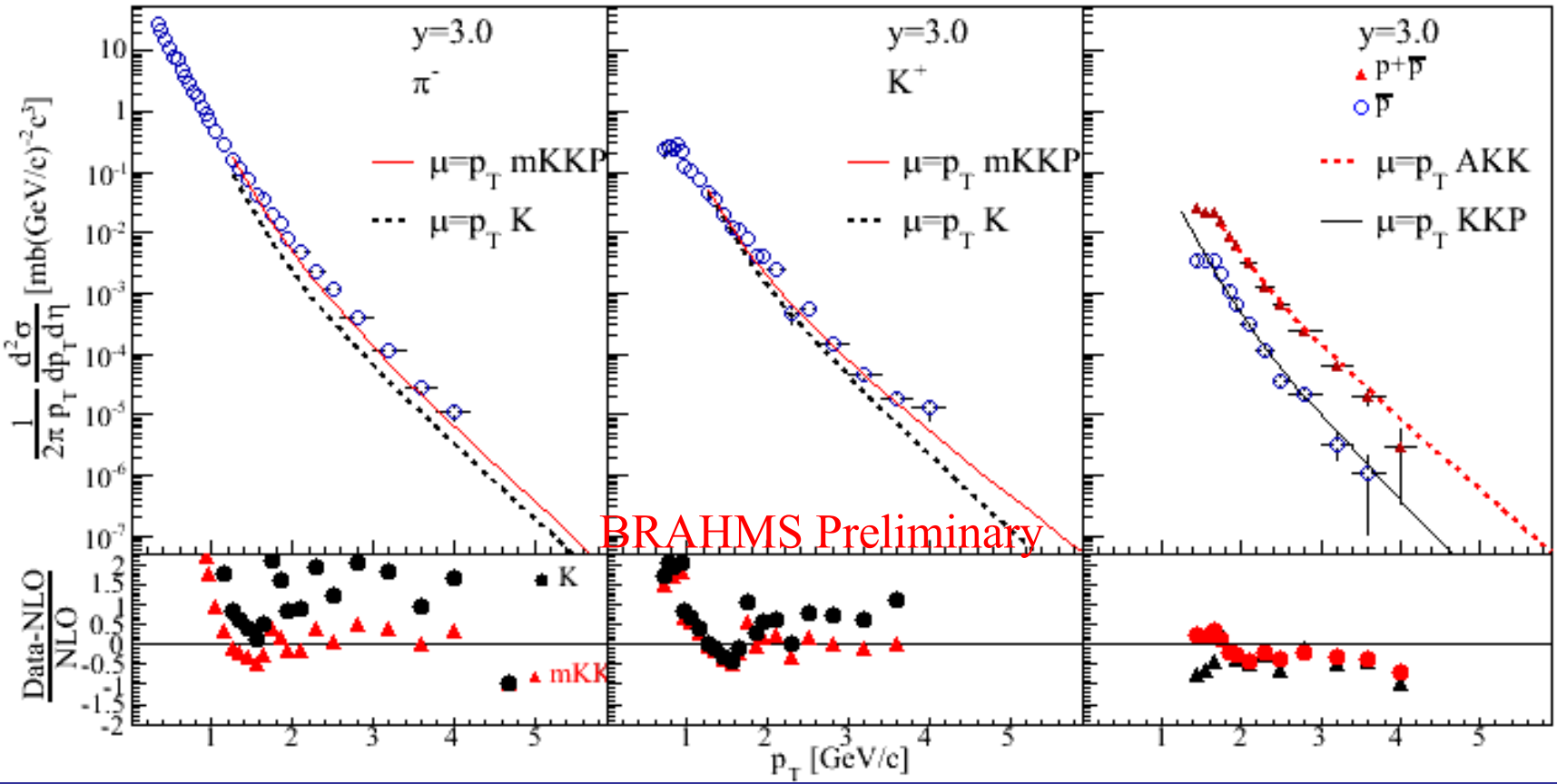
NLO pQCD comparisons to measured p+p distributions at y=3



