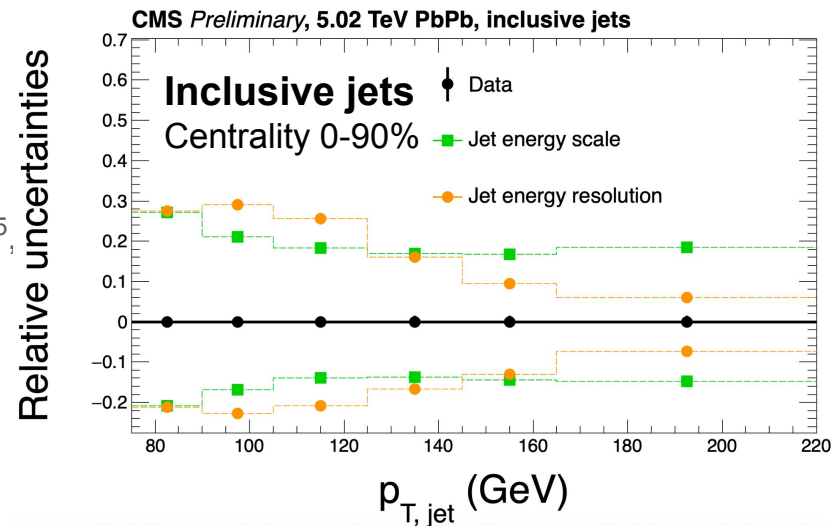
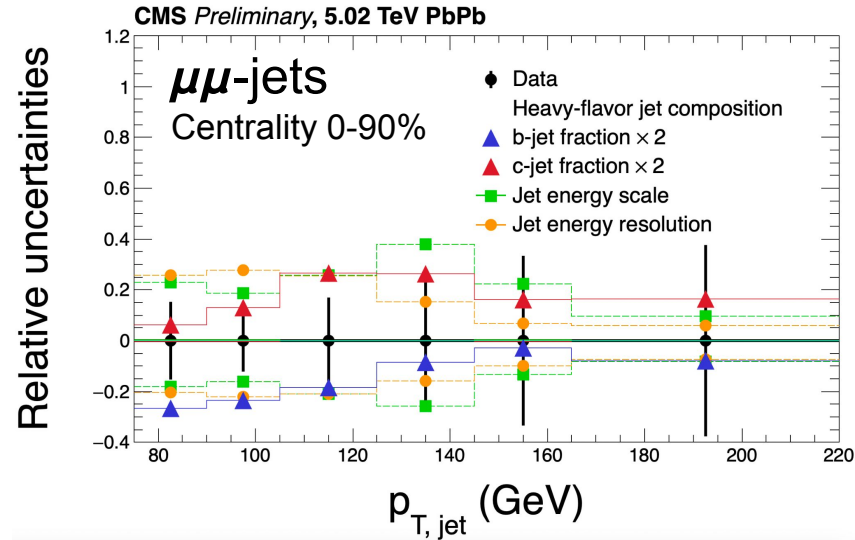


# Gluon splitting update

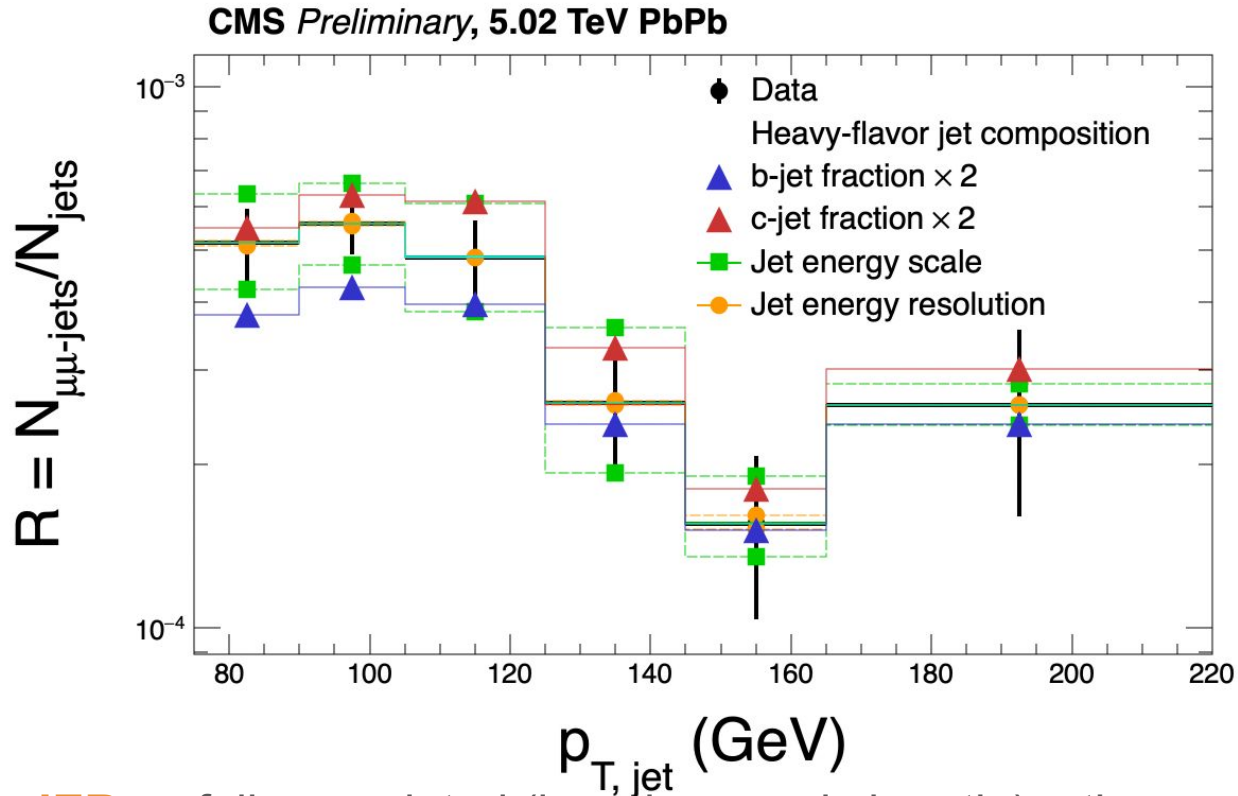
Cristian Baldenegro, Abraham Holtermann,  
Yen-Jie Lee, Gian Michele Innocenti, Matt Nguyen

# Systematic uncertainty evaluation

- Dimuon acceptance & efficiency corrections for  $\mu\mu$ -jet, + unfolding jet  $p_T$  spectra  $\mu\mu$ -jet & inclusive jets.
- $\mu\mu$ -jet corrections sensitive to **b-jet** & **c-jet** MC fractions (affects  $\mu\mu$  acceptance&efficiency, jet  $p_T$  migrations). Abraham working on refining uncertainty.
- Muon scale factor uncertainties negligible (not shown).
- **Jet energy scale (JES)** & **jet energy resolution (JER)** uncertainties for  $\mu\mu$ -jet & inclusive jets
- Large **JES** uncertainty caused by large JES uncertainty shifts of order 3-4% in PbPb (from spectral shape, eg  $dN/dp_T \sim 1/p_T^5$ , 3-4% JES shifts  $\rightarrow$  15-20% uncertainty)
- Can be mitigated with decomposition into JES unc. sources (JES unc. effects added in quadrature, allows for partial cancellations in  $\mu\mu$ -jet/inclusive jet ratio)



# Dimuon-tagged jet ratio (each spectra fully corrected)



Propagating **JER** as fully correlated (largely cancels in ratio), others propagated as uncorrelated