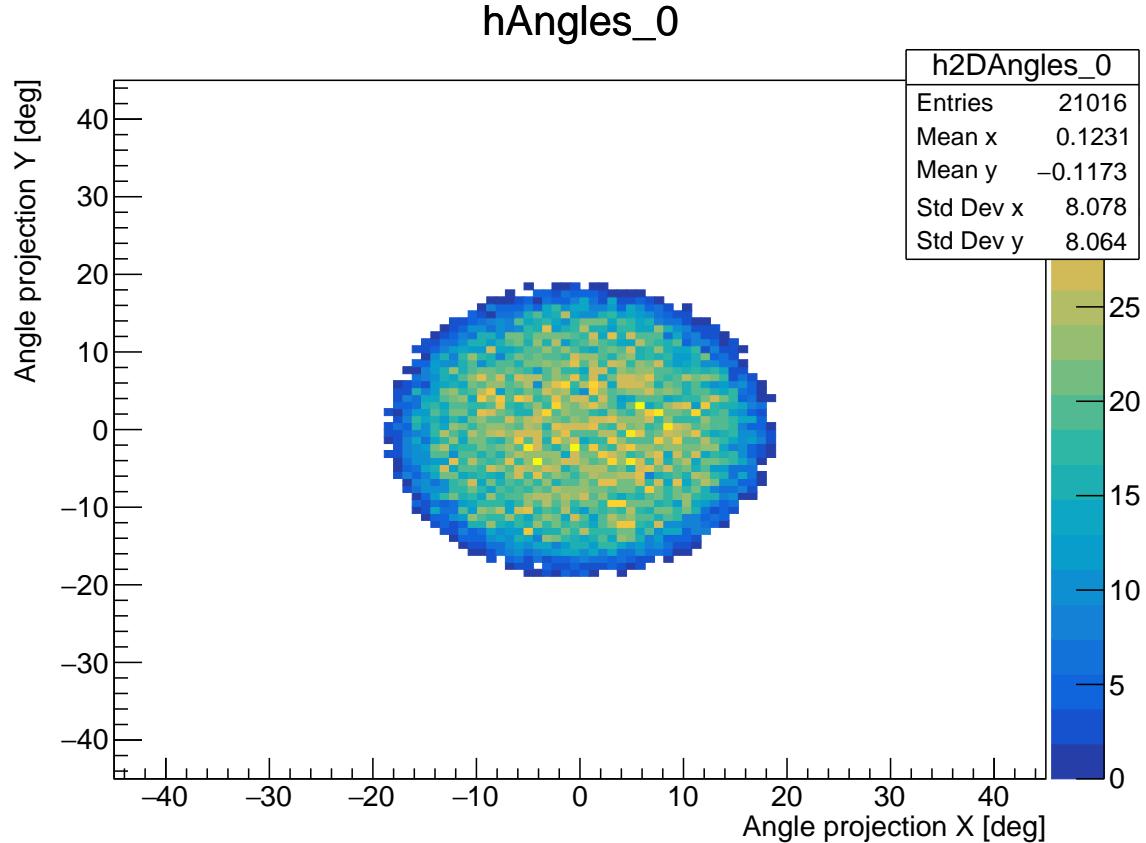


Figure: Angles distribution

