

GEANT4 Simulation Report

Riccardo Nicolaidis ²

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GDML File Name : **LEM_GAGG-worldVOL_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_AlScrew_Thick_3	G4_Al	2.44318
LV_AlTop	G4_Al	555.655
LV_AlFrame_Thin_0	G4_Al	1.30068
LV_SiliconDetector_Thin_0	G4_Si	0.0104495
LV_AlFrame_Thin_1	G4_Al	2.29301
LV_SiliconDetector_Thin_2	G4_Si	0.0325397
LV_BakeliteBoardMiddleLower	G4_BAKELITE	15.0798
LV_AlScrew	G4_Al	5.28106
LV_AlBottom	G4_Al	316.731
LV_BakeliteBoardTop	G4_BAKELITE	17.7828
LV_PlasticVetoBottom	G4_PLASTIC_SC_VINYLTOLUENE	100.1
LV_AlScrew_1	G4_Al	5.28106
LV_AlScrew_3	G4_Al	5.28106
LV_AlCoverUpper	G4_Al	21.9613
LV_SiliconDetector_Thin_3	G4_Si	0.0325397
LV_AlFrame_Thin_3	G4_Al	2.29301
LV_SiliconDetector_Thin_4	G4_Si	0.0325397
LV_AlFrame_Thin_2	G4_Al	2.29301
LV_AlFrame_Thin_4	G4_Al	2.29301
LV_AlScrew_Thick_2	G4_Al	2.44318
LV_SiliconDetector_Thick_4	G4_Si	0.135903
LV_AlScrew_Thick_1	G4_Al	2.44318
LV_AlFrame_Thick_1	G4_Al	2.97844
LV_AlFrame_Thick_4	G4_Al	2.97844
LV_AlFrame_Thick_2	G4_Al	2.97844
LV_SiliconDetector_Thick_2	G4_Si	0.135903
LV_AlScrew_Thick_4	G4_Al	2.44318
LV_SiliconDetector_Thick_1	G4_Si	0.135903
LV_BakeliteCable	G4_BAKELITE	0.279039
LV_BakeliteCable_2	G4_BAKELITE	0.352267
LV_BakeliteCable_4	G4_BAKELITE	0.352267
LV_BakeliteCable_3	G4_BAKELITE	0.352267
LV_BakeliteCable_1	G4_BAKELITE	0.352267
LV_Calo	GAGG	82.875
LV_AlScrew_2	G4_Al	5.28106
LV_PlasticVetoTop	G4_PLASTIC_SC_VINYLTOLUENE	166.68
LV_AlCoverLower	G4_Al	22.2453
LV_BakeliteBoardCalo	G4_BAKELITE	7.99125
LV_BakeliteBoardMiddleUpper	G4_BAKELITE	18.9792
LV_BakeliteBoardBottom	G4_BAKELITE	19.1034
LV_SiliconDetector_Thin_1	G4_Si	0.0325397
LV_AlFrame_Thick_3	G4_Al	2.97844
LV_AlFrame_Thick_0	G4_Al	2.18948
LV_SiliconDetector_Thick_3	G4_Si	0.135903
LV_AlScrew_Thick_0	G4_Al	1.46527
LV_SiliconDetector_Thick_0	G4_Si	0.0439621

hPID_1

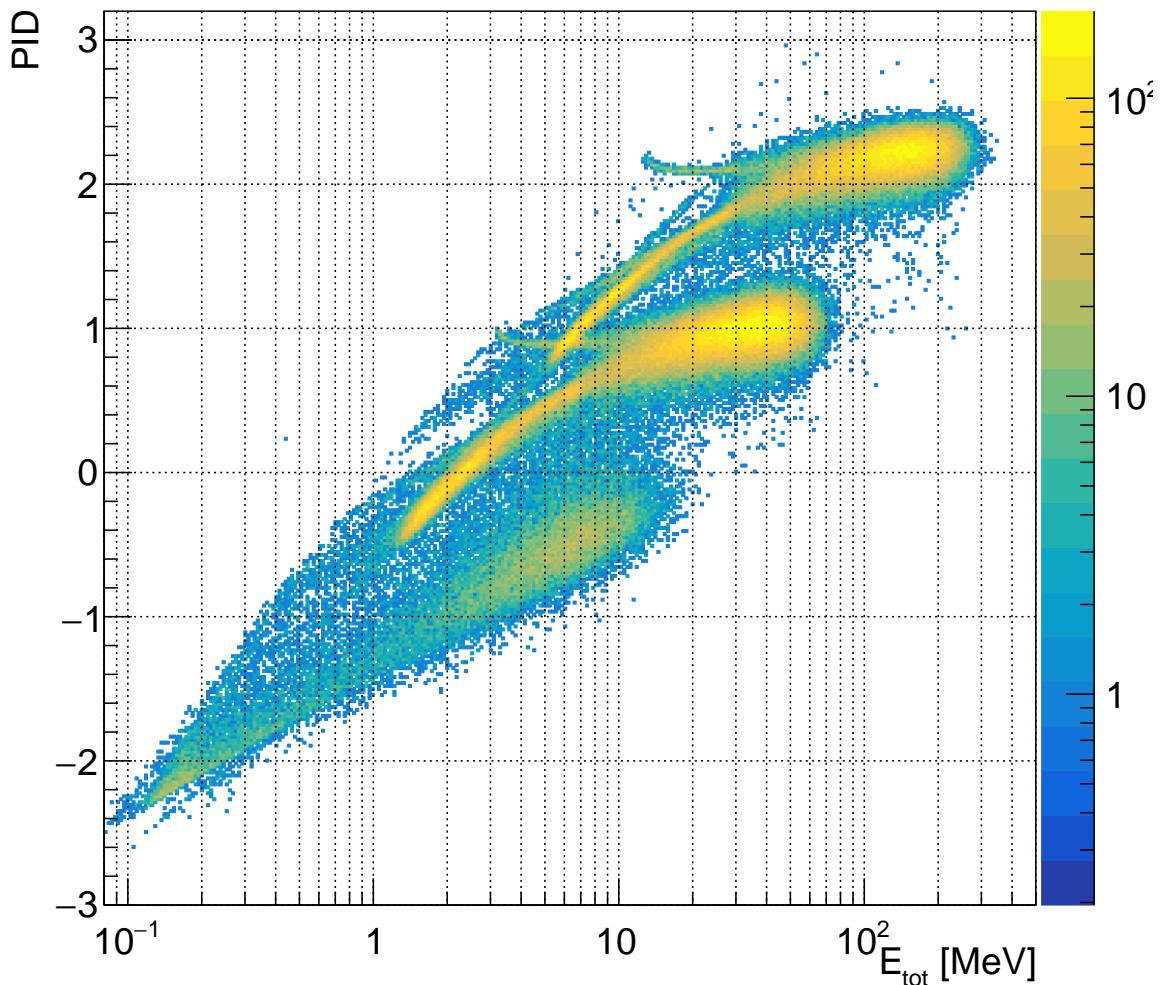


Figure: PID, No Gaussian Smearing, Total Energy is the Energy reconstructed.

hPID_2

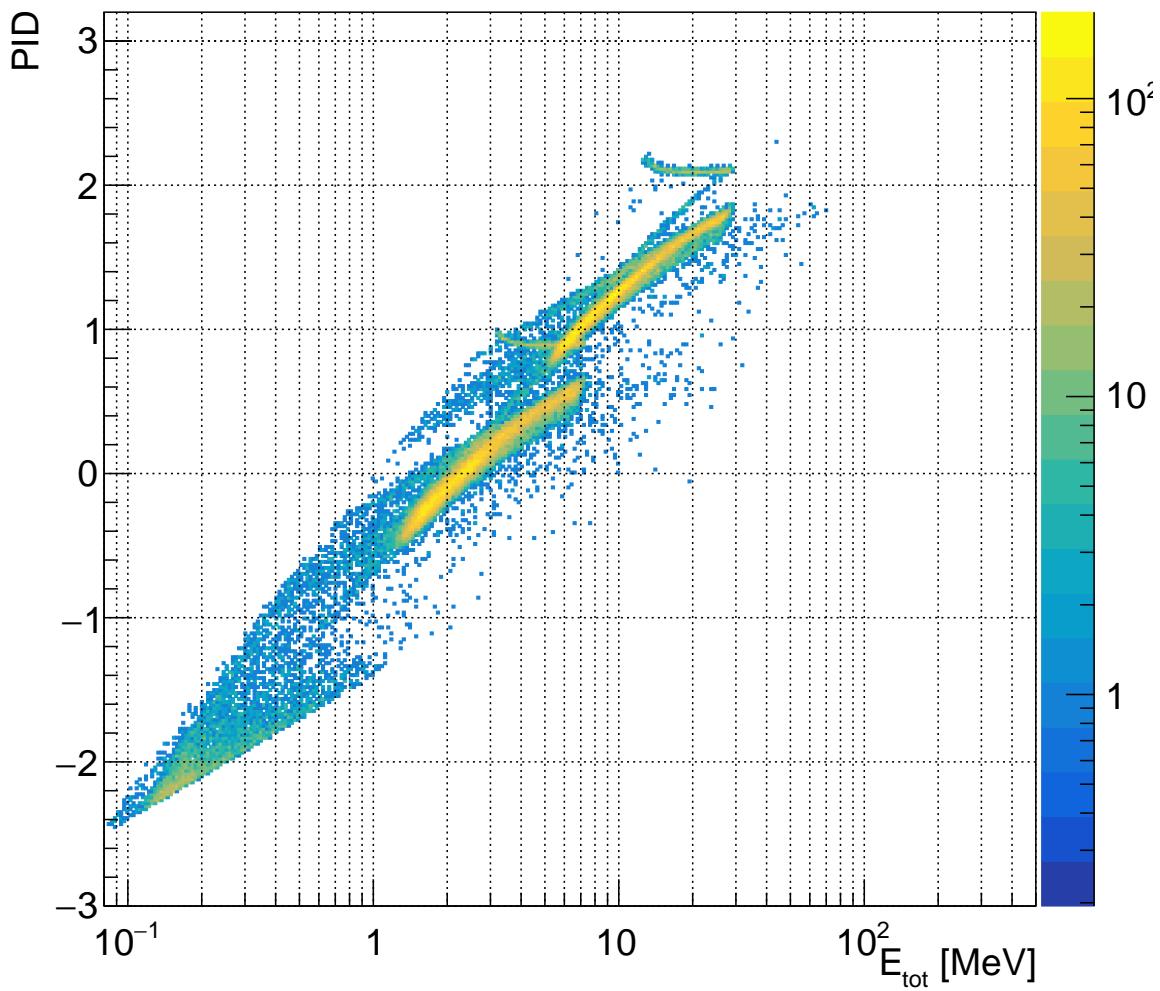


Figure: PID, No Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

hPID2_1

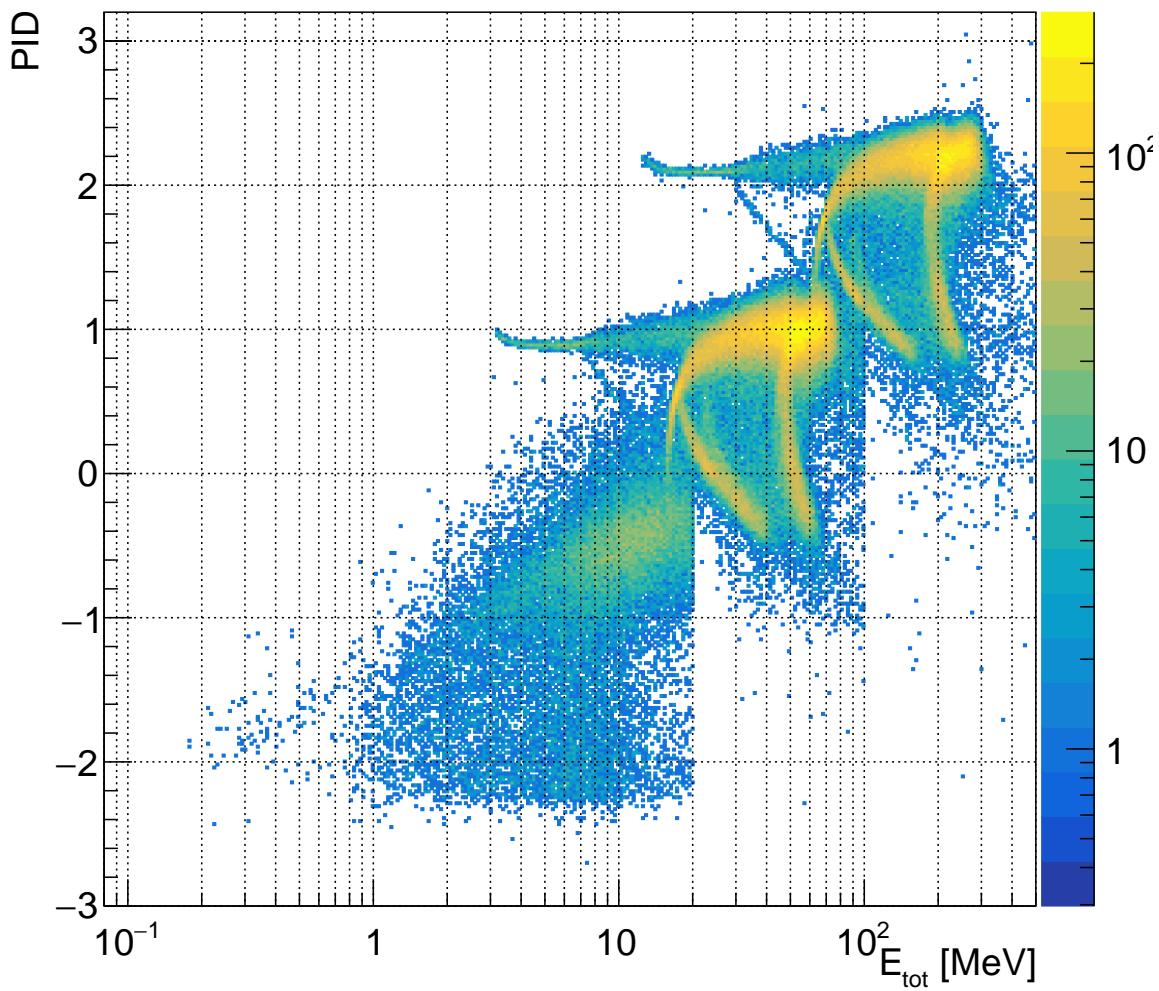


Figure: PID, No Gaussian Smearing, Total Energy is the MC Energy.

hPID2_2

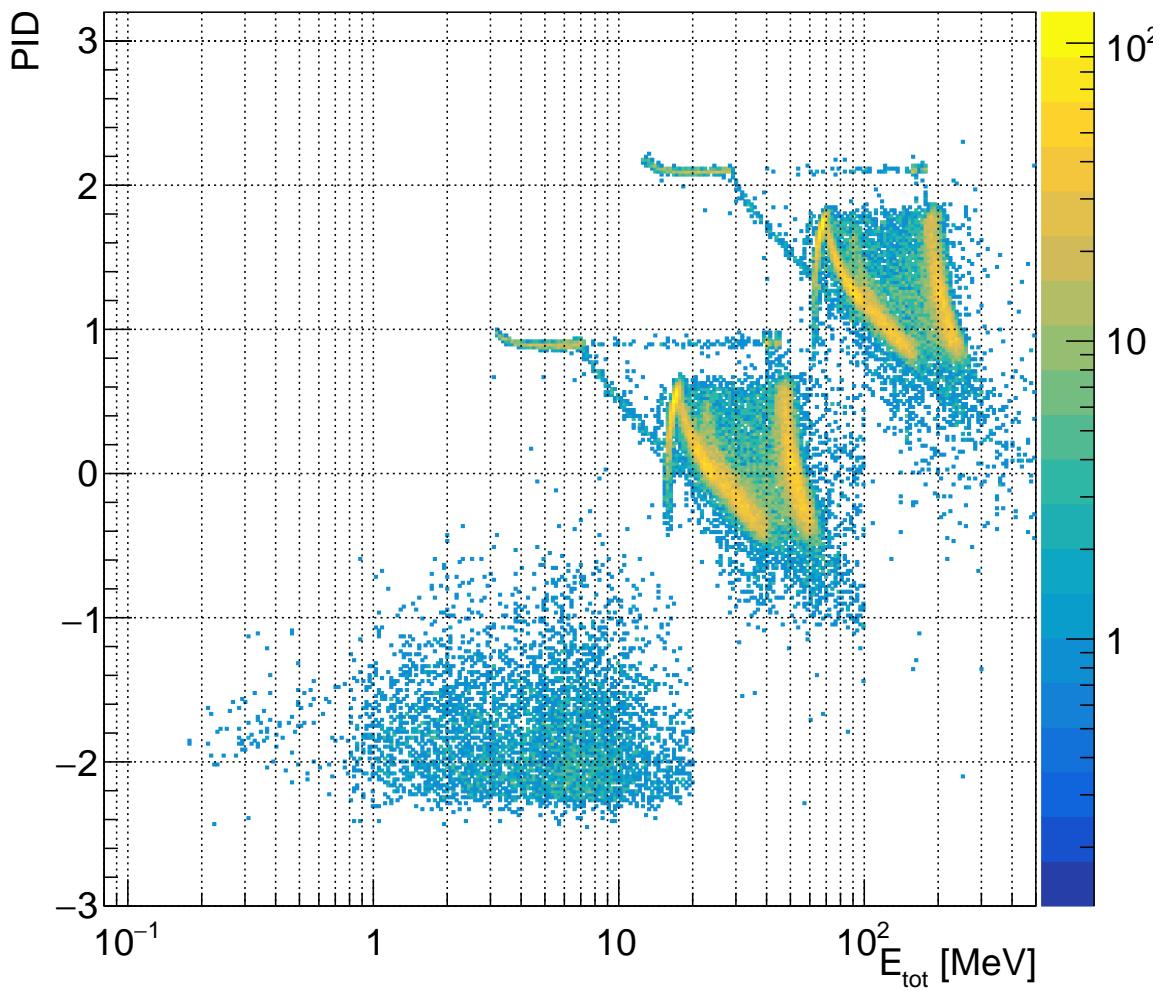


Figure: PID, No Gaussian Smearing, Total Energy is the MC Energy, No Calorimeter.

