

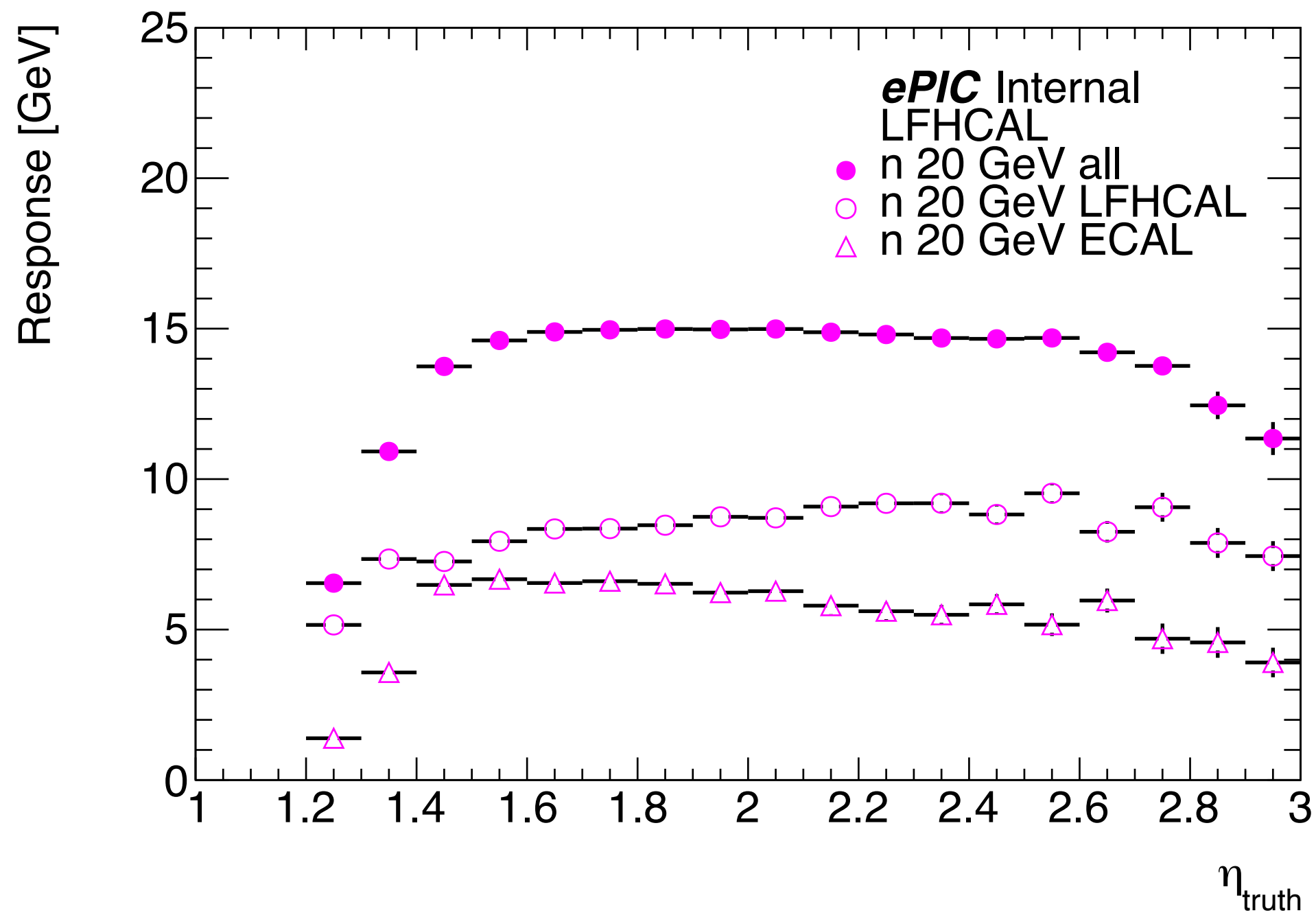
LFHCAL clustering update

Peter Steinberg, BNL, 26 June 2024, LFHCAL weekly

