exclusive J/psi update

**Peter Steinberg, BNL/ ECCE diffractive/tagging meeting / 30 June 2021**

Current status

- **Still running sartre 1.35 standalone**
  - J/psi to μμ, to avoid electron reco issues
  - Producing text files for EIC smear —> EIC smear ntuples
  - Text files get a fix to the nuclear momentum vector (not per nucleon anymore!)

- **Moved to new macros last week**
  - Using new Si tracker

- **Calculating |t| at 4 levels**
  - HEPMC - generator level
  - g4 level - after crossing angle & beam divergence
  - reconstructed - from event_tree
 - smeared - g4 level convolved with $\Delta p/p = 0.0075$

Tracking resolution

right from tracking evaluator output

$\Delta p/p$

0.04

0.03

0.02

0.01

0.0075

−4   −2   0   2   4

η (track)
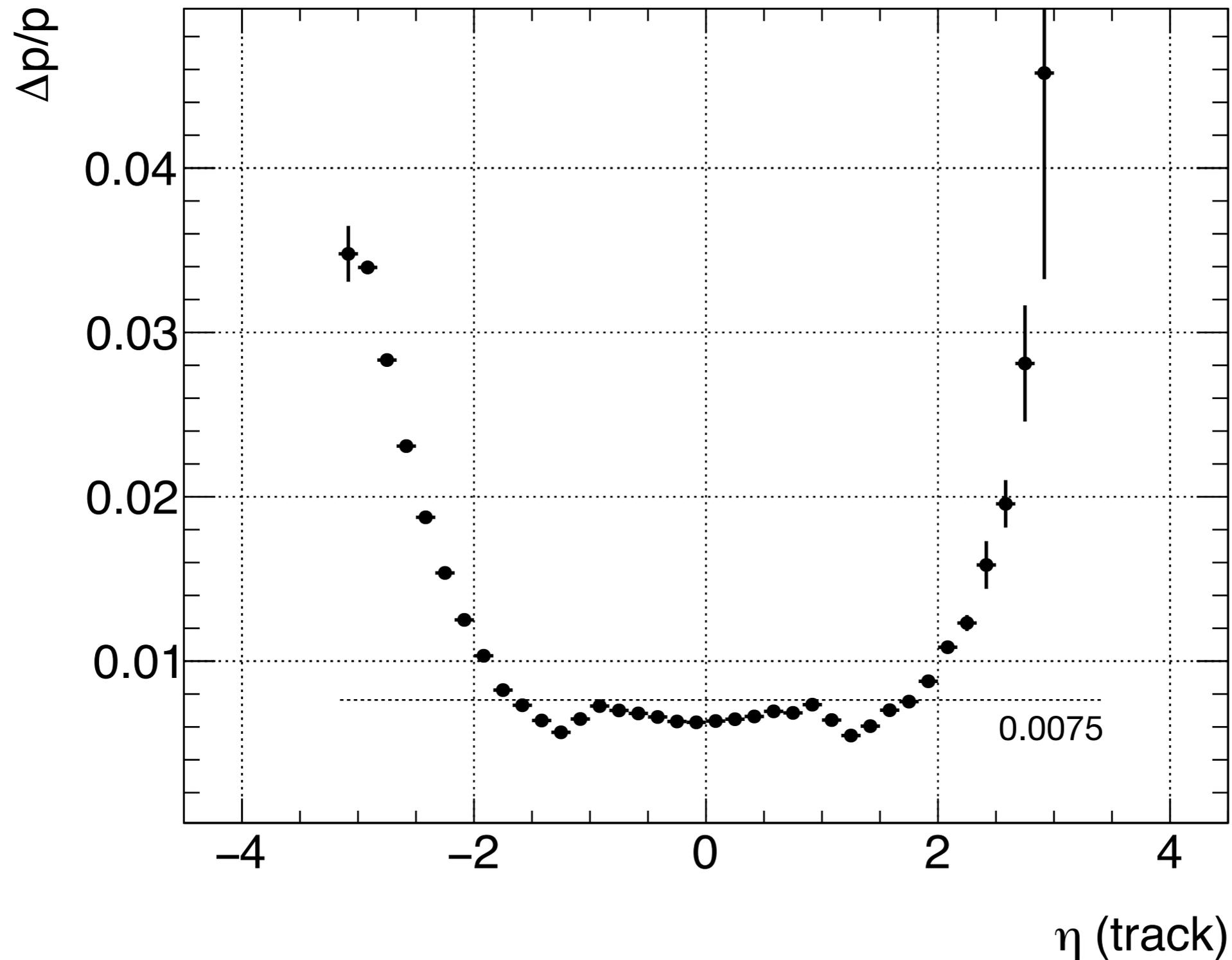
t reconstruction

- **As always, calculated from J/psi, and electron in/out - using full t, and not "t.Pt2()"**
  - truth kinematics for electron (a fight for another day…)

