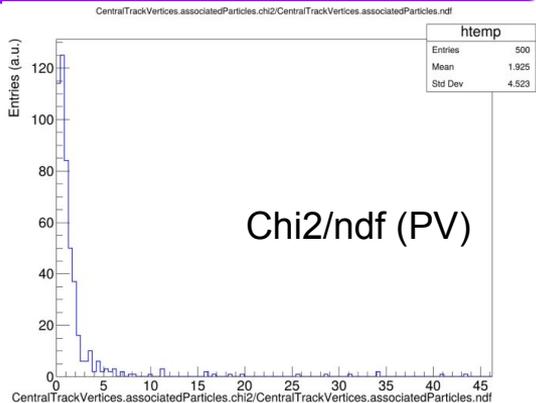
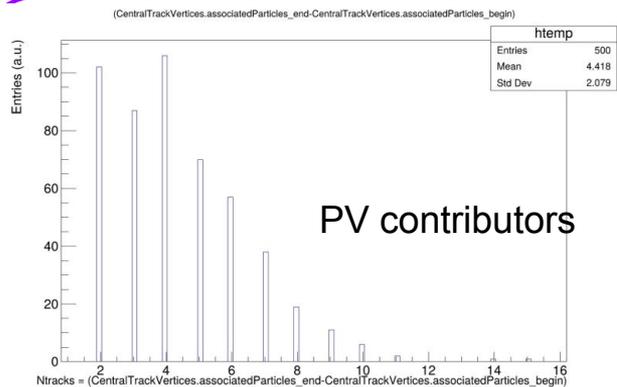


Jets and HF WG

Shyam Kumar, Rongrong Ma

Mar. 2, 2026

Background Studies (e+p, 10x100, NCDIS $Q^2 > 1 \text{ GeV}^2$) October campaign



(w/o Bkg)

(w Bkg)

Events 591

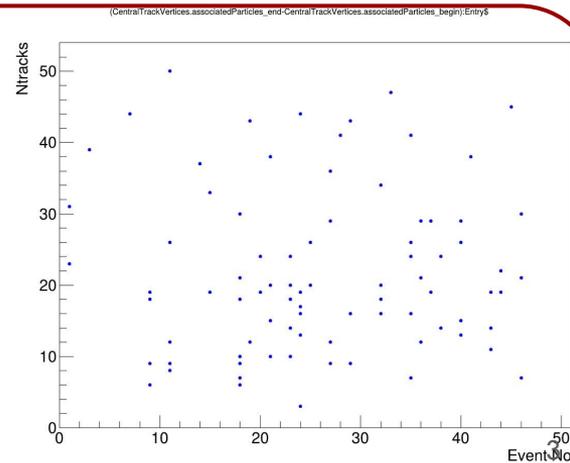
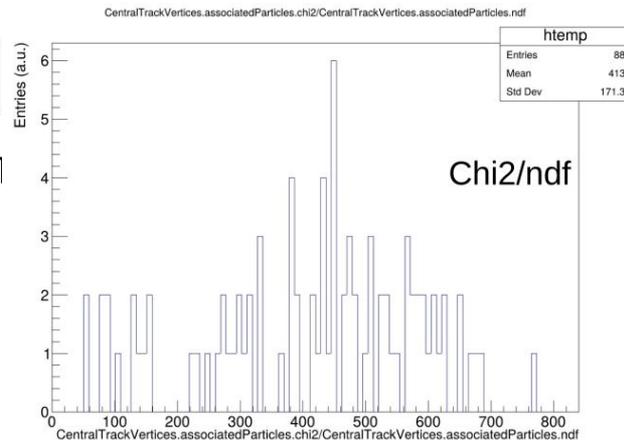
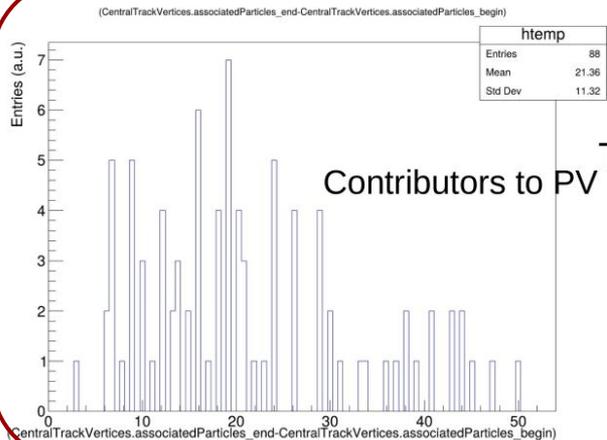
Events = 48

