

jet performance

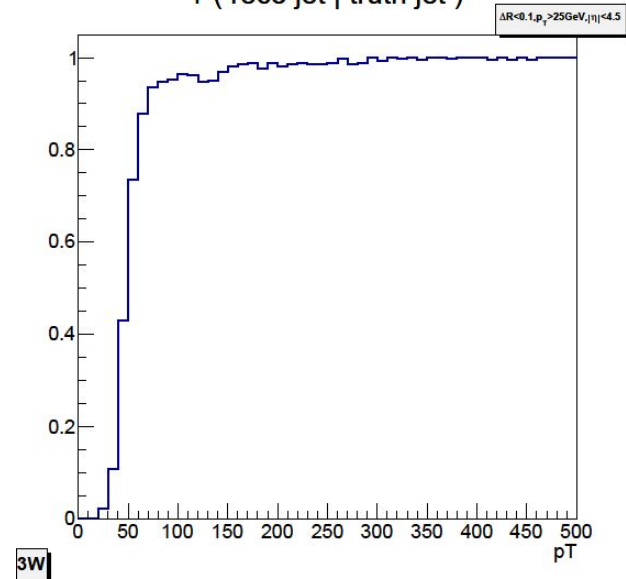
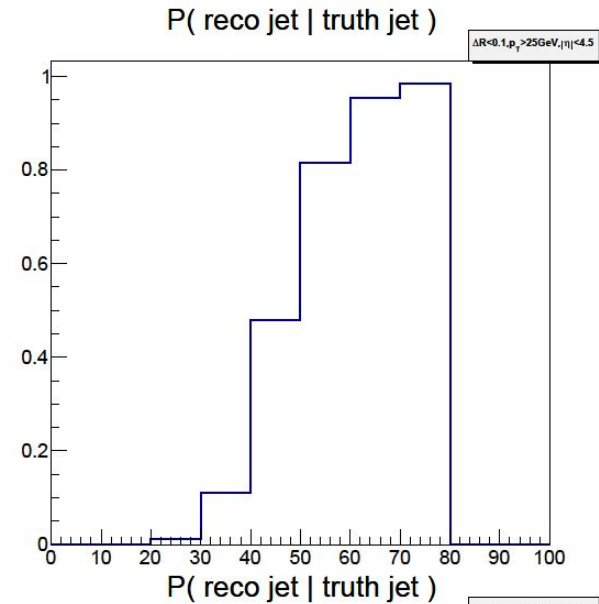
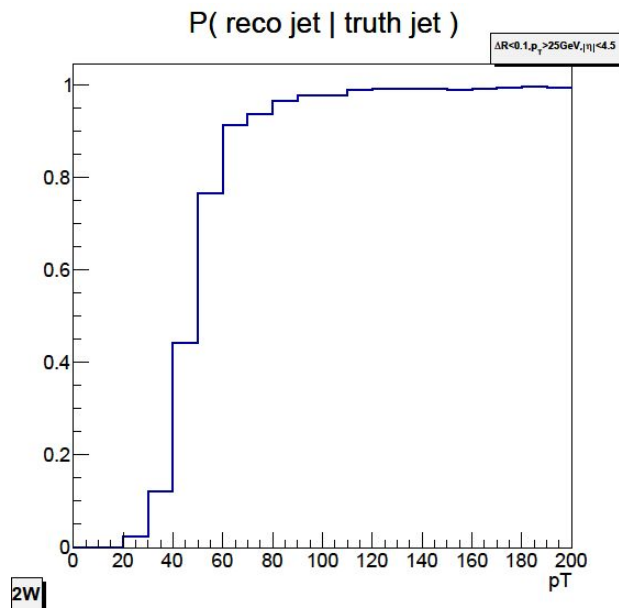
Jin Wang Yu Zhang Maosen Zhou
Feb 23

status

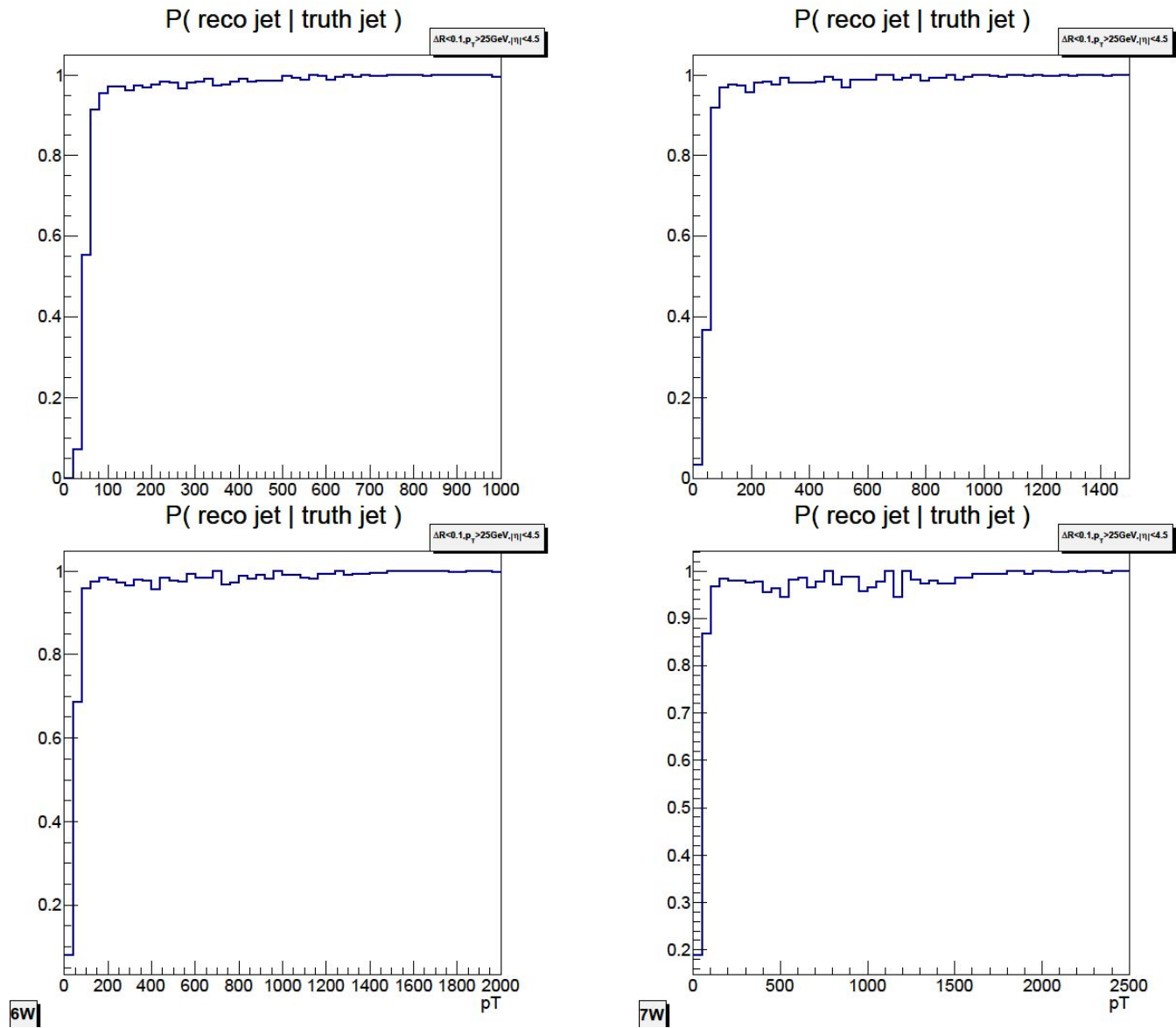
- sample:ZJ0W~ZJ7W,ggFH125,VBFH125
- key name:
JetContainer:AntiKt4TruthJet
AntiKt4EMTopoJet
TruthParticleContainer:TruthParticle
same with
PhotonContainer:PhotonCollection?
- run 5000 events in each sample as a test
- no Jet Validation/Calibration packages

