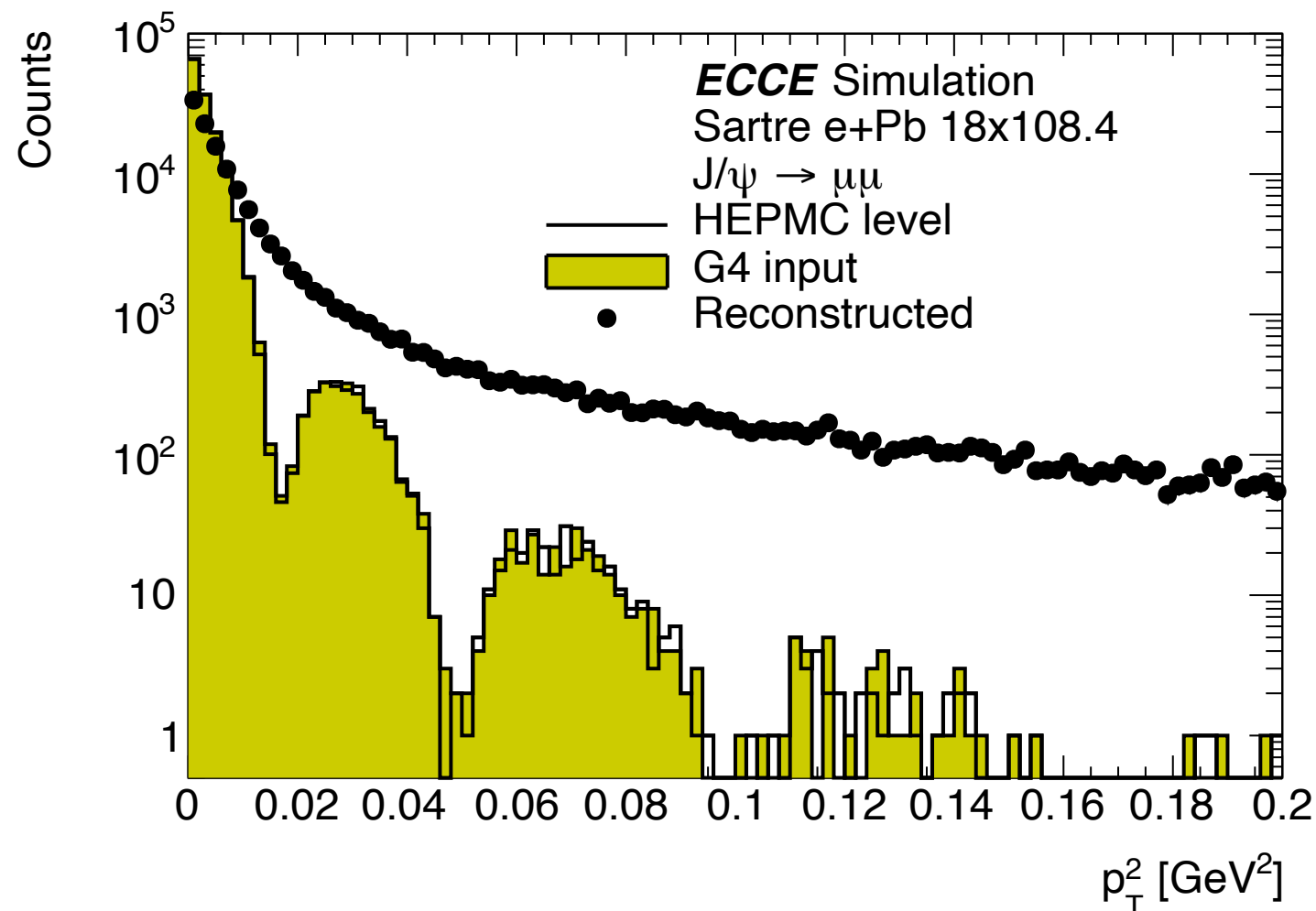


Towards reco-level exclusive J/ψ

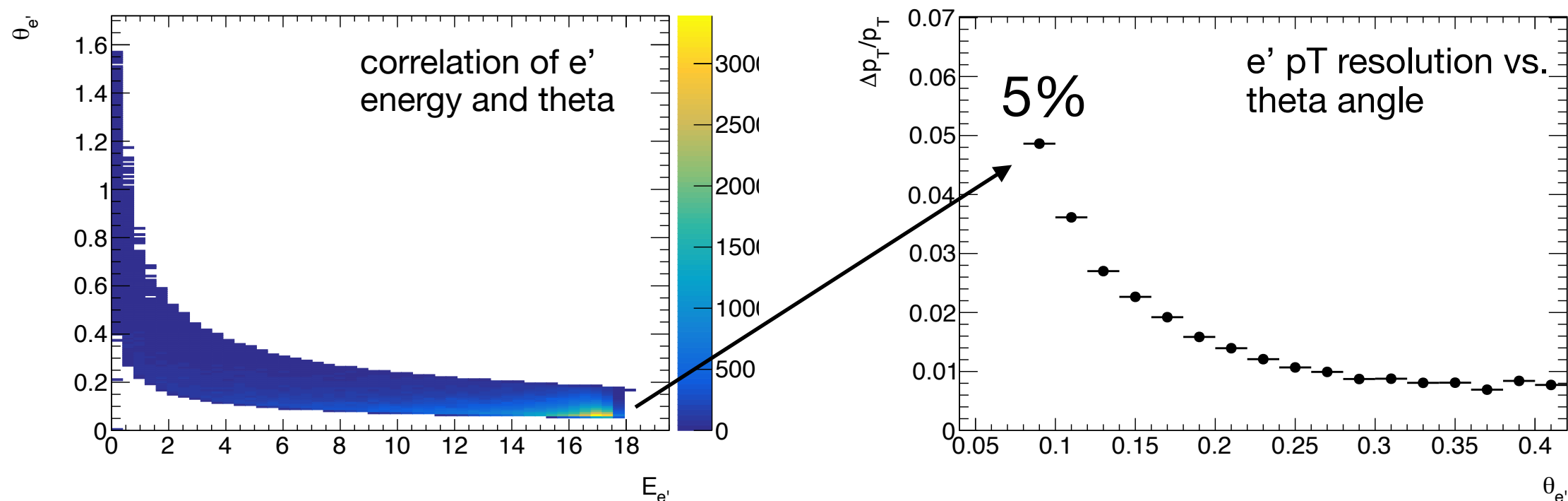
The problem

- After Tyler's talk at the workshop, I finally accepted that the reconstructed e' would come from the track, and not an optimized combination of tracker & call
