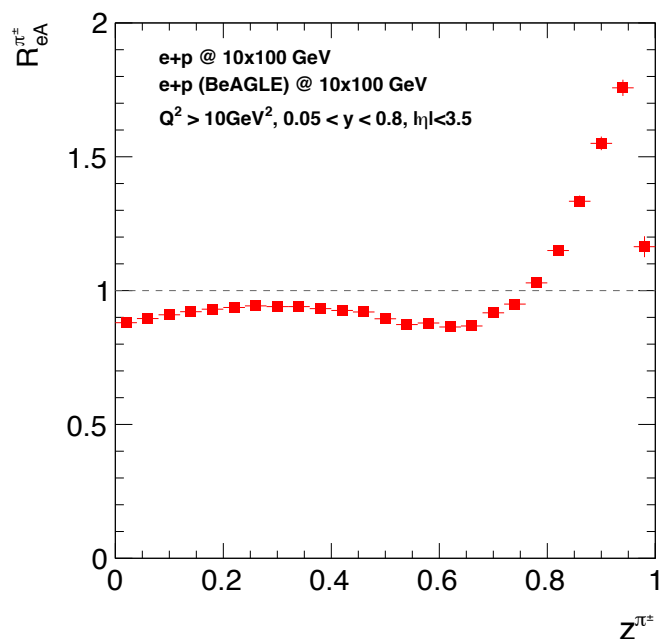
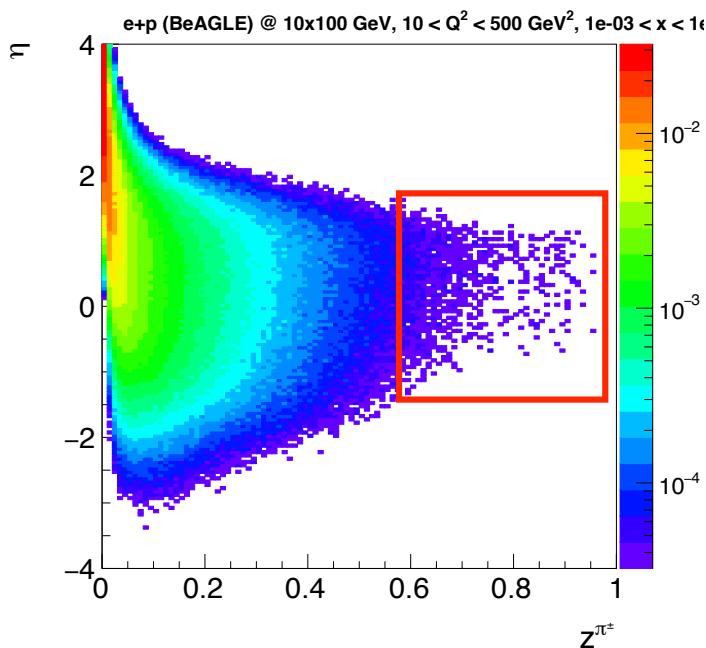
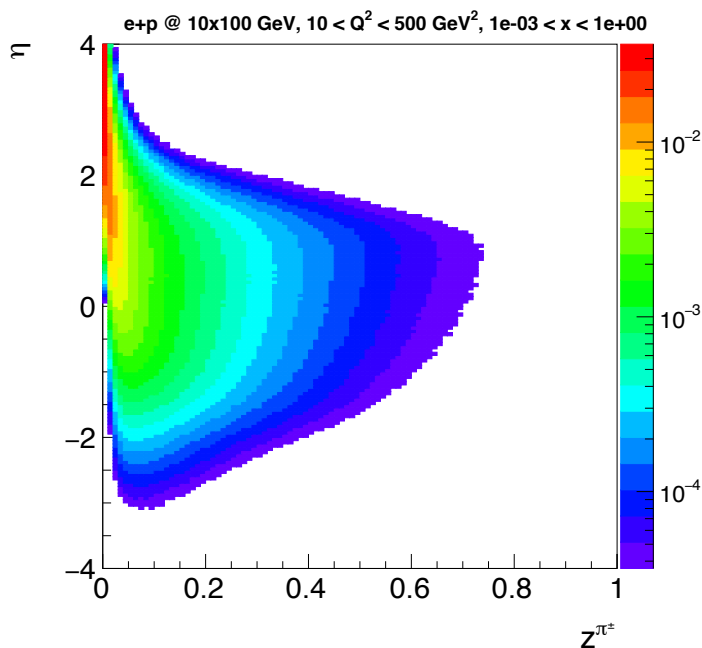


