



Update: Jets reconstruction in e-p collisions

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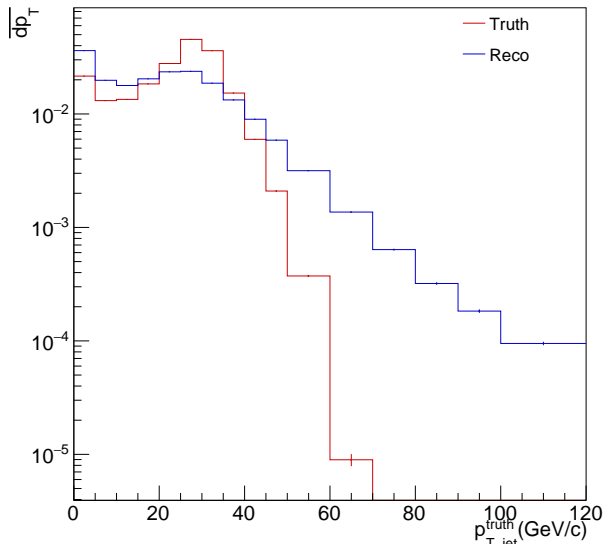
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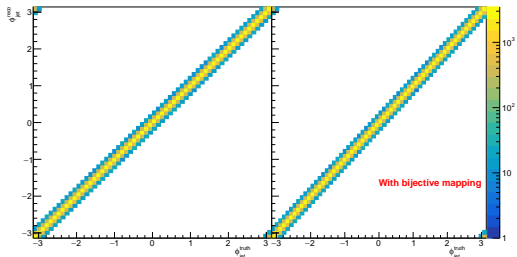
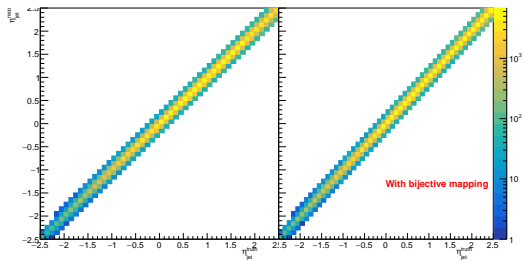
Introduction

- Took 1031 files from 23.12.0 campaign at:
 - root://dtneic.jlab.org/
/work/eic2/EPIC/RECO/23.12.0/epic_craterlake/DIS/NC
 - collision energies: 18×275
 - $\min(Q^2) = 1000$ GeV
 - file suffix : tree.edm4eic.root
- Jets were clustered (anti- k_T , E-scheme, $R = 1.0$) from branches “ReconstructedParticles” for reco level and “MCParticles” branch for truth level
 - $E_{jet} > 5$ GeV
 - $|\eta_{jet}| < 2.5$
 - only for Reco jets $\Delta R(\text{jet}, e_{\text{beam}}^-) > 1.0$
- Truth and Reco jets are matched using a proximity criteria in $\eta - \phi$ plane ($\Delta R < 0.2$)
- Added an extra criteria requiring the matching to be a bijective mapping between truth and reco level (matching truth to reco should give the same pair as matching reco to truth) to weed out fakes

