

Energy, Phi, Eta Distributions of Jets with/without Background

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Procedure:

Files: 18x275_noBG, 18x275_BG (Barak)

1000 events

Fastjet: anti-kt, $R=0.4$, E scheme

Branches used

For Gen: GeneratedParticles.momentum.x, GeneratedParticles.momentum.y, GeneratedParticles.momentum.z, GeneratedParticles.energy, GeneratedParticles.charge

Selection: GeneratedParticles.charge != 0

For Reco: ReconstructedChargedParticles.momentum.x, ReconstructedChargedParticles.momentum.y, ReconstructedChargedParticles.momentum.z, ReconstructedChargedParticles.energy, CentralCKFTrajectories.nMeasurements

Selection: CentralCKFTrajectories.nMeasurements >= 3,4,5...

Procedure:

18x275_noBG

Gen Jet: 1000 events

Reco Jet (≥ 3 tracks) : 973 events

Reco Jet (≥ 4 tracks) : 971 events

Reco Jet (≥ 5 tracks) : 898 events

Reco Jet (≥ 6 tracks) : 785 events

18x275_BG

Gen Jet: 1000 events

Reco Jet (≥ 3 tracks) : 1000 events

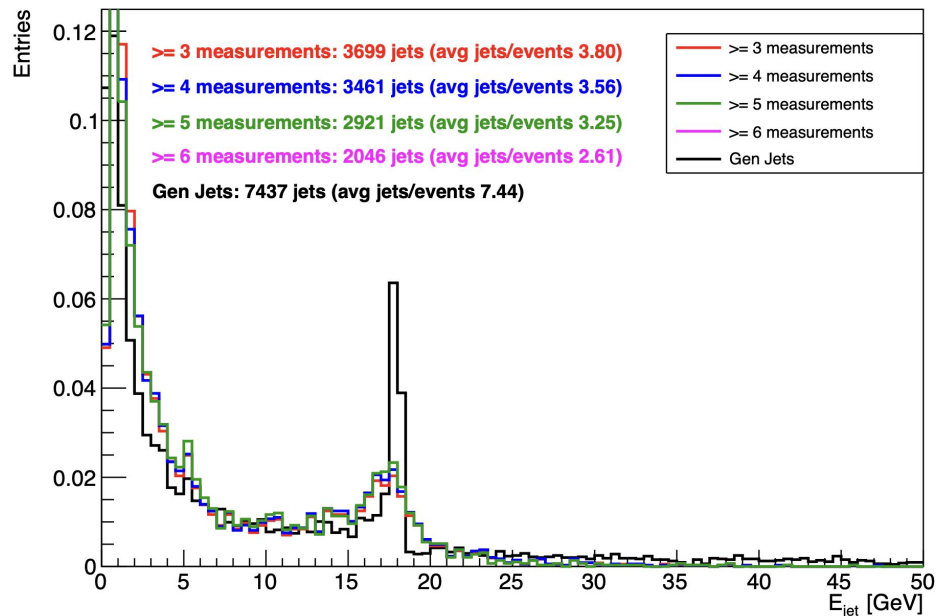
Reco Jet (≥ 4 tracks) : 967 events

Reco Jet (≥ 5 tracks) : 894 events

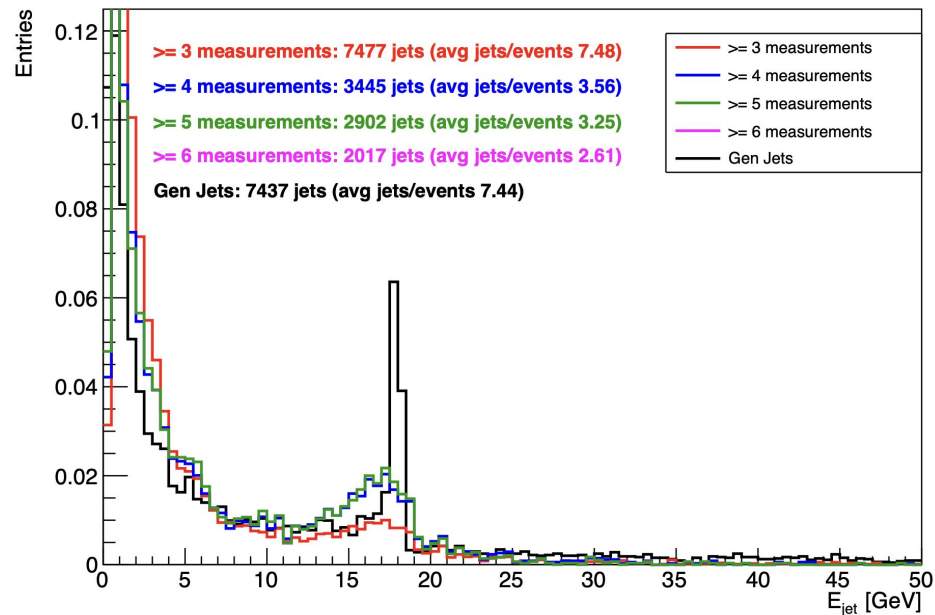
Reco Jet (≥ 6 tracks) : 773 events

Energy Distribution

