

# **Barrel HCAL background challenges**

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TIC Meeting (Background)

# SPATIAL RESOLUTION & EFFICIENCY

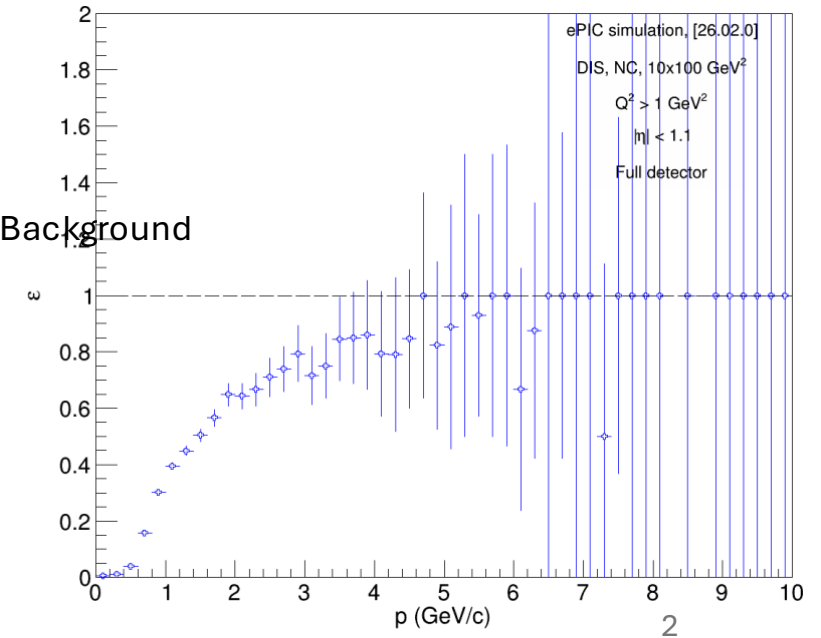
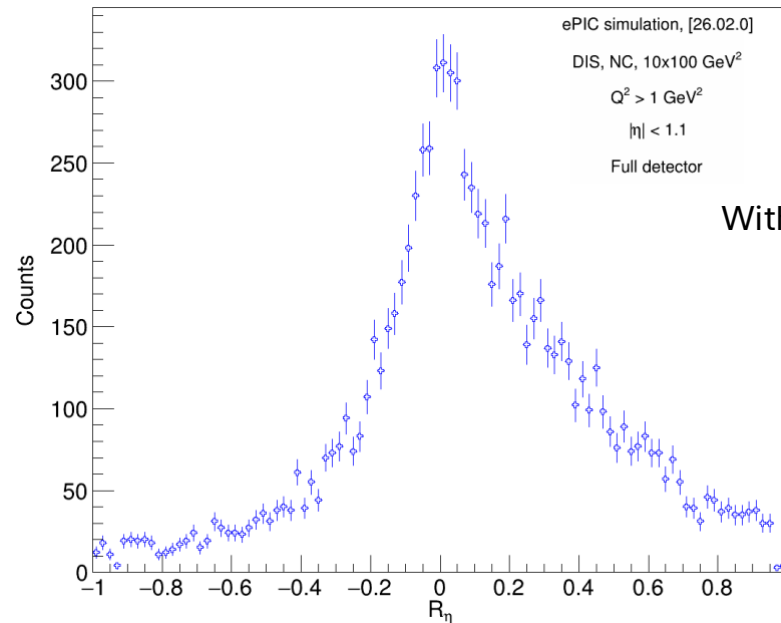
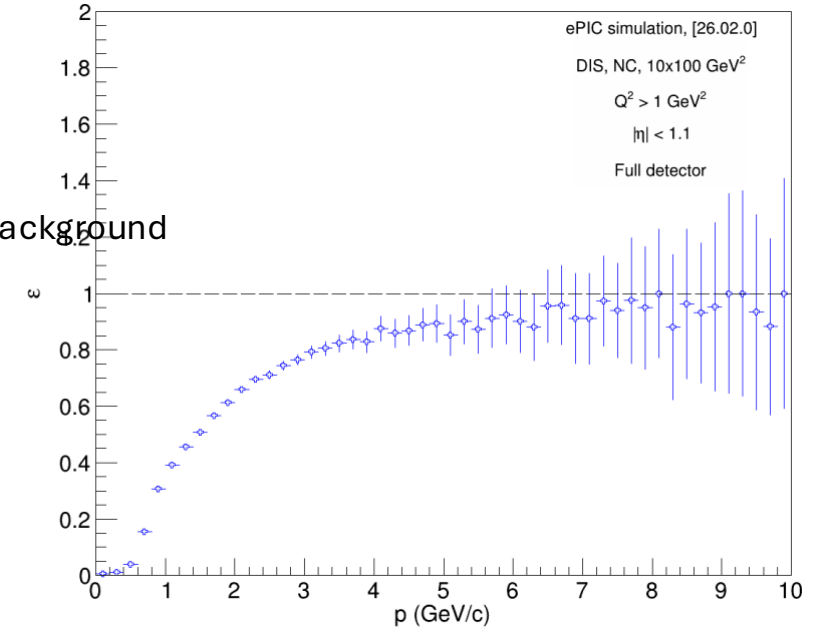
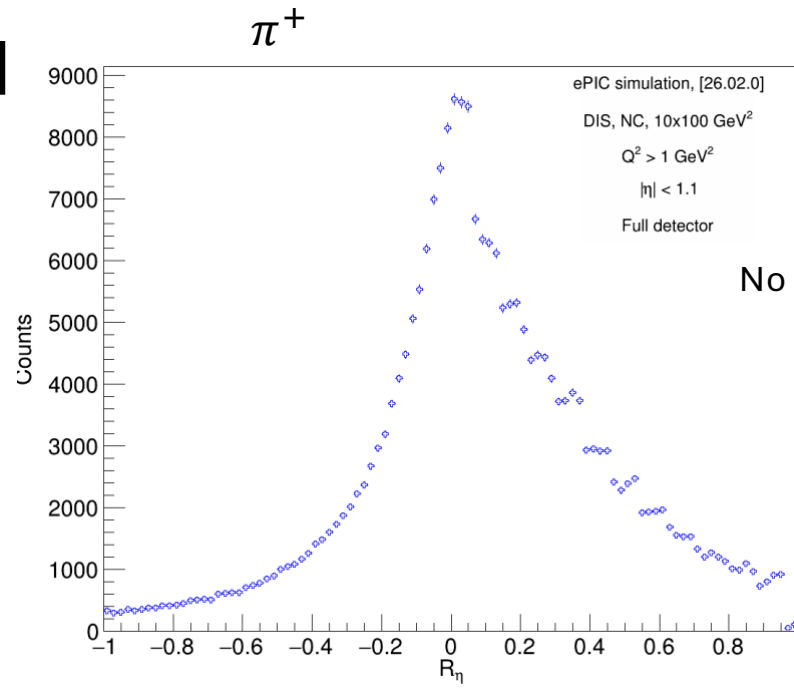
- Central DIS production:
  - 26.02.0, DIS, NC
  - 10x100 GeV<sup>2</sup>

