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GPU Online Reconstruction for J/Psi TSSA Study at SpinQuest

CATHERINE AYUSO, Mississippi State University/Fermilab, E1039/SPINQUEST EXPERIMENT COLLABORATION — h *–abstract–*\pardThe E1039/SpinQuest experiment is a transversely polarized fixed target experiment at Fermi National Accelerator Laboratory aiming to explore the sea quark and gluon Sivers functions via the measurement of the transverse single spin asymmetry (TSSA) for a number of physics processes including J/Psi, Psi' and Drell-Yan production. The experiment employs a 120-GeV extracted proton beam colliding with transversely-polarized NH3 and ND3 cryogenic targets and its spectrometer is optimized to detect the oppositely-charged muon pair output of these processes. In pursuit of these asymmetry measurements, we are seeking to develop an advanced GPU-based multi-threaded framework that allows an efficient parallelization of the online data processing, which will facilitate prompt online reconstruction, optimization, and robust data quality monitoring. In this talk, I will report the status of our GPU online reconstruction project along with results estimating the anticipated accuracy of the TSSA measurement via J/Psi production from early SpinQuest production data.\pard-/abstract-\

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