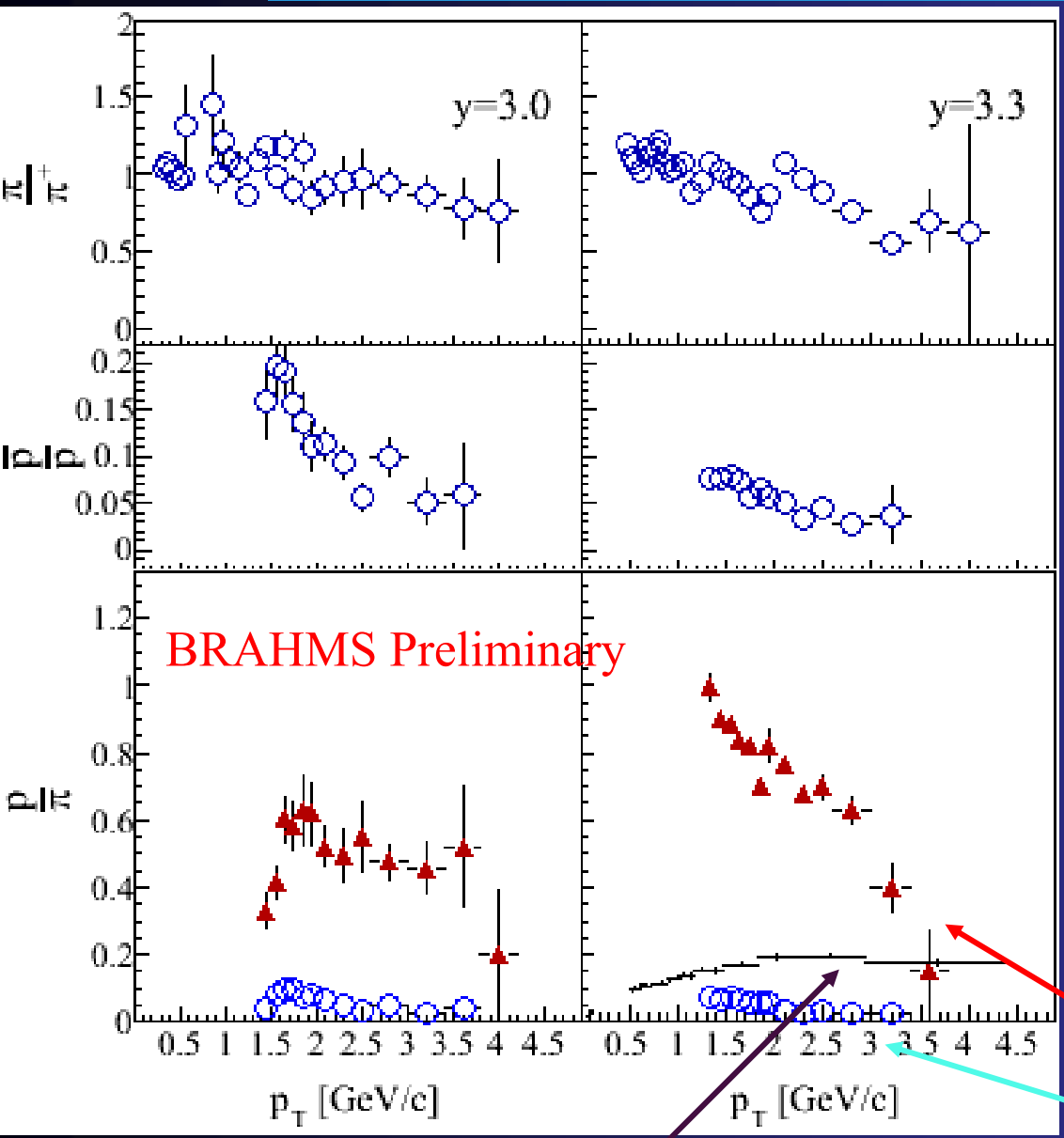
First time measurements of identified charged particle production at high rapidity and high energy, contributes to development of QCD, reference to extract nuclear effects, tuning of event generators.

Calculations done by W. Vogelsang. Only one scale $\mu=p_T$ and the same fragmentation functions as used for the PHENI comparison.

KKP has only π^0 frag. Modifications were needed to calculate charged pions

Agreement between protons and AKK is an accident, AKK implies high pbar/p ratio and we measure a small value.

Ratios p/π^+ at y=3.0 and 3.3



The π^-/π^+ ratio is consistent with dominance of valence quarks (at high p_T) at these rapidities.