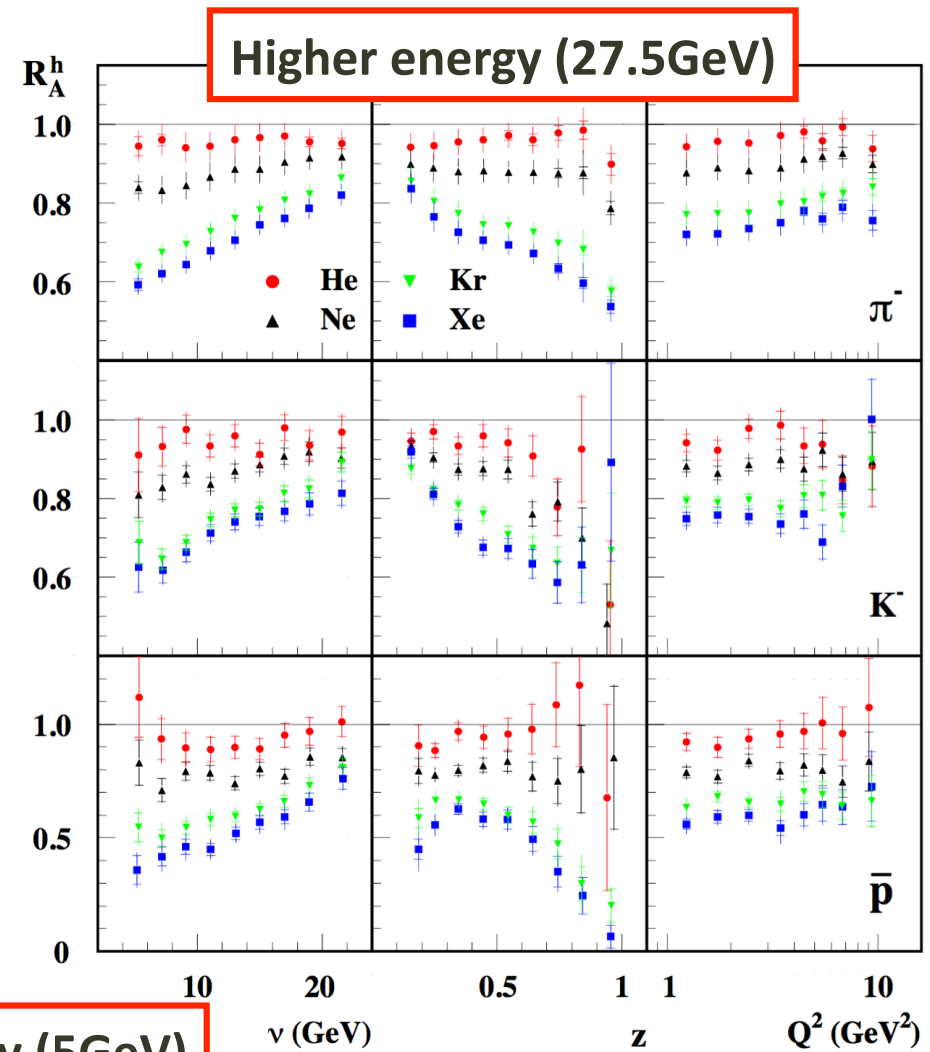
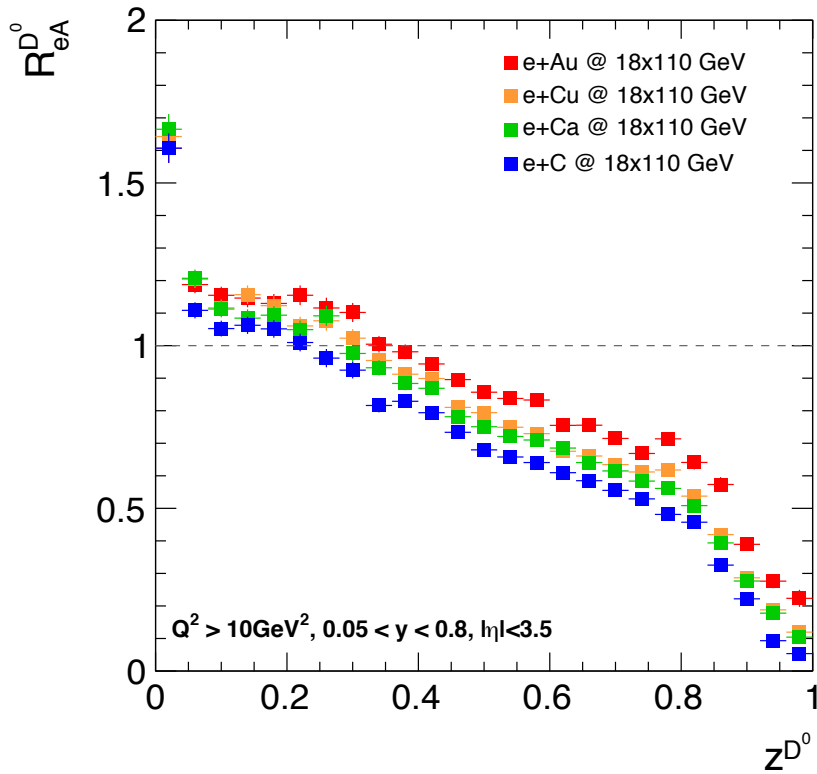


