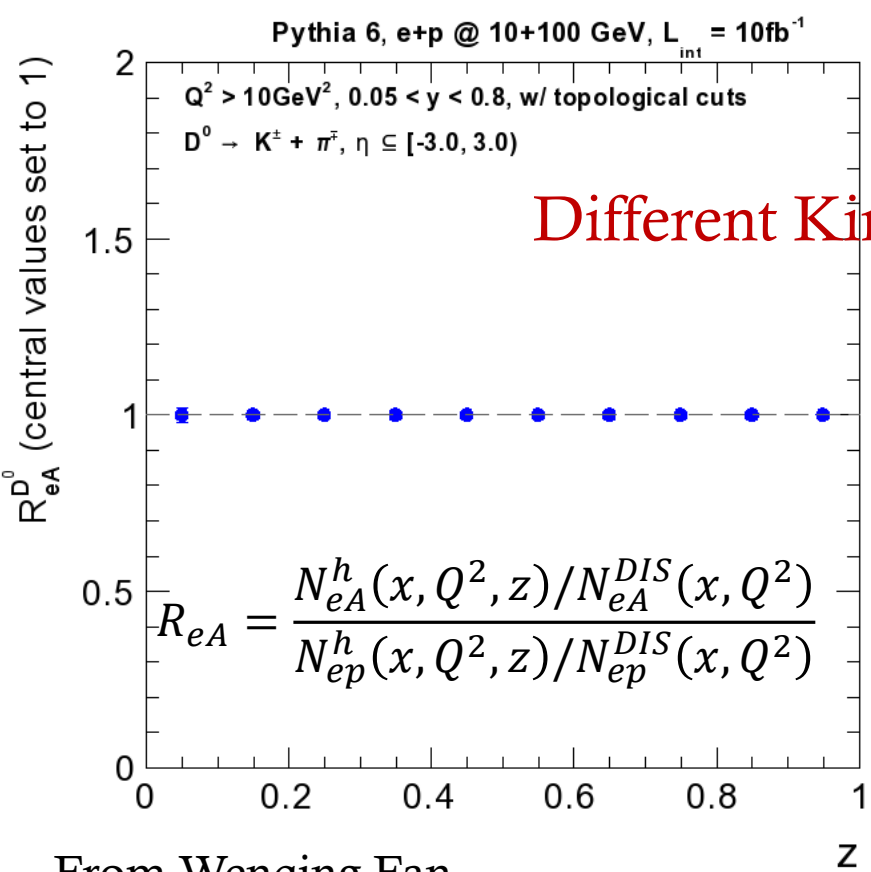

Double Ratio Comparison to EIC White Paper

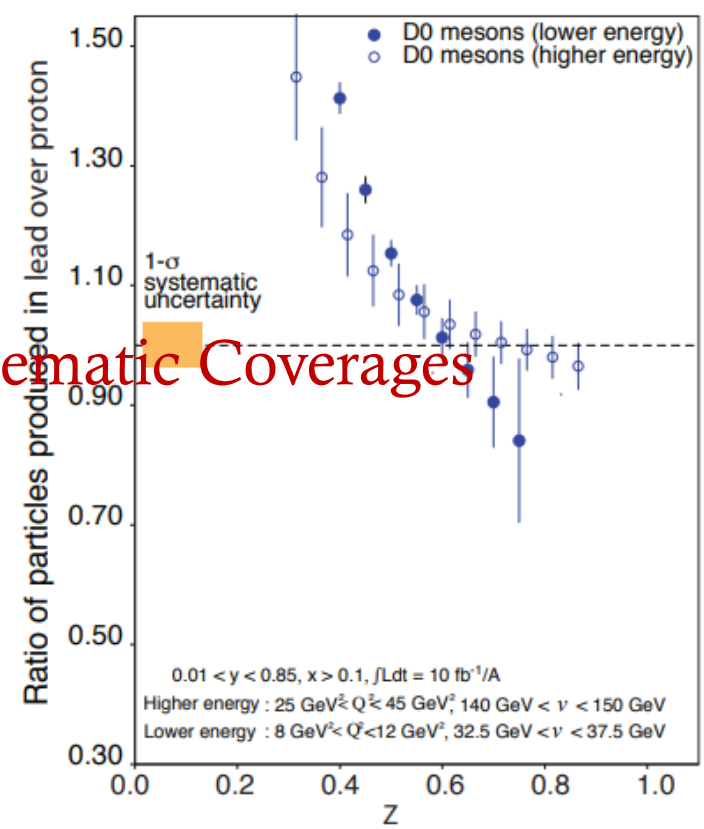
Senjie Zhu

2023/6/20

Double Ratio of EIC

