

Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

Determining the Light Antiquark Asymmetry in the Nucleon Sea with FNAL E-906/SeaQuest¹ BENJAMIN MILLER, Abilene Christian University, FERMILAB E-906/SEAQUEST COLLABORATION — SeaQuest will use the Drell-Yan process to improve our knowledge of the structure of the nucleon. This experiment will determine the ratio of anti-down to anti-up quarks to larger Bjorken- x than was attained by earlier experiments. SeaQuest's predecessor, Fermilab E-866/NuSea extracted the ratio to $x \approx .2$ with reasonable precision. SeaQuest will extend the measurements of light antiquark asymmetry to $x \approx 0.45$. SeaQuest will use the Fermilab 120 GeV/c Main Injector to collide protons with targets of liquid hydrogen, liquid deuterium and, for other measurements, solid nuclear targets. The detector under construction is a two-magnet, focusing spectrometer with four detector stations, similar to the E866/NuSea spectrometer. By comparing the Drell-Yan di-muon cross sections for both proton-proton and proton-deuterium collisions, we can extract \bar{d}/\bar{u} for the proton and better understand the properties of the sea of the nucleon.

¹This research is funded in part by the U.S. Department of Energy.

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Date submitted: 02 Aug 2010

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