► Compared pythia input for pythiaeRHIC and BeAGLE, which look pretty consistent

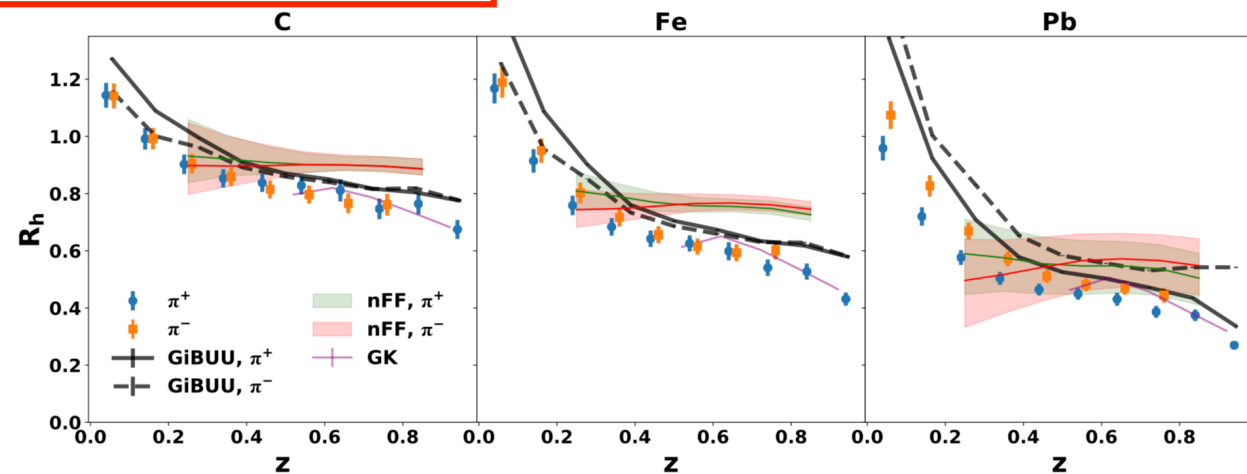
- ◆ PARJ(170) = 0.20 for pythia and 0.32 for BeAGLE
- ◆ PARP(2) = 5 for pythia and 2 for BeAGLE

BeAGLE e+A

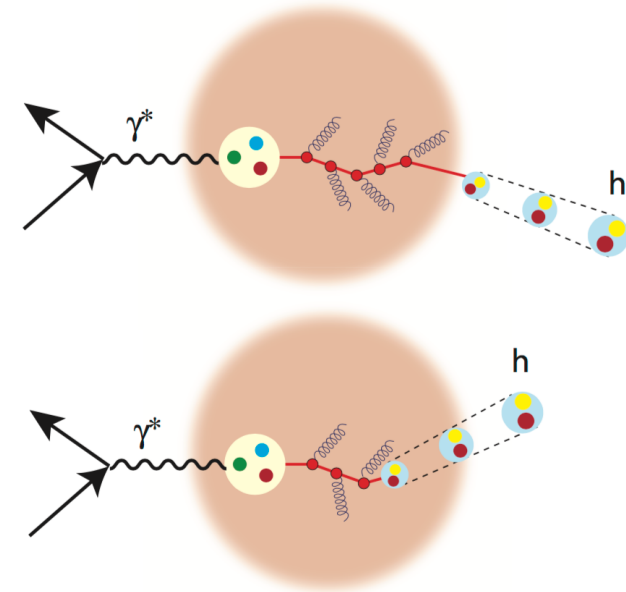
- ▶ Counter-intuitive trend seen for D0 production
- ◆ More suppression for smaller system?