Jet energy with No BG

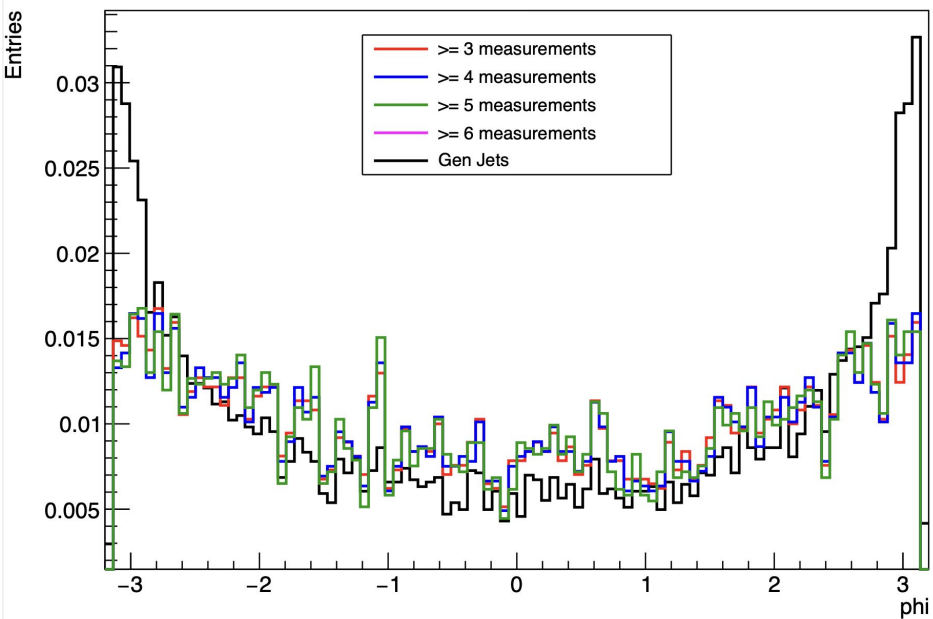


Jet energy with BG

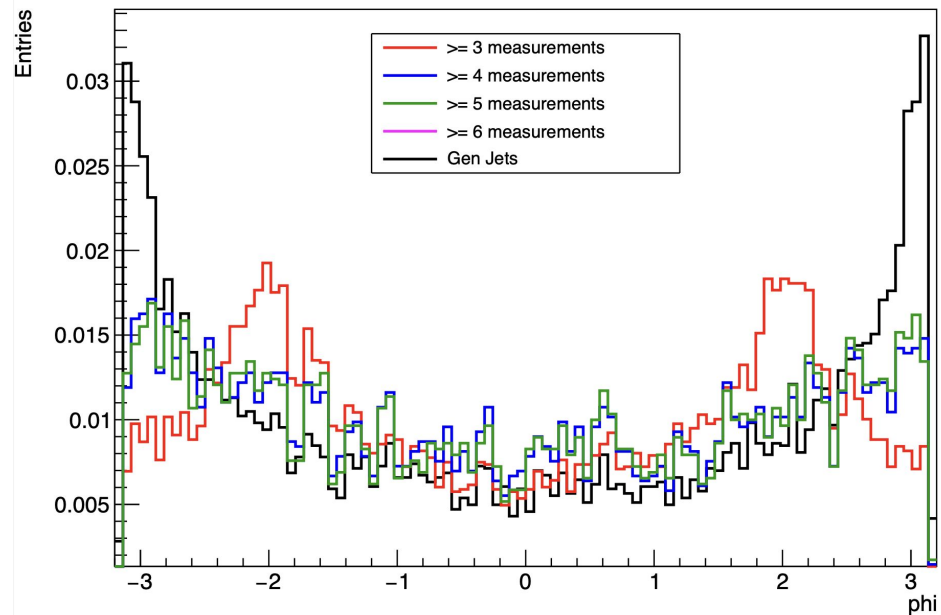


Phi Distribution

Jet phi with No BG

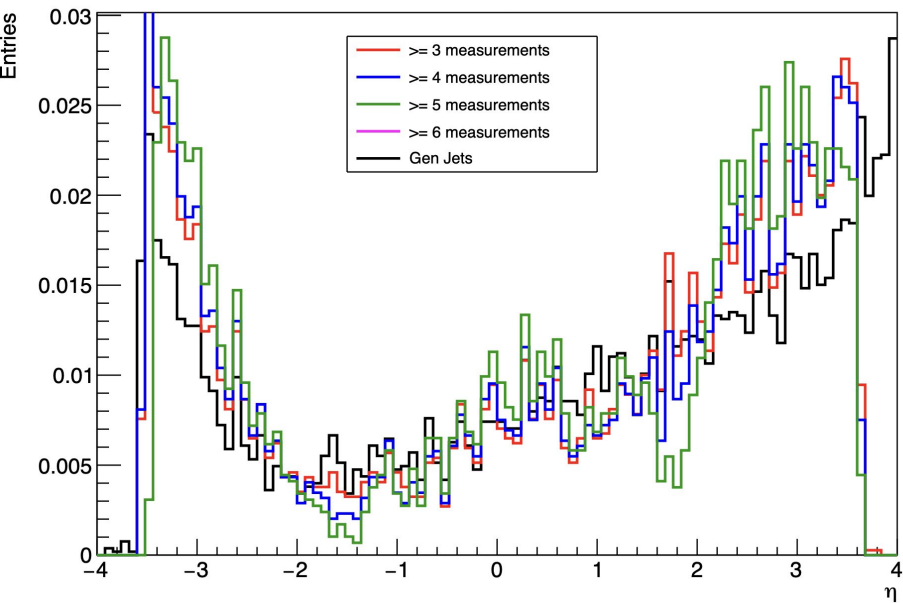


Jet phi with BG

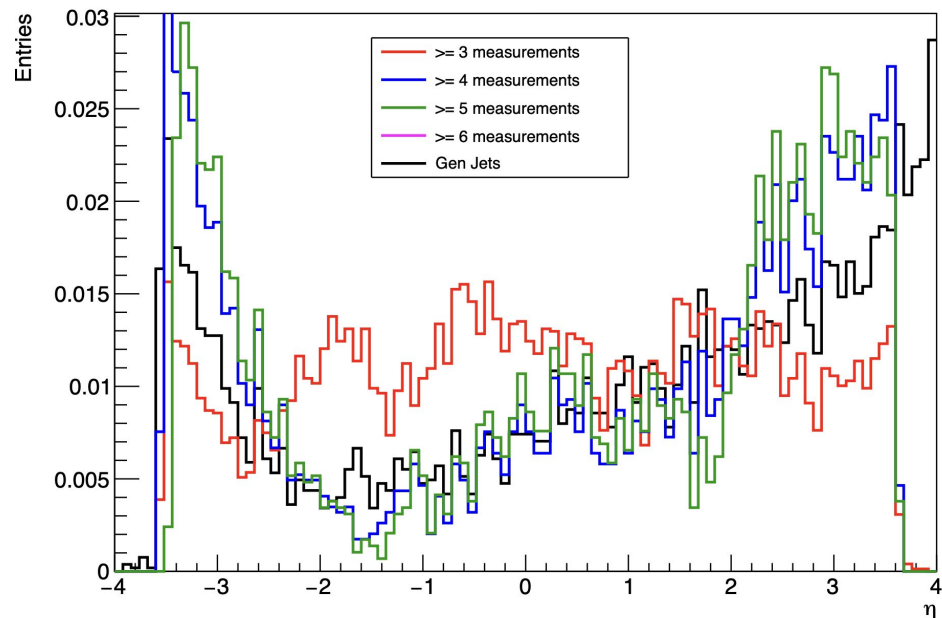


Eta Distribution

Jet eta with No BG



Jet eta with BG



Next : Energy Resolution, Energy Scale

Matching: One to one matching

Start with Reco Jet, and match it to closest Gen Jet based on spatial distance

(once a gen jet is matched, remove it from the array so that other reco jets will not match with it)