hPID_1

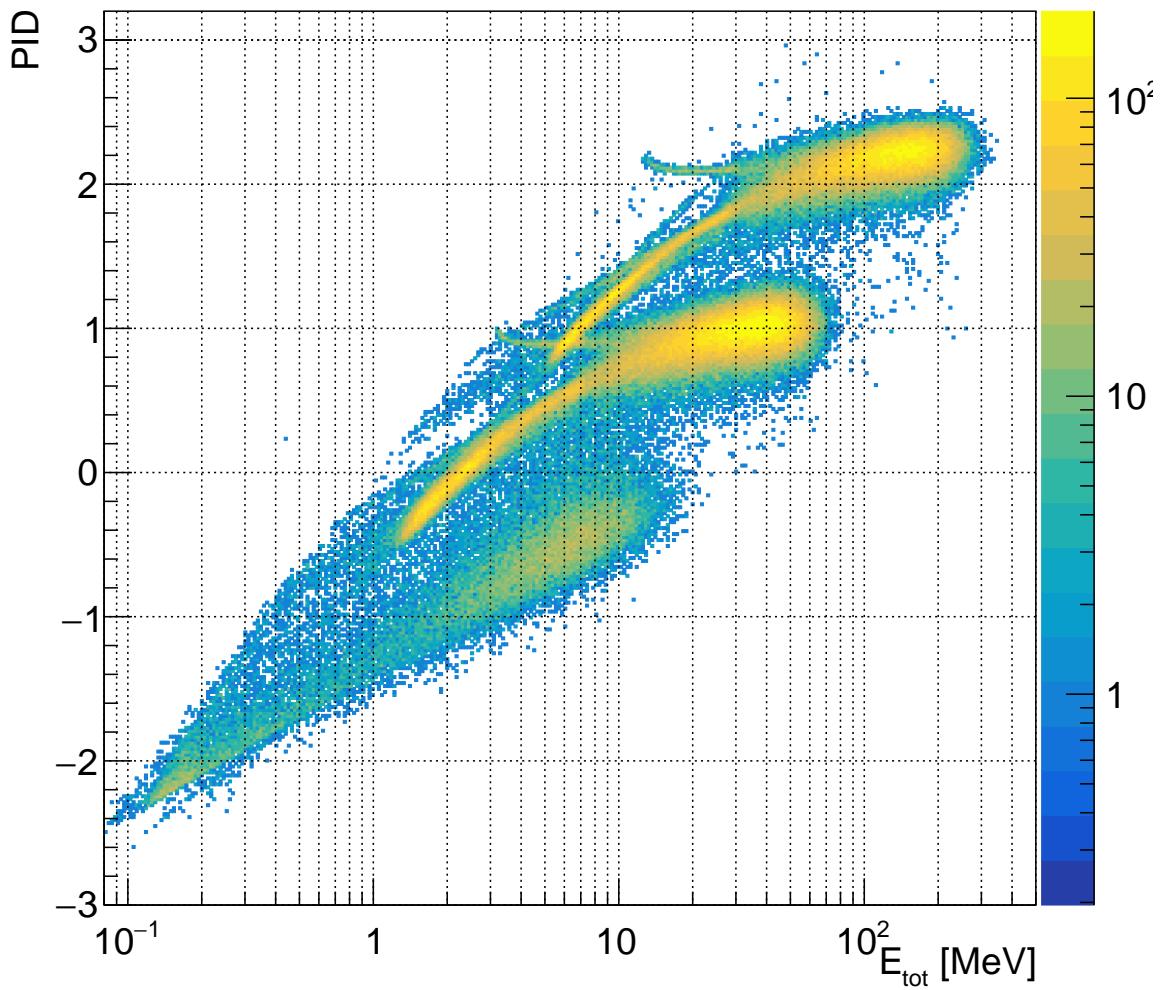


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed.

hPID_3

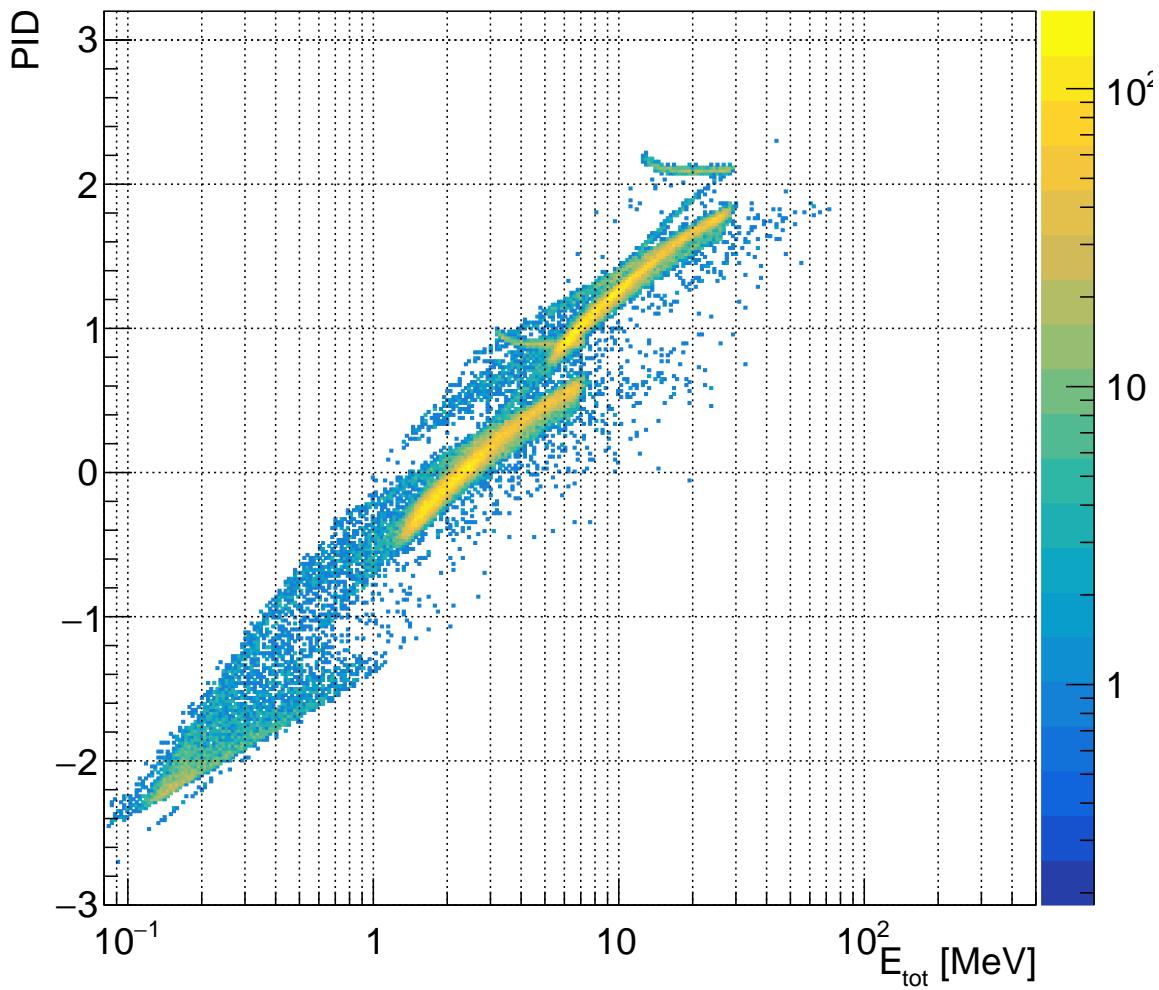


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

hPID2_1

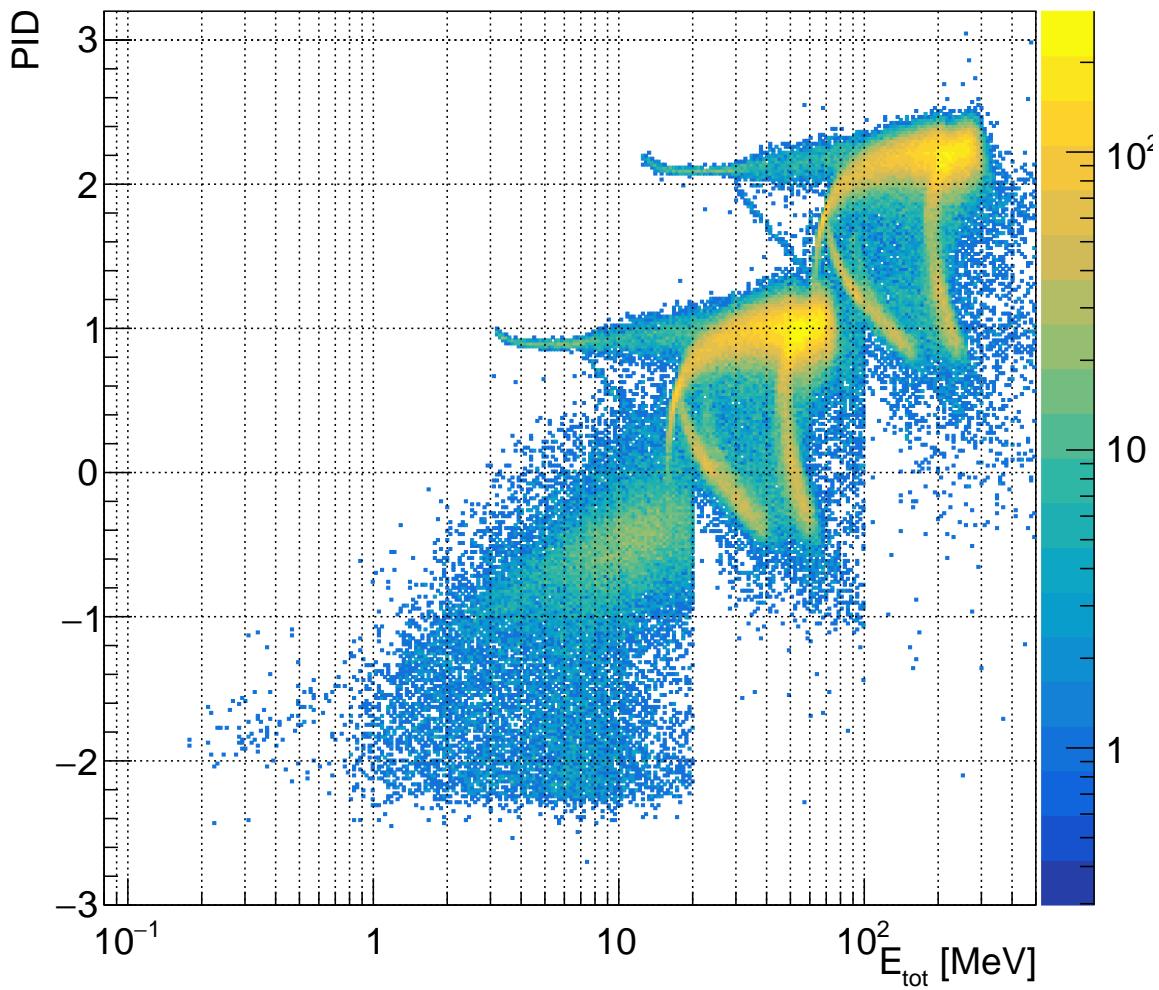


Figure: PID, Gaussian Smearing, Total Energy is the MC Energy.

hPID2_3

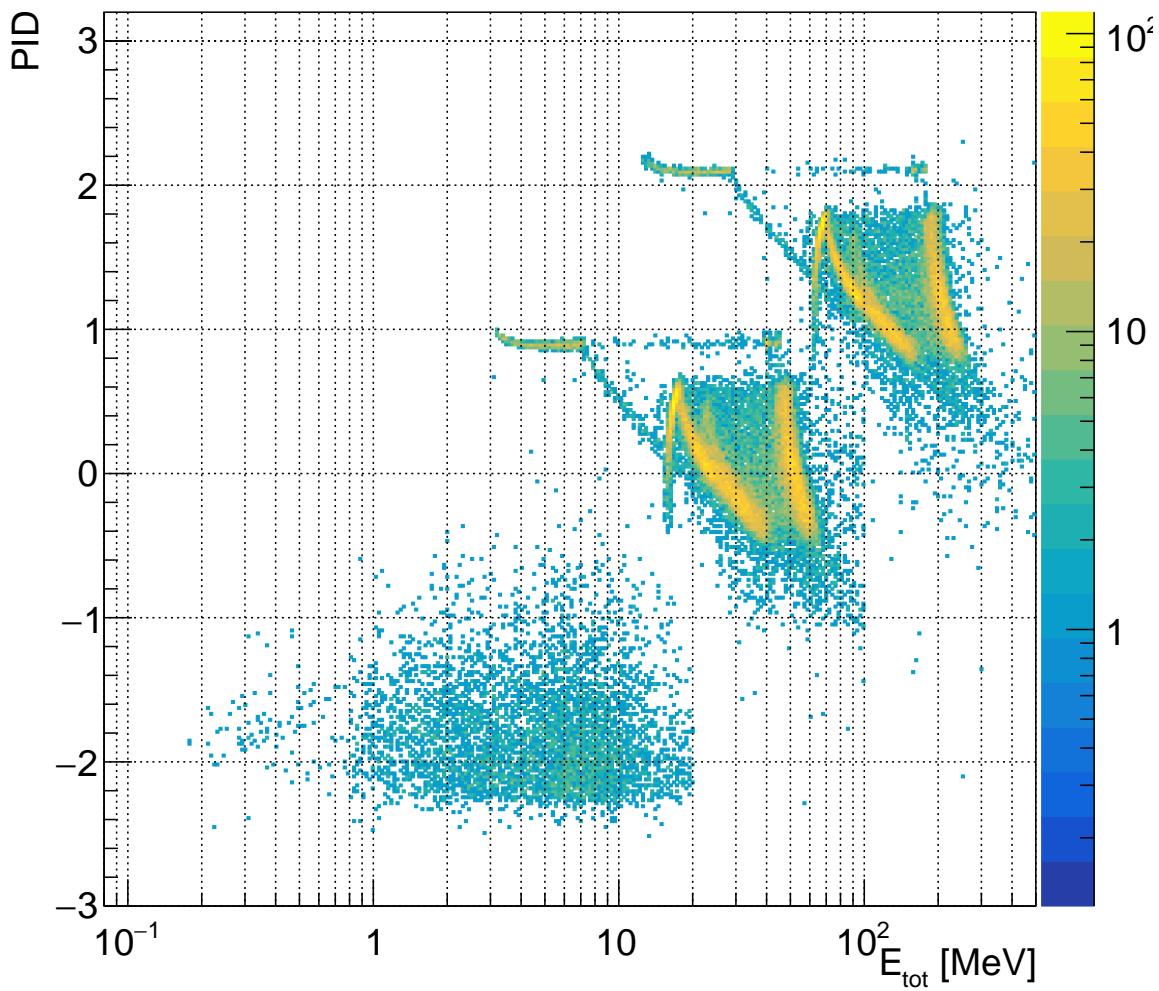


Figure: PID, Gaussian Smearing, Total Energy is the MC Energy, No Calorimeter.

mgrPID

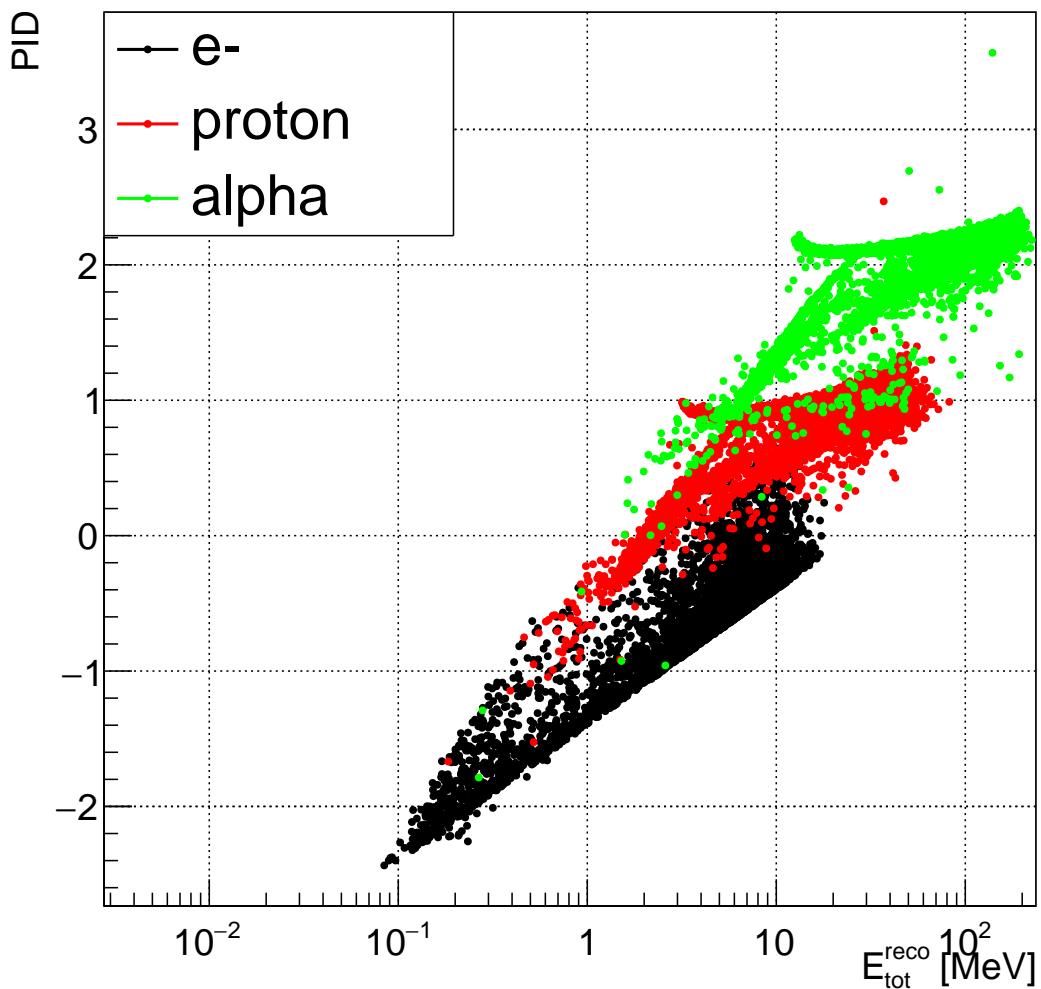


Figure: PID, Gaussian Smearing, Total Energy is the Energy reconstructed, No Calorimeter.