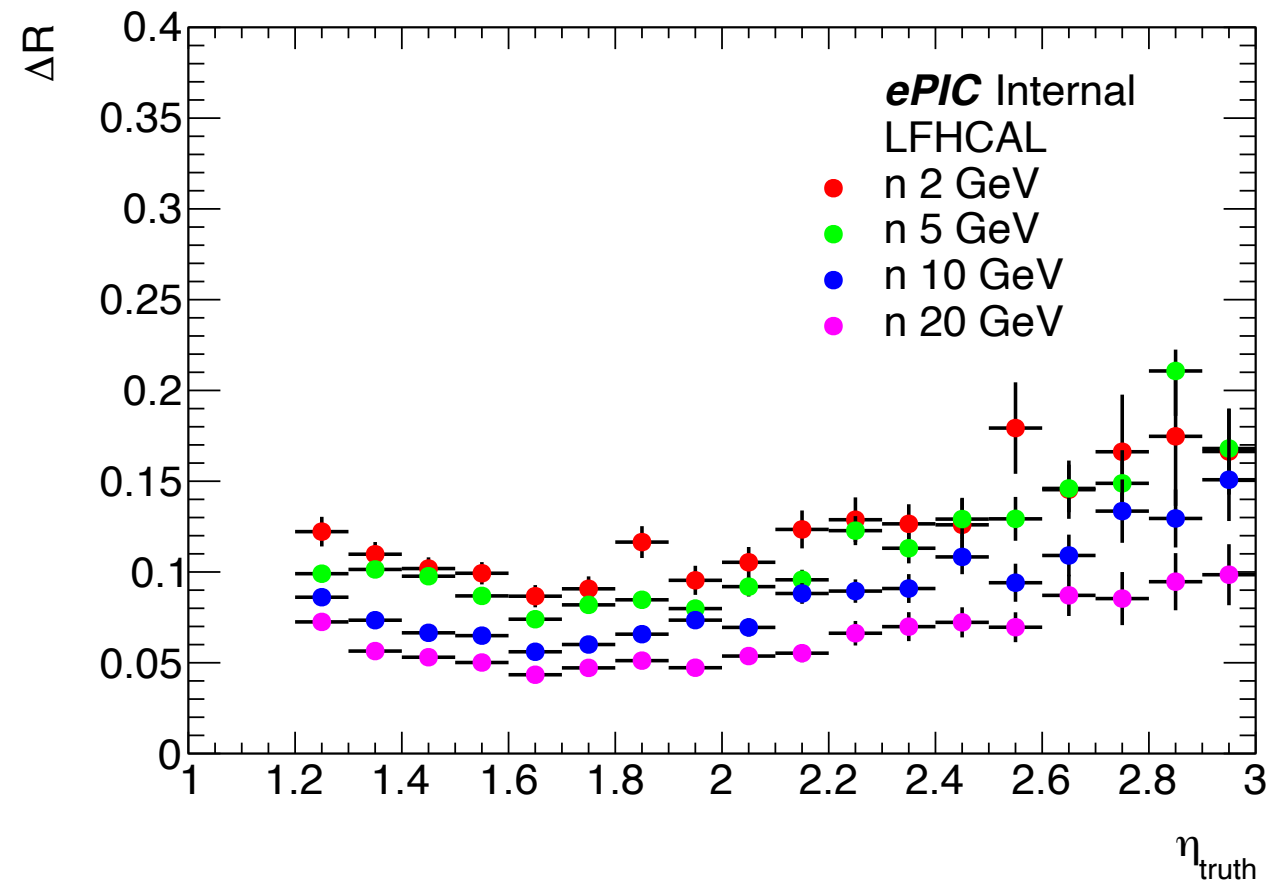
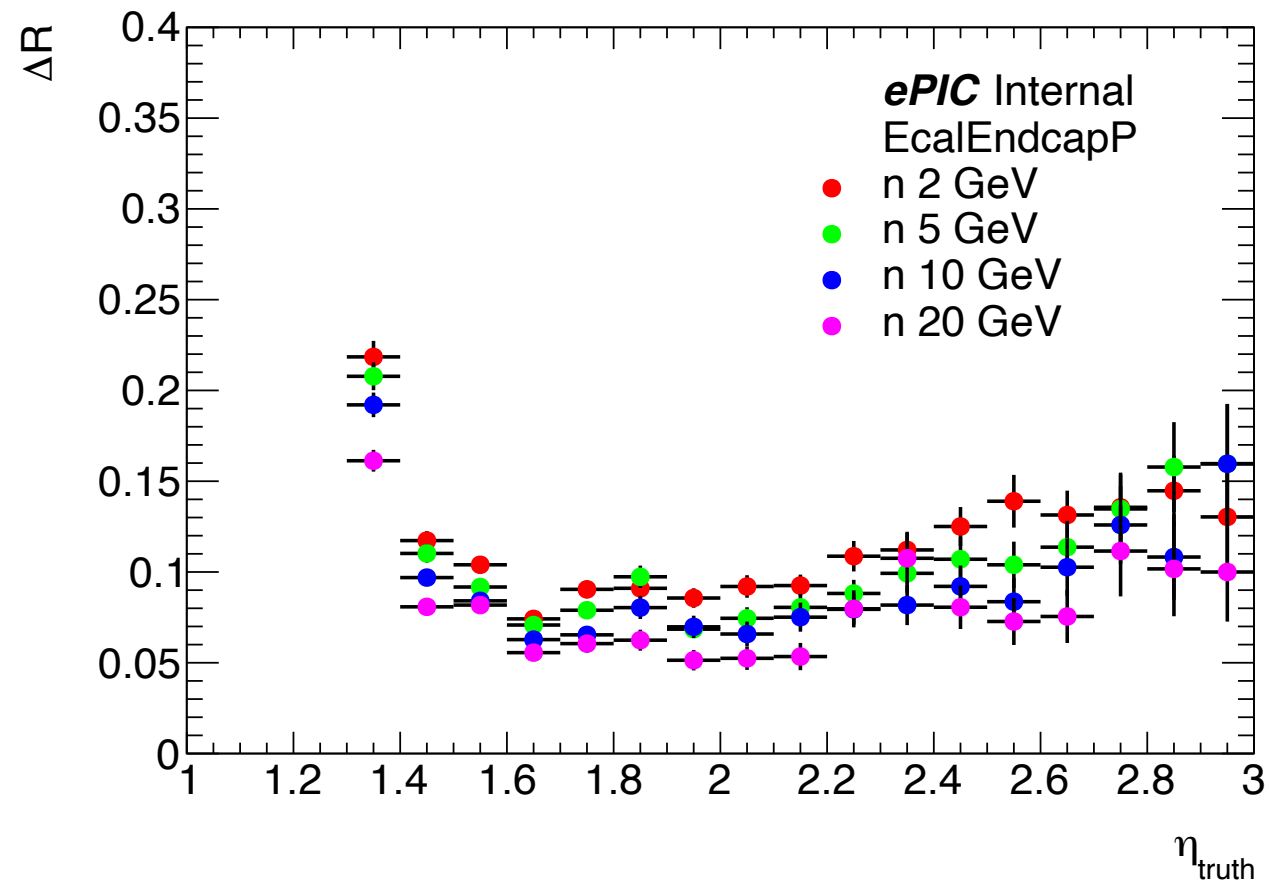
Samples used

