

Abstract Submitted
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Using Neural Networks to Detect Di-muon Tracks for Fermilab E906/SeaQuest¹ PAUL CARSTENS, Abilene Christian University, SEAQUEST COLLABORATION — The experiment E906/SeaQuest aims to gain further insight into the nucleon quark sea by gathering information about the anti-down/anti-up ratio produced by Drell-Yan events. SeaQuest collides a 120 GeV proton beam with one of several targets, liquid hydrogen, liquid deuterium, carbon, tungsten, iron, and two calibration targets, empty target and no target. The di-muon pairs created by the Drell-Yan events are monitored by four detector stations. Each has a set of hodoscopes, stations one, two, and three have wire chambers, and station four, which has a lower resolution, has a set of prop tubes. In order to separate the useful Drell-Yan events from dump events and background noise we employ the use of the hodoscopes to trigger potentially useful events to keep. This neural network would learn to properly discern Drell-Yan events by associating hodoscope readings from real data with results from existing trigger systems. By doing this, we could efficiently replicate existing results while alleviating the processing needed.

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