reco eff

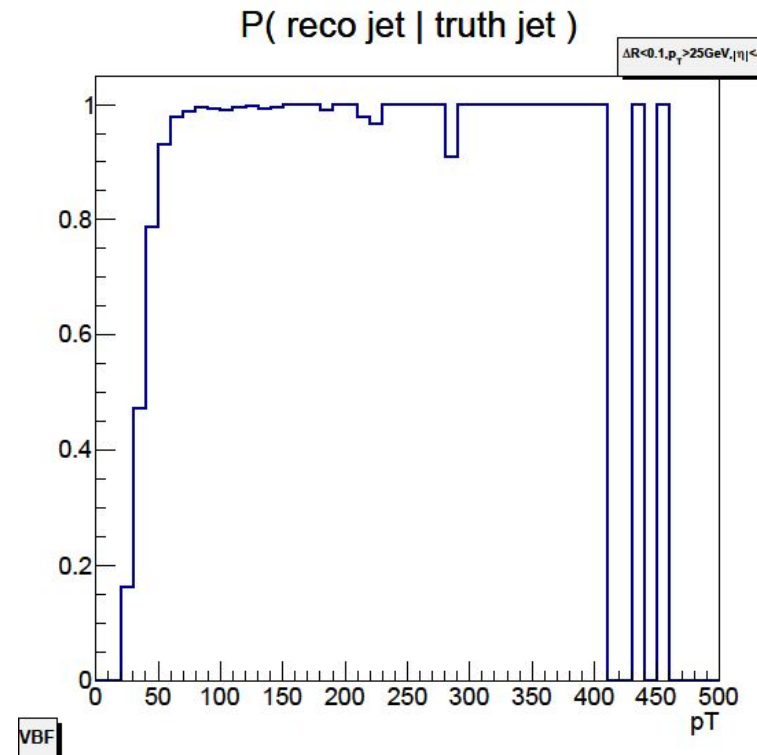
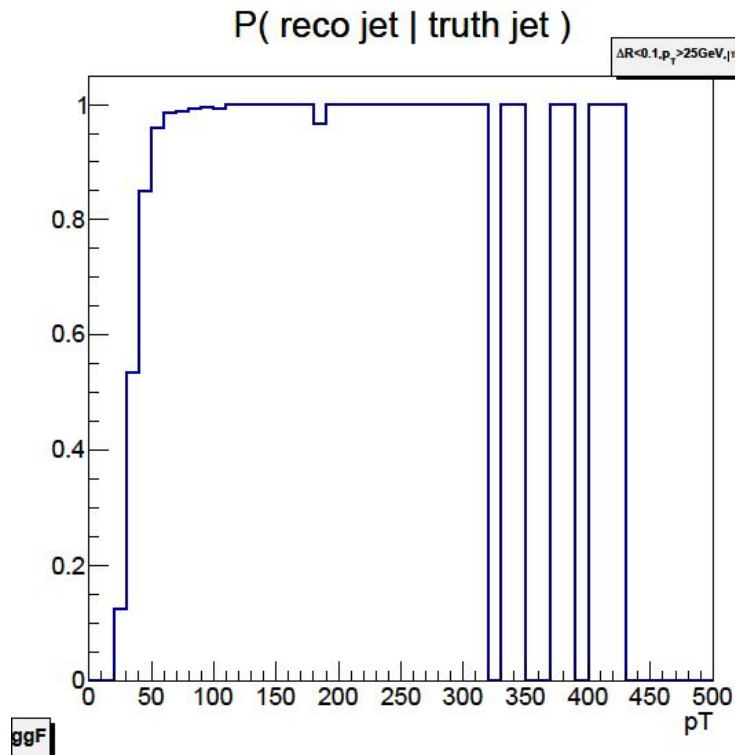
- $\Delta R < 0.1$
- $p_T > 25 \text{ GeV}$,
- $|\eta| < 4.5$
- leading jet p_T in ZJ0W is smaller than 25 GeV