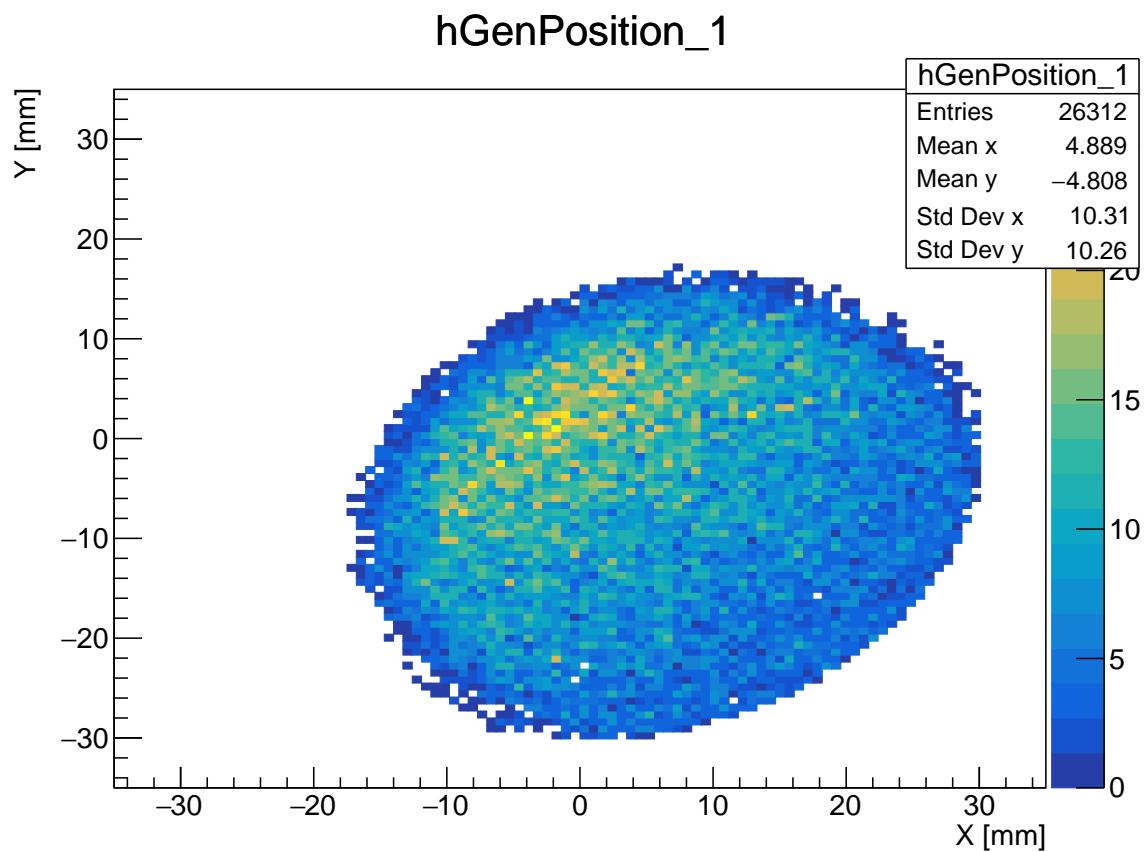


Figure: Generation Position

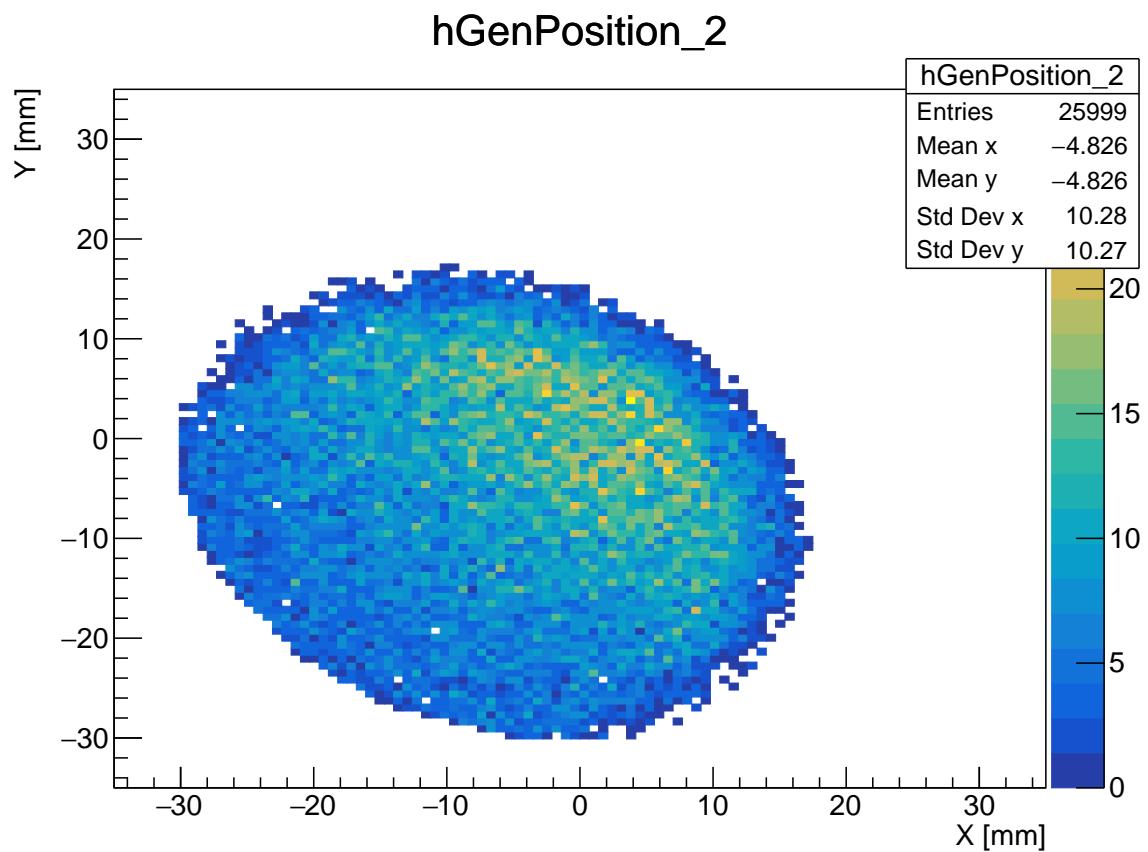