Average Chi2/ndf ~2

Average Chi2/ndf is larger

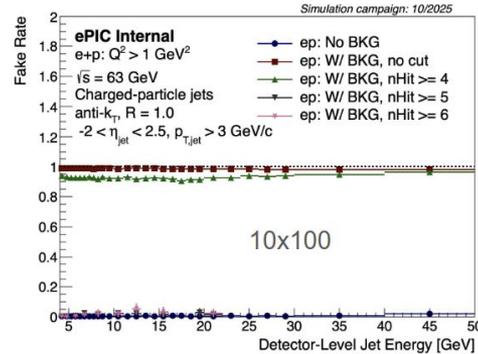
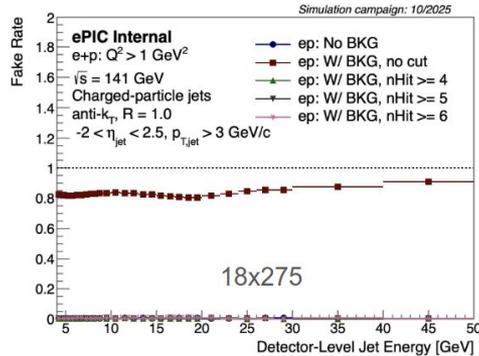
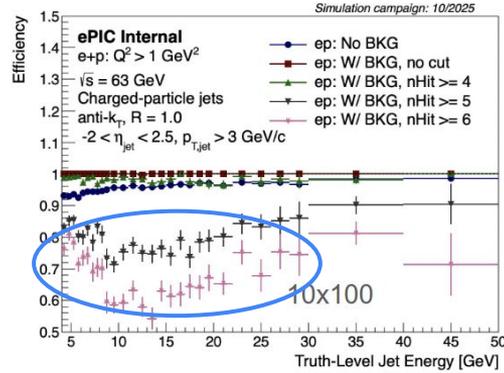
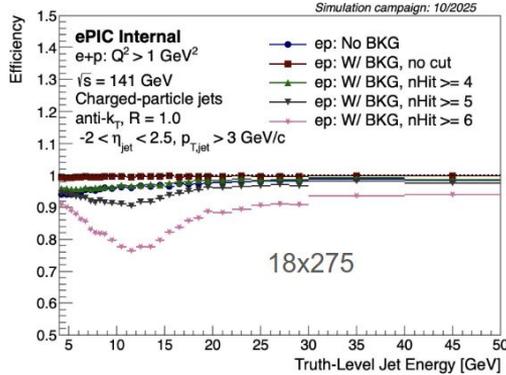
PV Contributors larger in case of machine bkg

More than one vertices per event

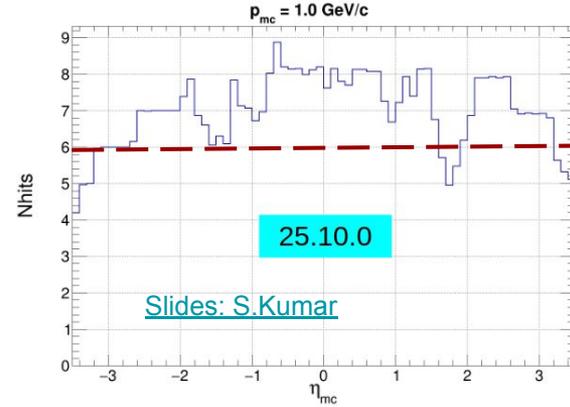


Background Studies (Jets)

