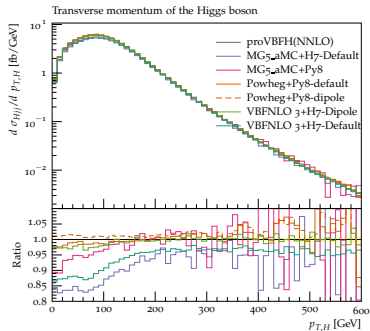
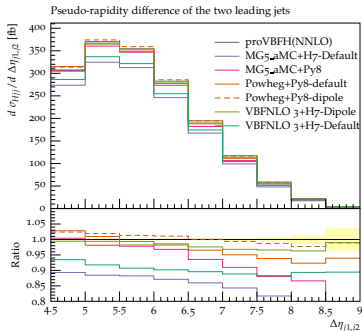
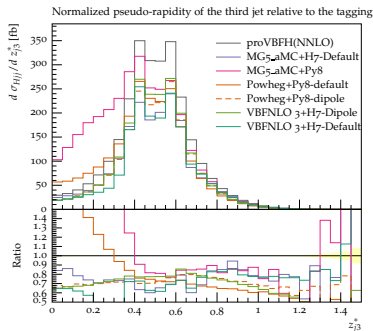
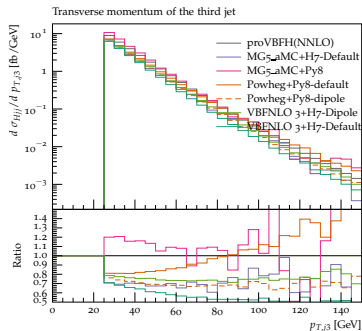


- VBF folklore: NNLO-QCD corrections are at the percent level with residual scale uncertainties at the same level
- Expect that parton shower effects in NLO+PS calculations are of the same order, at least for inclusive quantities
- However, when comparing different SMCs and matching procedures much larger discrepancies are observed



- Spread in predictions clearly not an indication of true theory uncertainty
- In particular the agreement is quite good when restricting the showers to local recoil (dipole type)
- This is even more pronounced when looking at the third jet

$$z_{j3}^* = \frac{y_{j3} - \frac{y_{j1} + y_{j2}}{2}}{|y_{j1} - y_{j2}|}$$



- We can compare the Hjj predictions to Hjjj predictions
 - In this case it becomes clear that the dipole showers are much closer to the Hjjj predictions
 - In this case the spread in predictions is much closer to the expected, ie $\mathcal{O}(5\%)$
- Extremely important for central jet veto analyses