- $\eta$  resolution:  $R_\eta = \frac{\eta_{MC} - \eta_{clust}}{\eta_{MC}}$

- Efficiency definition:

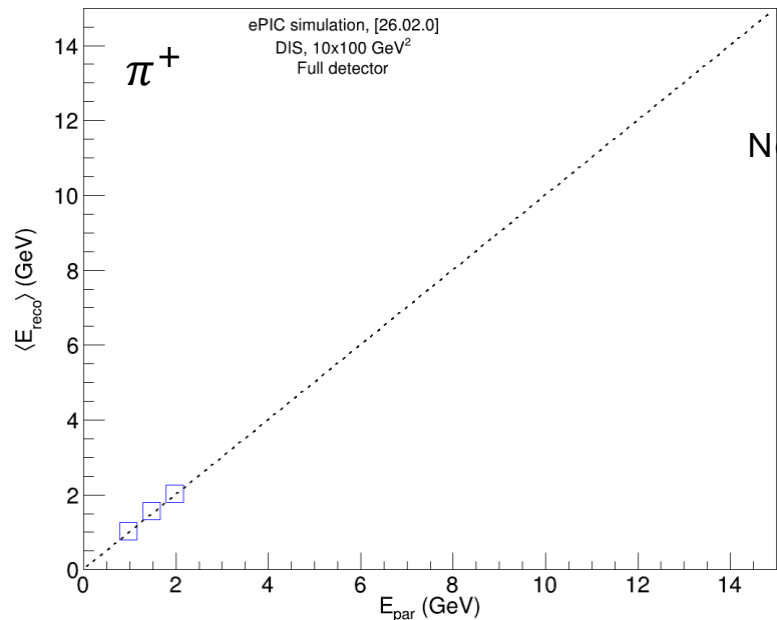
$$\varepsilon = \frac{N_{MC,bHCAL}}{N_{MC}}$$

- **No major differences within statistical precision for all distributions**
  - Background sample statistically limited

