

Truth Level Lepton Isolation Check

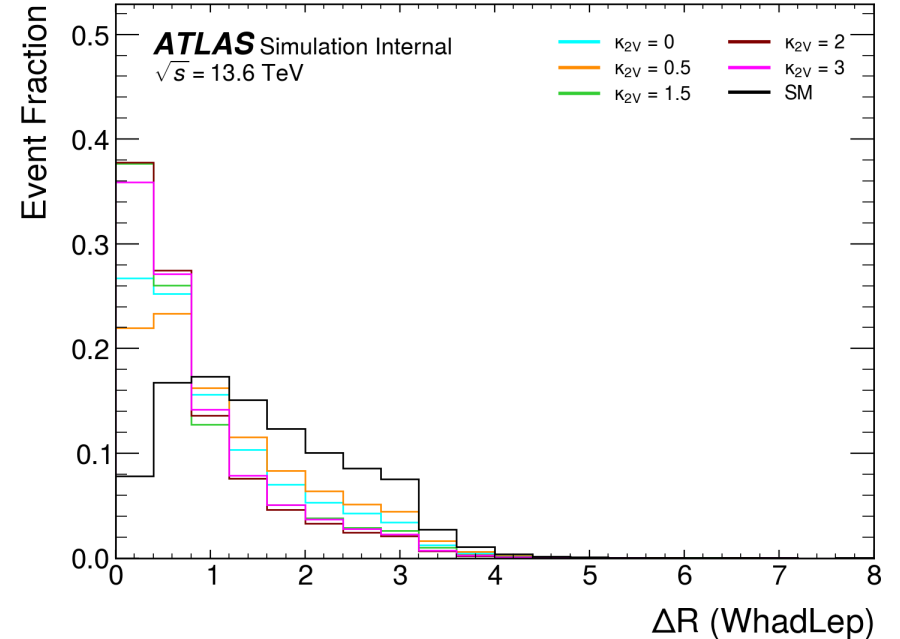
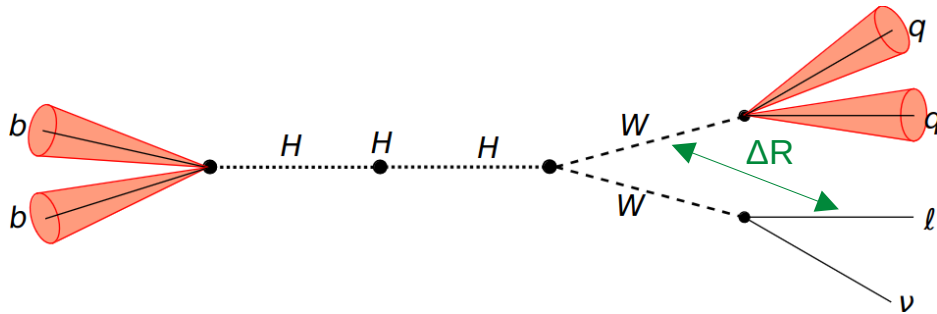
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Weekly Analysis Meeting
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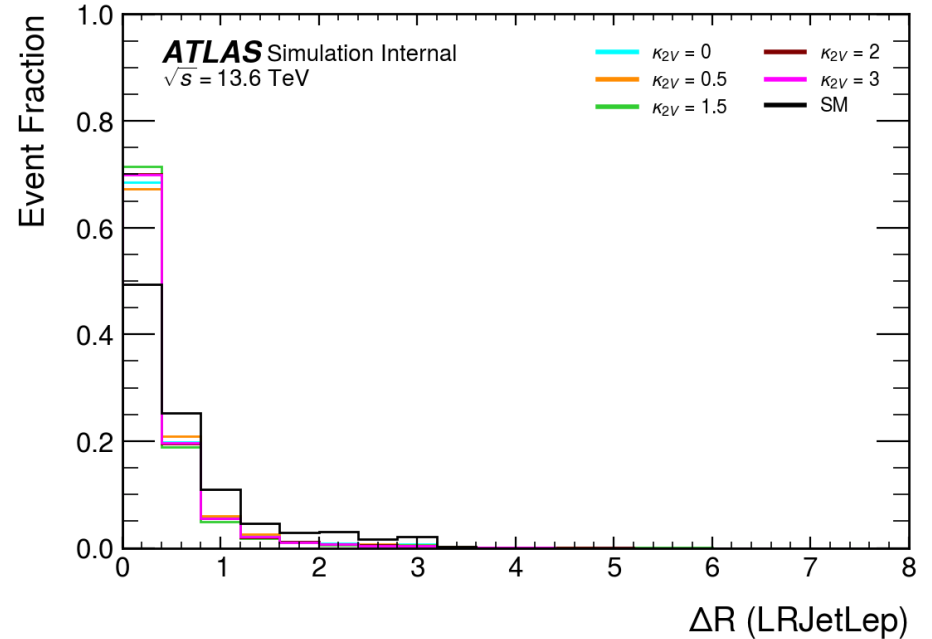
Introduction

- Reconstruct boosted W to qq decay via Large Radius Jet (LRJet) with $R = 1$
- Conveners mentioned they believe our lepton will likely be part of these LRJets
 - Check this in the truth samples for a proper understanding of our topology



Result For Large Radius Jets Matched to Whad

- Only consider the LRJets that were successfully matched to a Whad
- Check dR distance between the lepton and matched LRJet
 - The distances is smaller than 1 for most of the events
 - Most of the events we select will feature a lepton that is part of the Whad LRJet



Conclusions

- The boosted bbWW single lepton topology shows an overlap of Leptons and LRJets used for the analysis
 - ▶ Need to be careful about this when doing our analysis
- There is already some expertise on this problem present in the ATLAS bbVV group
 - ▶ Will help correctly handling object assignments without major issues

Backup