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Simulation Studies of Backgrounds for the Fermilab SeaQuest Experiment (E906)[1] PUYANG MA, CHRISTINE AIDALA, University of Michigan, E906/SEAQUEST COLLABORATION — The Fermilab SeaQuest experiment uses a 120 GeV proton beam on targets of liquid hydrogen, liquid deuterium, and solid nuclear targets of carbon, iron, and tungsten. The experiment measures the Drell-Yan process of quark-antiquark annihilation to produce muon pairs, with the main physics goal of studying the sea quark distributions in the nucleon and nuclei. Since quark and antiquark annihilation to dimuons is a rare process, there are significant backgrounds due to muons from the decay of pions produced in the target and beam dump. These backgrounds are being studied via simulated proton interactions in a GEANT implementation of the experimental setup. Full simulation of these backgrounds has proved to be difficult because of the extensive computer time needed. Studies to speed up the simulation process will be presented.

[1]NSF

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