reco eff

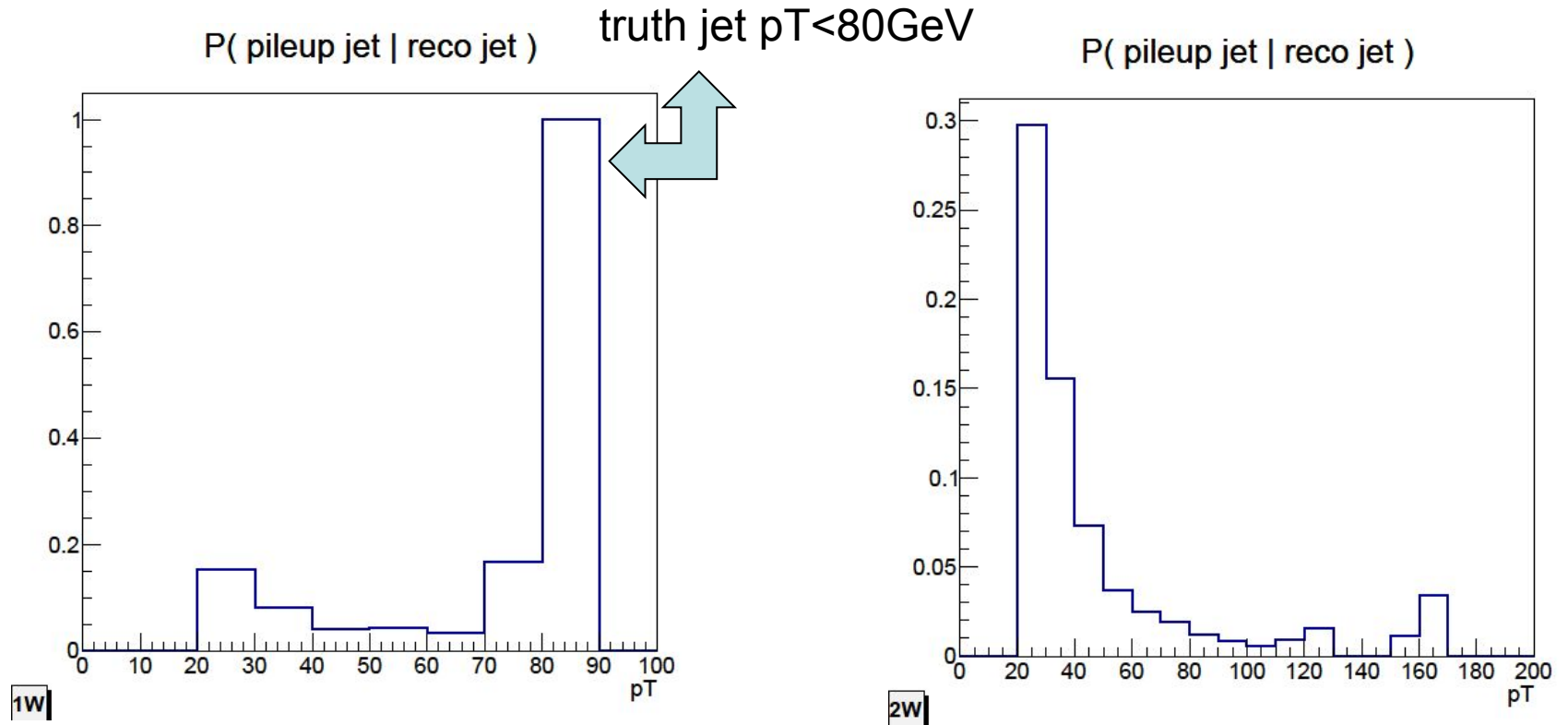


reco eff



- no events in several bins

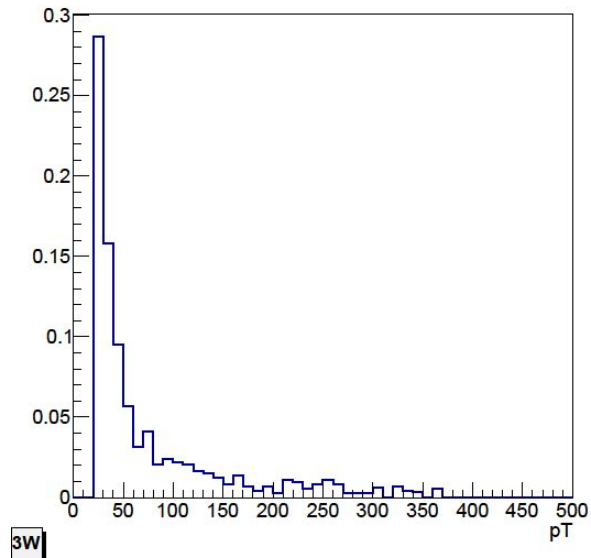
pileup fraction



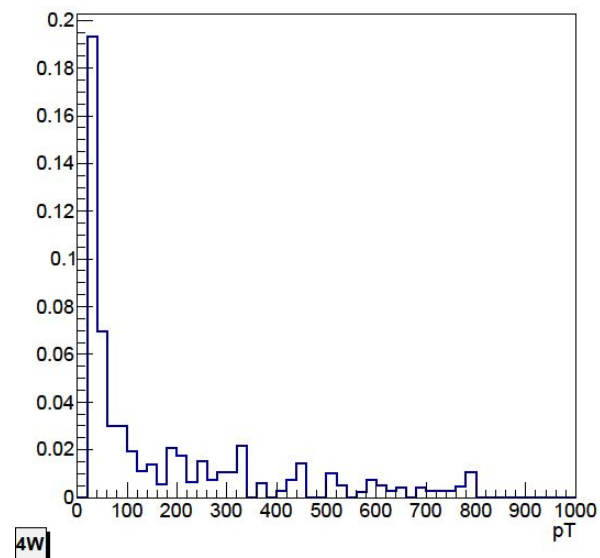
- $\text{pileup fraction} = \text{unmatched_reco_jet} / \text{all_reco_jet}$

pileup fraction

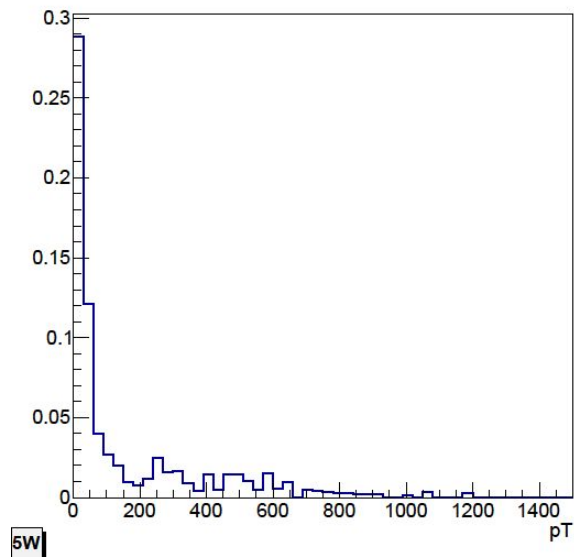
$P(\text{pileup jet} | \text{reco jet})$



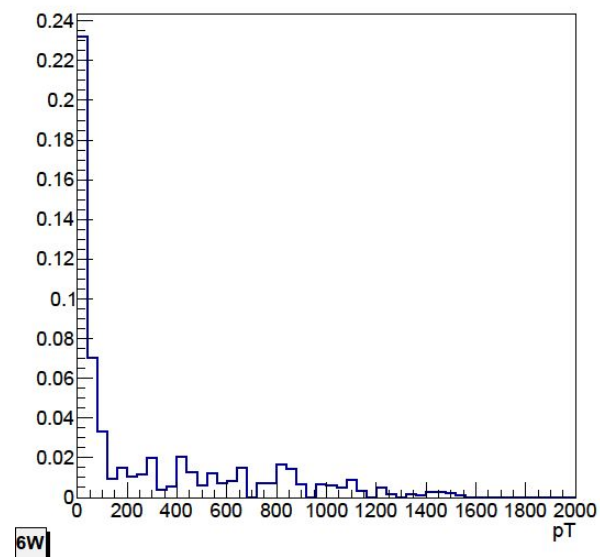
$P(\text{pileup jet} | \text{reco jet})$