- **Focusing on forward neutrons ($\eta=1-3$) to avoid bending in solenoid field**
 - Trying to figure out how to use the projection info as “POD”
- **Four energies (that we have for everything)**
 - 2,5,10,20 GeV
- **Interested in**
 - Partitioning in Ecal vs. LFHCAL
 - Number of clusters produced by ElCrecon
 - Mean of energy-weighted ΔR distribution (RMS x .8)
 - Response vs. η
 - *Forward system is only well defined beyond $\eta=1.4$*

Response

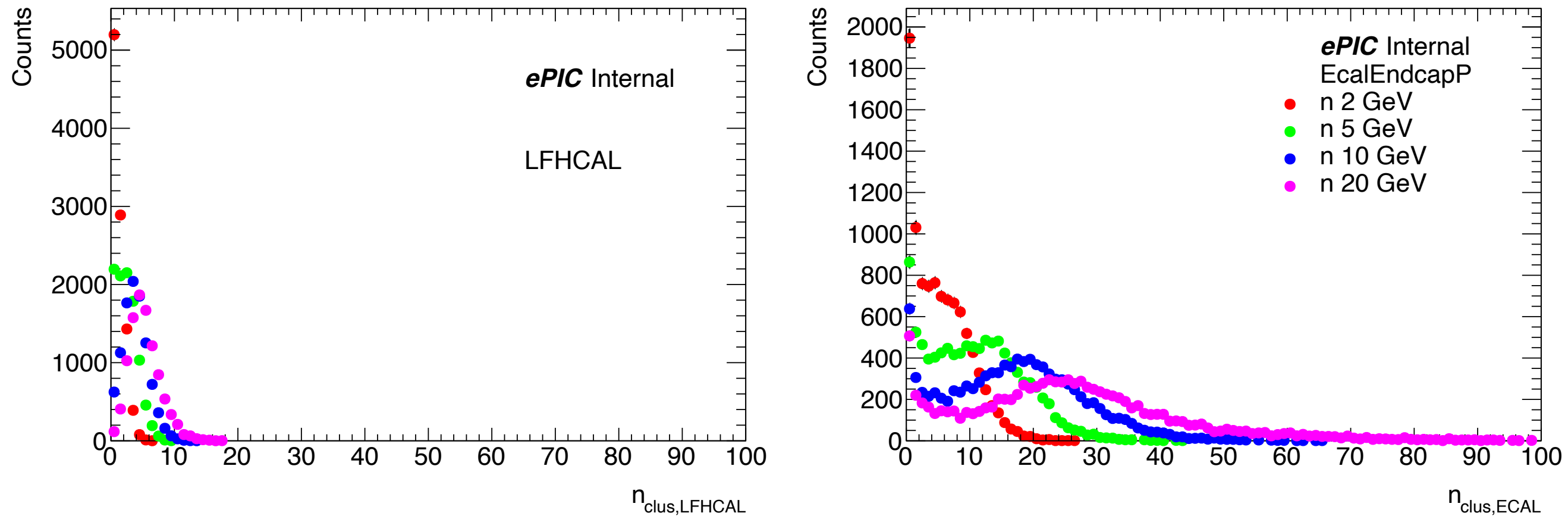


Width of ΔR distribution



Cluster distributions get wider at forward rapidities, but are intrinsically quite wide ($R=0.1-0.2$)

Number of clusters



- **Very different in Ecal and LFHCAL**

TBD

- **Want to finish this for all simulated particle species**
- **Incorporate track projections for charged particles**