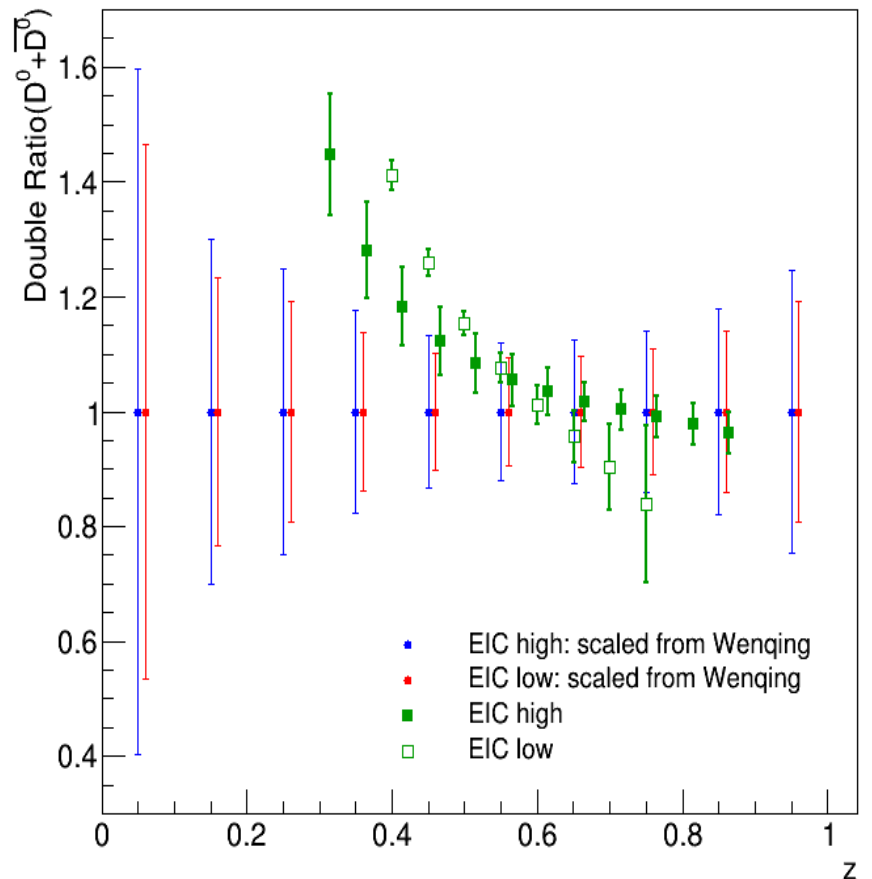


From Wenqing Fan
 simply $\sqrt{2}$ *ep uncertainty
 Fast Simulation with the EPIC momentum
 and pointing resolution