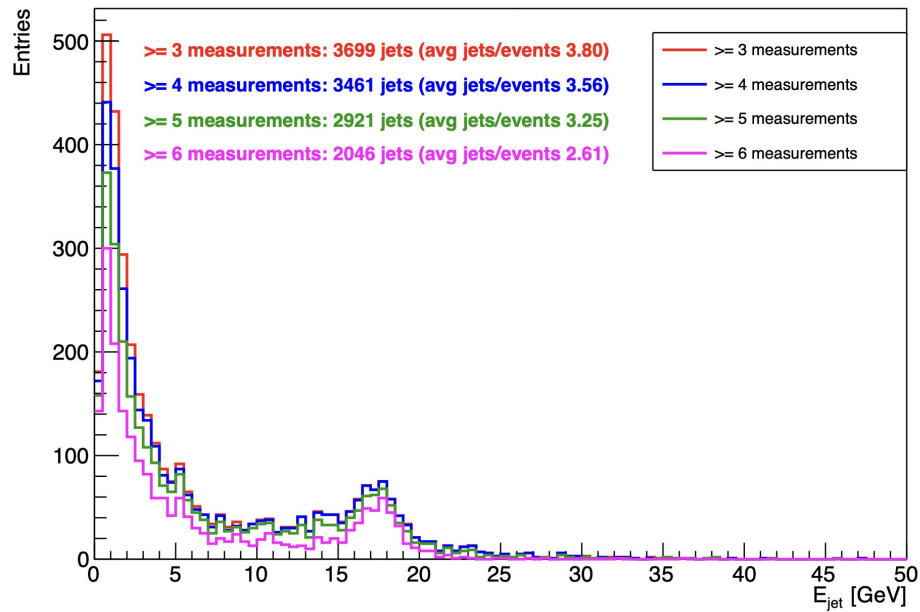
Maximum $dR = 0.4$

No selection on Energy threshold

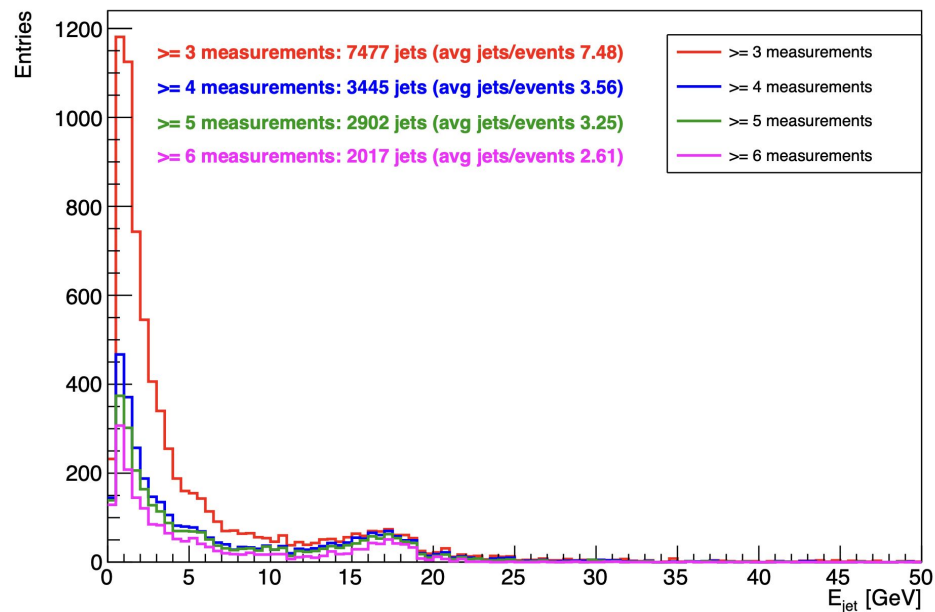
BackUp

Reminder: Energy Distribution

Jet energy with No BG

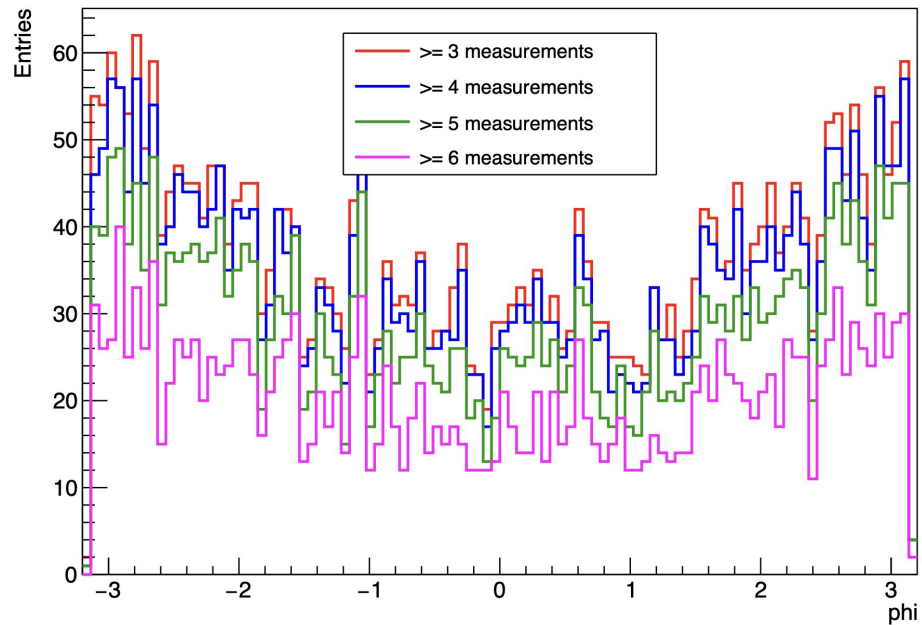