MC quantities for e-_t0

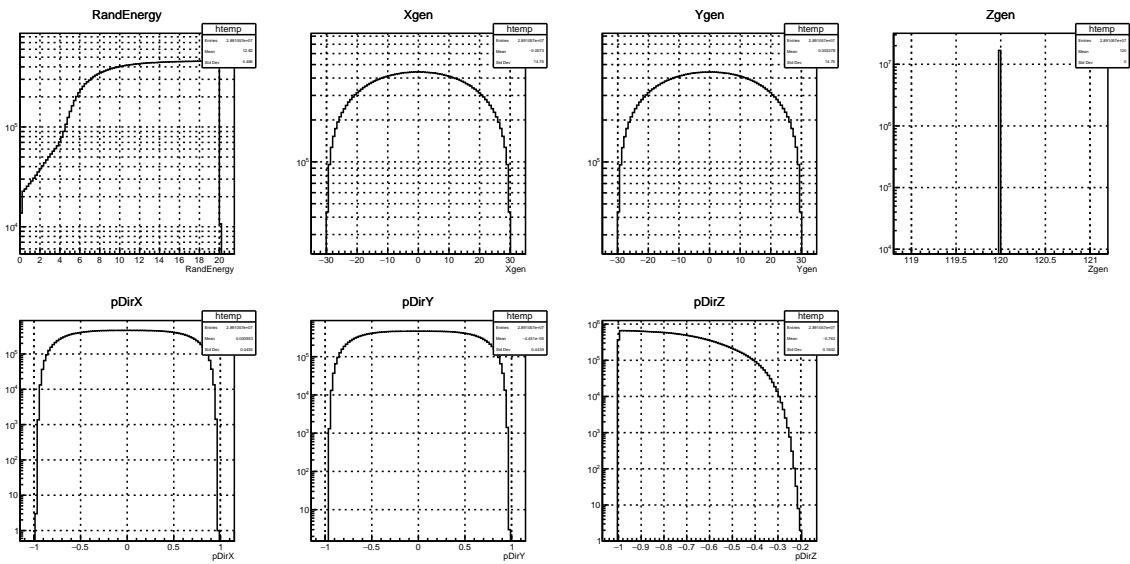


Figure: MC quantities

Energies distribution for e-

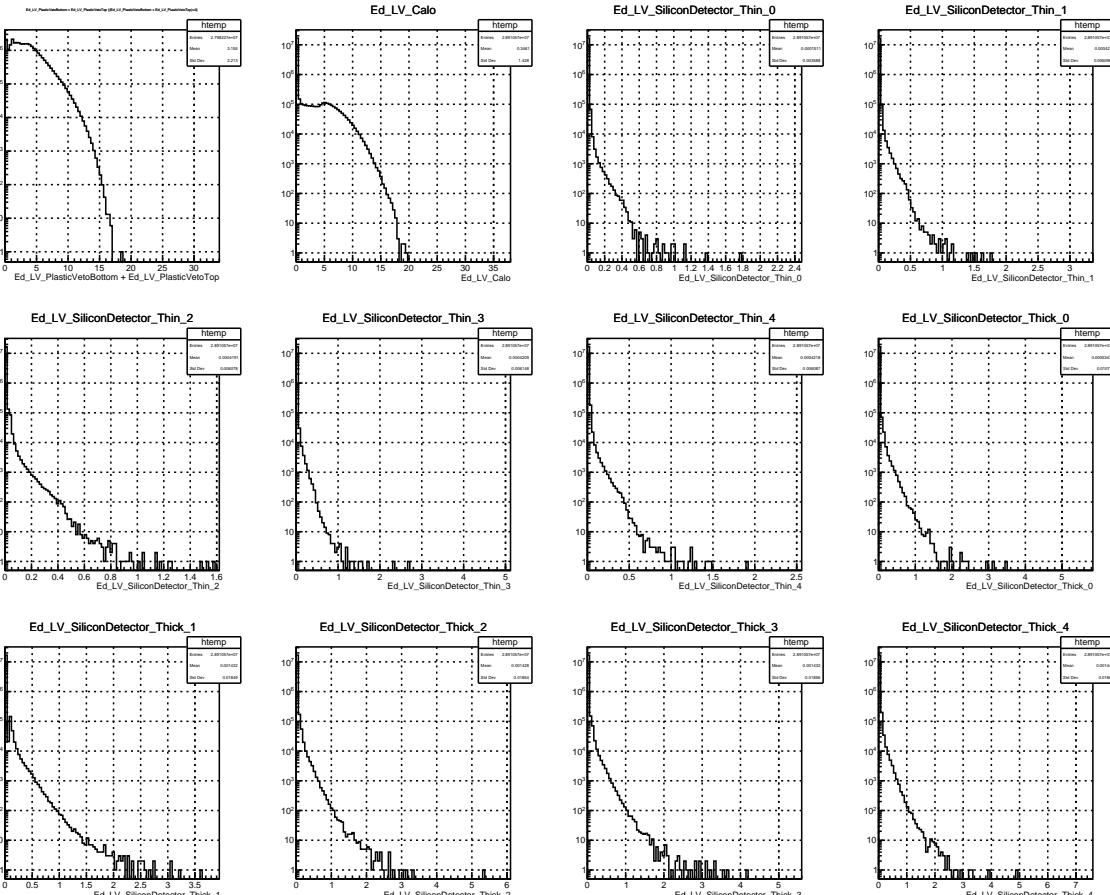


Figure: Detected energies

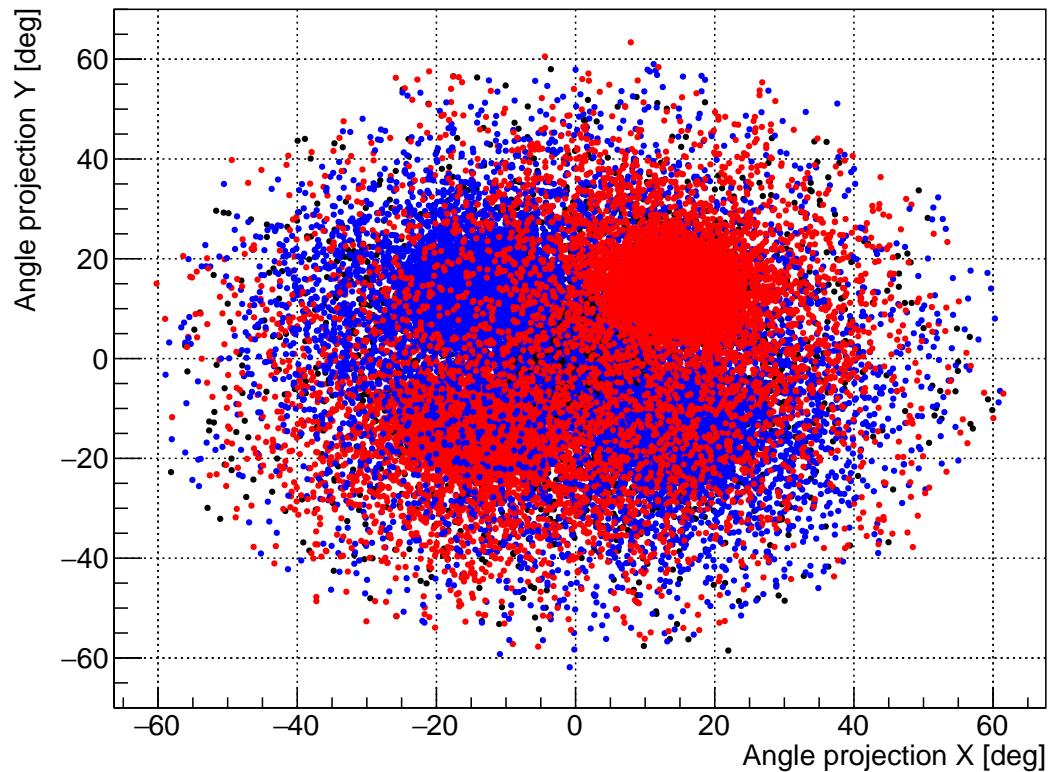


Figure: Angles distribution

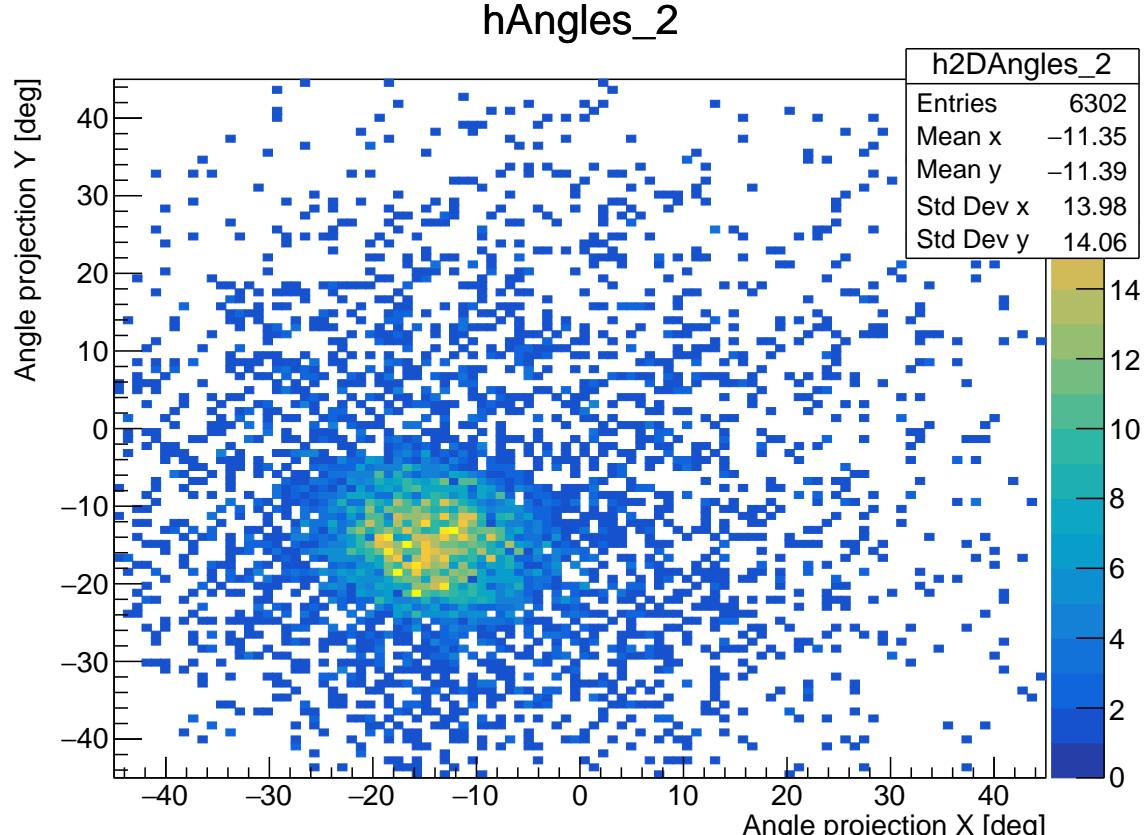


Figure: Angles distribution

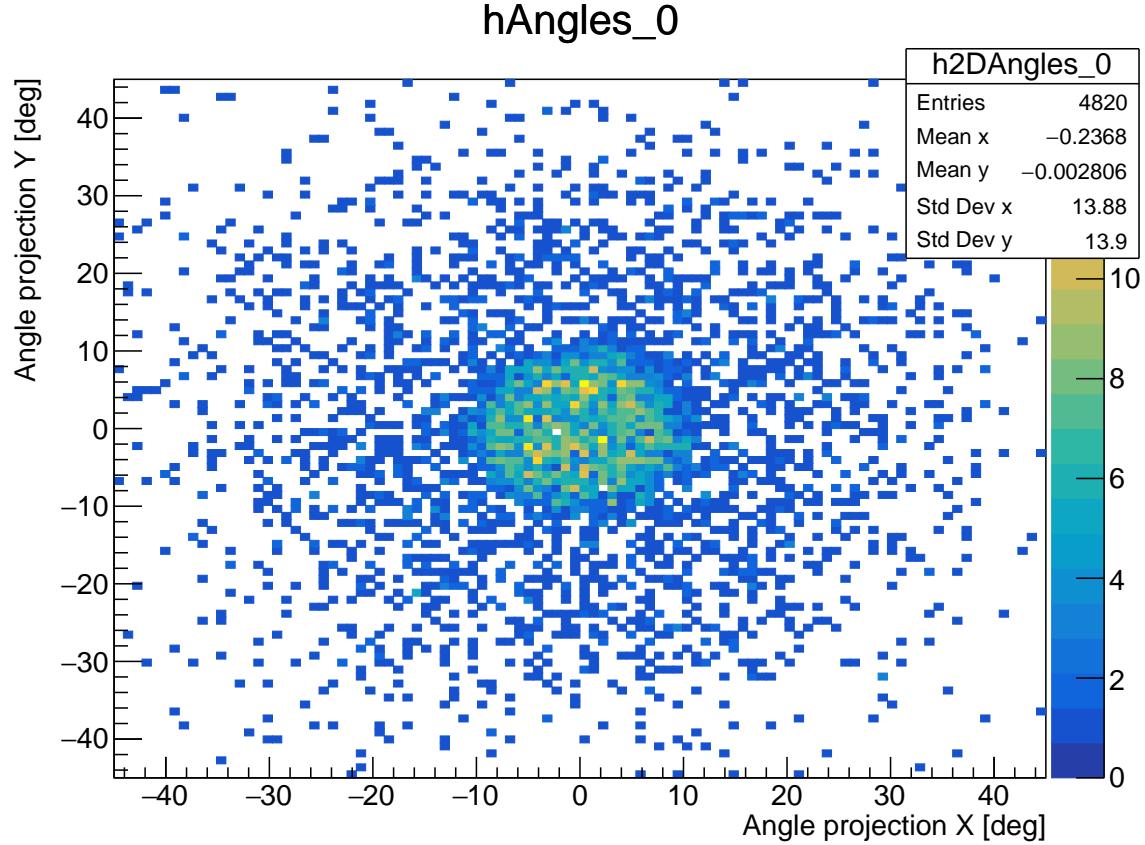


Figure: Angles distribution

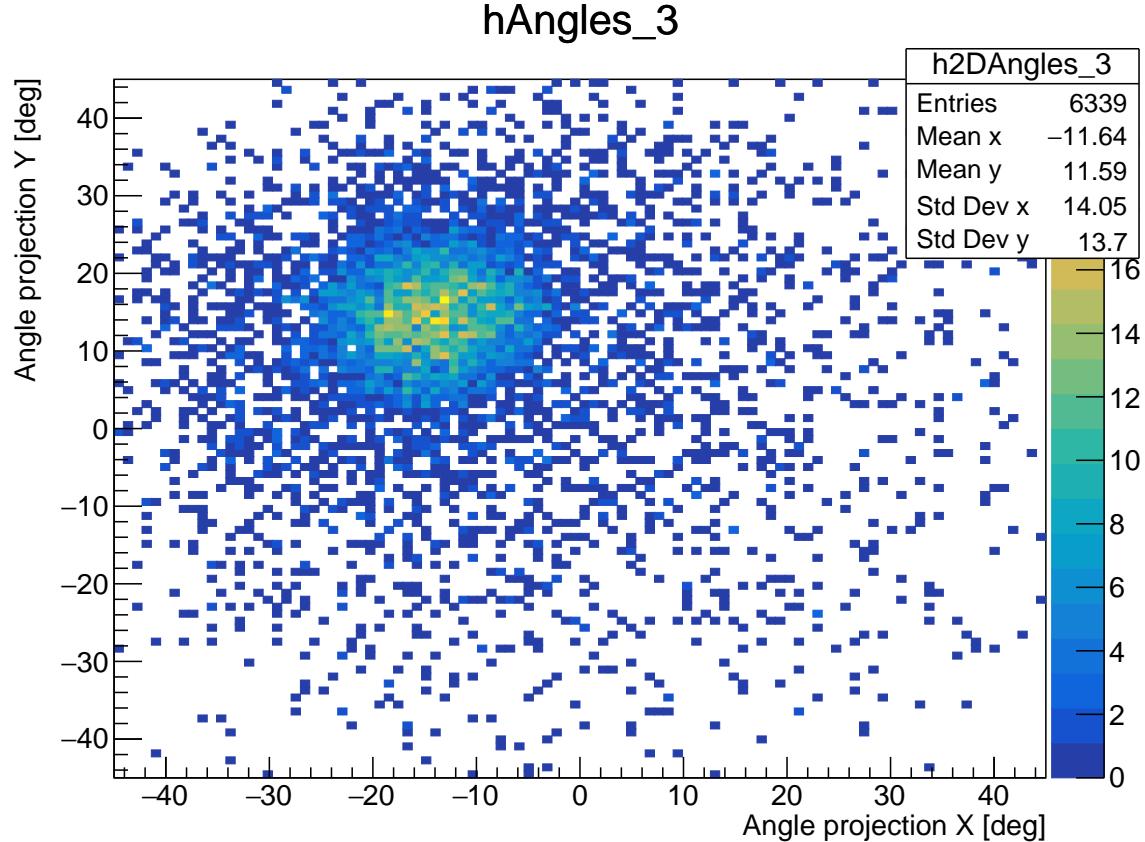


Figure: Angles distribution

