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Flavor asymmetry in the Nucleon Sea

Thursday, 8 June 2017 18:00 (2 hours)

SeaQuest E906 is an experiment aimed at studying the anti-quark distributions
in the nucleon and nuclei. The experiment uses a 120 GeV proton beam extracted from the Main Injector at Fermilab to collide with various targets of hydrogen, deuterium, carbon, iron and tungsten to study a variety of physics topics. It takes advantage of the Drell-Yan process to probe the nucleon sea structure. In the Drell-Yan process, a quark from one hadron annihilates with an anti-quark from another hadron, producing a virtual photon which eventually decays into a dilepton pair. The SeaQuest forward spectrometer is optimized for detecting such di-muons. Comparison of Drell-Yan cross-section ratios of liquid hydrogen and deuterium allows SeaQuest to probe the $\overline{d}(x)/\overline{u}(x)$ ratio up to a region of ~0.45 in Bjorken-x, a region which hasn't been explored yet. Preliminary analysis of FY 2015 data sets will be presented in the poster.

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