Small $\bar{p}/p$ ratio eliminates possible strong gluon -> p or $\bar{p}$ fragmentation ($\bar{p}/p \sim 1$)

The difference between protons and anti-protons indicates another mechanism besides fragmentation (as AKK) that puts so many protons at high p_T at this rapidities.

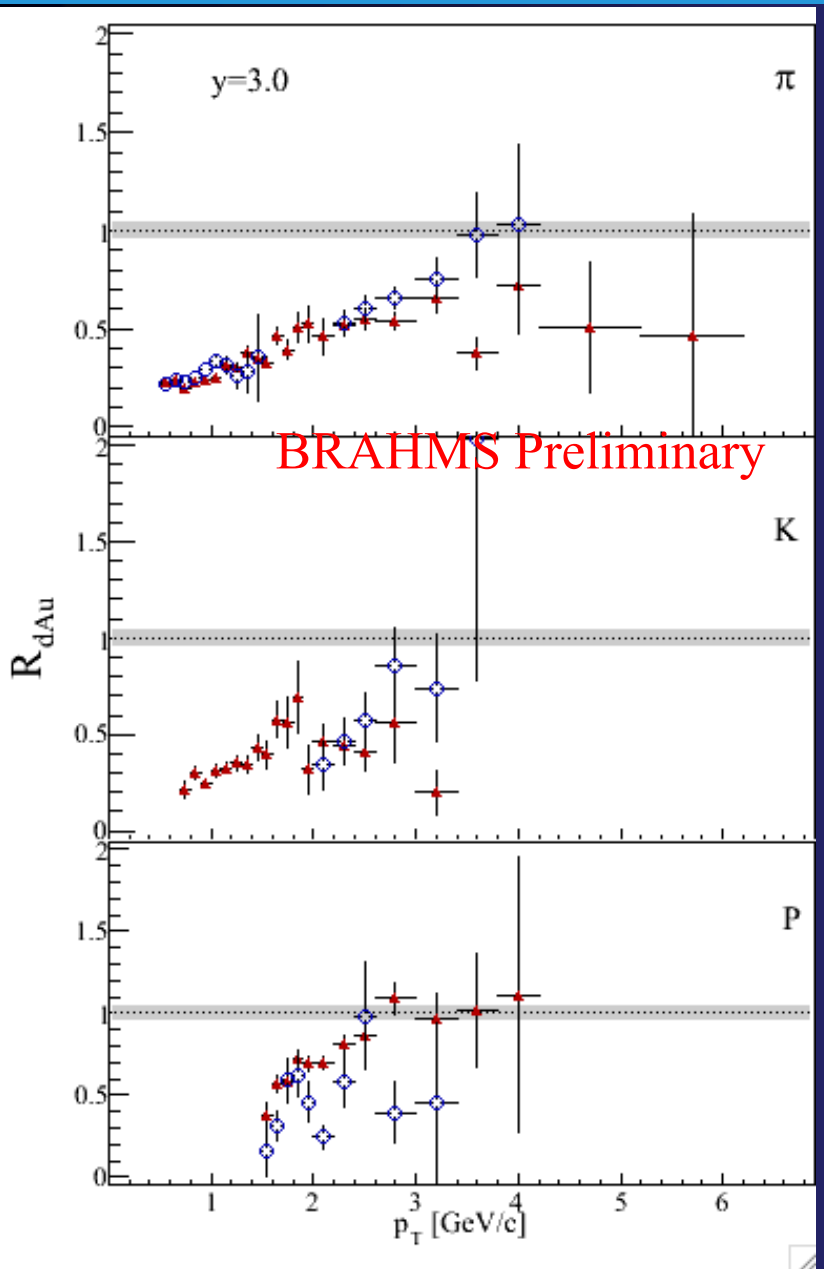
This work is circulating within the collaboration as a draft PRL publication.