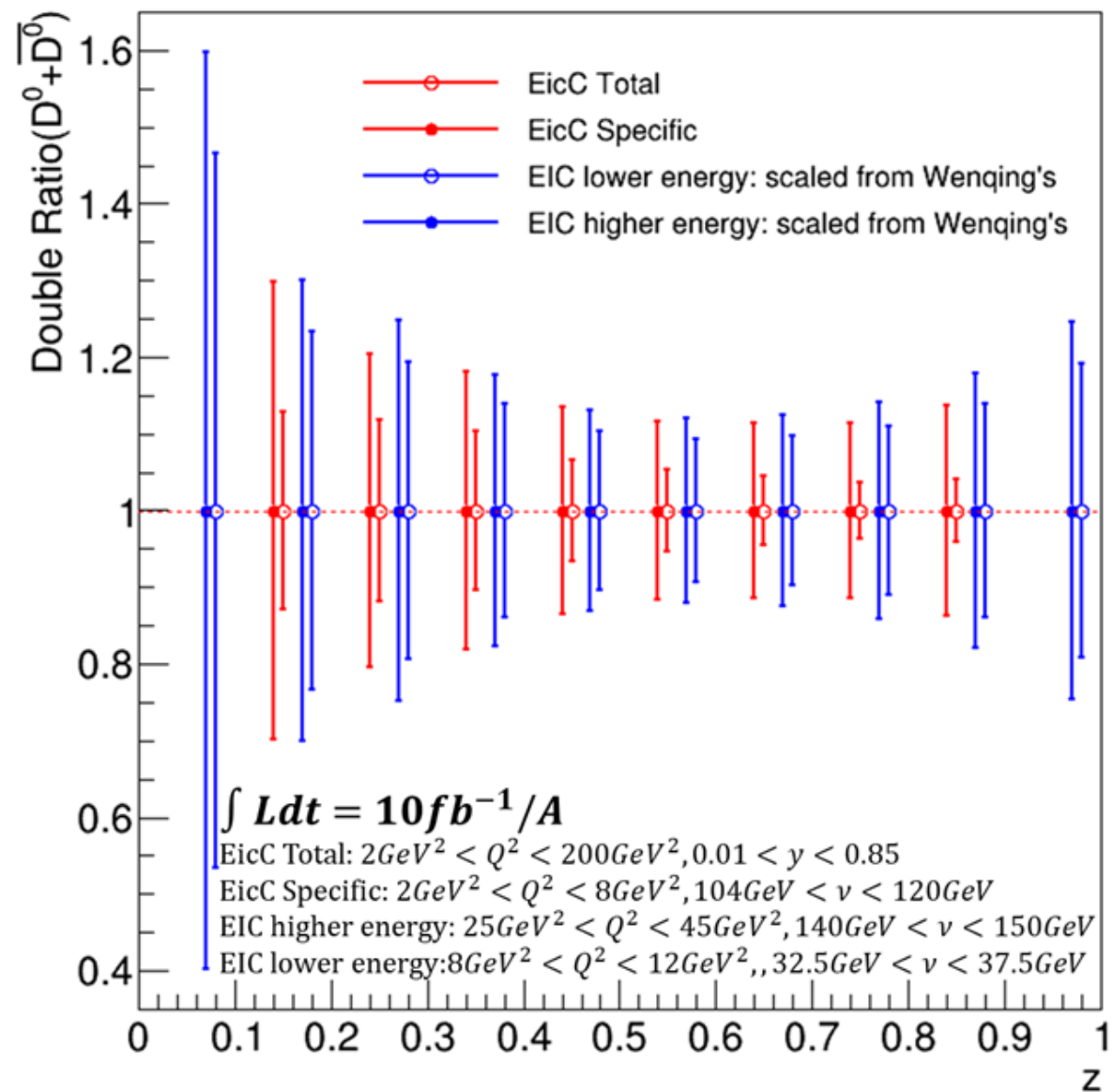
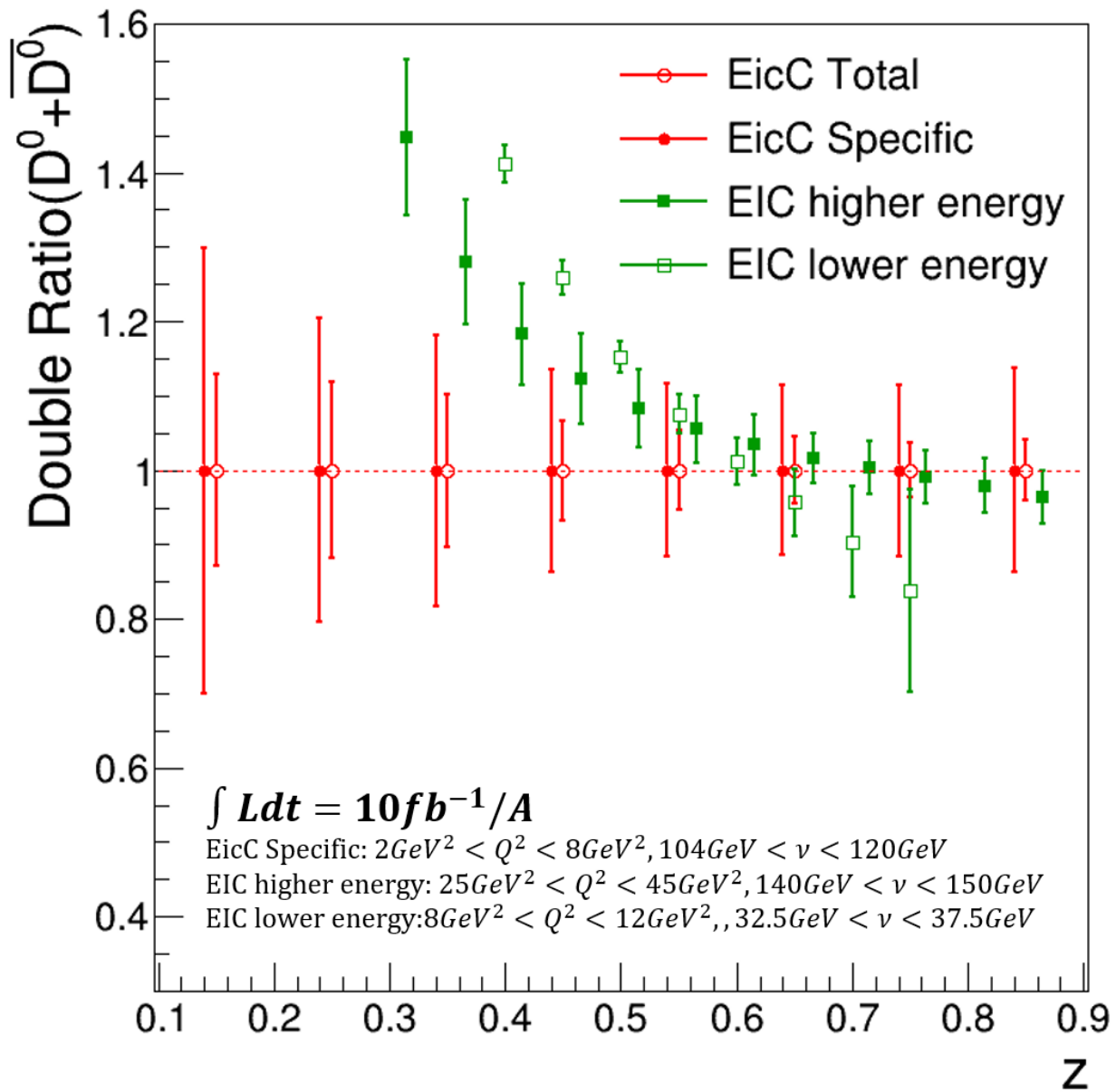
EIC White Paper
 Eur. Phys. J. A **52**, 268 (2016)
 Page.96 Figure 3.27: No detail

In Fig. 3.27, simulation results are plotted for the multiplicity ratio of semi-inclusive DIS cross-sections for producing a single pion (Left) and a single D^0 (Right) in e+Pb collisions to the same produced in the e+d as a function of z at the EIC with two different photon energies: $\nu = 35\text{GeV}$ at $Q^2 = 10\text{GeV}^2$ (solid line and square symbols) and $\nu = 145\text{GeV}$ at $Q^2 = 35\text{GeV}^2$ (dashed line and open symbols). The p_T of



Scaled from Wenqing's uncertainty to specific kinematic region

- Generate $D^0/\overline{D^0}$ by pythia6
- Count $D^0/\overline{D^0}$ at different x, Q^2 regions
 - Wenqing Fan: 10484
 - EIC higher energy: 14
 - EIC lower energy: 23



Summary

- EIC double ratio in EIC white paper can't be reproduced from Wenqing's simulation.
- Do we still need to compare double ratio of EicC simulation to EIC white paper's result?