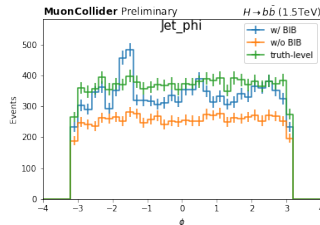
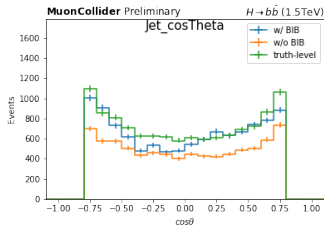
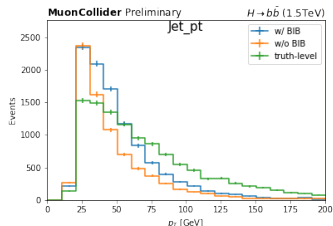
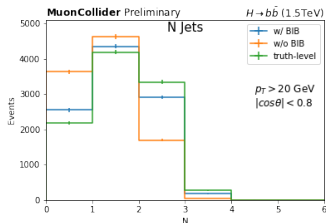


Updates: Feb 27

- Shifted to Coffea framework for analysis code (easier to modify).
- Made jet kinematic plots and acceptance efficiency.
- Working on resolution plot, jet momentum correction.

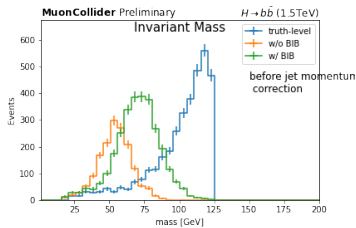
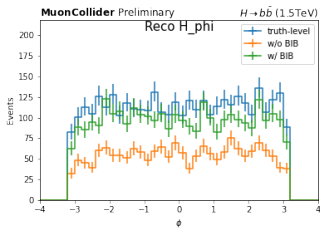
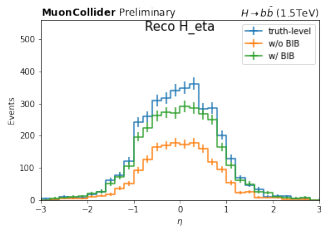
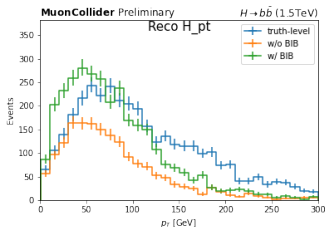
Jet kinematics

AK4 jets with $p_T > 20\text{GeV}$, $|\cos\theta| < 0.8$



Reconstructed Higgs kinematics

reconstructed Higgs = dijet (for $N_j=2$)
tri-jet (for $N_j>2$)



Next: add jet momentum correction to reco jets

Acceptance Efficiency

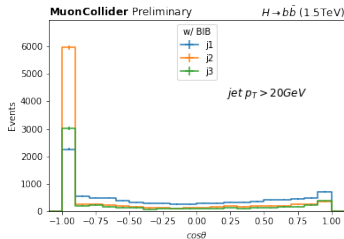
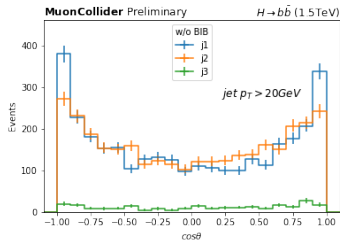
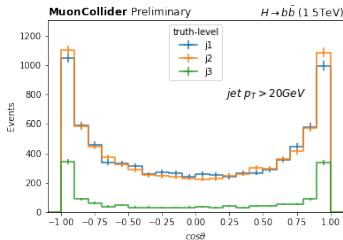
$$\epsilon = \frac{\#events(p_T^j > p_T^{cut} \& |\cos\theta_j| < |\cos\theta_{cut}|)}{\#events(p_T^j > p_T^{cut})}$$

where each event has $N_j \geq 2$

p_T^{cut}	$ \cos\theta_{cut} $	$\epsilon(\text{truth-level})$	$\epsilon(\text{reco w/o BIB})$	$\epsilon(\text{reco w BIB})$
20	0.8	3622/8069 (45%)	1742/3226 (54%)	3098/9623 (31%)
20	0.85	4272/8069 (53%)	2000/3226 (62%)	3504/9623 (36%)
20	0.9	5125/8069 (64%)	2304/3226 (71%)	4010/9623 (42%)

Acceptance Efficiency

Jet $\cos\theta$ distribution for $p_{Tj} > 20$ GeV



Look into why reco jets w/ BIB have asymmetry!

Acceptance Efficiency

Jet p_T distribution for $|\cos\theta_j| < 0.8$

