Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

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.

[1] Yong-Jun Zhang et al., Phys. Lett. B. **260**, 523 (2001)
[2] R. Kleiss, W.J. Stirling, and S.D. Ellis, Comp. Phys. Comm. **40** (1986) 359.
[3] F. Cao, and A.I. Signal, Phys. Rev. D. **60**, 074021 (1999)

[1]Supported in part by NSF Grants No. 0855656 and 1205686.

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Date submitted: 31 Jul 2013 Electronic form version 1.4