- **75k events (after filtering 100k for coherent) - need at least 1M to see 3rd peak, but 5M ideal?**
  - Can probably do 1M by myself using condor
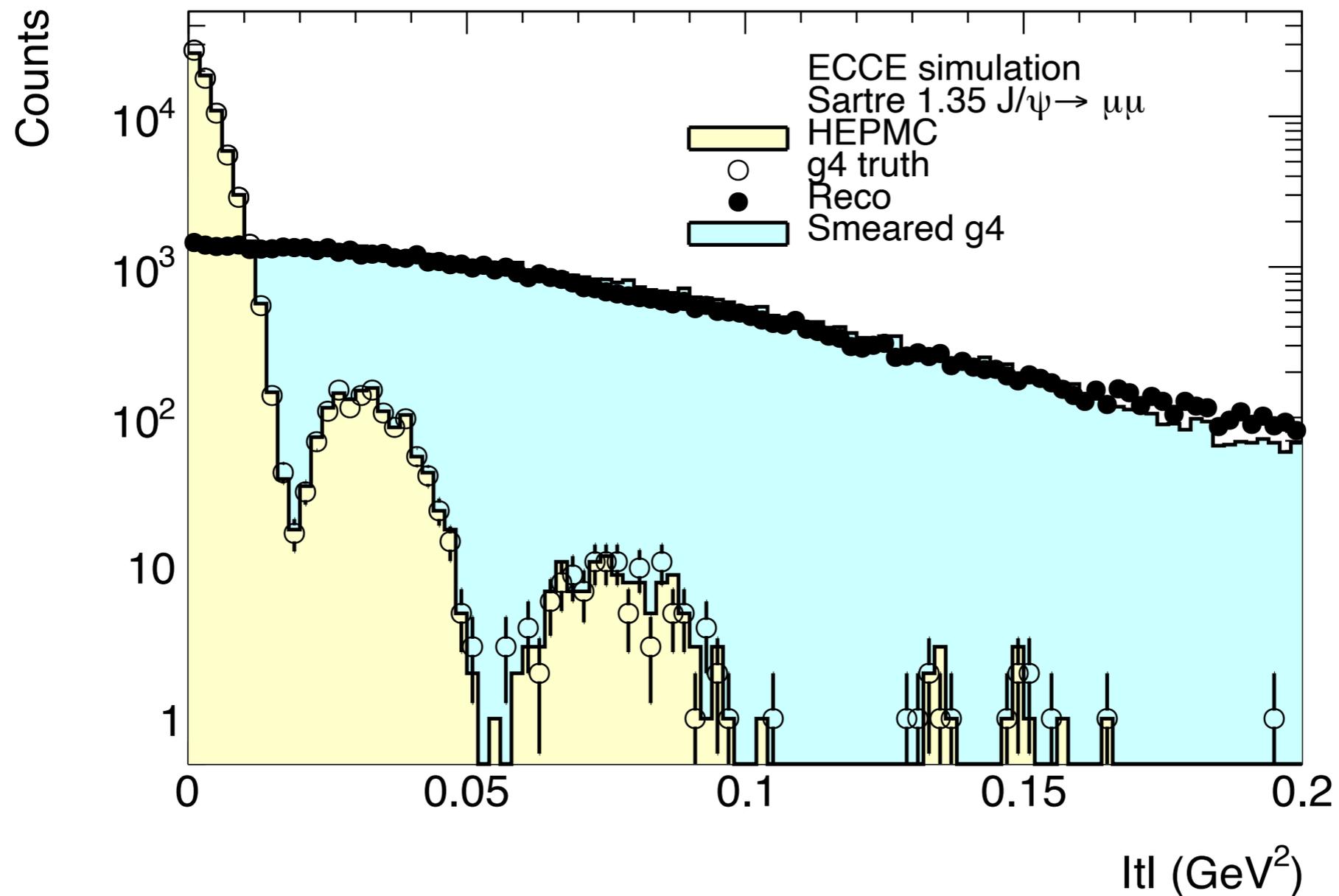
t reconstruction (p$_T$ only)

