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Investigating strangeness in the proton by studying the effects of Light Cone parton distributions in the Meson Cloud Model[1] SAM TUPPAN, GARRETT BUDNIK, JORDAN FOX, Seattle Univ — The Meson Cloud Model (MCM) has proven to be a natural explanation for strangeness in the proton because of meson-baryon splitting into kaon-hyperon pairs. Total strangeness is predicted by integrated splitting functions, which represent the probability that the proton will fluctuate into a given meson-baryon pair. However, the momentum distributions $s(x)$ and $\bar{s}(x)$ in the proton are determined from convolution integrals that depend on the parton distribution functions (PDFs) used for the mesons and baryons in the MCM. Theoretical calculations of these momentum distributions use many different forms for these PDFs. In our investigation, we calculate PDFs for K, K*, Λ, and Σ from two-body wave functions in a Light Cone Model (LCM) of the hadrons. We use these PDFs in conjunction with the MCM to create a hybrid model and compare our results to other theoretical calculations, experimental data from NuTeV, HERMES, ATLAS, and global parton distribution analyses.

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