$P(\text{pileup jet} | \text{reco jet})$

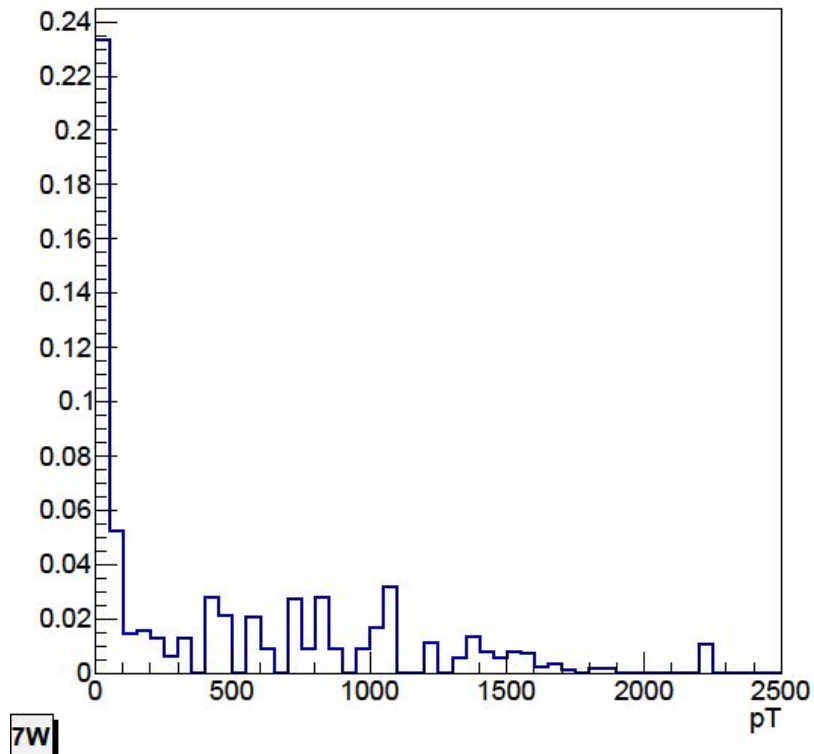


$P(\text{pileup jet} | \text{reco jet})$

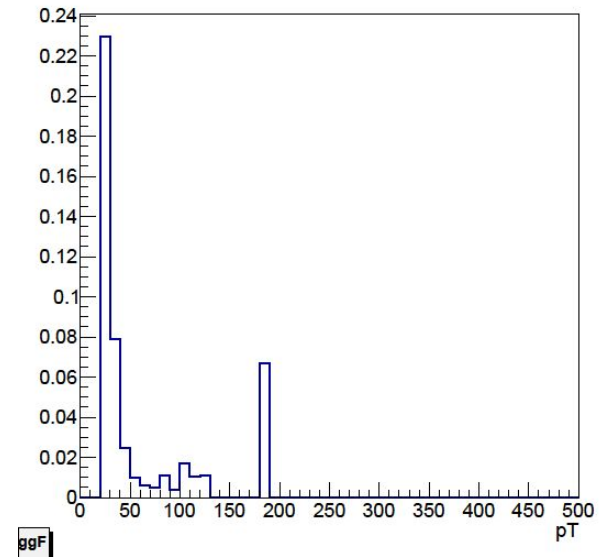


pileup fraction

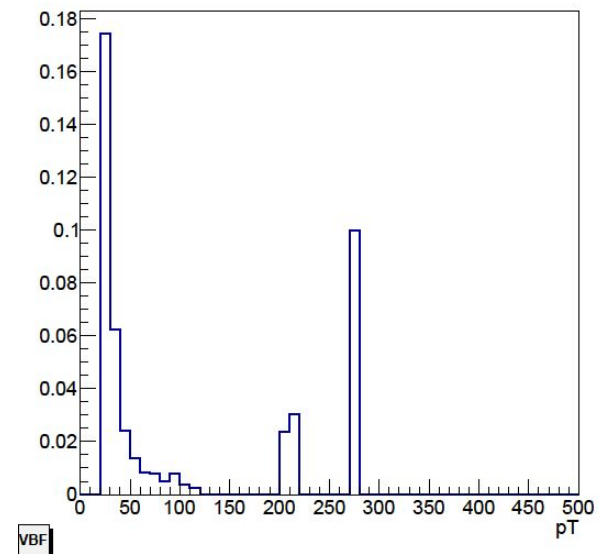
$P(\text{pileup jet} | \text{reco jet})$



$P(\text{pileup jet} | \text{reco jet})$

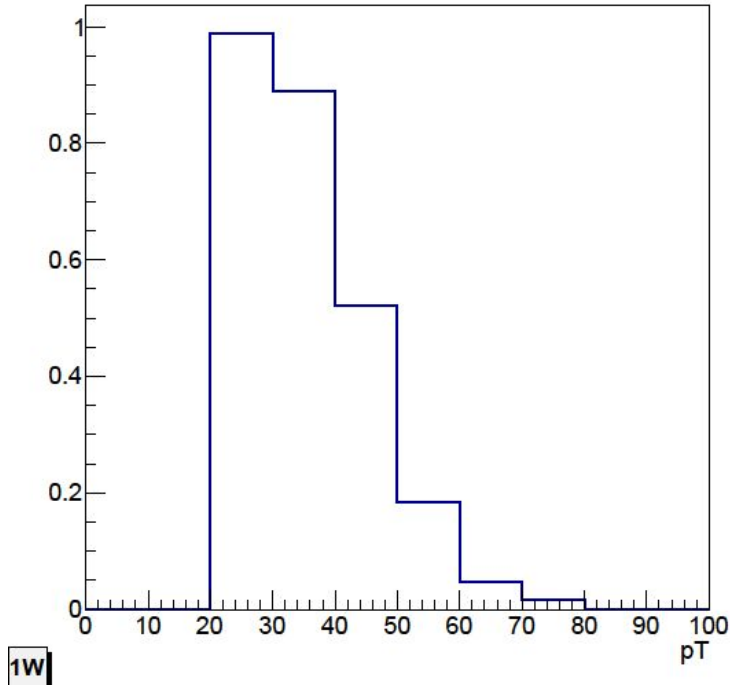


$P(\text{pileup jet} | \text{reco jet})$

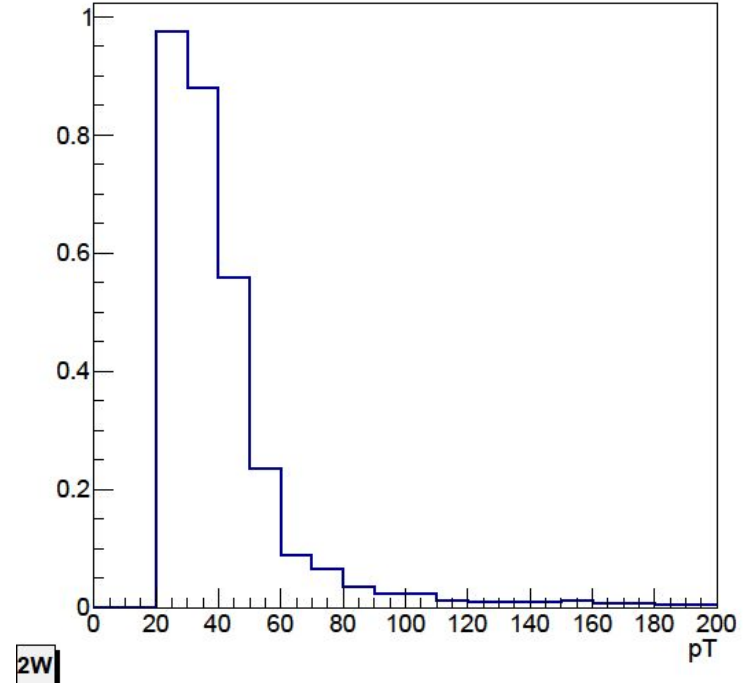


rejection rate of hard jet.