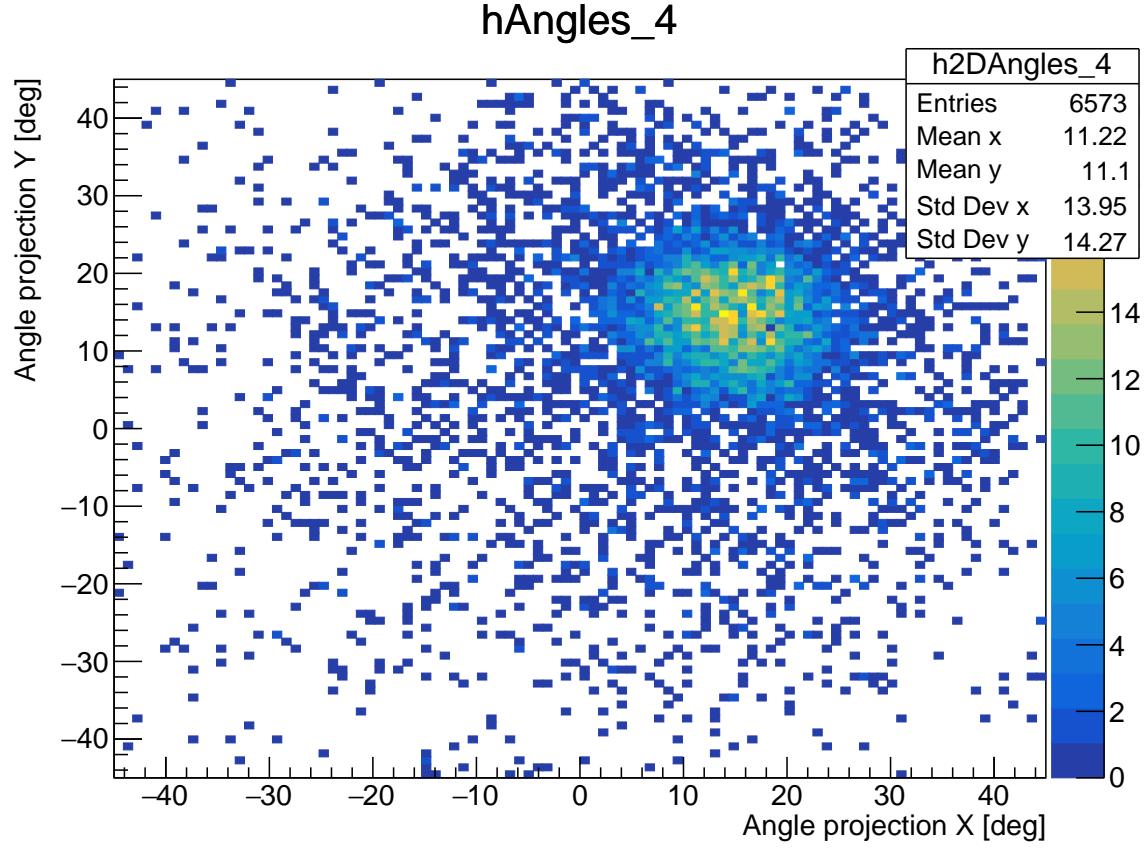


Figure: Angles distribution

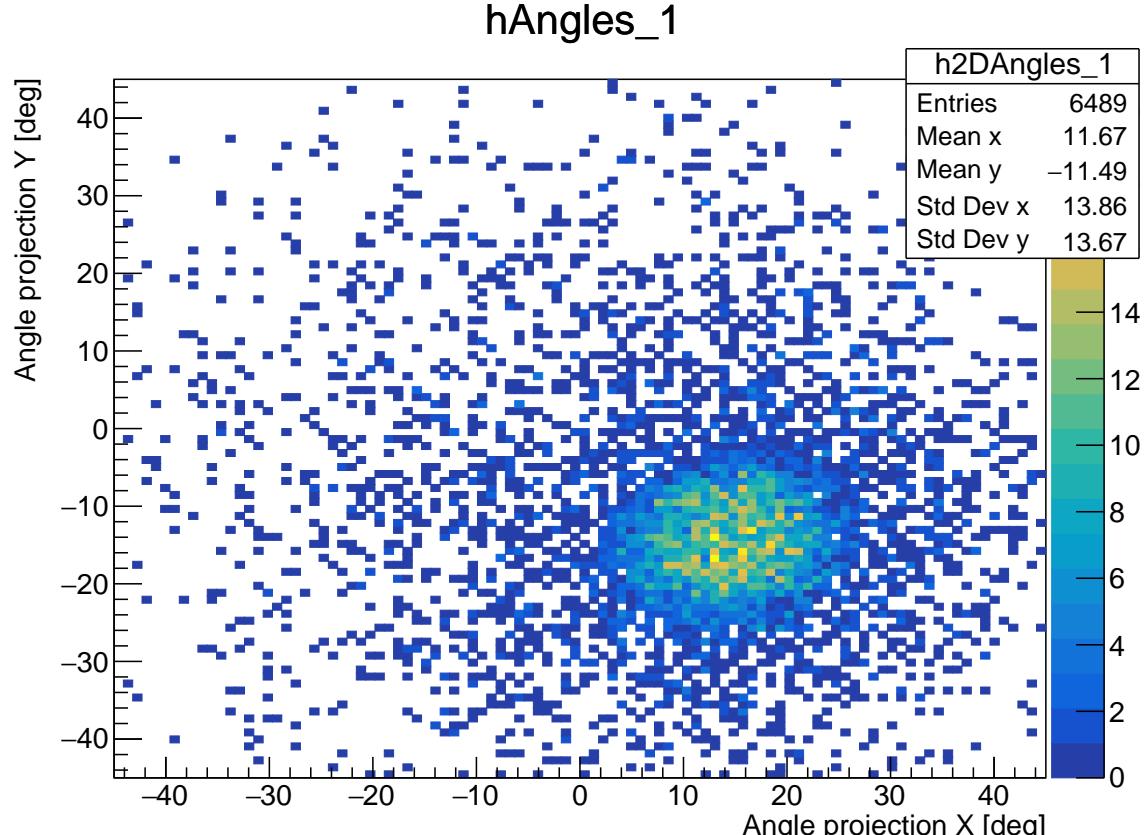


Figure: Angles distribution

hGenPosition_2

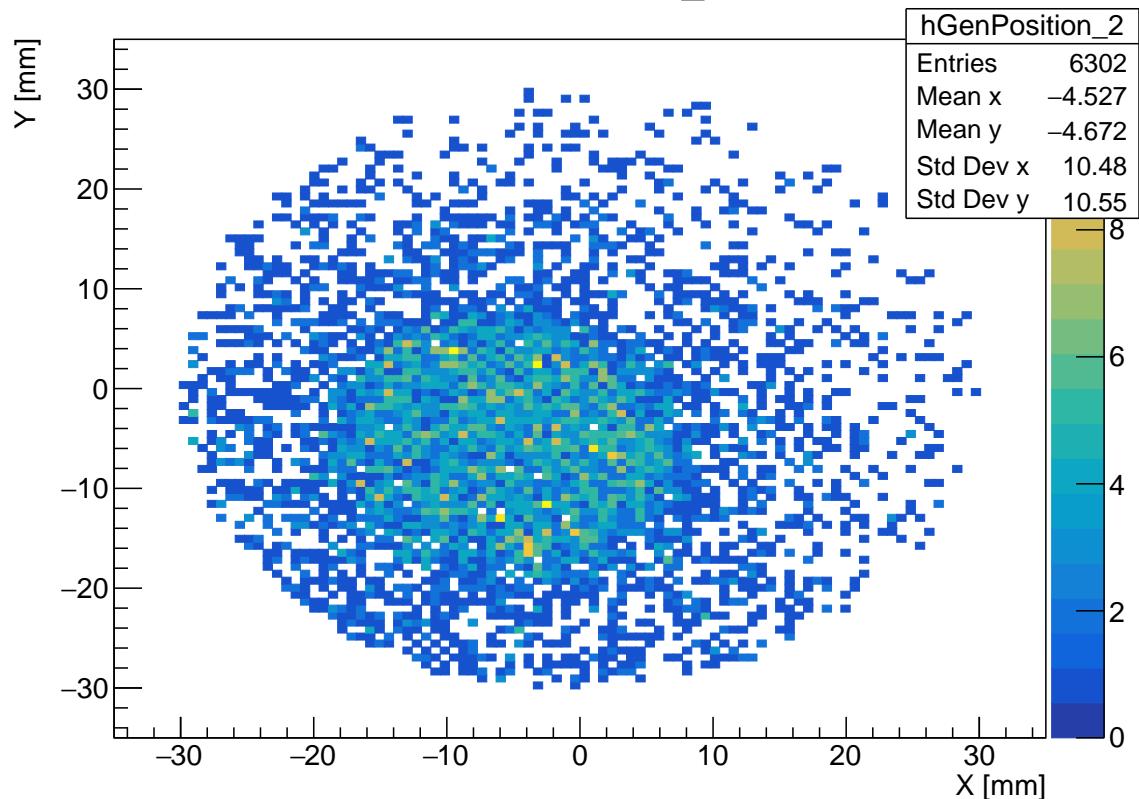


Figure: Generation Position

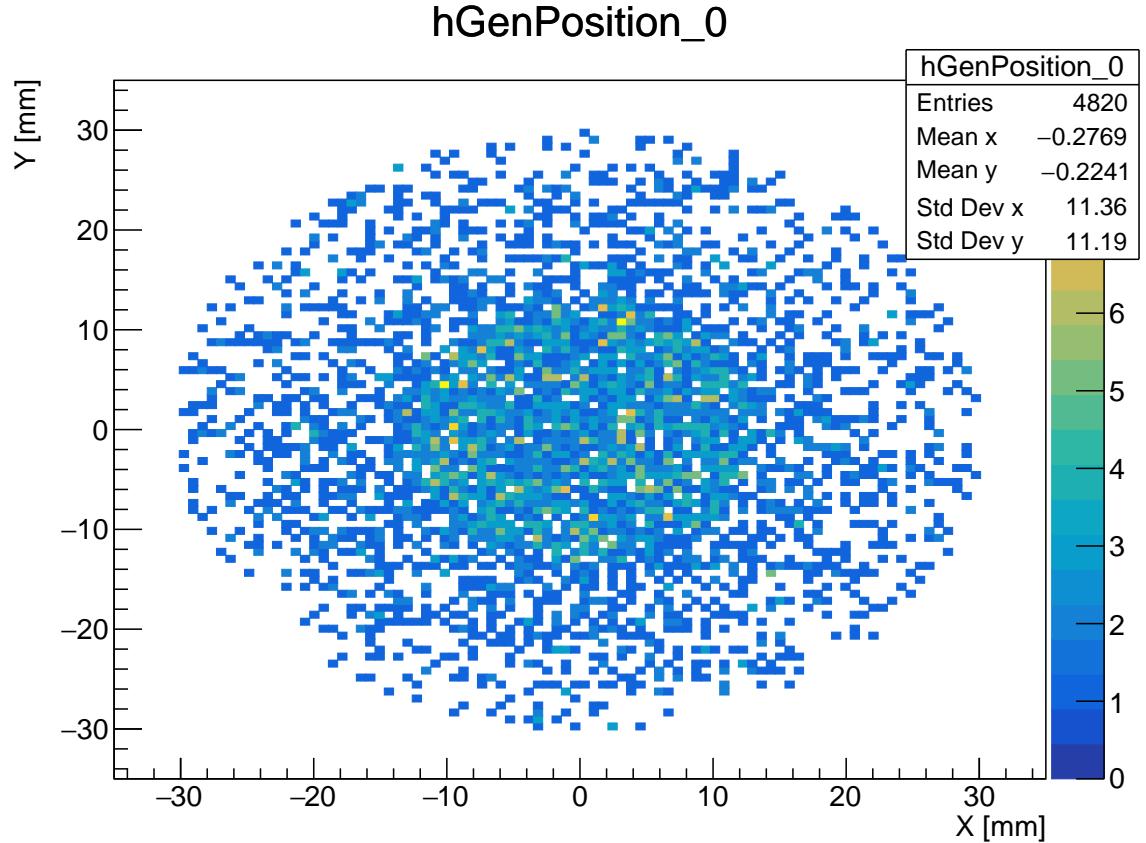


Figure: Generation Position

hGenPosition_3

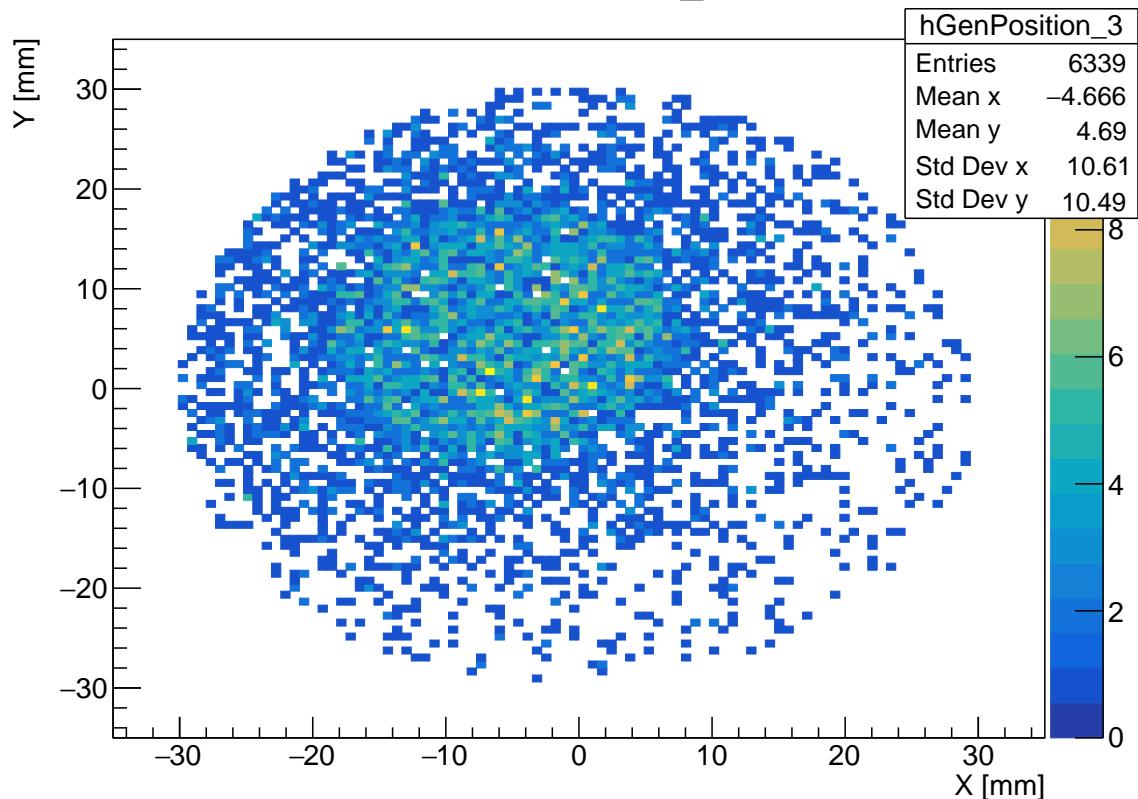


Figure: Generation Position

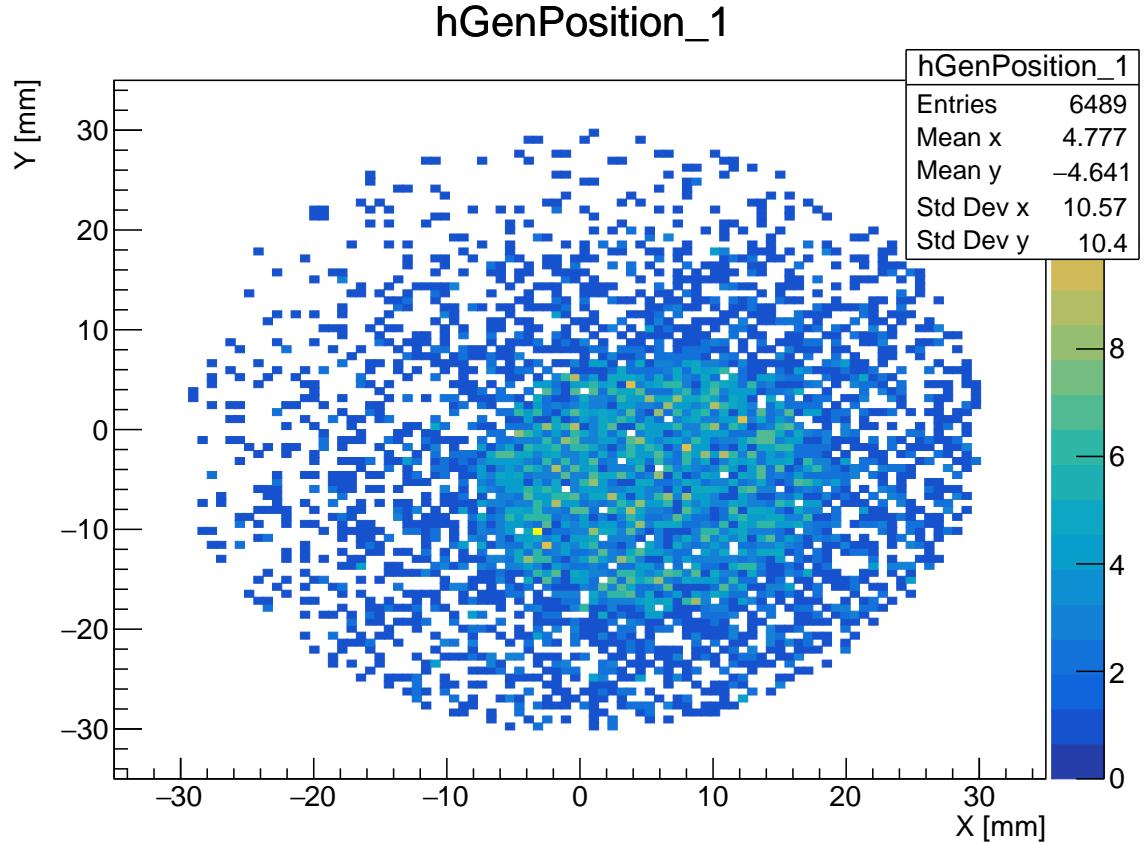


Figure: Generation Position

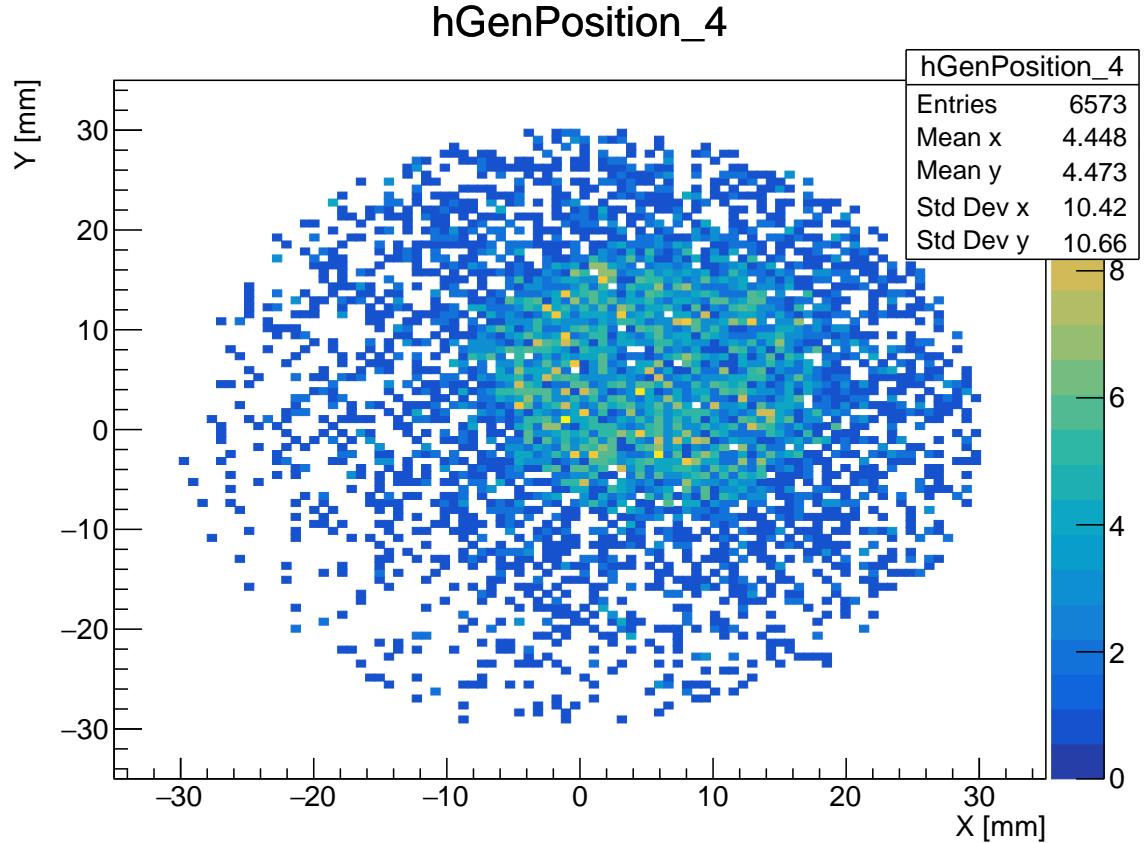


