Exclusive and Tagging group: current concerns

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ATHENA meeting, Feb. 24, 2022

- Physics Concerns
- Simulation studies

(re)-started biweekly meetings Mondays at 12:30 Eastern time

We are starting a paper that will discuss the studies that were done for the proposal, including both the physics and the simulation studies

One DIS abstract submitted (travel issues)

Physics Concerns

- During the YR process and ATHENA proposal writing, we saw that some of the physics in the White Paper may not be accessible. We are following up on these issues
- Separating coherent and incoherent interactions
- Measuring t in eA collisions
  - This requires a good measurement of the outgoing electron.
    - For 10/18 GeV electrons, we cannot resolve the diffractive dips in $d\sigma/dt$. 5 GeV electrons are workable.
  - What are the optimal kinematics?
  - Can we use the calorimeter + tracking together to improve t resolution
- Choice of final-state mesons
  - The ϕ as the standard light meson, but is very hard to reconstruct at small Q^2. Is the ρ an acceptable alternative?

Simulation Plans

- We are also working on simulation studies to better quantify and optimize ATHENA performance.
- Incorporating PID information organically
- Simulations to study t resolution
- Improved studies of DVCS and TCS
  - First studies to consider background rejection
- Studies using improved far forward simulations
- Studies of near-threshold Υ in eA collisions