P(unreconstructed truth jet | truth jet)



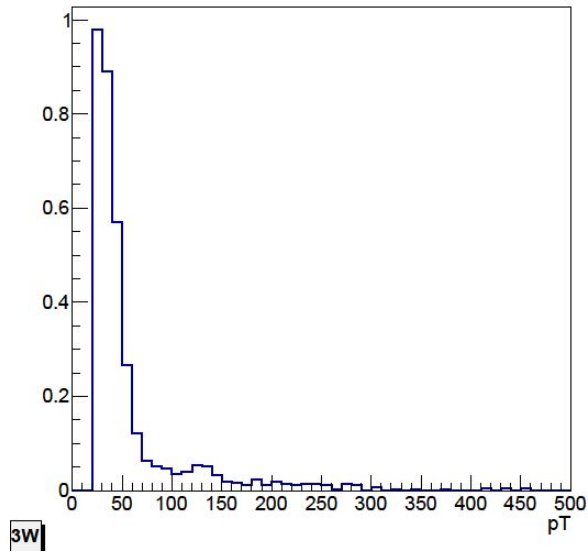
P(unreconstructed truth jet | truth jet)



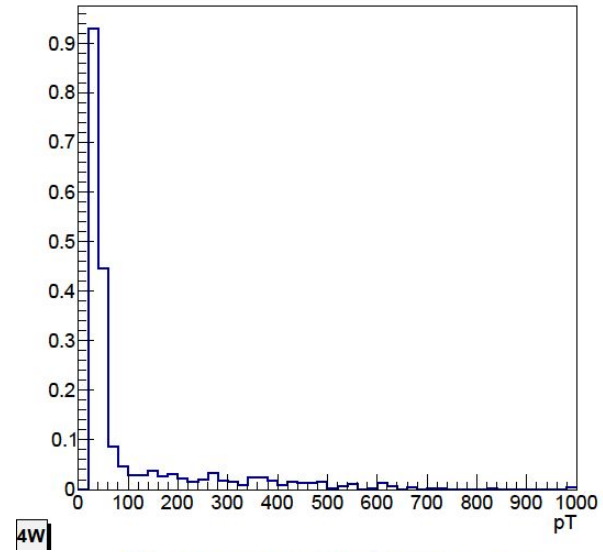
- $\text{rejection_rate} = \text{unreconstructed_truth_jet} / \text{all_truth_jet}$
 $= 1 - \text{reco_eff}$

rejection rate of hard jet

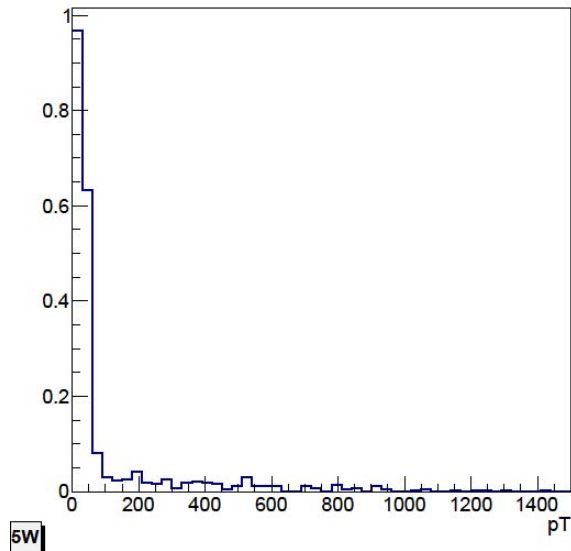
$P(\text{unreconstructed truth jet} \mid \text{truth jet})$



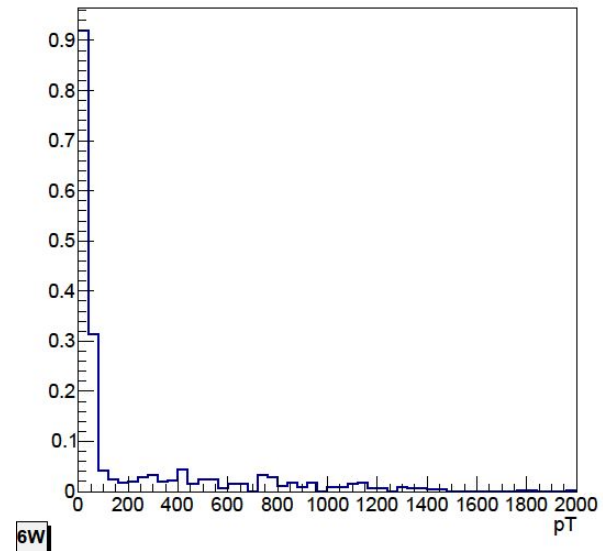
$P(\text{unreconstructed truth jet} \mid \text{truth jet})$