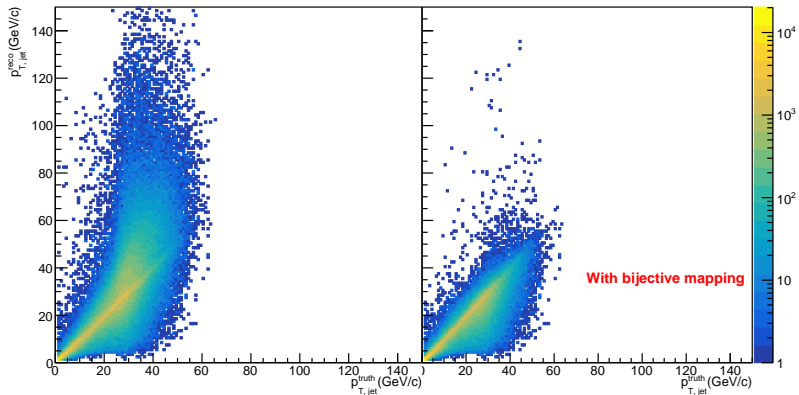
$p_{T,\text{jet}}$ spectra



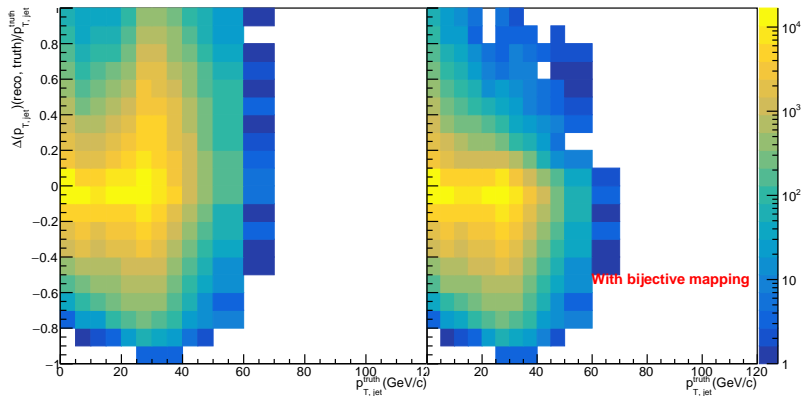
$\eta - \phi$ matching



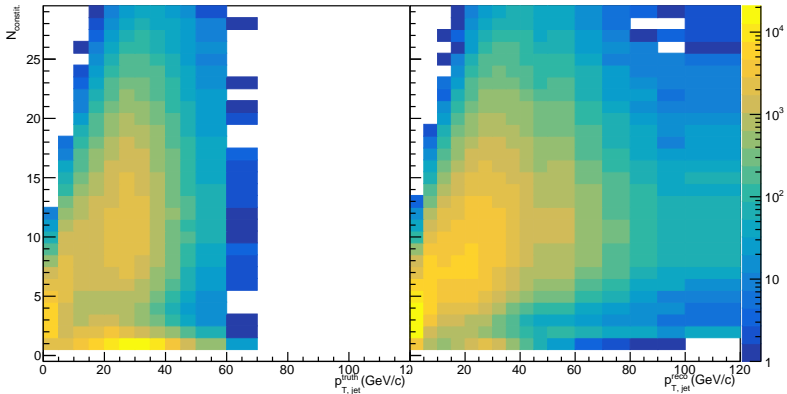
$p_{T,jet}$ response



$p_{T,\text{jet}}$ resolution

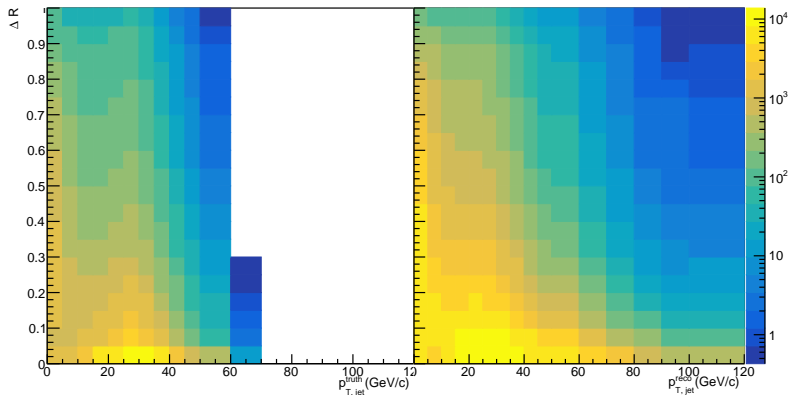


$N_{\text{constit.,jet}}$ vs $p_{T,\text{jet}}^{\text{reco}}$



Jet energy profile

z-axis represents, $\sum_{jet} \frac{\left(\sum_{constit.} p_{T, constit.} \right) (\Delta R)}{p_{T, jet}}$



Outlook

- Look for e-A samples (BeAGLE) and do comparison with e-p