 - Dropped truth level info in final state *except* PID
 - For ee final states, can use J/ψ mass to distinguish e'
- However, when I do this, everything falls apart :)



Diagnosis

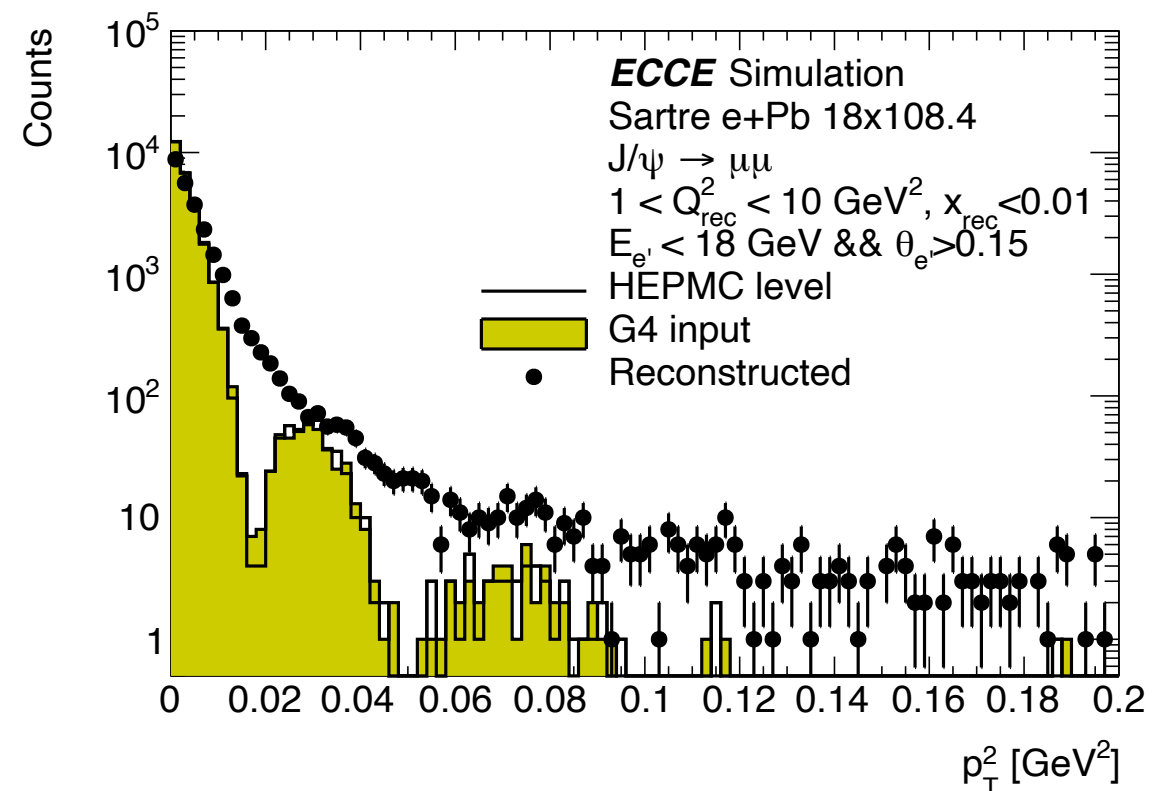
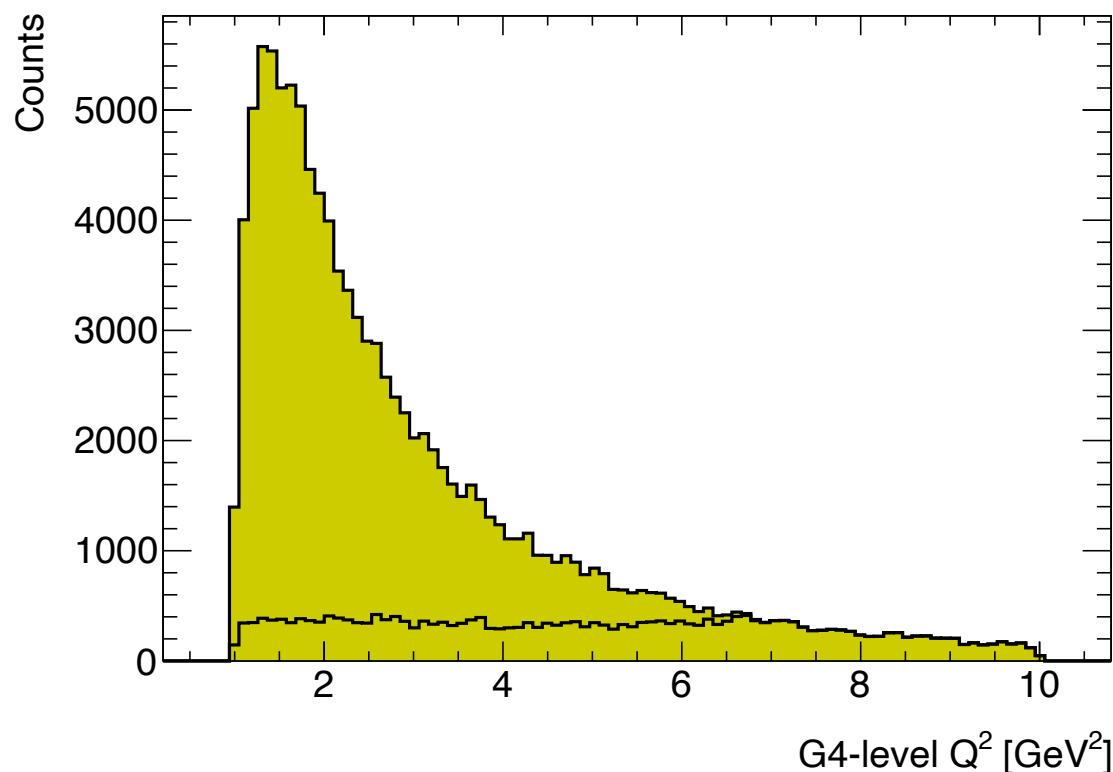
