Abstract Submitted
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Strangeness in the Proton Sea[1] DAVID RASCHKO, CHASE HANSEN, GREG NETZEL, Seattle University — A proton consists of three valence quarks: two up quarks and one down quark. Experiments have shown that the proton also has a sea of gluons and quark-antiquark pairs. Zhang, Zhang and Ma [1] used a statistical model to calculate the probabilities of having distinct states of up and down quarks, their antiquarks, and gluons. Their model predicts a $\bar{d} - \bar{u}$ asymmetry in excellent agreement with experiment. We have extended their model to describe the strange quark sea, which is important for an understanding of the intrinsic structure of the proton sea and searches for dark matter candidates. We used RAMBO [2] to include the effects of the strange quark mass, and evolved our distributions to higher Q^2 to compare our results to the experimental results of HERMES, ATLAS, and CTEQ.

[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.

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