$P(\text{unreconstructed truth jet} \mid \text{truth jet})$

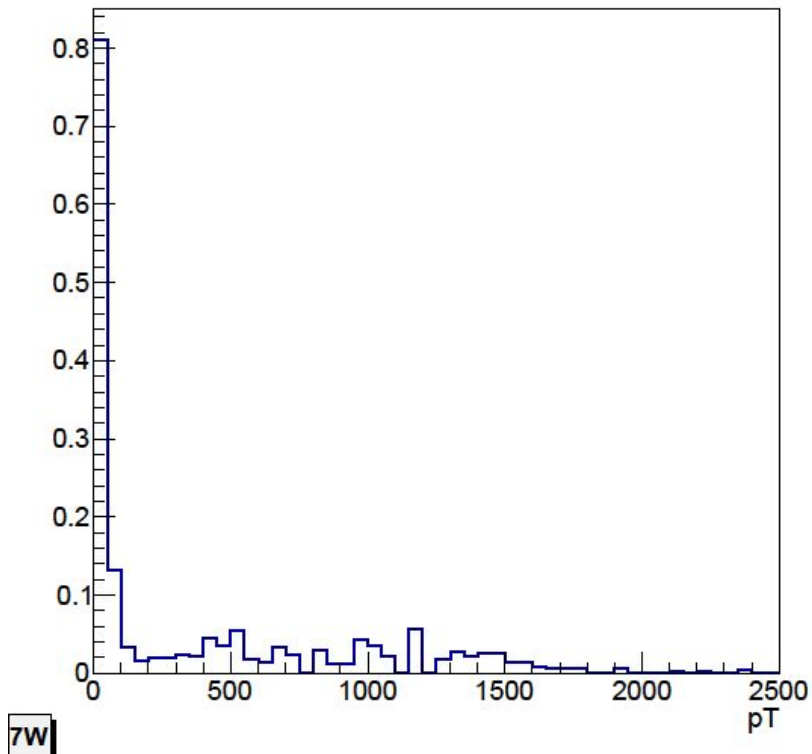


$P(\text{unreconstructed truth jet} \mid \text{truth jet})$

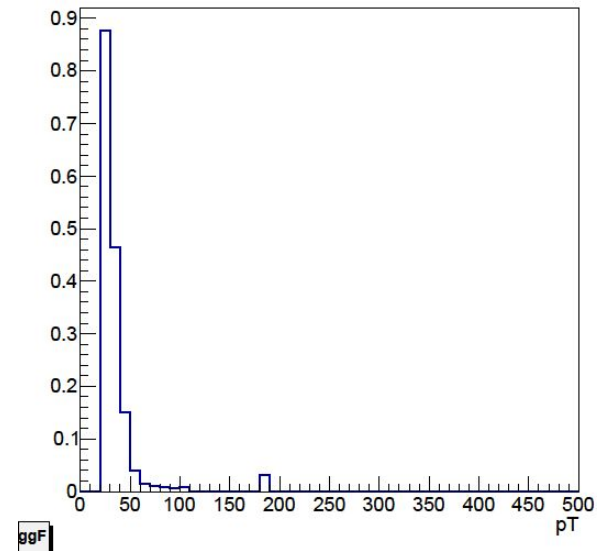


rejection rate of hard jet

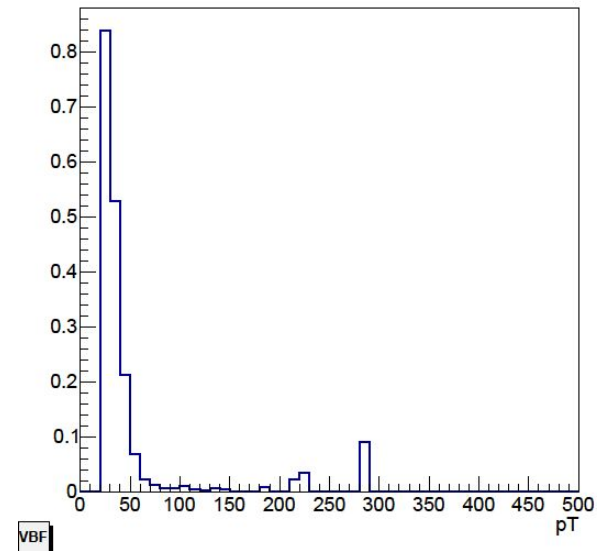
$P(\text{unreconstructed truth jet} \mid \text{truth jet})$



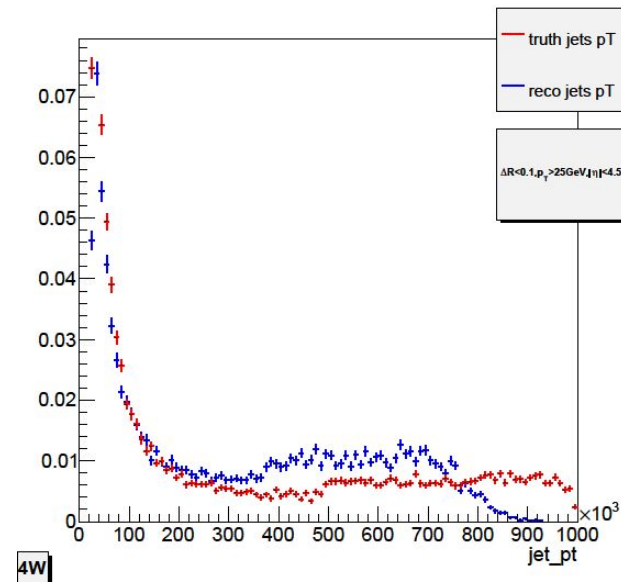
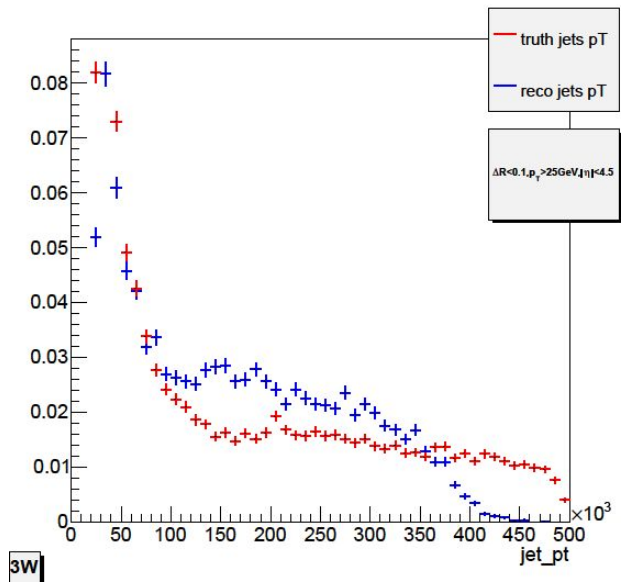
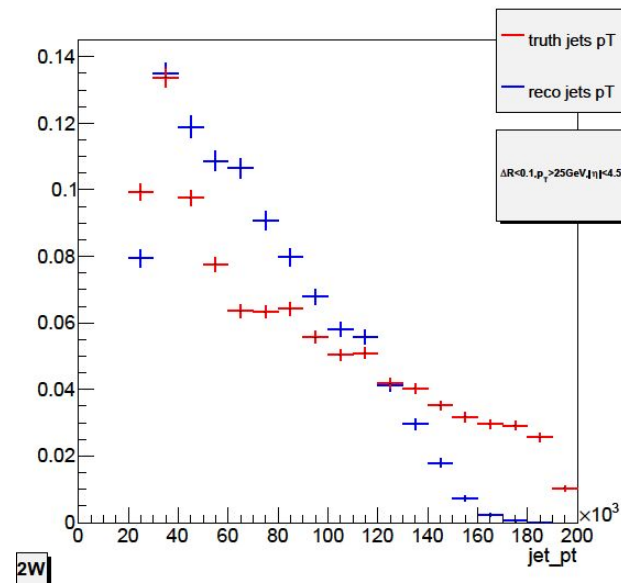
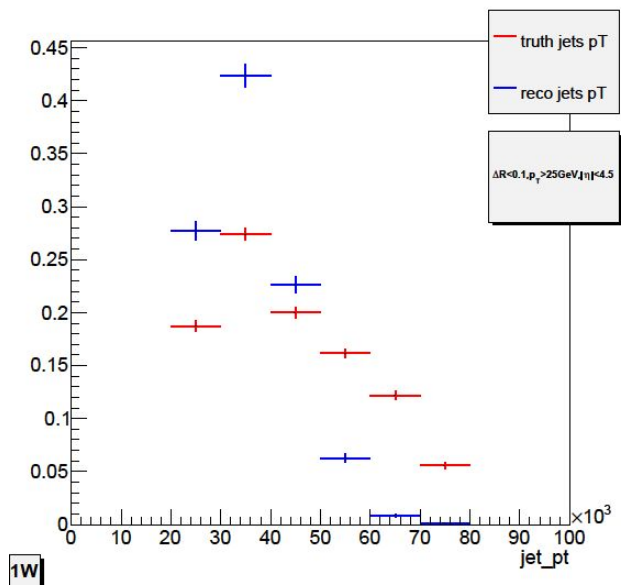
$P(\text{unreconstructed truth jet} \mid \text{truth jet})$