Figure: Generation Position

MC quantities for proton_t0

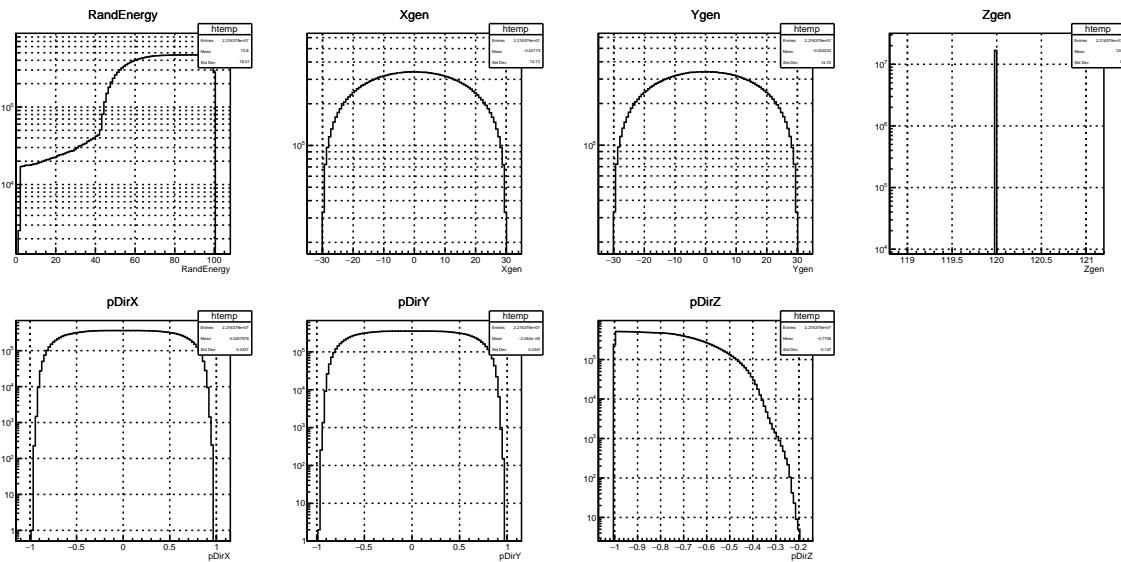


Figure: MC quantities

Energies distribution for proton

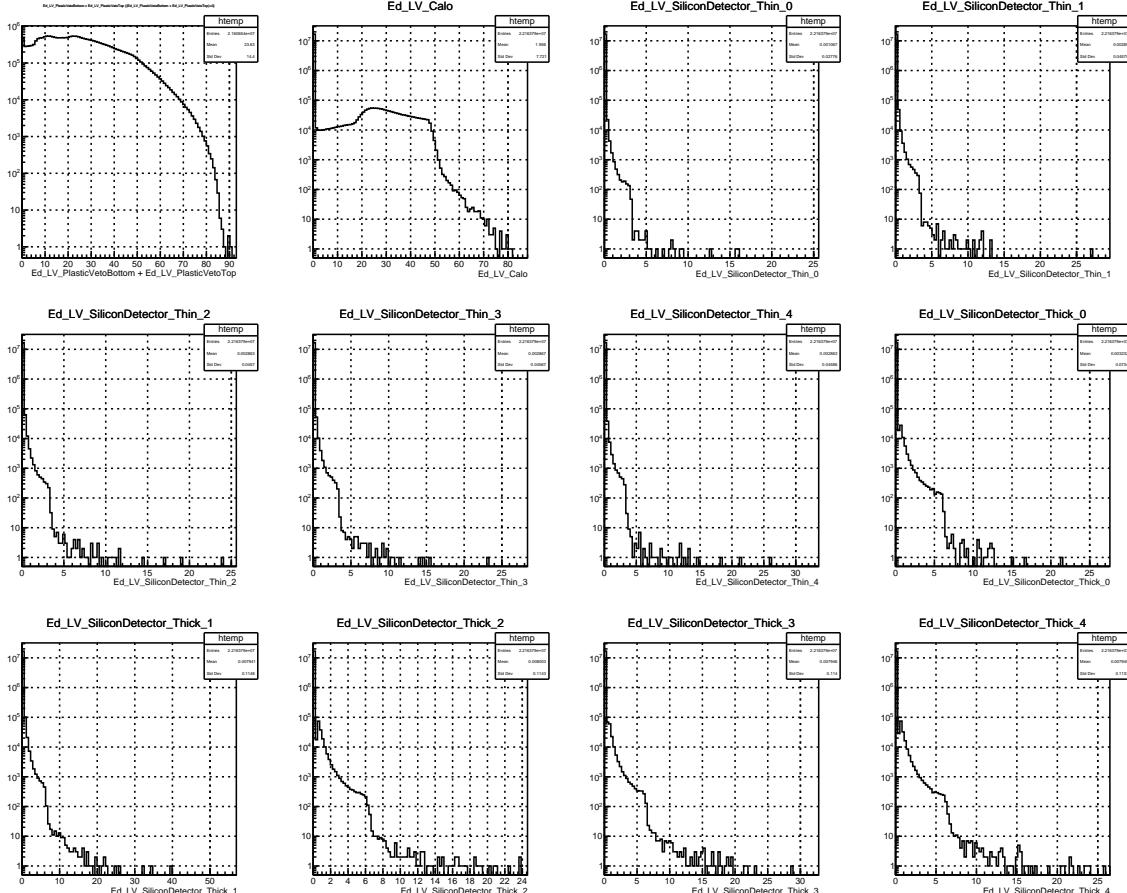


Figure: Detected energies

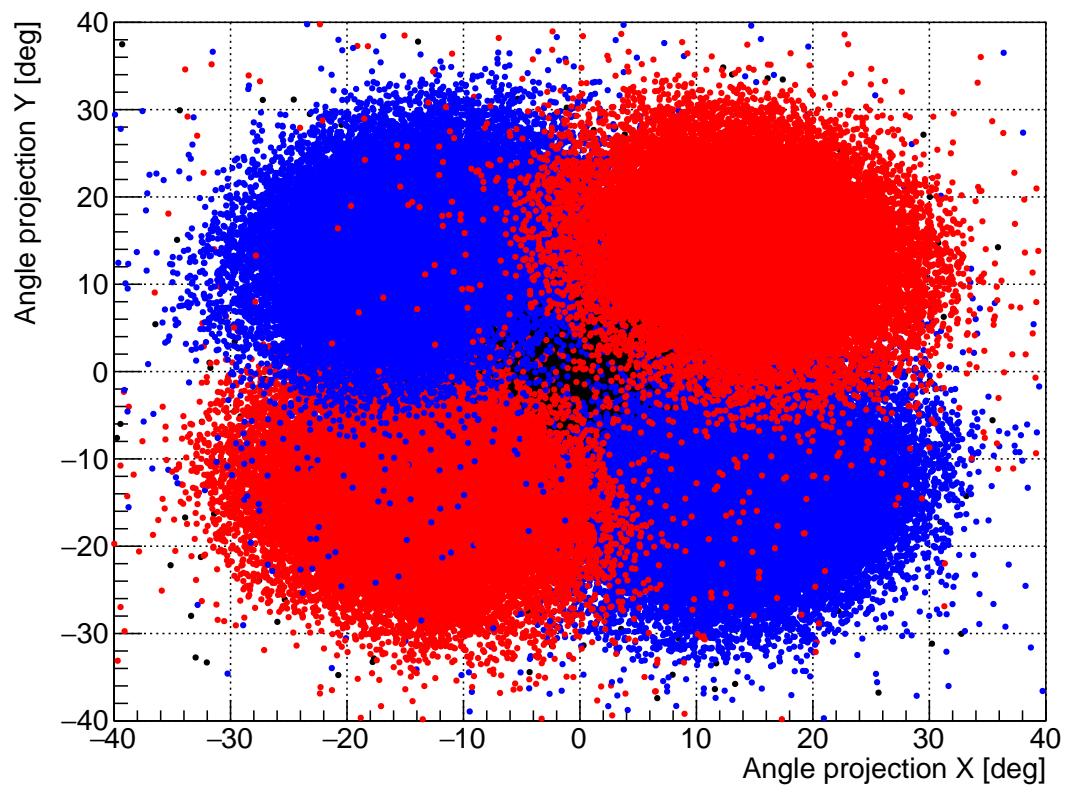


Figure: Angles distribution

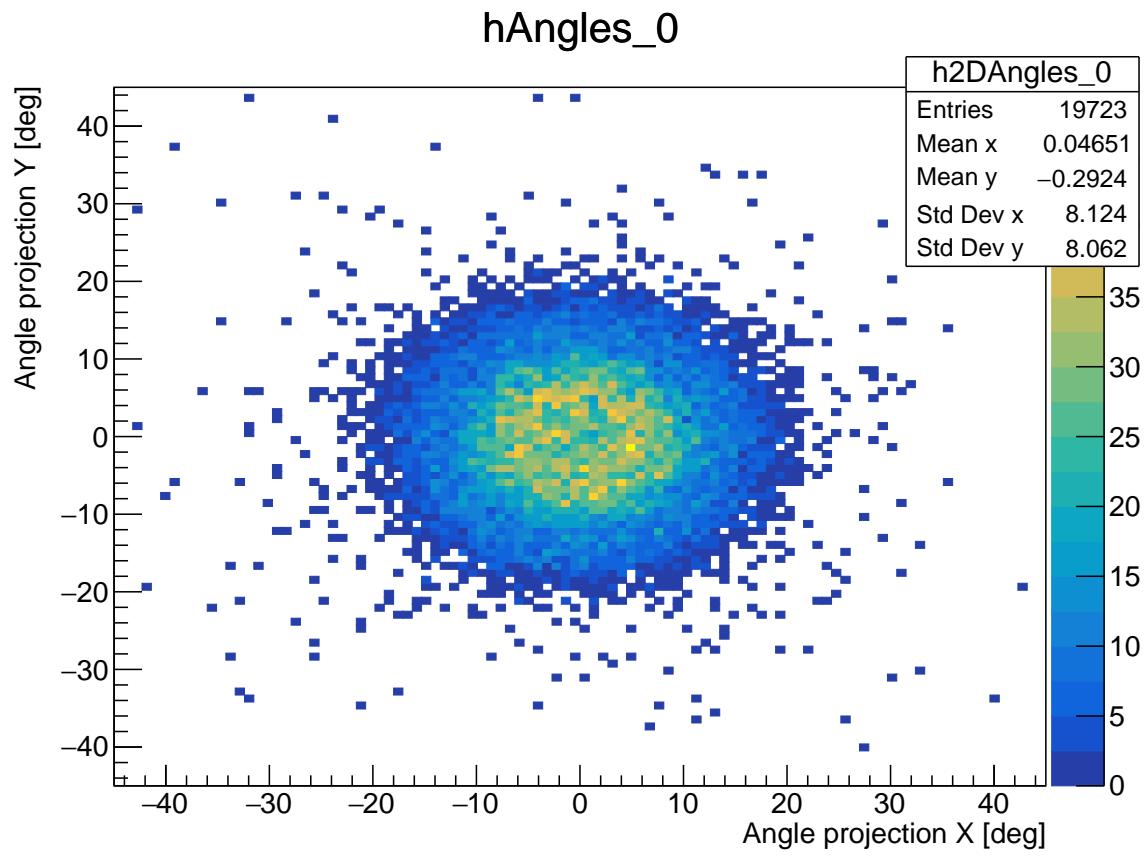


Figure: Angles distribution

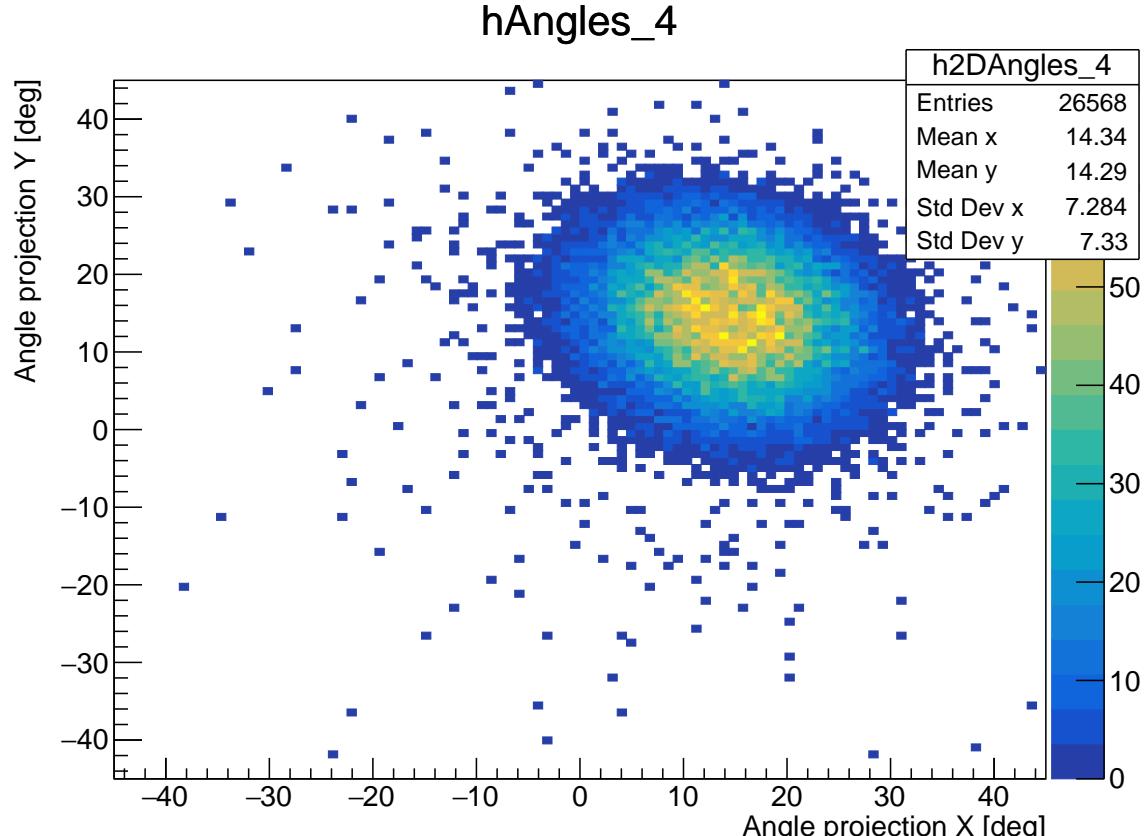


Figure: Angles distribution

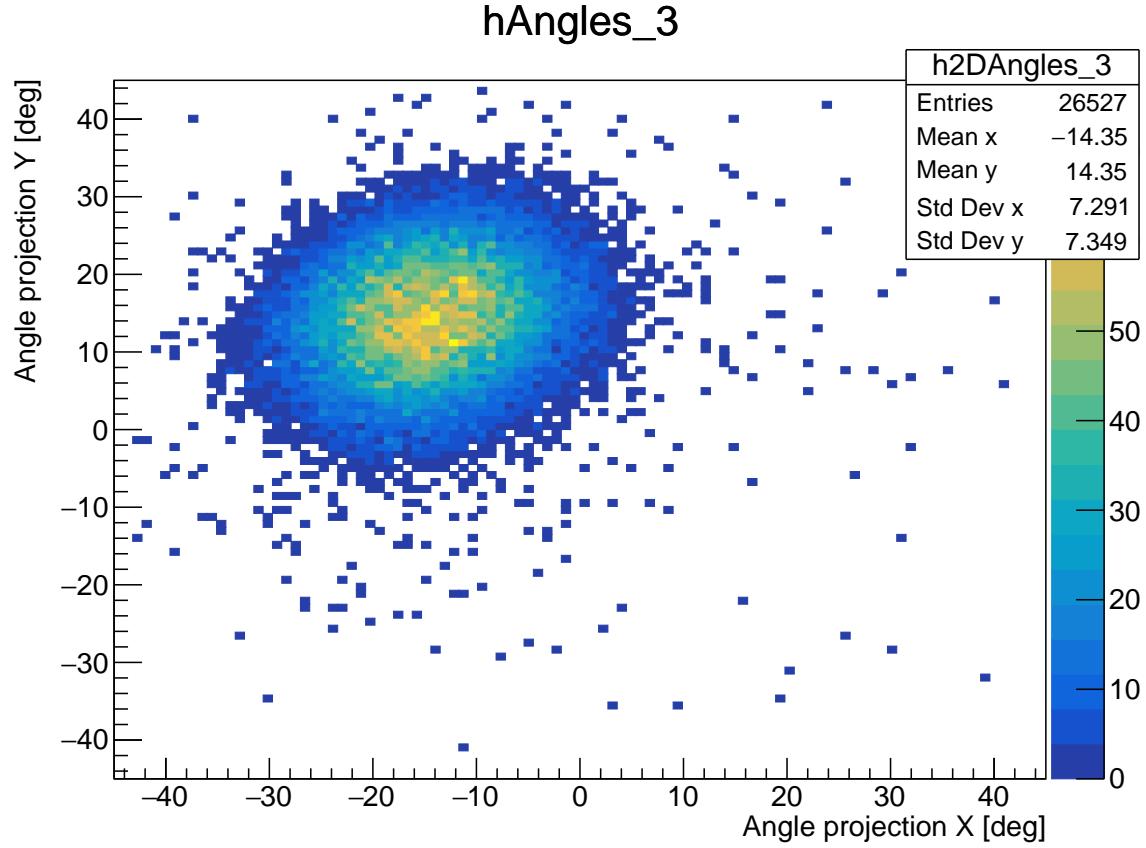


Figure: Angles distribution