Red: proton/π^+

Blue: $\bar{p}$/ π^-

e^+e^- p+pbar/π^++ π^- ALEPH

Nuclear modification factors of identified particles from d+Au collisions



Red:positive

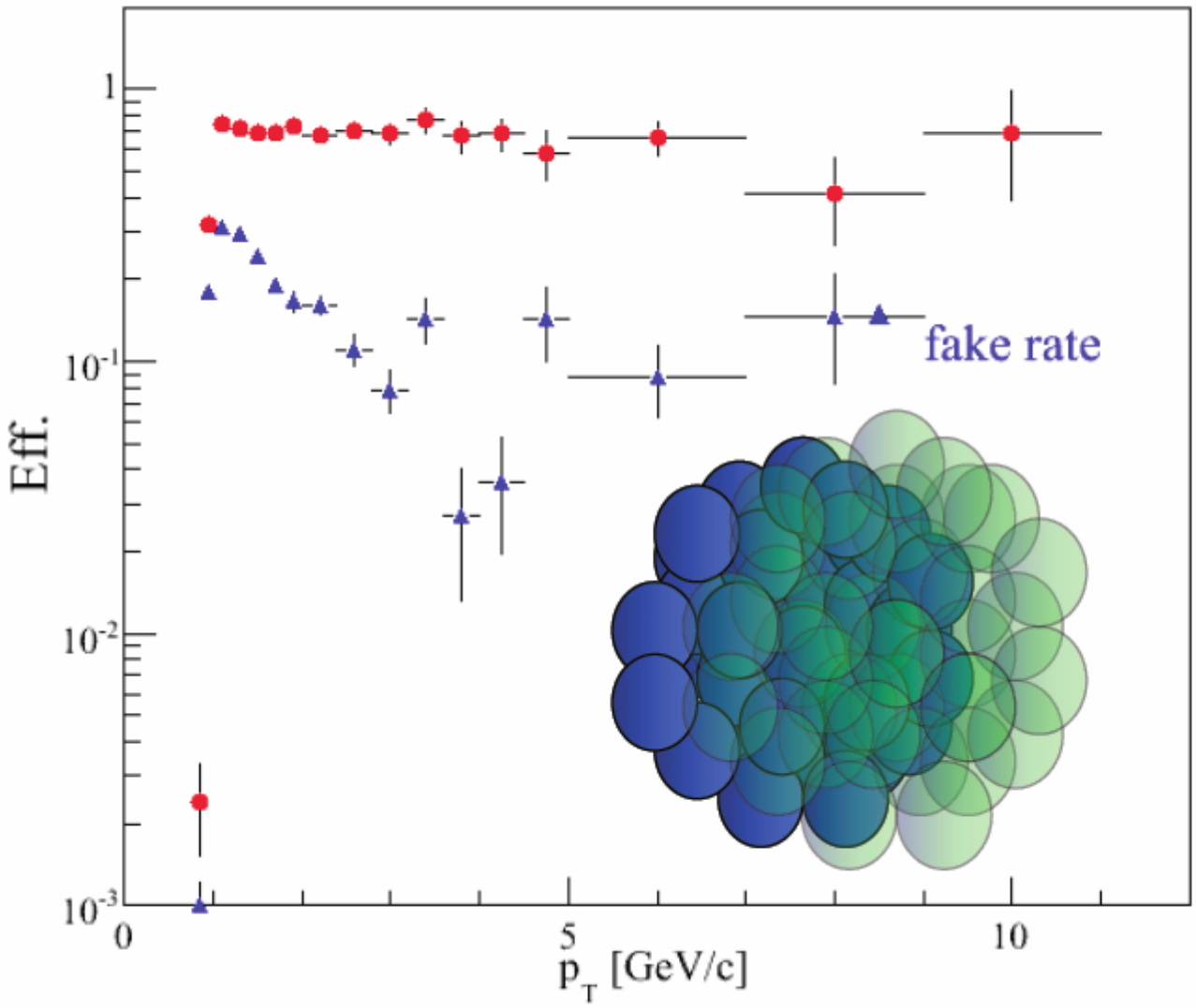
Open blue: negative

As expected there is a difference between positive and negative pions driven by a "suppression" of negative pions in p+p (isospin)

Protons are showing a hint enhancement, but a "suppression" in the anti-proton R_{dAu} remains after several checks on the analysis.

This work is geared towards a PRL publication that will have the centrality dependence added to these min biased results.

