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Novel Method of Storing and Reconstructing Events at Fermilab E-906/SeaQuest Using a MySQL Database TYLER HAGUE, Abilene Christian University, FERMILAB E-906/SEAQUEST COLLABORATION — Fermilab E-906/SeaQuest is a fixed target experiment at Fermi National Accelerator Laboratory. We are investigating the antiquark asymmetry in the nucleon sea. By examining the ratio of the Drell- Yan cross sections of proton-proton and proton-deuterium collisions we can determine the asymmetry ratio. An essential feature in the development of the analysis software is to update the event reconstruction to modern software tools. We are doing this in a unique way by doing a majority of the calculations within an SQL database. Using a MySQL database allows us to take advantage of off-the-shelf software without sacrificing ROOT compatibility and avoid network bottlenecks with server-side data selection. Using our raw data we create stubs, or partial tracks, at each station which are pieced together to create full tracks. Our reconstruction process uses dynamically created SQL statements to analyze the data. These SQL statements create tables that contain the final reconstructed tracks as well as intermediate values. This poster will explain the reconstruction process and how it is being implemented.

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