Pythia Study of Rapidity-Separated Two-Particle Correlations in $\sqrt{s}=200$ GeV $p+p$ collisions.\textsuperscript{1} YIFAN YUAN, NATHAN GRAU, Augustana University — The PHENIX detector at the Relativistic Heavy Ion Collider collected data from $\sqrt{s_{NN}} = 200$ GeV $d+$Au collisions in 2016. This data set includes the MPC-EX which enhances $\pi^0$ identification at forward rapidity sensitive to low-$x$ partons in the Au nucleus. We are measuring $\pi^0$-hadron two particle azimuthal correlations in this data set for pairs separated in rapidity. We used PYTHIA to gain an intuition on how the away-side width is dependent on parton kinematics. In this poster, we will show the results of two-particle correlations in PYTHIA8. We find that the away-side width broadens with the rapidity gap. For triggers in the forward rapidity, the away-side width increases with $x$ of the target.

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