Figure: Generation Position

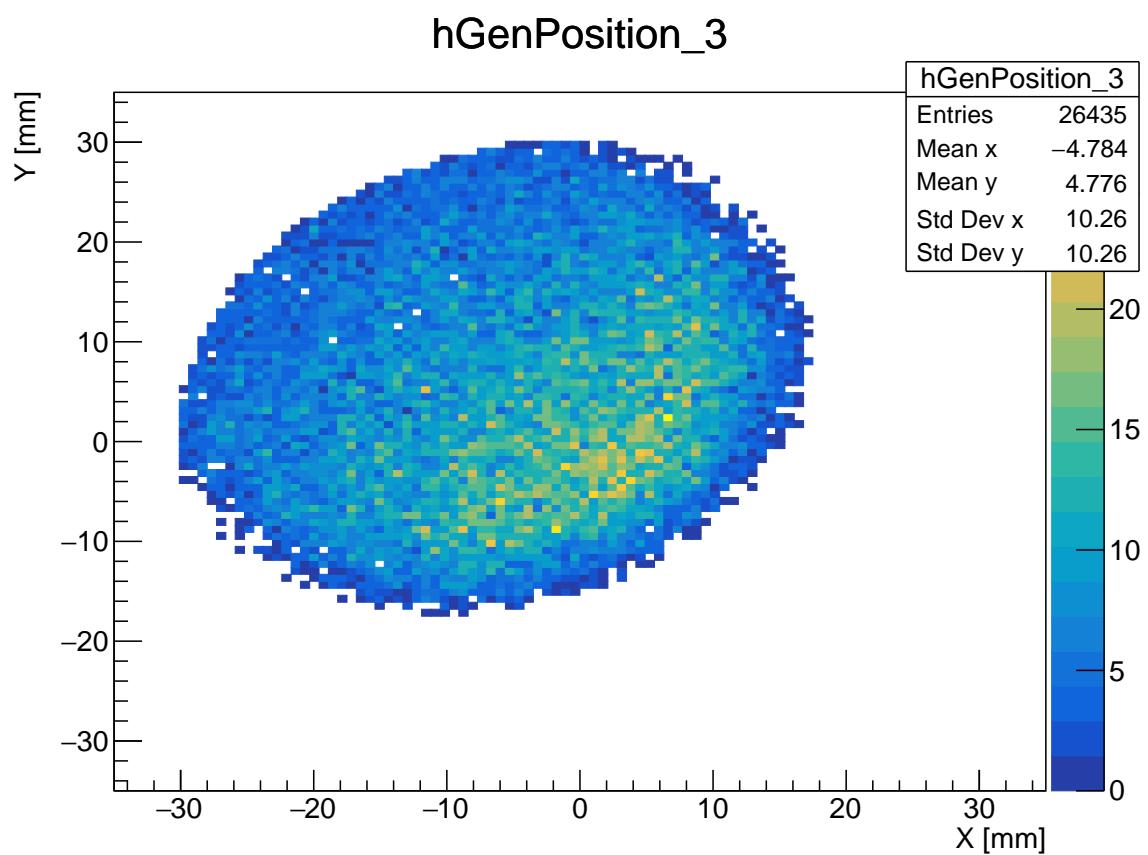


