

Abstract Submitted
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Parton Distributions in the K^+ meson THOMAS SHELLY, STEPHANIE HARP, Seattle University — The statistical model of [1] is extended to calculate the parton distributions in the K^+ meson (Kaon). The Kaon is the lightest particle containing a strange quark. It consists of two valence quarks (u and sbar) and a sea of other partons (quarks and gluons) that may be found inside the Kaon at any time. Here, the K^+ meson is represented as a superposition of states that contain a definite number of partons, known as Fock states. Using the method of [1], the probability of finding the Kaon in any given Fock state is calculated. From these results the average number of each type of parton in the Kaon is calculated. Asymmetry is found in the Kaon light quark sea, with a dbar – ubar value of 0.2606. Using the Monte Carlo method of [2], the momentum distributions of the partons in the Kaon are calculated. These results for K^+ distributions are important for theoretical meson-cloud calculations of the strange sea asymmetry in the proton, which may resolve the NuTeV anomaly. This research has been supported in part by the Research in Undergraduate Institutions program of the National Science Foundation, Grant No. 0245101.

[1] Y-J. Zhang et al., Phys. Lett. B 523 (2001) 260

[2] Y-J. Zhang et al., Phys Lett. B 528 (2002) 228

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