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A meson cloud model of strangeness asymmetry in the proton[1]
GREG NETZEL, DAVID RASCHKO, CHASE HANSEN, Seattle University — We use a meson cloud model to describe strangeness in the proton. In this model the proton can fluctuate into meson-baryon pairs, as allowed by the Heisenberg uncertainty principle. The leading contributions to strangeness are from the meson-baryon pairs $K\Lambda$ or $K\Sigma$. In this model, the probability of finding strange quark pairs depends on both the splitting functions, which represent the probability of splitting into a given meson-baryon state, and the phenomenological vertex form factors. Because the s and $\bar{s}$ quarks reside in different hadrons, their momentum distributions will differ, as suggested by the NuTeV anomaly and recent global parton distribution fits. We compare our results to other theoretical calculations and to experimental data from HERMES and ATLAS, and to global parton distribution fits.

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