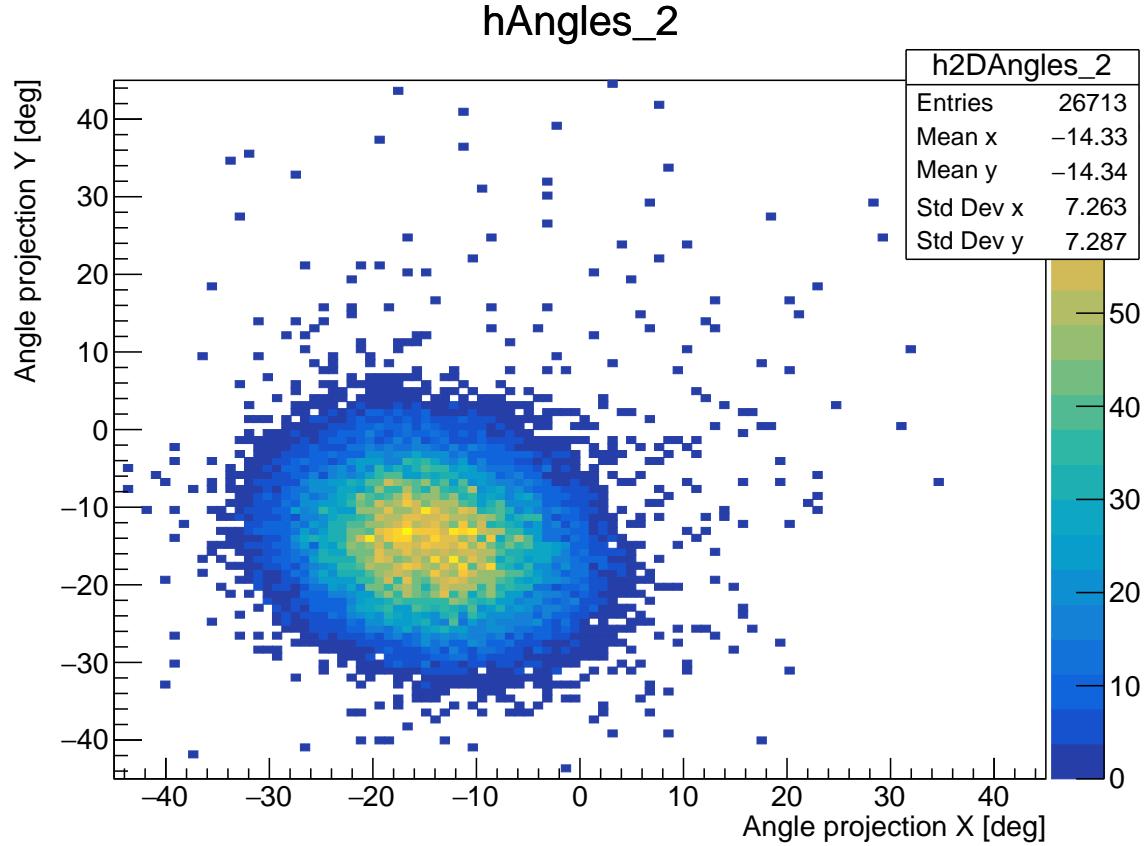


Figure: Angles distribution

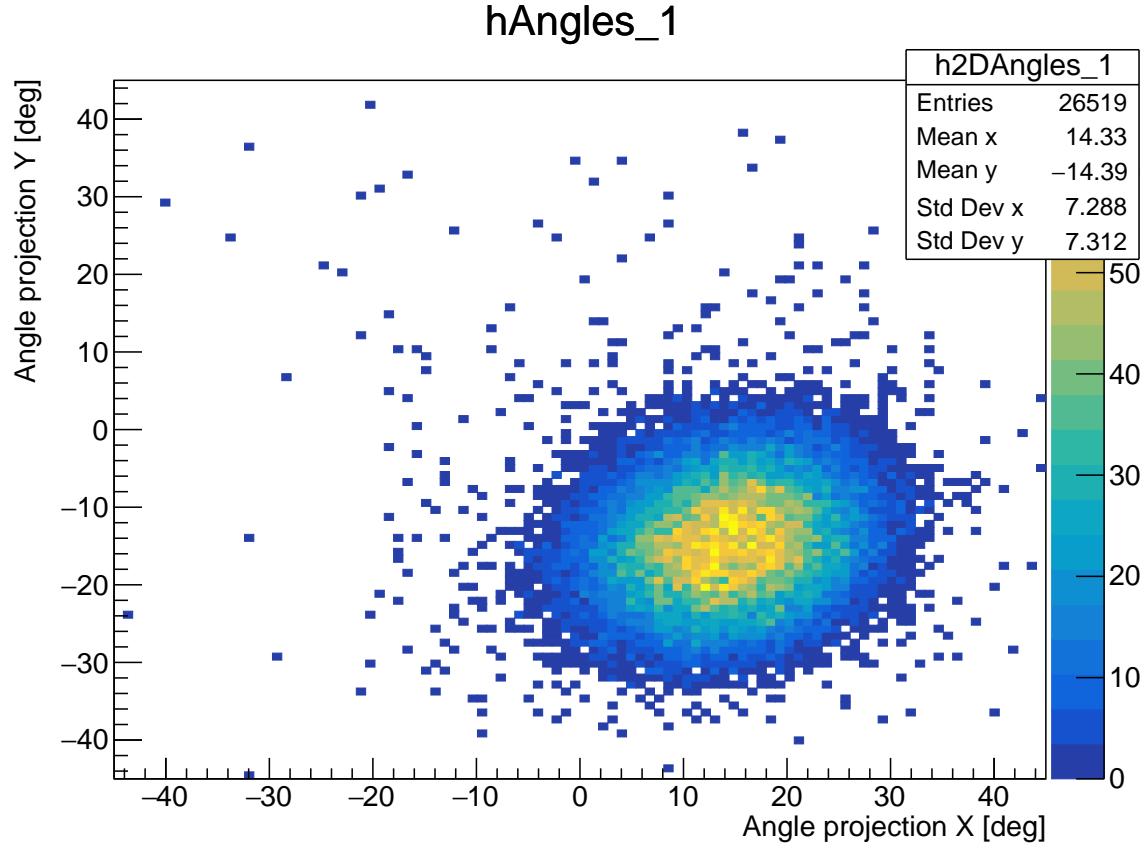


Figure: Angles distribution

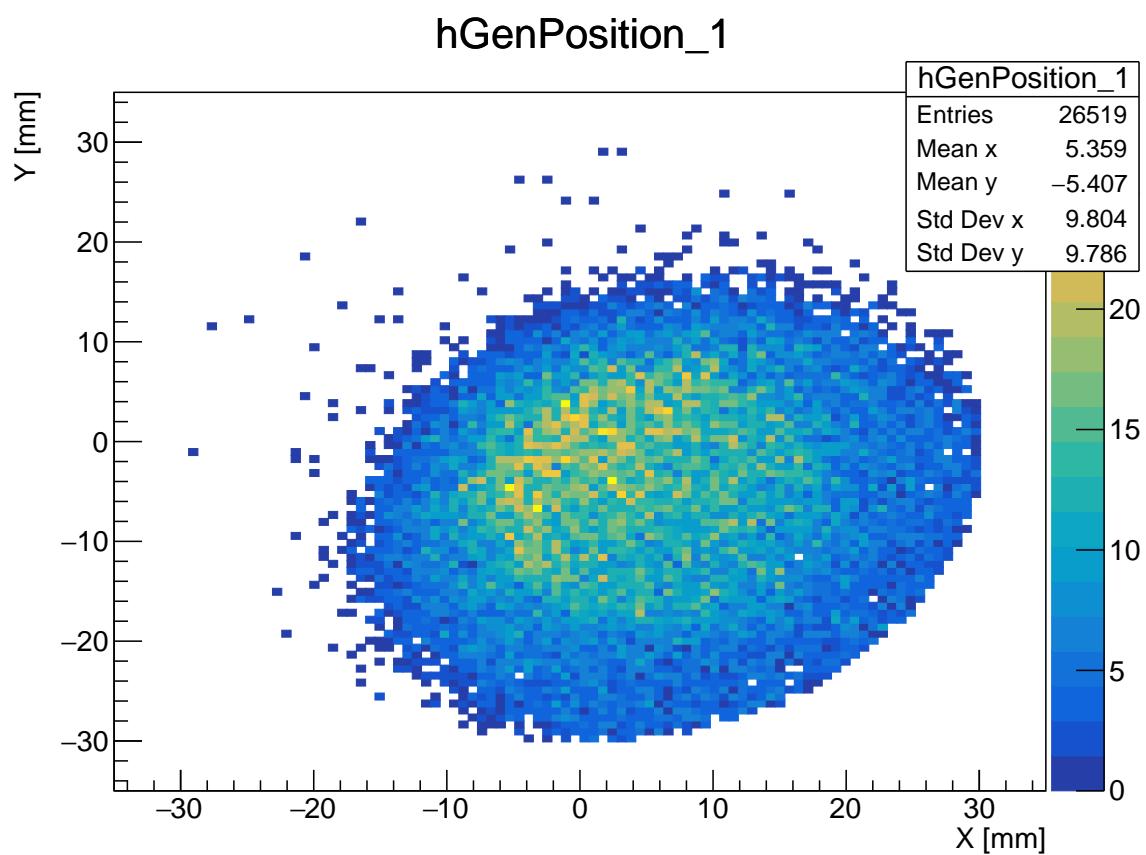


Figure: Generation Position

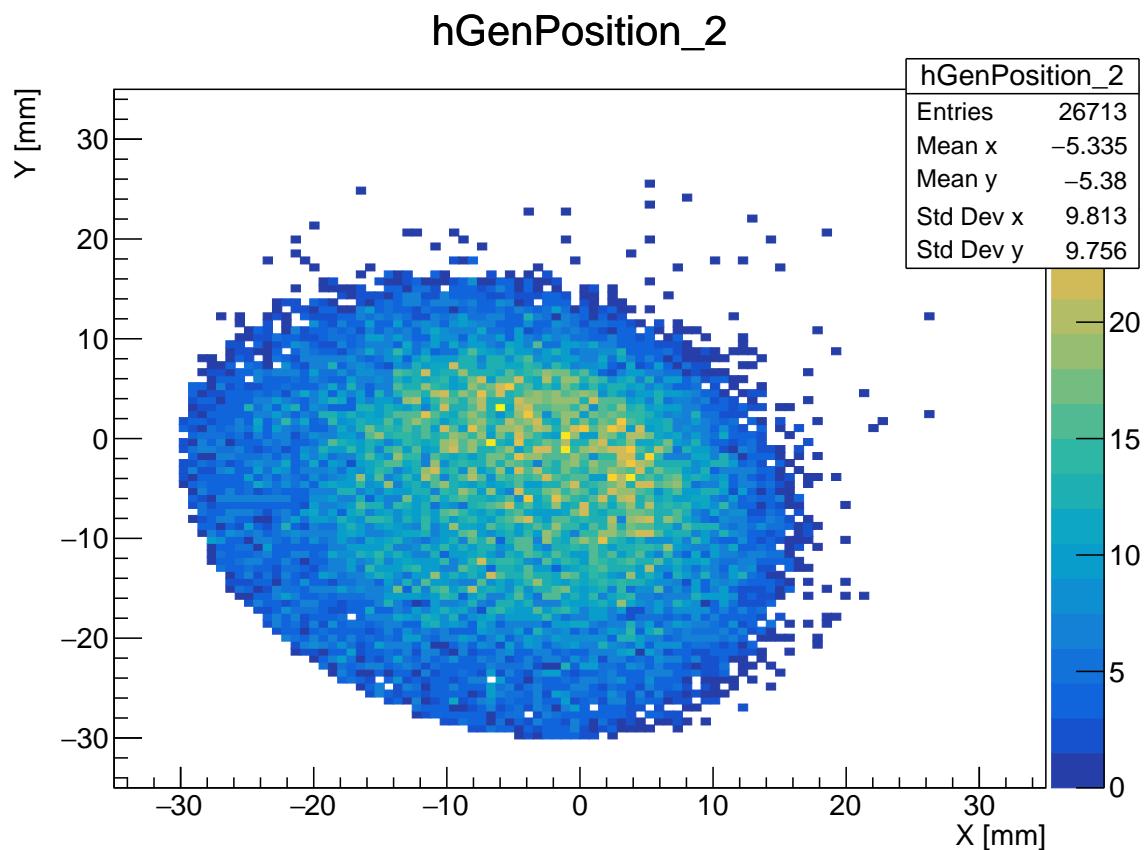


Figure: Generation Position

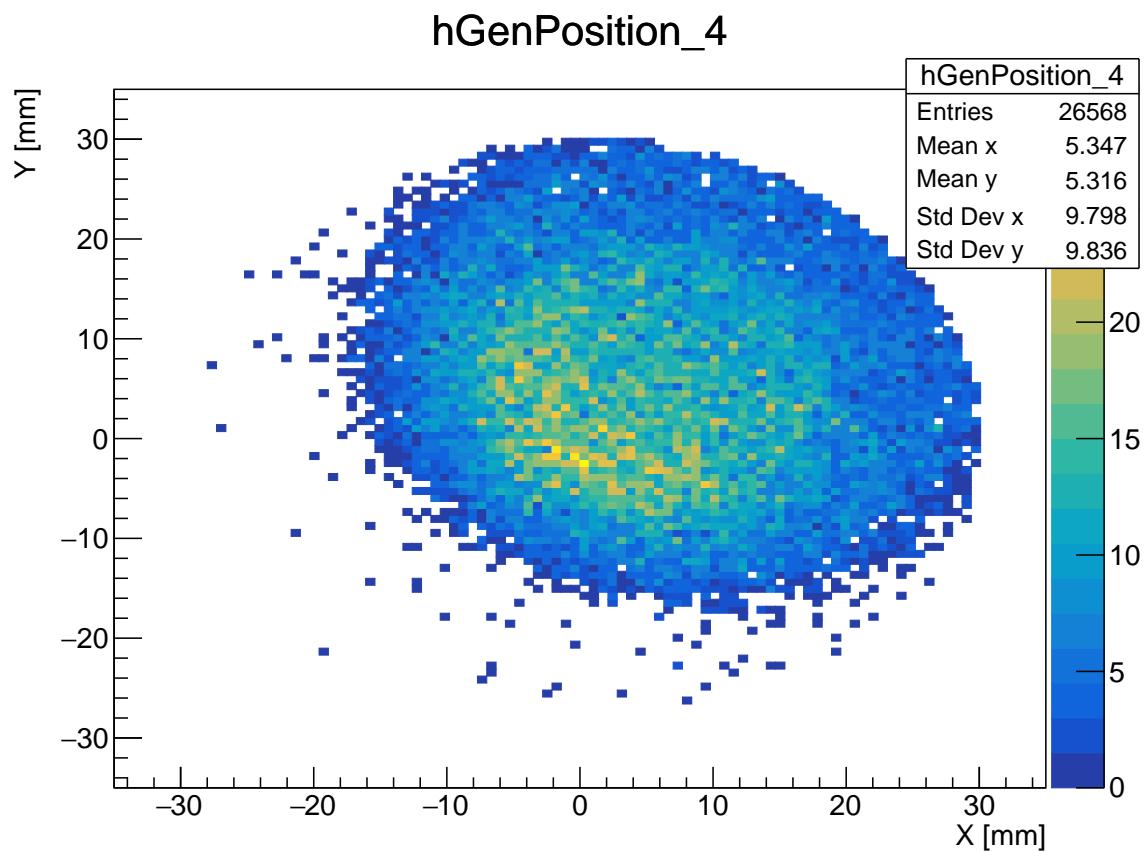


Figure: Generation Position

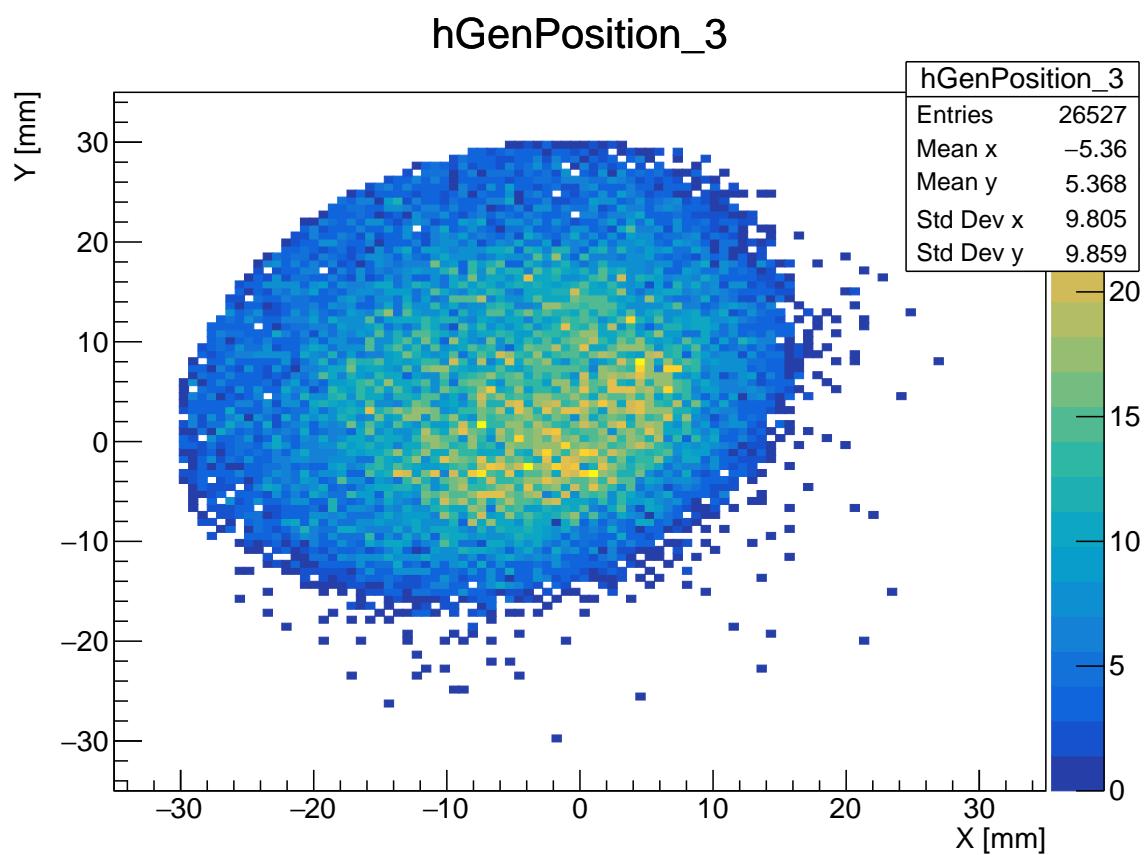


Figure: Generation Position

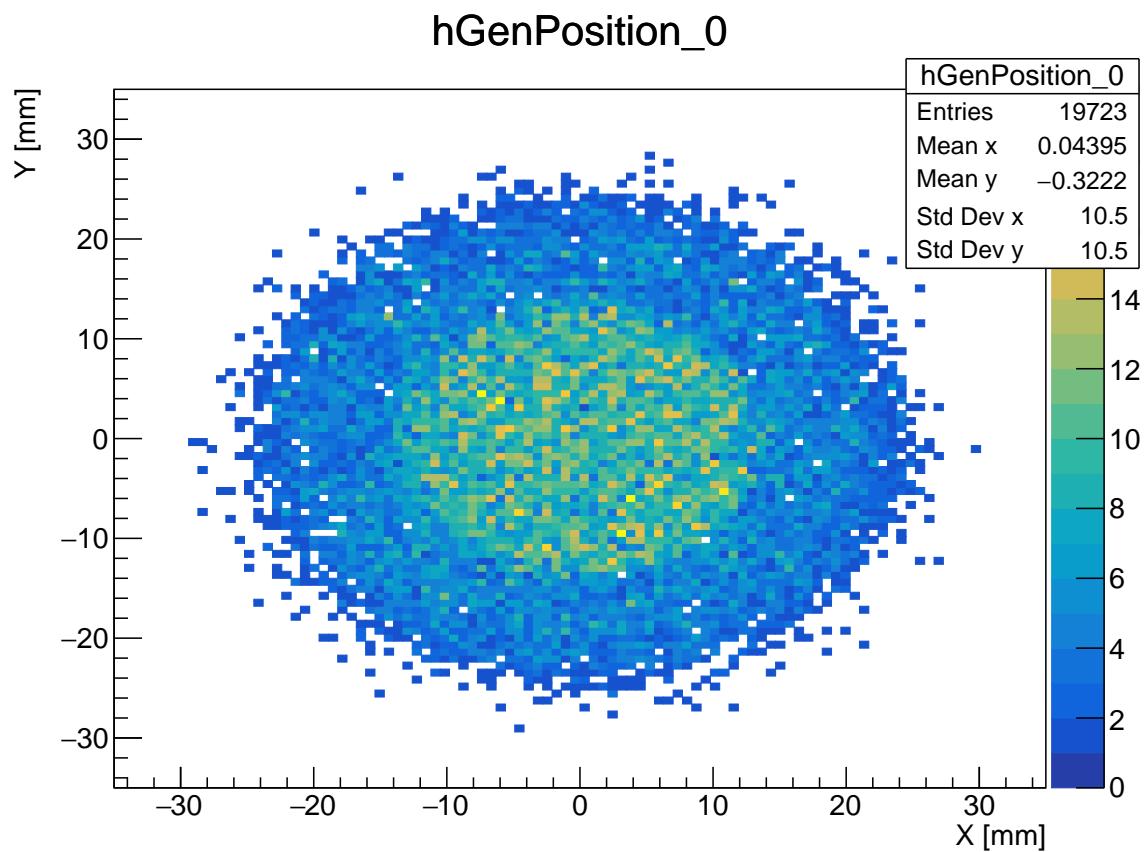


Figure: Generation Position