Figure: Generation Position

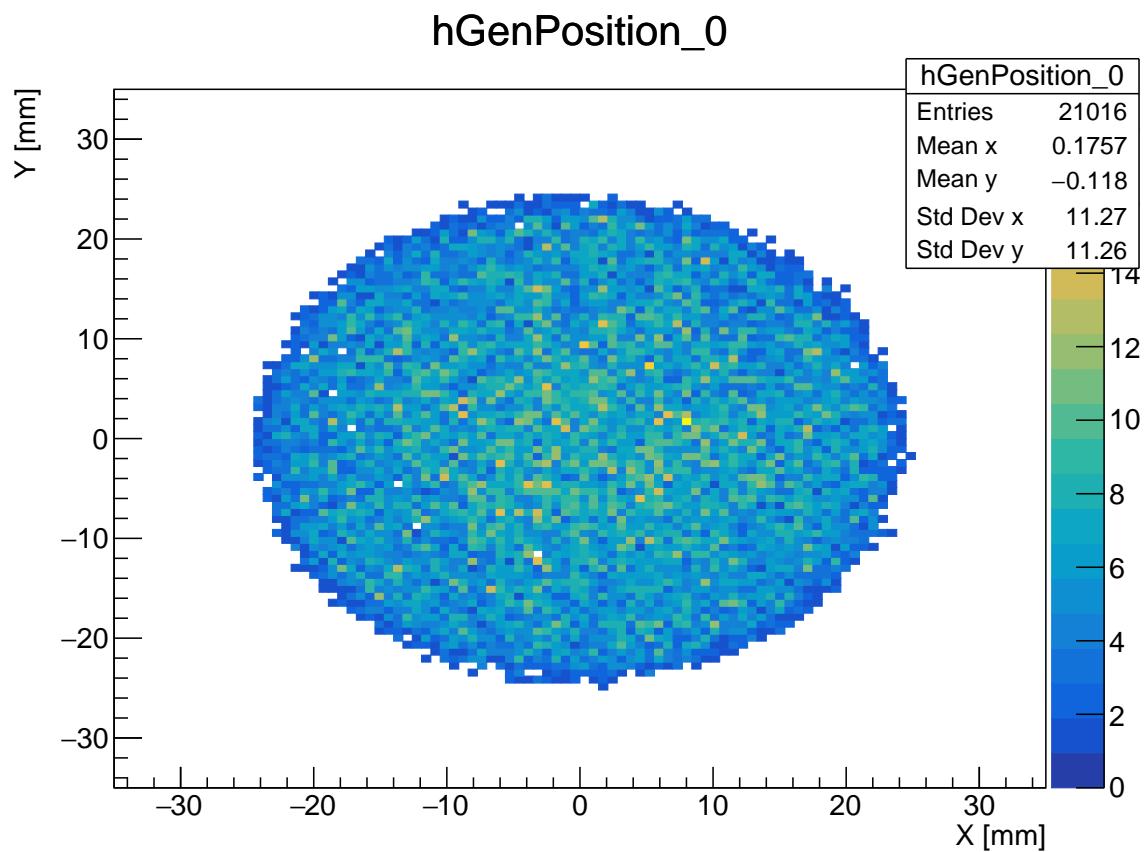


Figure: Generation Position