Losing efficiency



Nhits at MC Level (no digitization)



nHit ≥ 5 suppresses the fake rate

Applying nHit ≥ 6 start losing acceptance

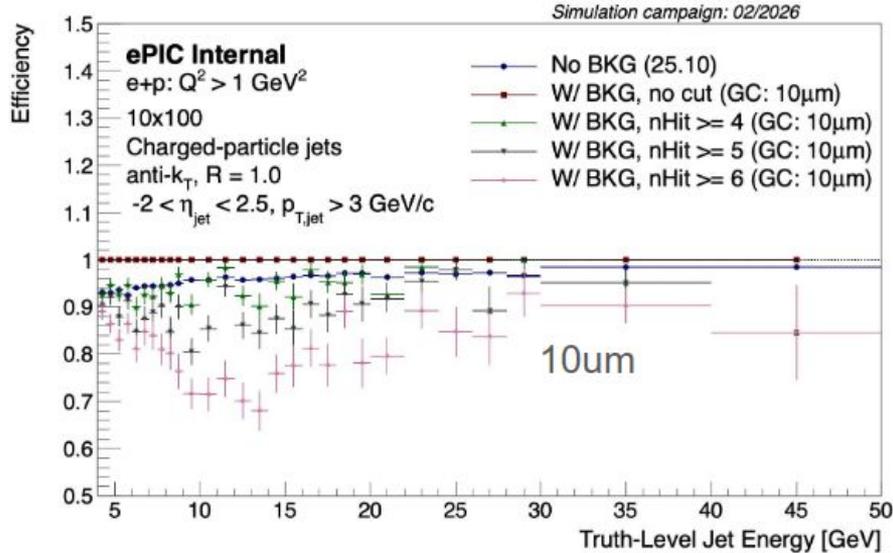
$$\epsilon_{\text{jet}} = \frac{N_{(\text{reco \& matched})}}{N_{\text{gen}}}$$

Still looking other options to remove the background other than nHits e.g. significance (DCA_{xy})

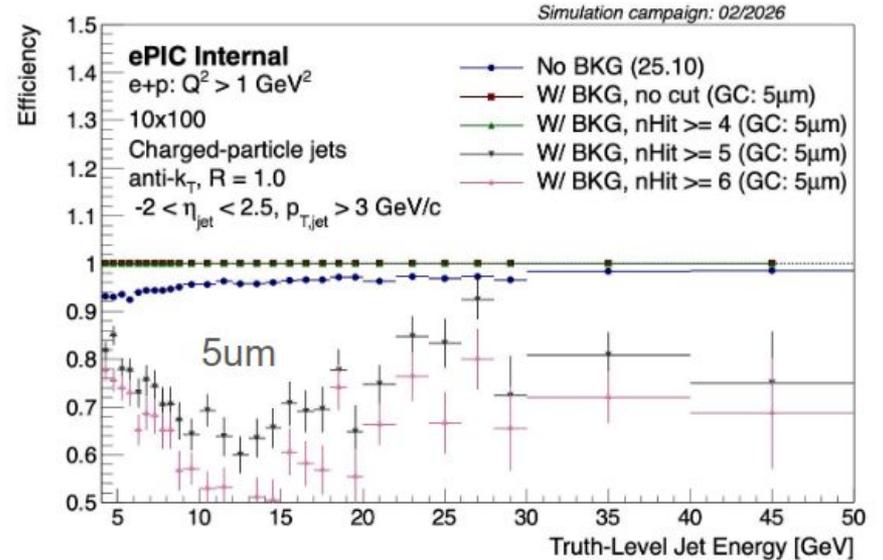
Background Studies (Jets)

e+p, 10x100

10 μm thick Au layer



5 μm thick Au layer



Study with 10 μm Au layer but material map correspond to 5 μm one

Study with 5 μm Au layer and its corresponding material map

Efficiency is smaller for 10 μm case w.r.t. 5 μm (nhits ≥ 4): green marker
Need to perform study with updated material map!