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Using Geometry Description Markup Language to store the geometry of FNAL E-906 TYLER HAGUE, Abilene Christian University — The primary goal of FNAL E-906 is to investigate the ratio of d(bar)/u(bar) in the nucleon sea. To do this, the Drell-Yan cross section ratio will be measured in proton-proton and proton-deuterium collisions. FNAL E-906 is utilizing Geometry Description Markup Language (GDML) to describe the geometry of the spectrometer. GDML is capable of describing the spectrometer in great detail and is fully functional with GEANT4 and ROOT. By using this we will have a common geometry input for all of our software codes including two Monte Carlo simulations, primary data analysis code, and a ROOT-based event display. The use of such a language creates the need for an easy way to read it and extract data, as well as to update the geometry when changes are made. A tool has been developed to convert a GDML file into an experiment-specific, easy to read ASCII file. Another tool is in development to create a simple interface to update a GDML file without knowledge of the language. These tools use ROOT's geometry tree to traverse the volumes described in GDML. This poster will describe the advantages of using GDML and its implementation.

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