Lower energy (5 GeV)



- ▶ PyQM: this module, when turned on, applies energy loss to the partons after they have been simulated by Pythia, but before they have been hadronized
- ◆ Try turn it on/off (there is an control line for quenching and qhat, trying to confirm that with BeAGLE authors)
- ◆ Try differen qhat: any other related tuning?
- ◆ SW (Salgado and Wiedemann) energy loss: need to understand how energy loss is handled? How is the path length defined (hadronization time scale and nucleus size)?



```
'eAu.txt' ! output file name
1e-06, 1.00 ! xmin and xmax
F2PY,1998 ! F2-Model, R-Parametrisation
0 ! switch for rad corrections; 0:no, 1:yes, 2:gen.lookup table
1 ! Pythia-Model = 0 standard GVMD generation in Pythia-x and Q2; = 1 GVMD model with generation in y and Q2 as for radgen
1,1 ! A-Tar and Z-Tar
3 ! switch for shadowing: genShd
101 ! USED L0 - nuclear pdf parameter2: correction order x*100+y x= 1:L0, 2:NLO y:error set
1 ! switch for quenching 1:on, 0:off
0.0 ! QHAT value
! FSEED 1234567 ! only use fixed seed for debugging
! PMAS(4,1)=1.27 ! charm mass
```

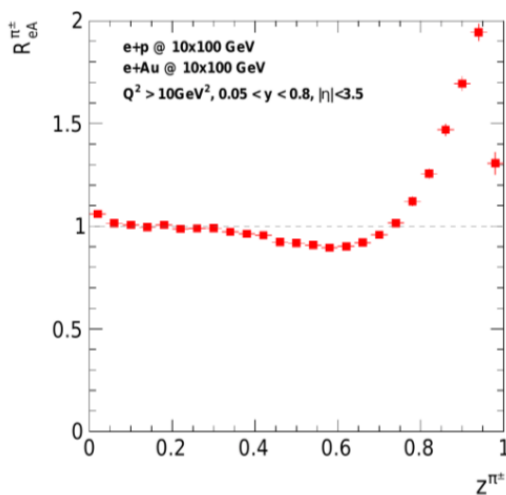
▶ Intra-nuclear cascade handled by DPMJet (FLUKA)

- ◆ Intra-nuclear cascade: secondary low-energy interactions with spectator nucleons
- ◆ It unifies all the features of the event generator DPMJET-II and DTUNUC-2, while the individual collisions are simulated based on the PHOJET1.12 code. JETSET takes care of the fragmentation part using string model. The extension to nuclei is done through Glauber-Gribov theory. Furthermore, the model employs FLUKA to simulate nuclear evaporation and intra-nuclear cascade.
- ◆ Controls inside BeAGLE input card:

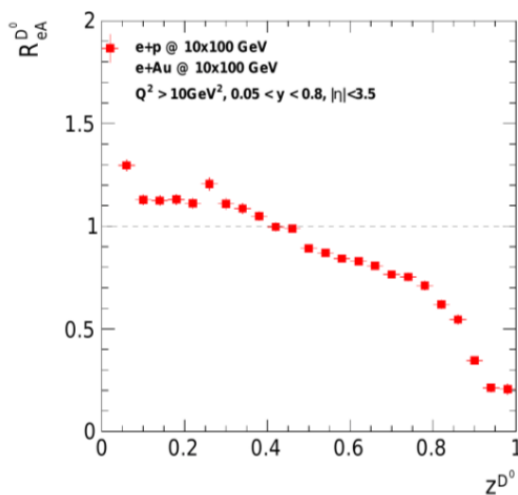
TAUFOR - the first # is the formation time parameter (τ) in fm/c for the intranuclear cascade the second # is the number of generations followed Default=25, 0 means no cascade

```
* projectile / target
* -----
* ...+...1....+...2....+...3....+...4....+...5....+...6....+...7...
PROJPAR                                     ELECTRON
TARPAR      12.0      6.0      3
TAUFOR      10.0      25.0     1.0
```