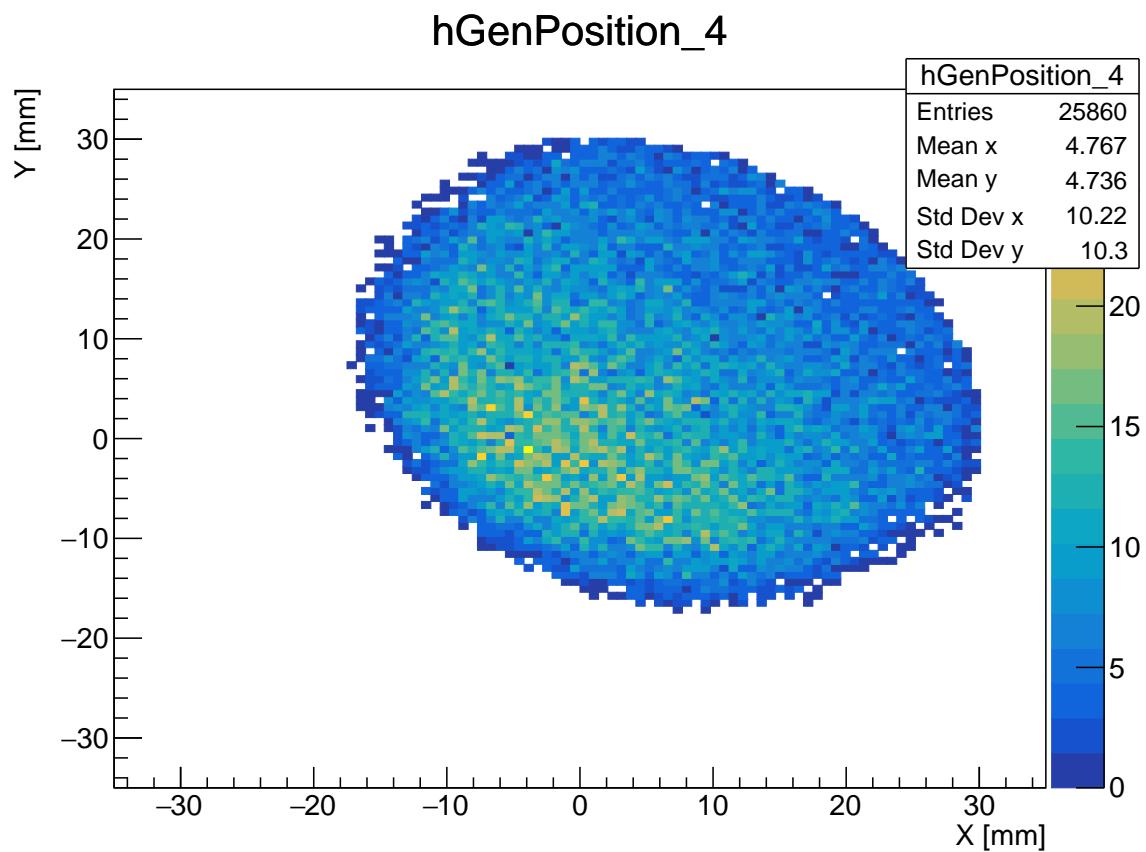


Figure: Generation Position