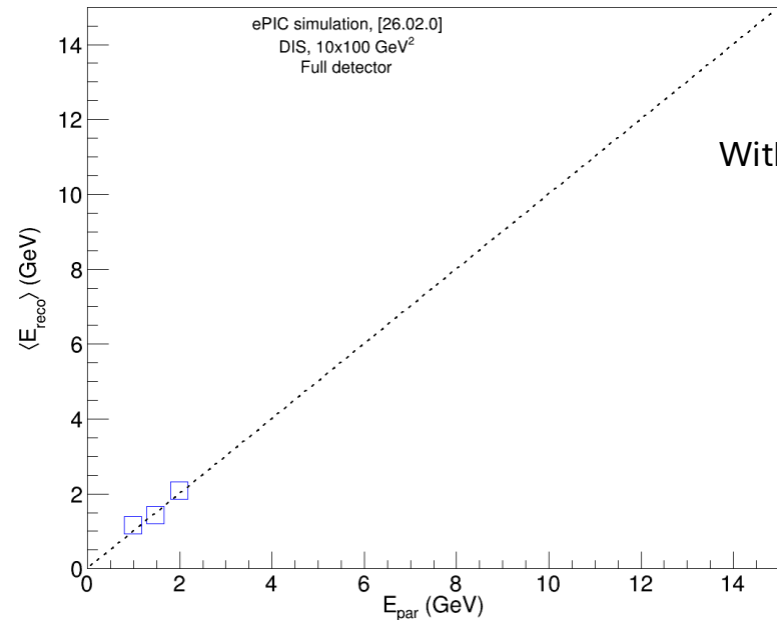
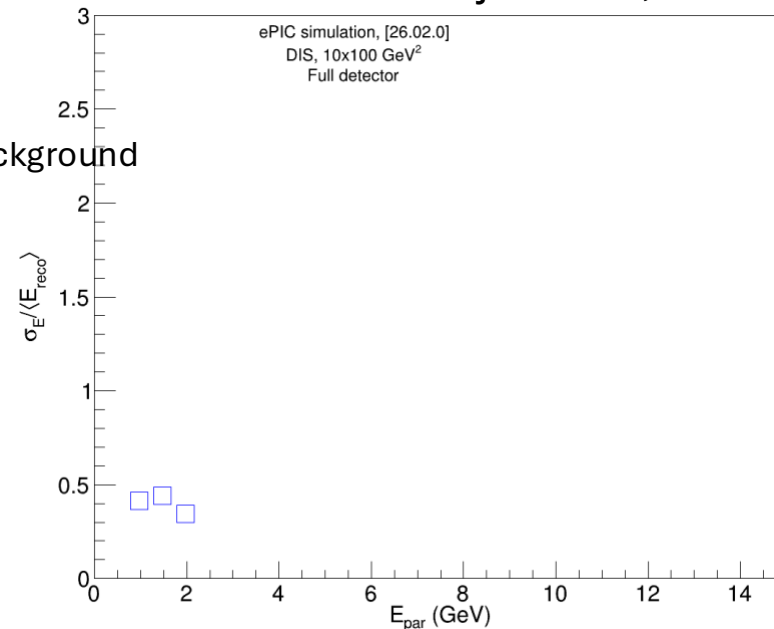


# CALIBRATION

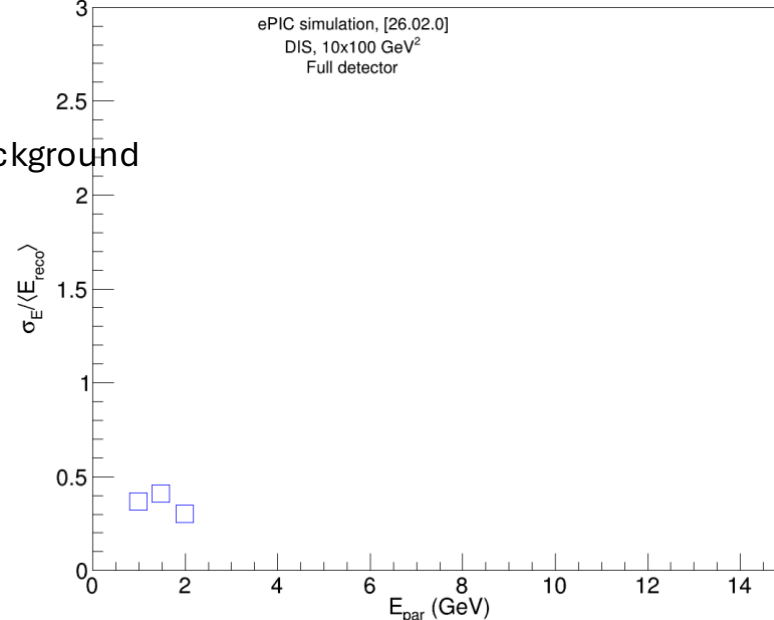
- Central DIS production:
  - 26.02.0, DIS, NC
  - 10x100 GeV<sup>2</sup>
  - with and without background



No Background



With Background



# SUMMARY

- BHCAL calibration and spatial resolution show no significant degradation in the presence of beam background
- Background sample is statistically limited — larger statistics needed to confirm findings at high momentum
- No critical background challenges identified for BHCAL at this stage