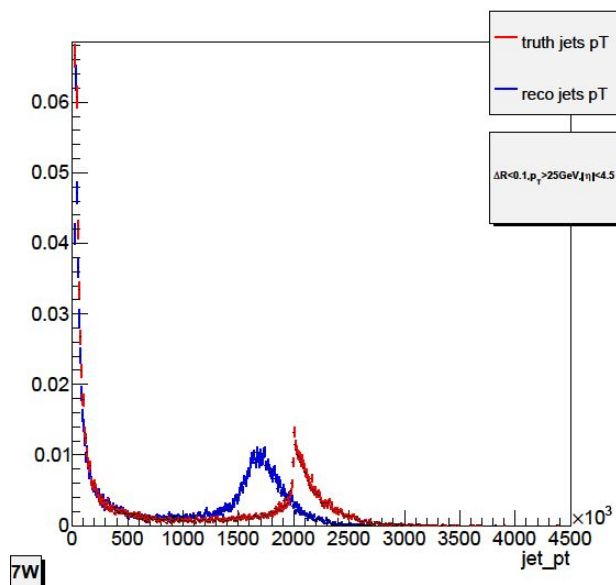
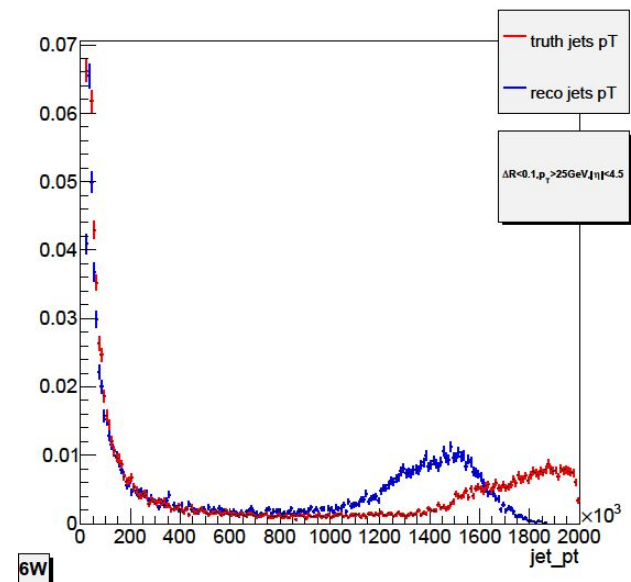
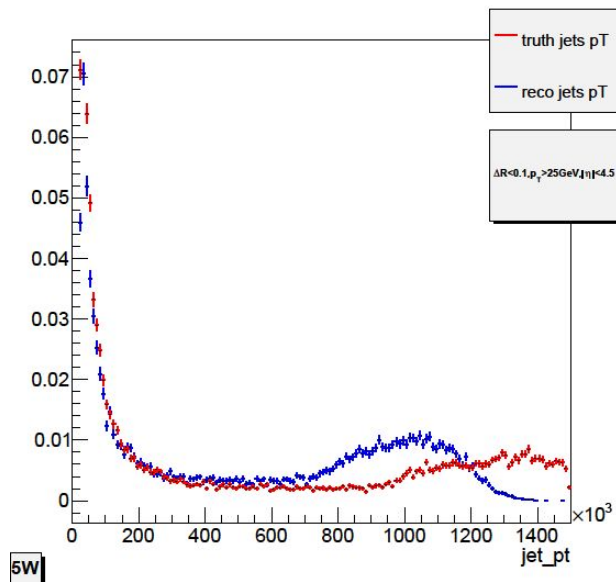
$P(\text{unreconstructed truth jet} \mid \text{truth jet})$



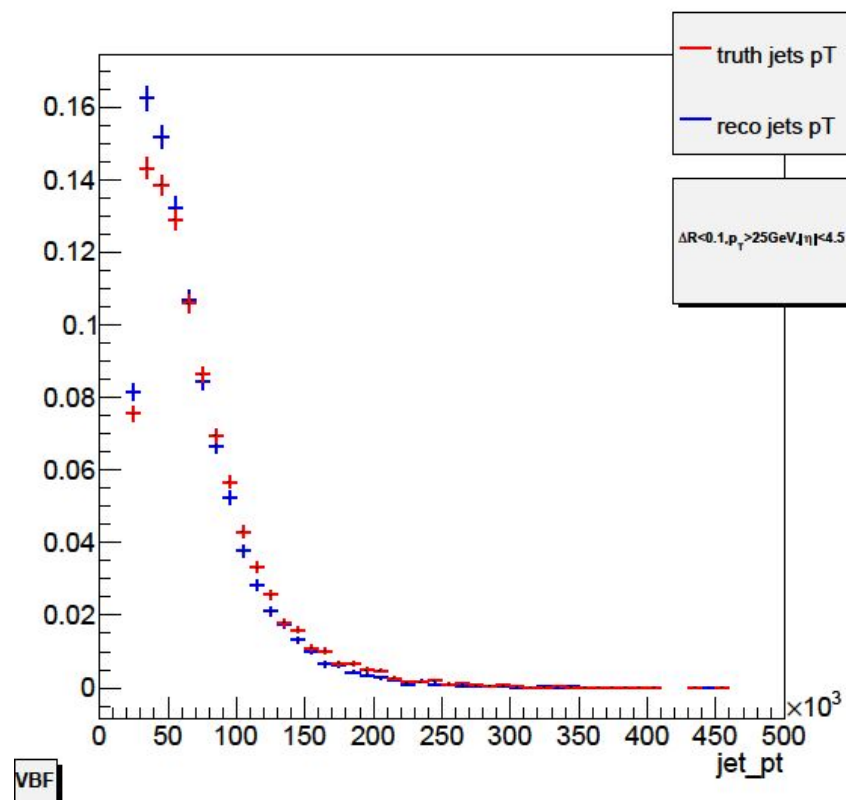
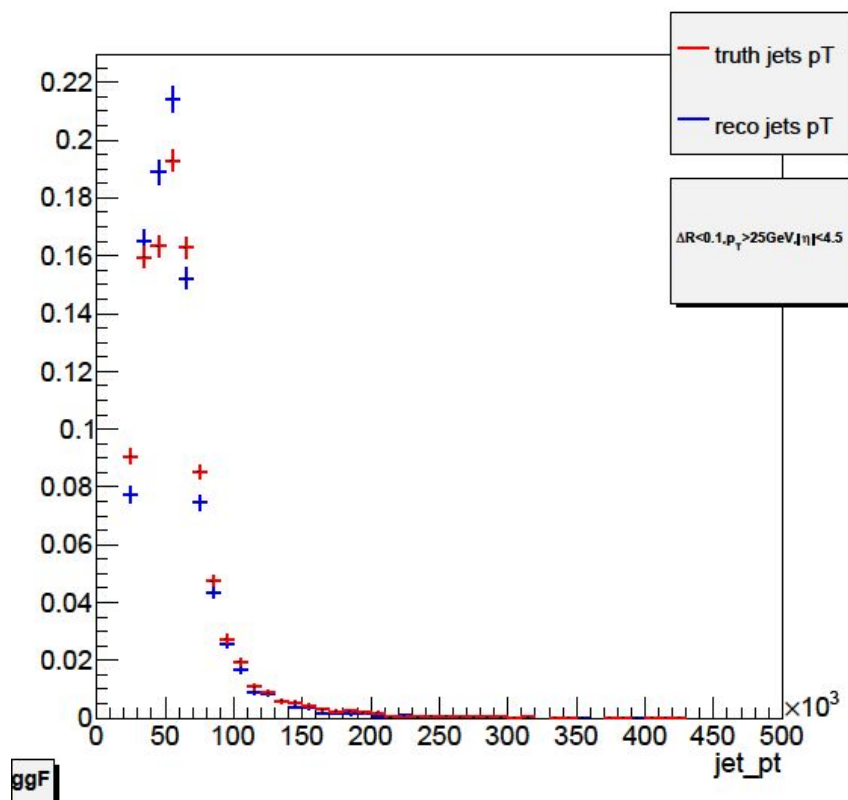
truth/reco jet pt