MC quantities for alpha_t0

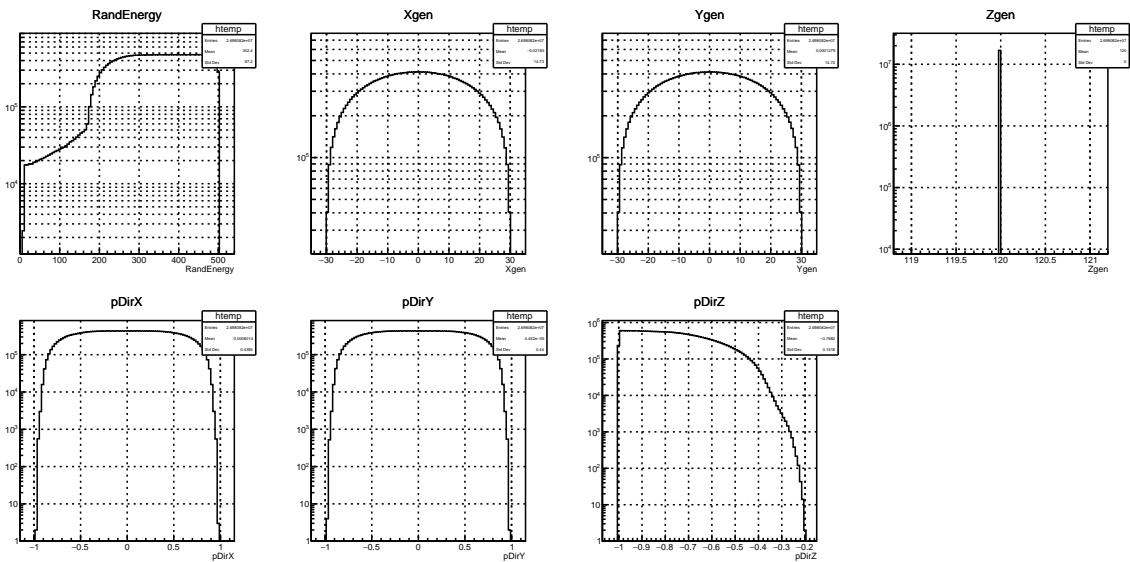


Figure: MC quantities

Energies distribution for alpha

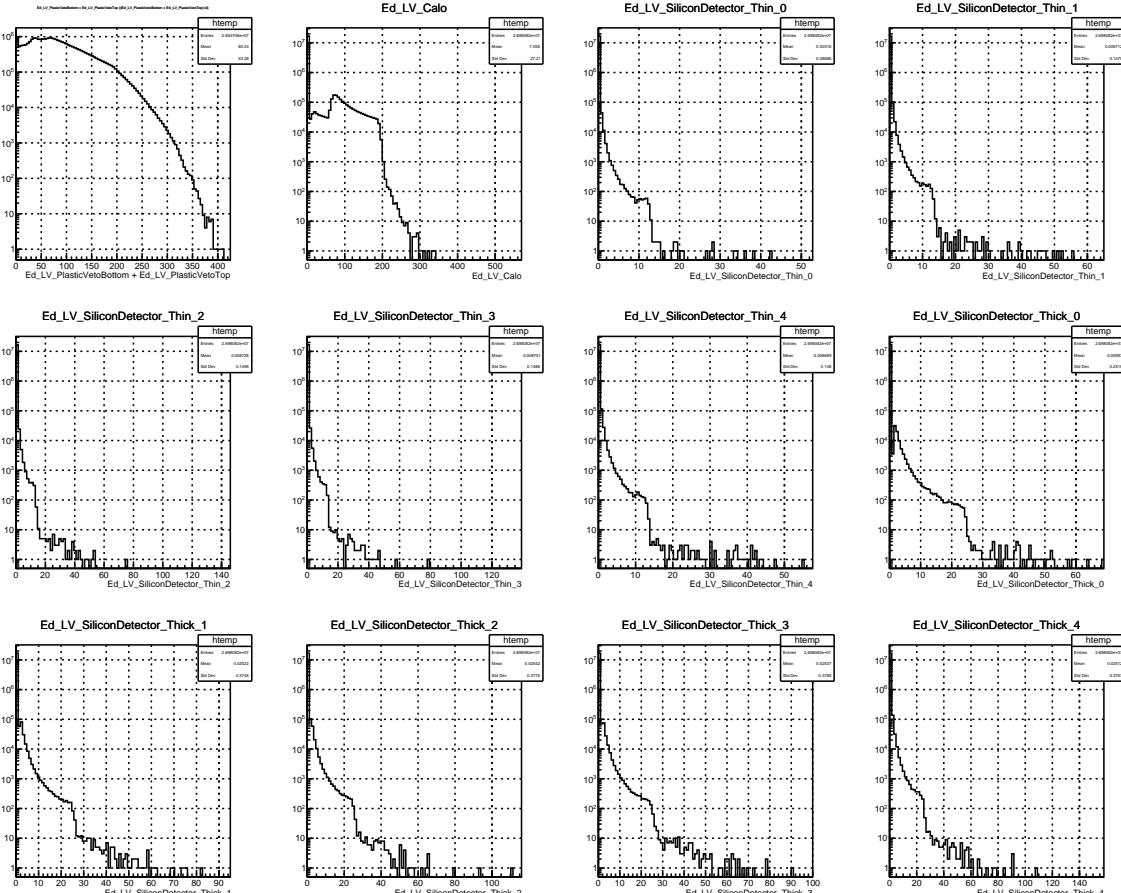


Figure: Detected energies

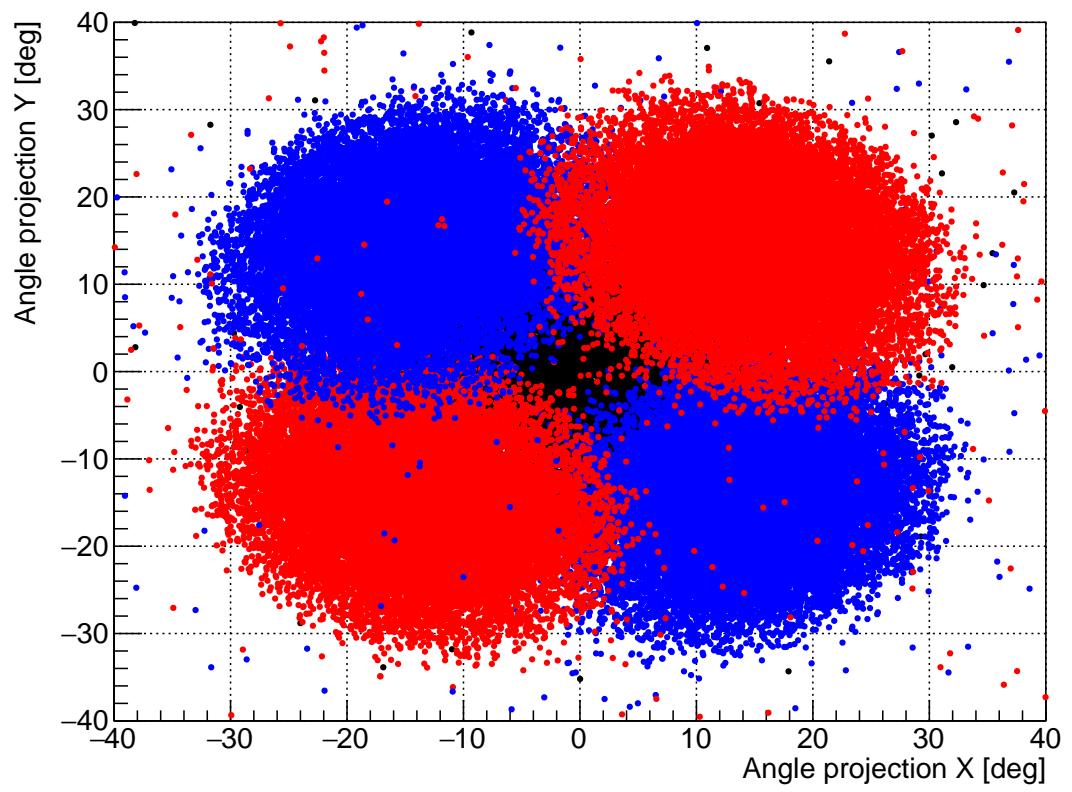


Figure: Angles distribution

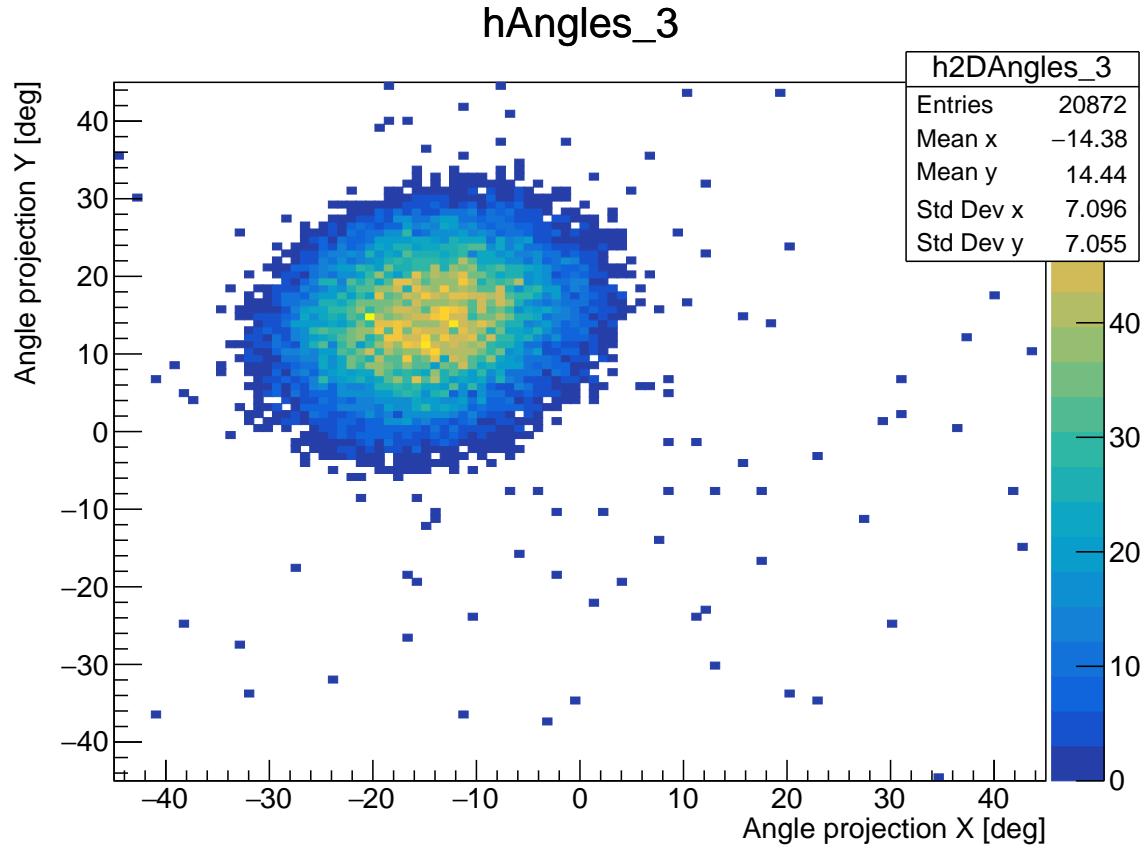


Figure: Angles distribution

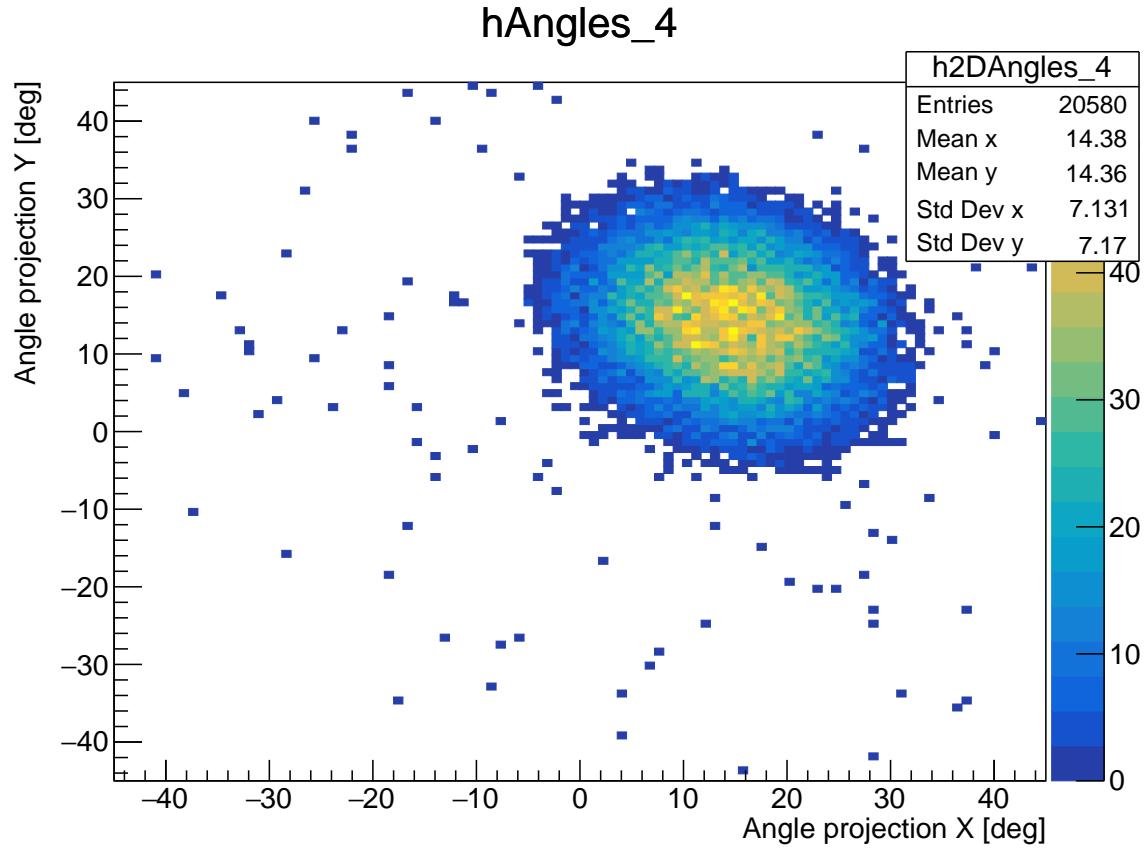


Figure: Angles distribution

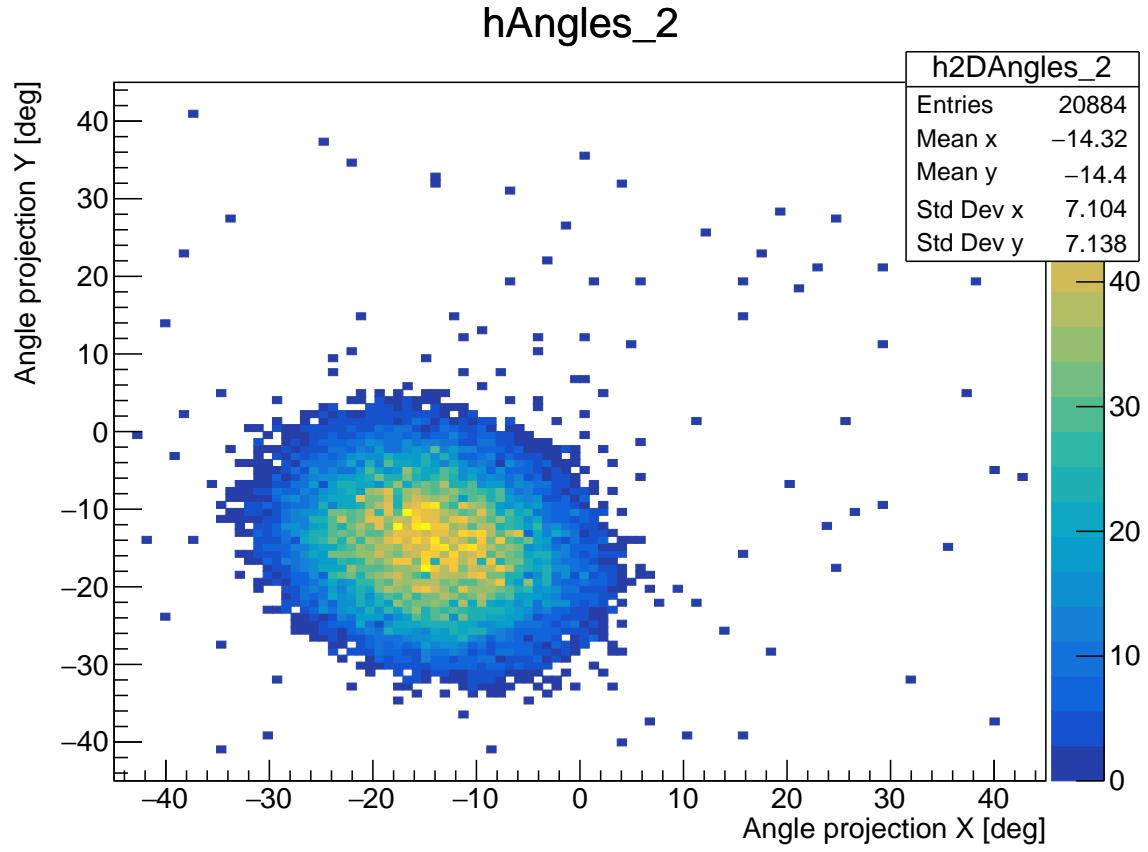


Figure: Angles distribution