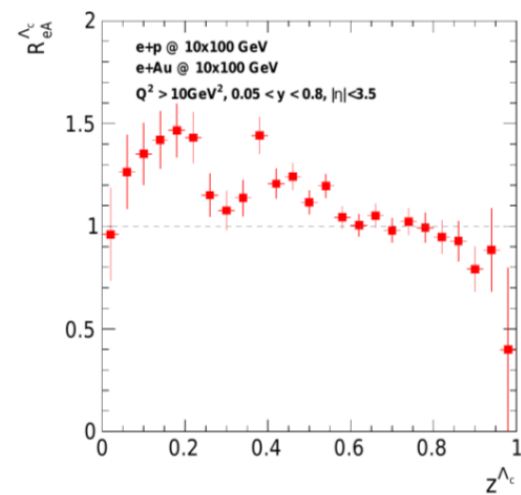
► Intra-nuclear cascade on (top) and off (bottom)



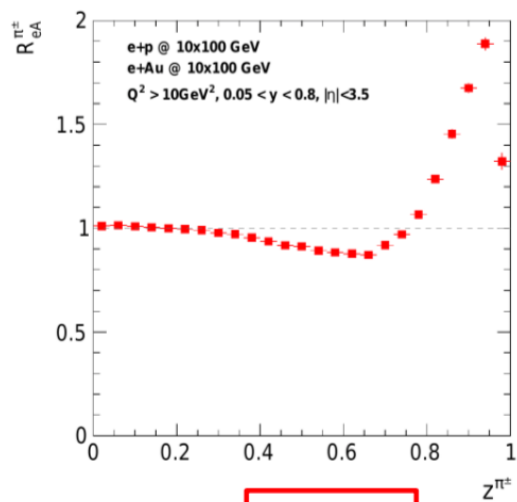
$\pi^{+/-}$



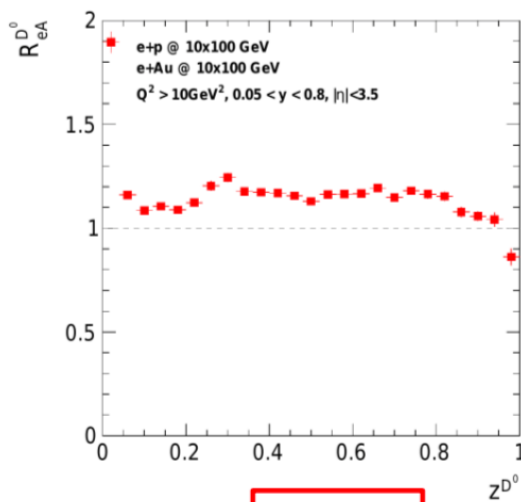
D0



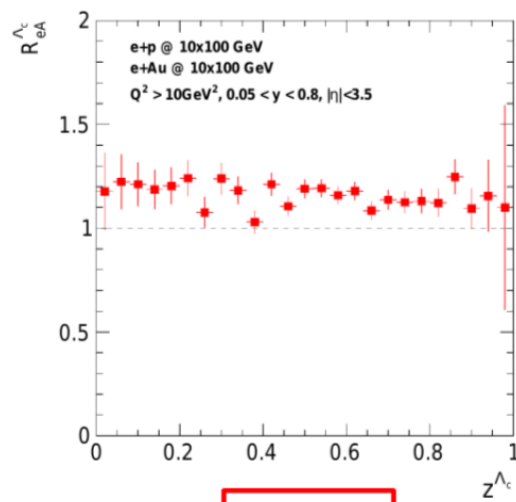
Lc



$\pi^{+/-}$

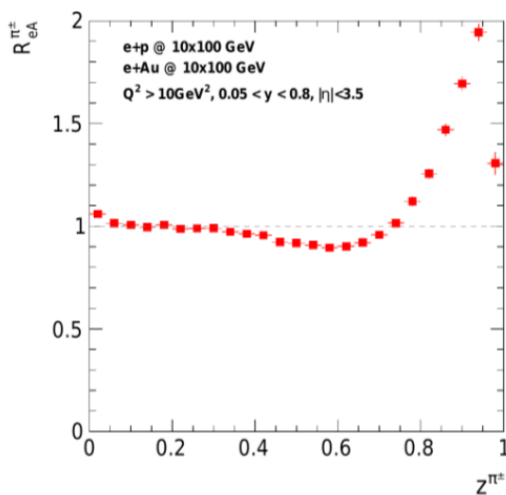


D0