- **Out of the box, "pT" for the combined 4-vector is wrong, due to crossing angle**

- **Implemented a simple "unrotate/unboost" transform**

Much better! need to correct for x-ing angle…
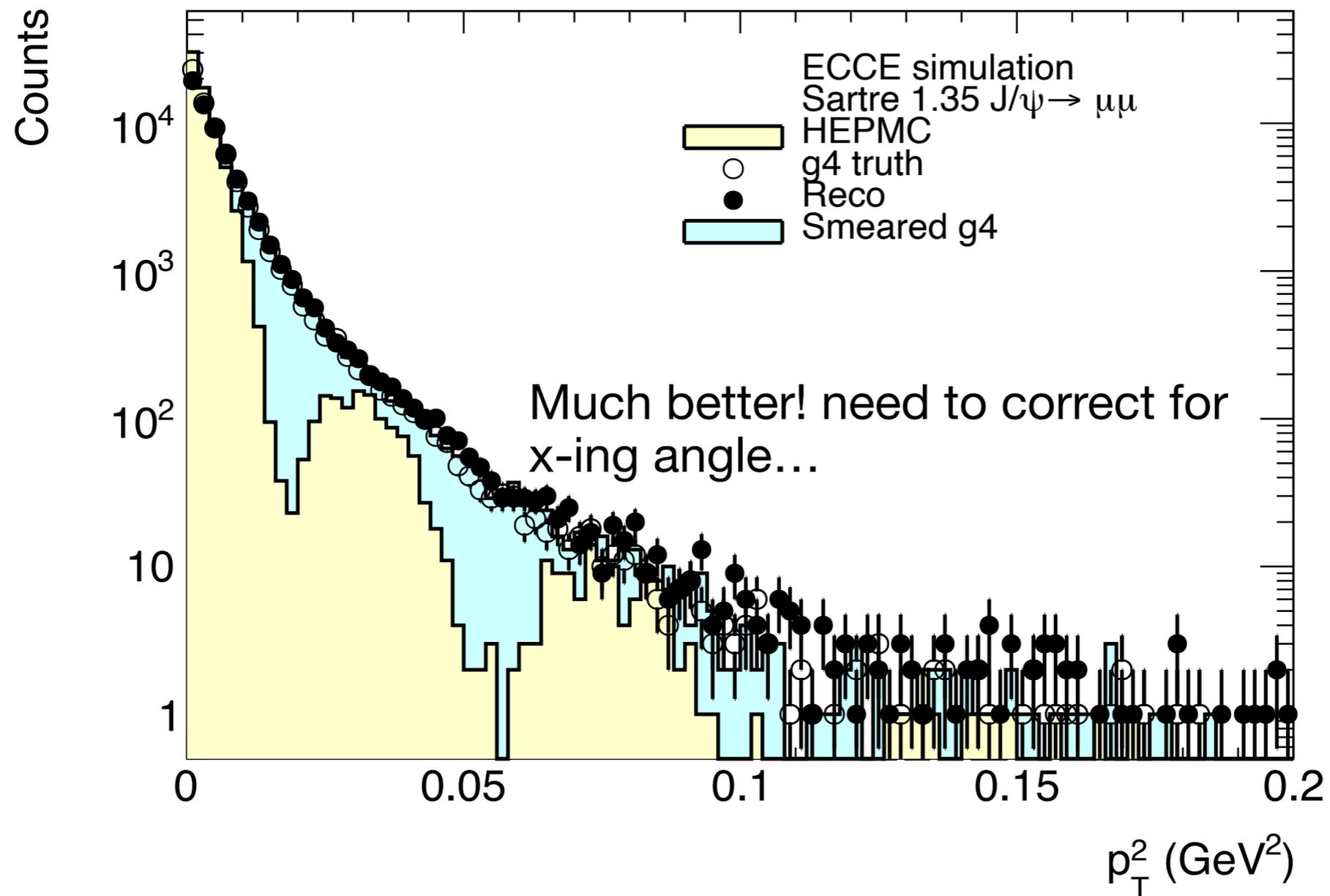
t reconstruction (XA correction)

- **Out of the box, "pT" for the combined 4-vector is wrong, due to crossing angle**

- **Jin implements a "boost+rotate" for x-ing angle**
  - I just implemented a simple "unrotate+unboost" transform