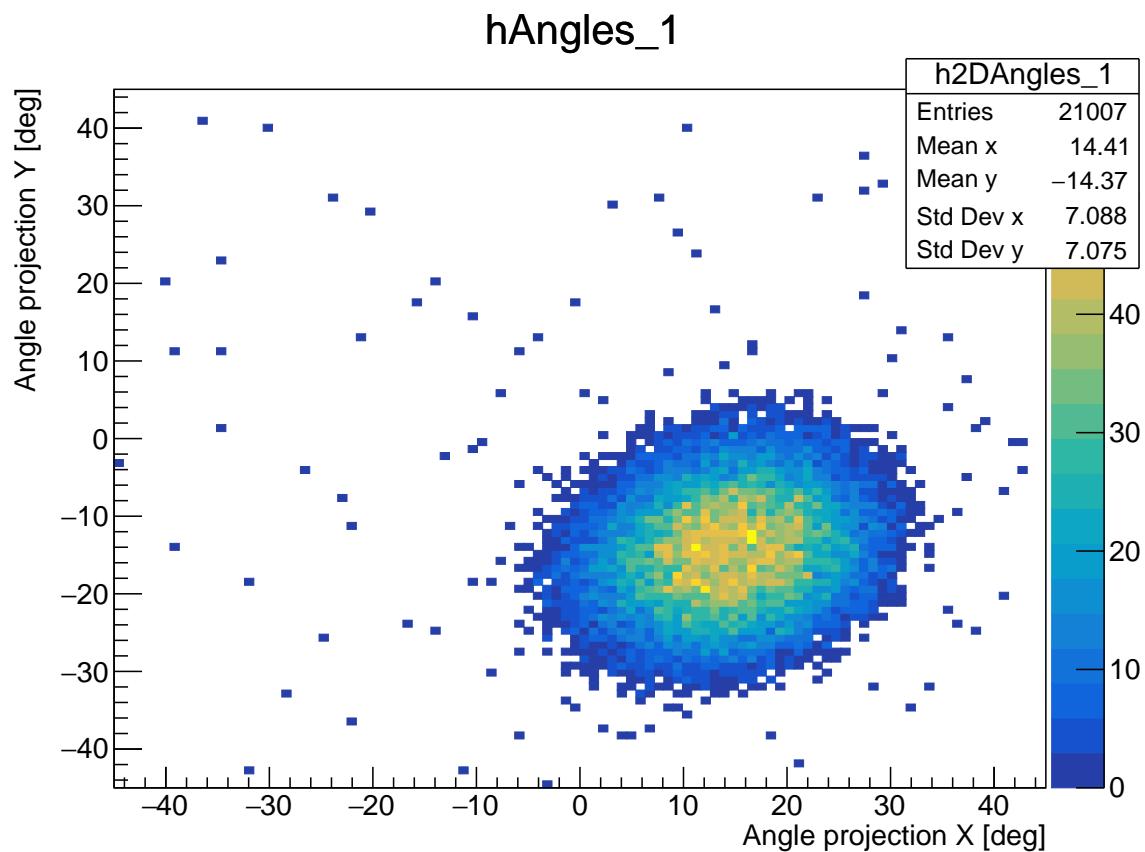


Figure: Angles distribution

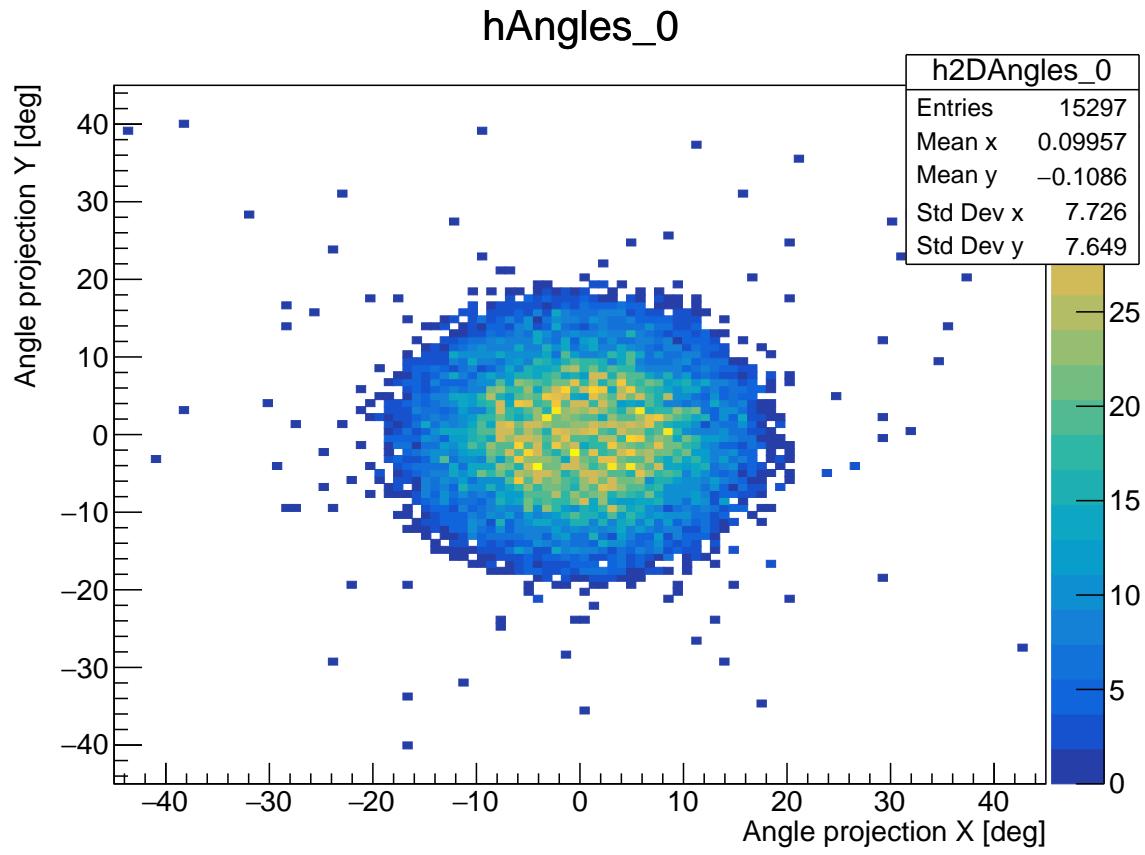


Figure: Angles distribution

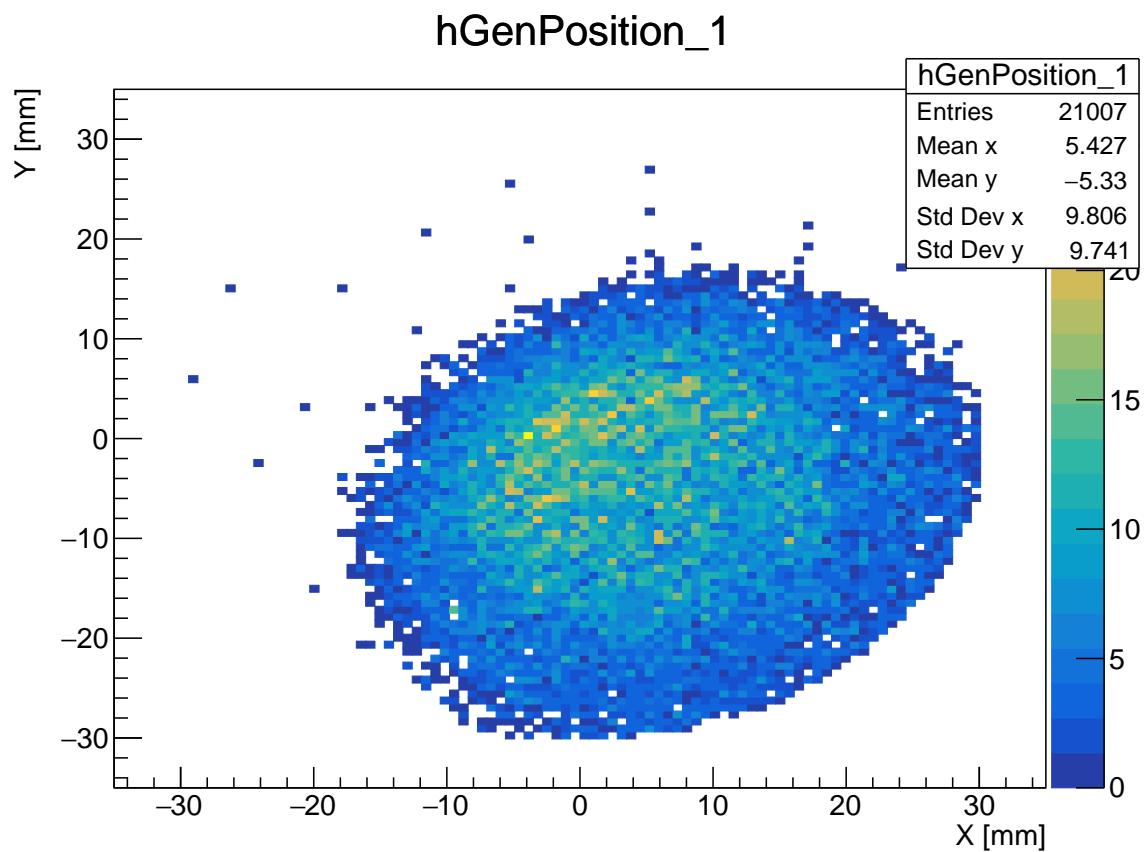


Figure: Generation Position

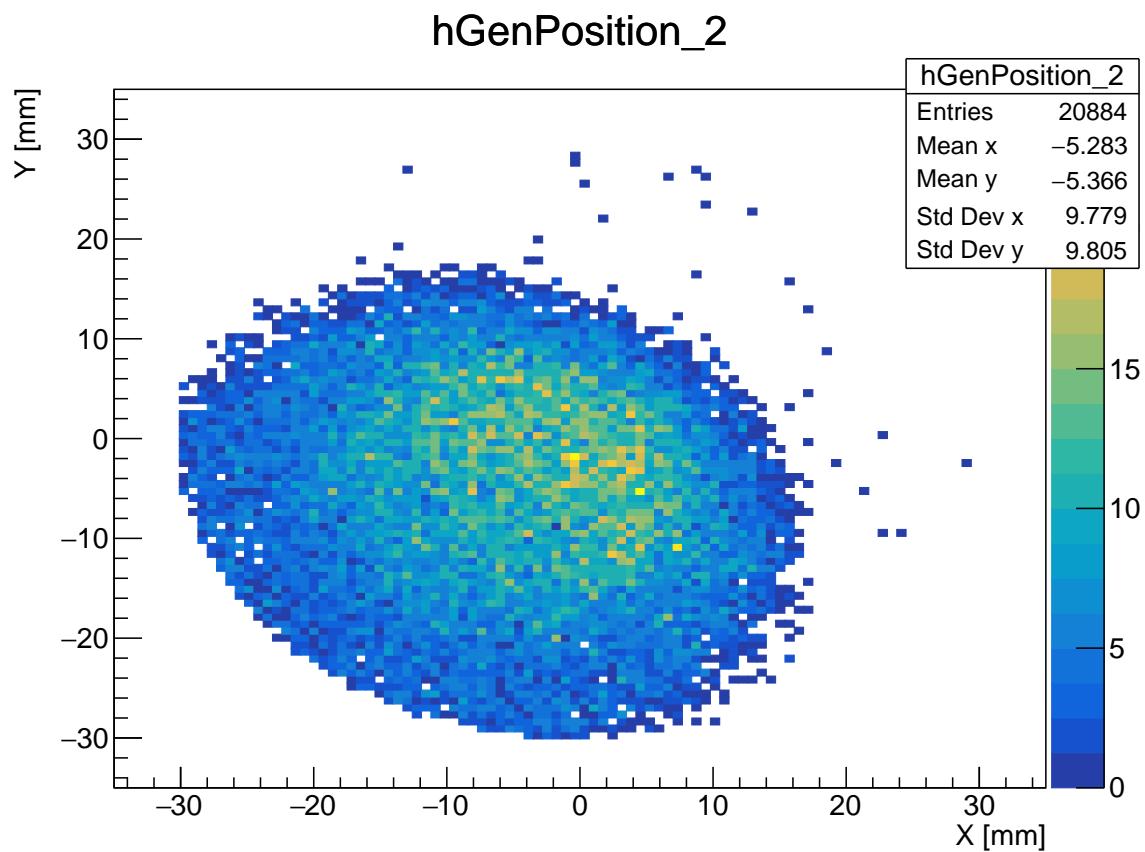


Figure: Generation Position

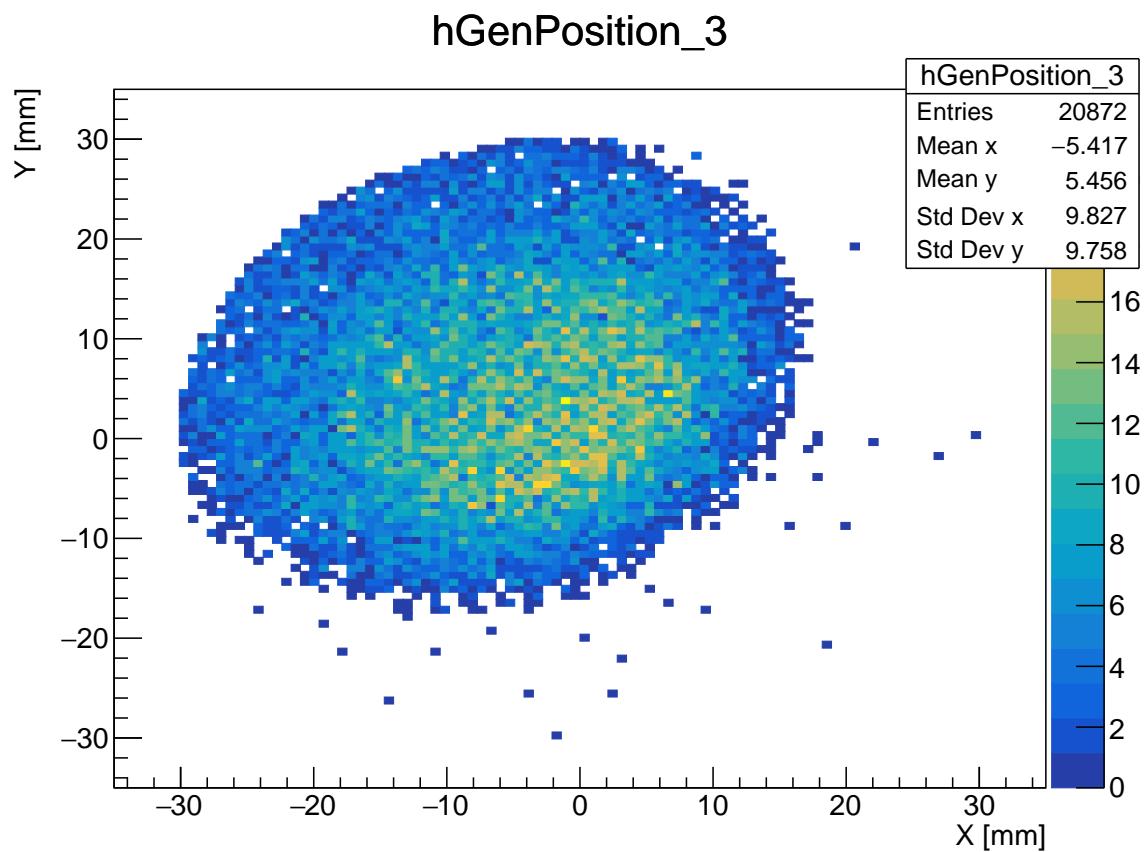


Figure: Generation Position

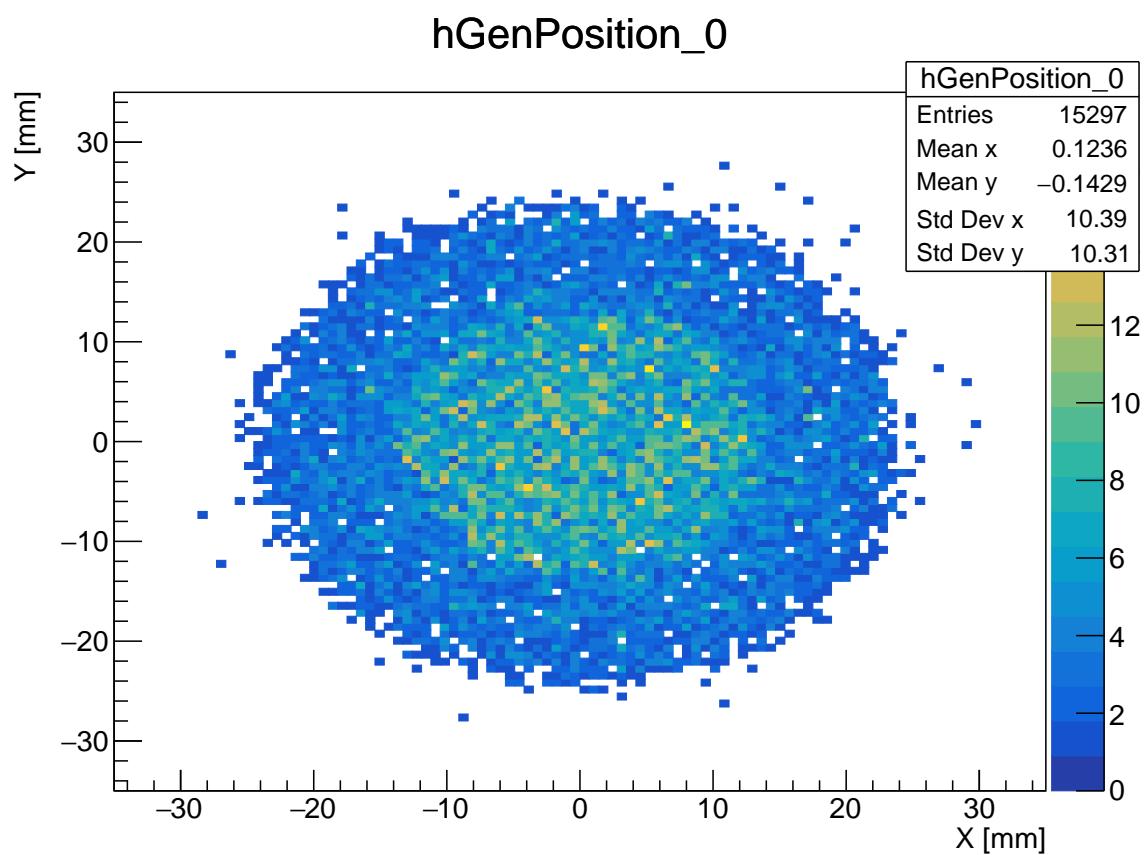


Figure: Generation Position

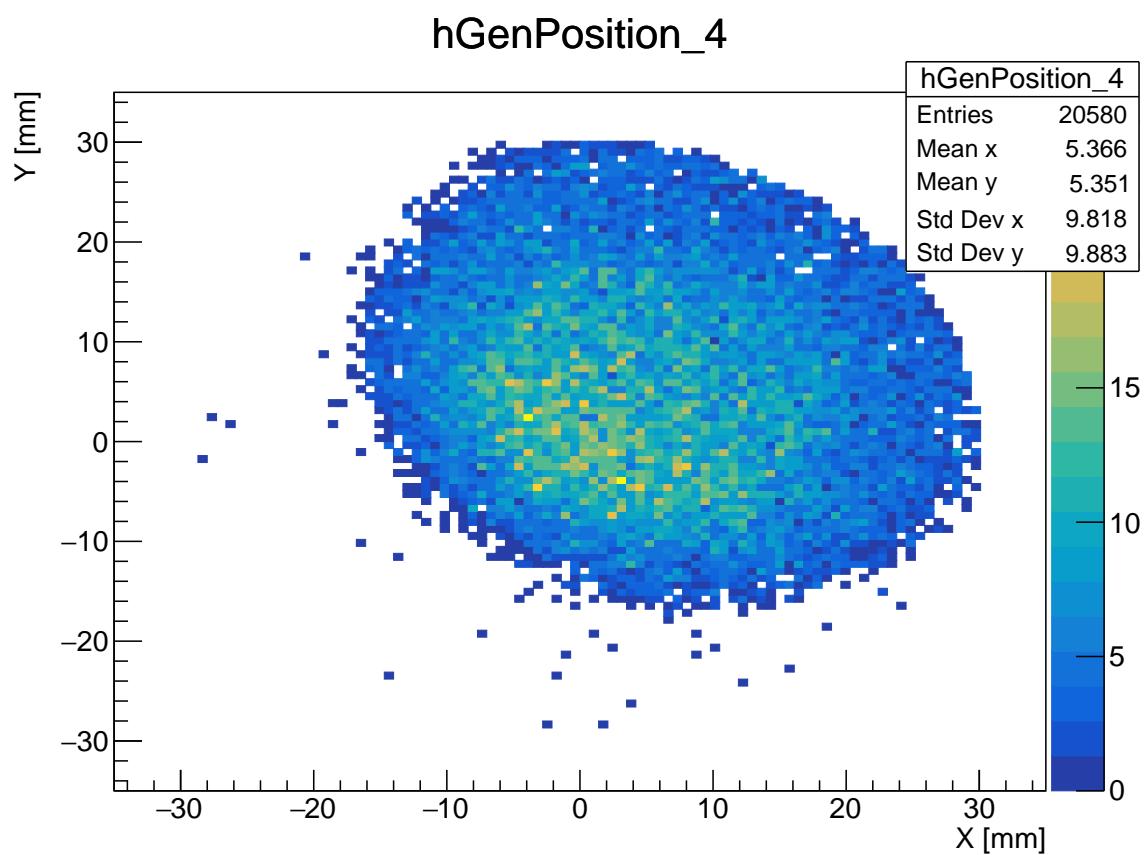


Figure: Generation Position