Jet energy with BG

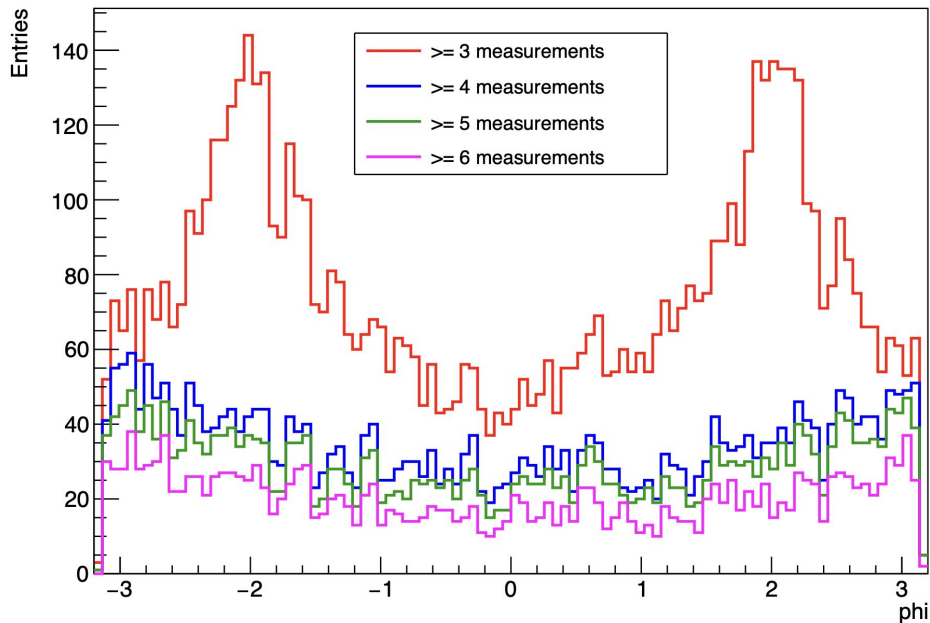


Phi Distribution

Jet phi with No BG

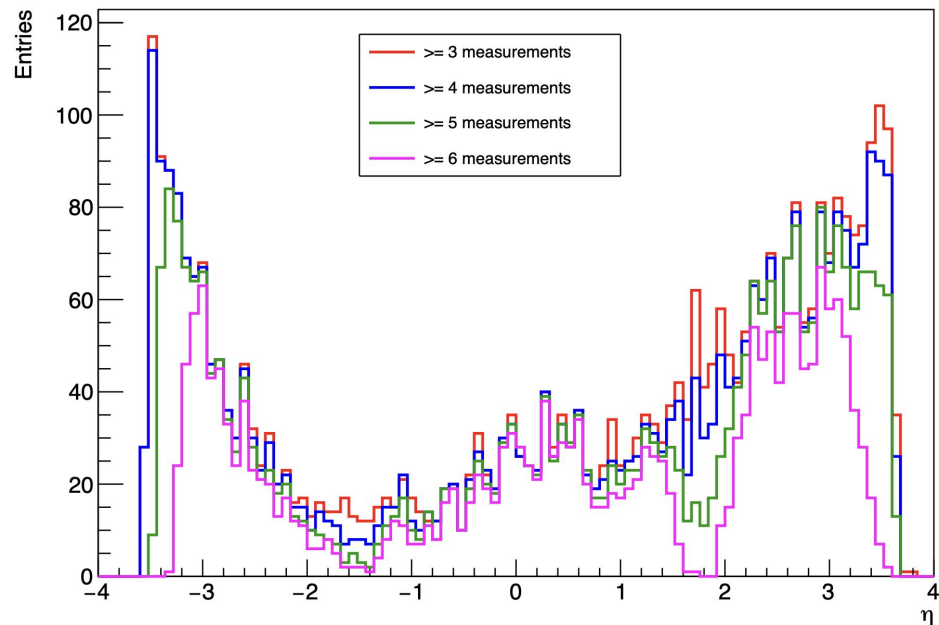


Jet phi with BG



Eta Distribution

Jet eta with No BG



Jet eta with BG