- **It's perhaps unsurprising**
 - $Q^2 \sim 1$ GeV implies e' at smallish angles so worst tracking performance



- Focusing on p_T since I am using p_T projection of t vector instead of $|t|$
- Also seeing lots of electron tracks with $E_{e'} > 18$ GeV
- **So now experimenting with cuts on $\theta_{e'}$, $E_{e'}$ and applying reco-level DIS kinematic cuts**
 - Will of course require unfolding, etc. in final results

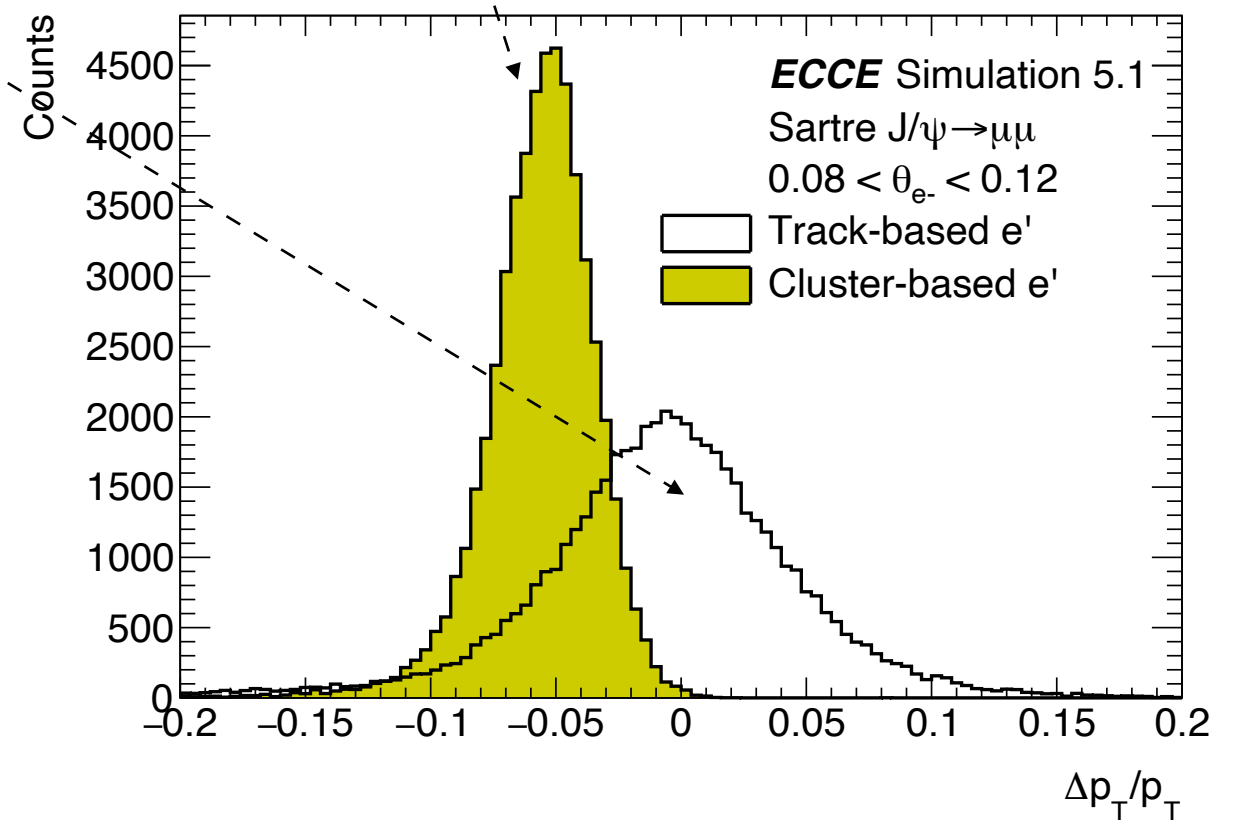
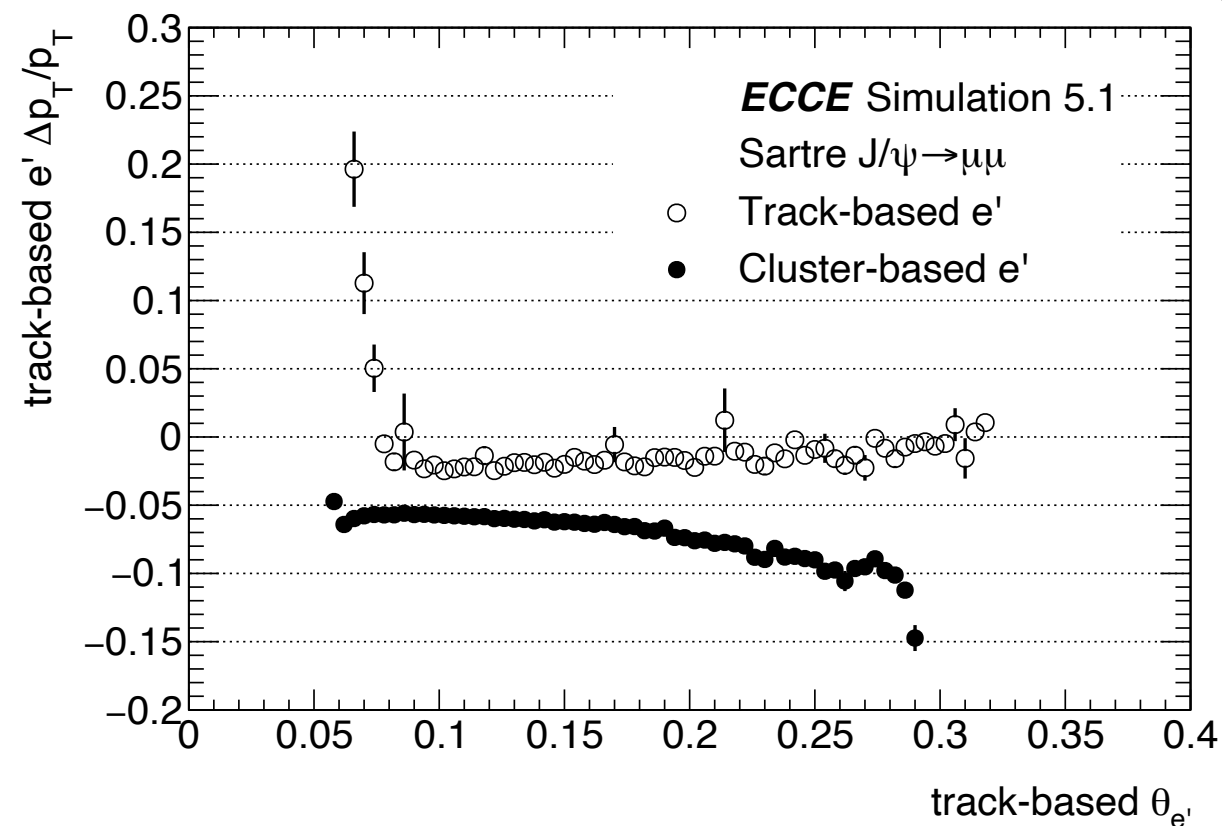
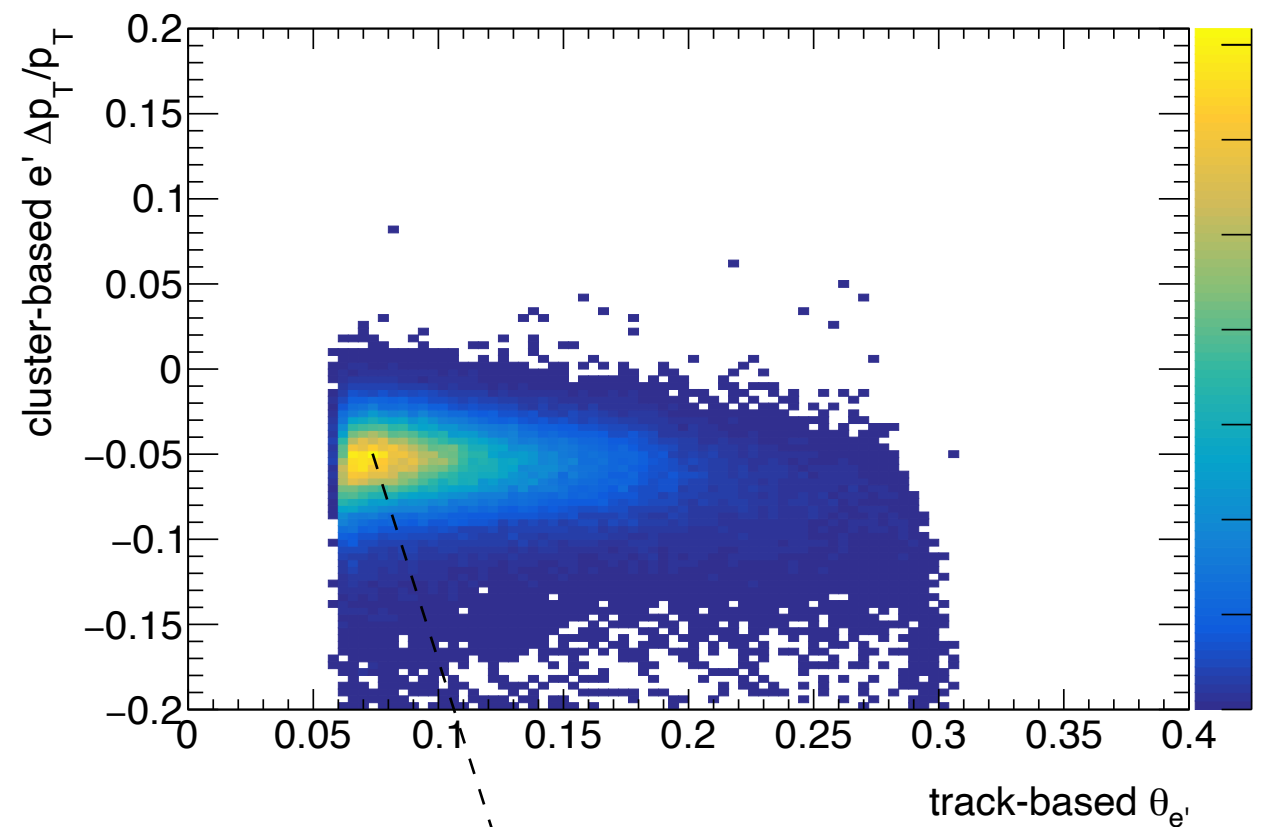
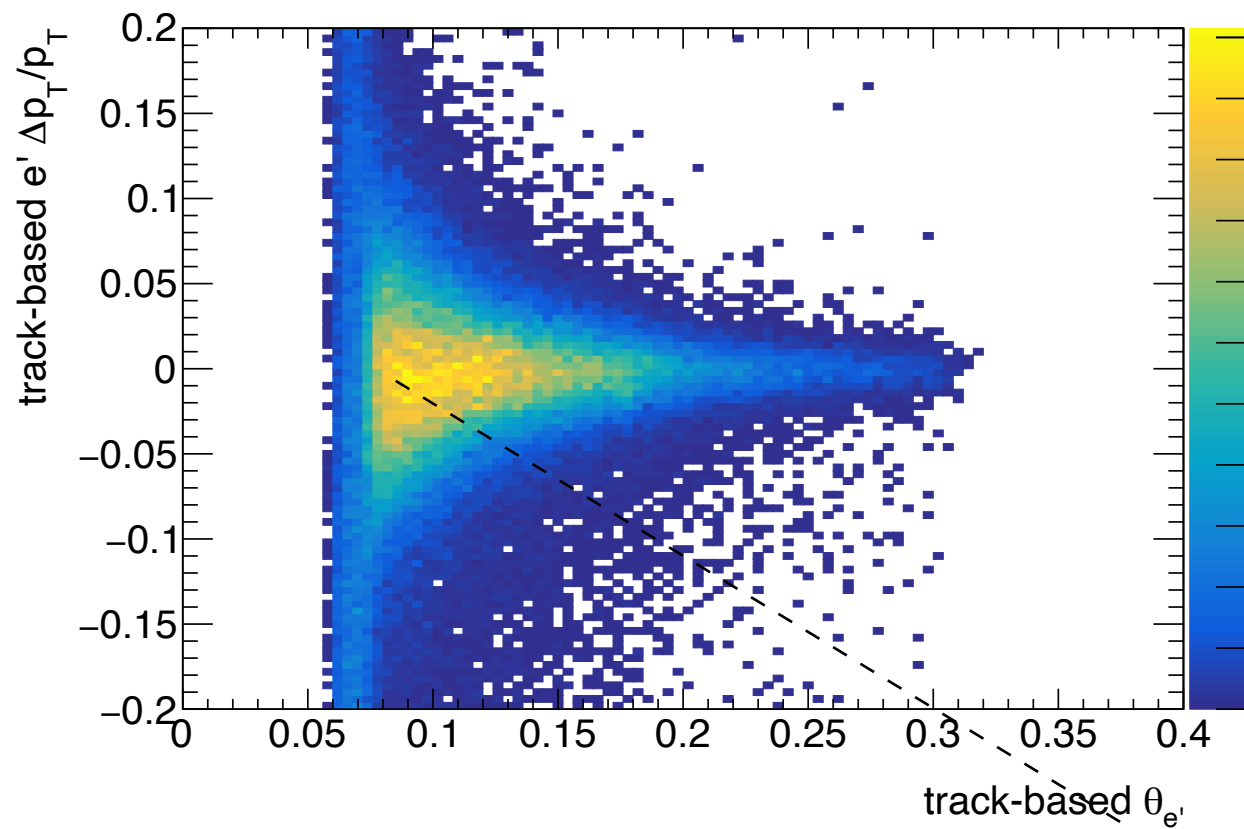
Some improvement

- Cut on θ_{e^-} moves us away from dangerous region, but huge reduction in observed cross section, and drastic changes to underlying kinematic distributions



- Clusters in the forward region have a much better resolution

Track vs. EEMC cluster performance (5.1)



Next steps

- **Afterburner time**
 - Bill has made a geometry.root for 5.1 & 6
 - *They are *very* different as you may expect*
- **Tyler also working in this direction from the e' PID perspective**
 - I am advocating we also might want to combine the track and cluster information to optimize the 4-vector reconstruction
- **Once this is working for Sartre, and the quasi-dips recovered, need to cycle back to background studies**
 - Hits in evaluators can be used to make 10-sigma cuts
 - I have ellipses defined for IP8 using project info
 - *Dien working on IP6 :)*

