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Simulation of the CLAS12 dual hydrogen-deuterium target CHRISTOPHER MUSALO, GERARD GILFOYLE, University of Richmond — The primary mission of Jefferson Lab (Jlab) is to reveal the quark and gluon structure of nucleons and nuclei and to deepen our understanding of matter and quark confinement. This mission will be done using a 12-GeV electron beam incident on nuclear targets. One approved experiment E12-07-104 will measure the elastic scattering of electrons from deuterium to extract the neutron magnetic form factor  $(G_M^n)$  using the CLAS12 detector. Calibrations will be done with a dual, co-linear target consisting of liquid hydrogen $(LH_2)$  and liquid deuterium  $(LD_2)$  cells. The hydrogen target is used for calibration, and the deuterium one provides the data for the physics analysis. A CLAS12 simulation has been developed called gemc, where Geant4 is used to simulate the components of CLAS12. We have added the dual  $LH_2 - LD_2$  target to the gemc simulation. The targets parameters are stored in a mysql database and then read into the simulation at run time. Simulated particles start at a random point in the target volume and are propagated through the CLAS12 detector. We will present initial results showing the effect of target size and position on the distribution of hits in CLAS12.

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