Momentum distributions of strange and anti-strange quarks in the proton\(^1\) CHASE HANSEN, DAVID RASCHKO, GREG NETZEL, Seattle University — Strangeness in the proton has been confirmed by experiment. We are using the statistical method of Zhang et al. [1], which explained the \(\bar{u} - \bar{d}\) asymmetry in the proton. We expand the model to include strange quarks, to explain the existence of strangeness in the proton. We used RAMBO [2] in order to create a Bjorken-x distribution for the partons in the proton. We adjusted RAMBO to include the strange quark mass. In order to suppress the transitions to states that include \(s - \bar{s}\) pairs, we calculate energy distributions for the gluons and allow gluons to split into \(s - \bar{s}\) pairs only if the gluon is above the energy threshold of twice the mass of a strange quark. We expand our view to include the meson cloud model, attempting a different approach at explaining strangeness in the proton [3]. After \(Q^2\) evolution, we compare our calculations of strangeness probability and \(S^+(x)\) to HERMES and ATLAS data, as well as global parton distribution fits.


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