truth/reco jet pt



truth/reco jet pt

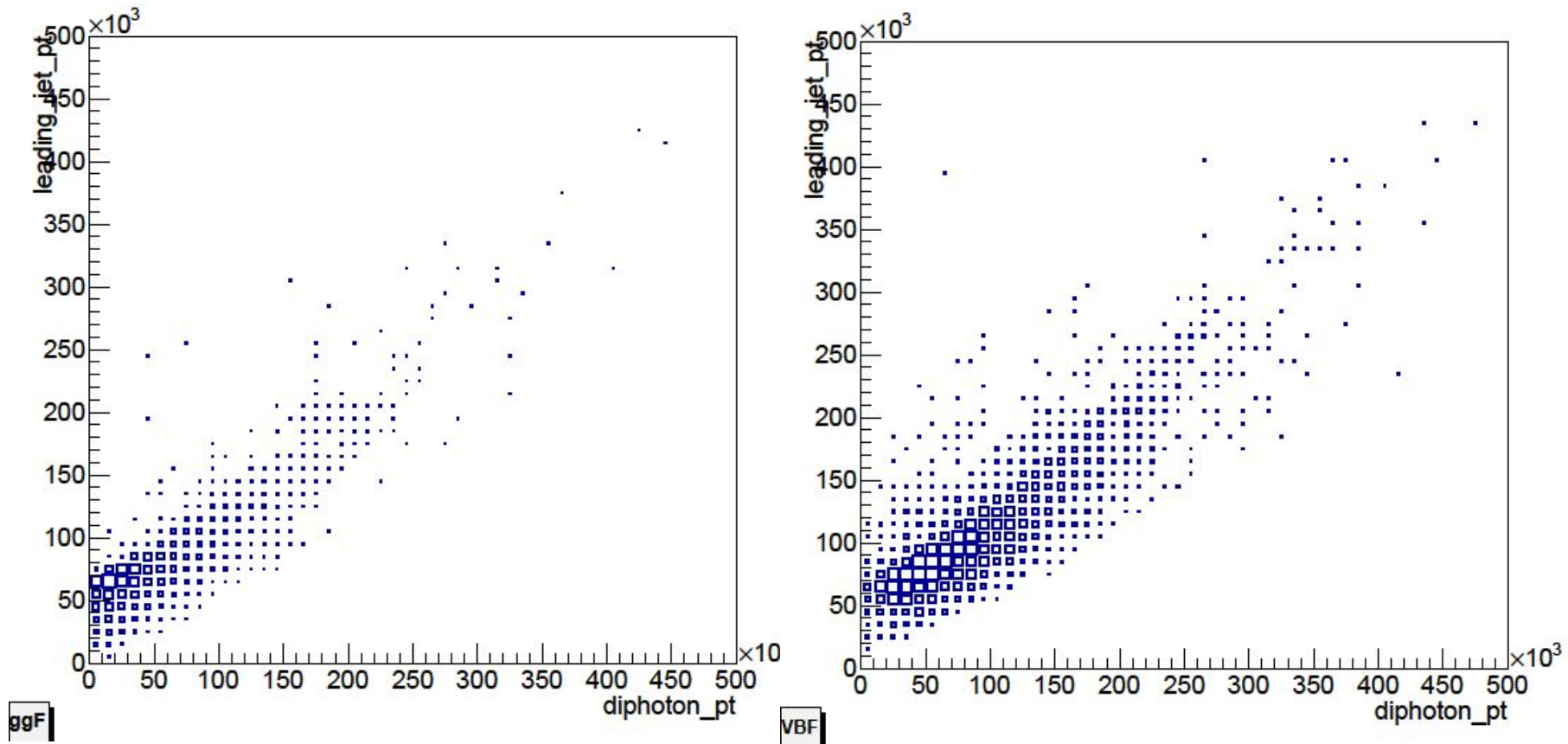


quark/gluon fraction

	ZJ0W	ZJ1W	ZJ2W	ZJ3W	ZJ4W	ZJ5W	ZJ6W	ZJ7W	ggF	VBF
quark	14	34286	100954	171131	237638	279419	298232	305291	17101	71016
gluon	8	90799	252316	483860	734775	879527	978041	1015678	47702	36539
ratio	1.75	0.42	0.40	0.35	0.32	0.32	0.30	0.30	0.36	1.94

- TruthParticle:pdgId()=[-6,-1],[1,6],21
- $p_T > 25 \text{ GeV}, |\eta| < 4.5$
- how is TruthParticle related to Jet in AOD?

jet response



- 2D plot leading jet pt vs diphoton pt
- use leading and subleading photon to reconstruct Higgs₁₆

to do list