Heavy Ion studies with the ATLAS detector

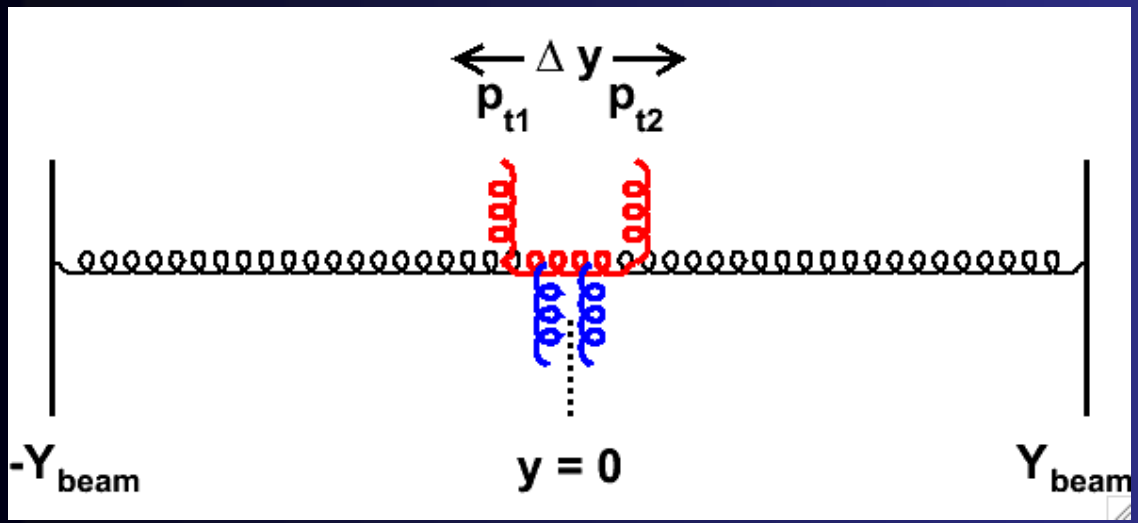


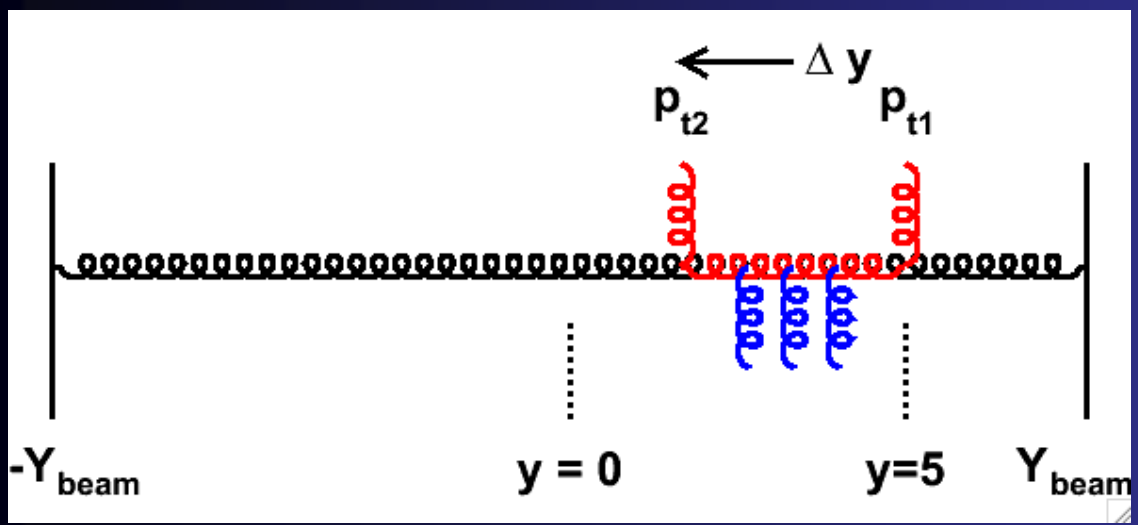
Evaluation of tracking efficiency with the ATLAS inner tracker: Combination of pixel and strip Si counters and HIJING Pb+Pb events in the complete ATHENA framework

50 simulated events b:0-2 fm

Can we detect the onset of CGC and quantum evolution in 14 TeV p+p collisions at LHC with the ATLAS detectors?

$$x_a = \frac{2M_T}{\sqrt{s}}\cosh(y^*)e^{y_{system}} \qquad x_b = \frac{2M_T}{\sqrt{s}}\cosh(y^*)e^{-y_{system}}$$





Reference: Study jets produced at equal y around mid-rapidity, $x_1 = x_2 \approx 0.04$ P_t=10GeV/c y=1 Jet decorrelation by intermediate gluon emission start weak and grows with Δy.

Main focus: One jet at y=5, second one at decreasing y. Quantum ev. starts strong and decorrelation grows with rapidity separation of jets both effects add up.