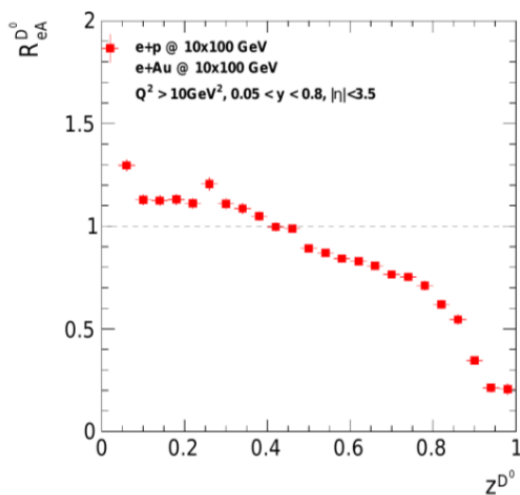


Lc

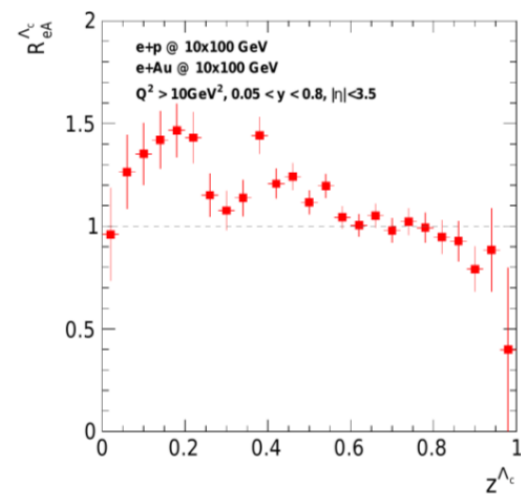
► Quenching on (top) and off (bottom)



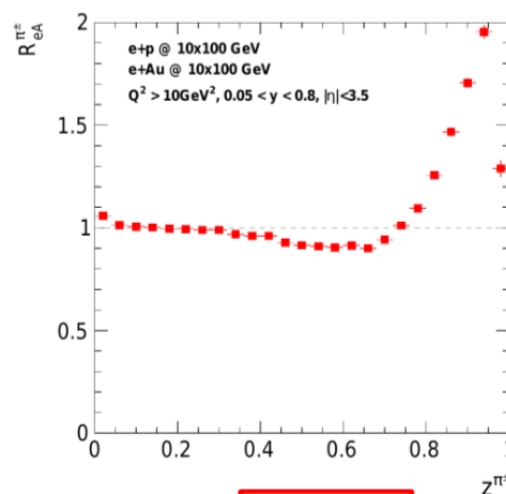
$\pi^\pm$



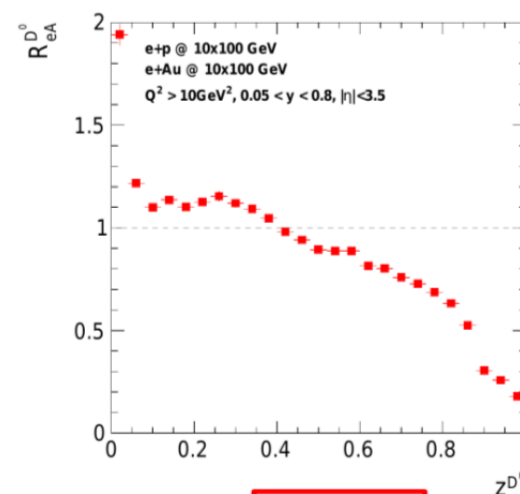
D^0



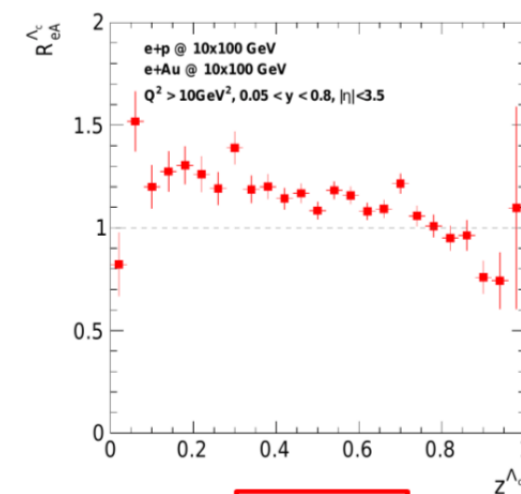
Λ_c



$\pi^\pm$



D^0



Λ_c