

# Simulated Neutron Detection Efficiency

1. Simulate  ${}^2\text{H}(e, e'n)p$  in quasielastic (QE) kinematics to study neutron detection efficiency (NDE) in preparation for Experiment E12-07-104 ( $G_M^n$  measurement).
2. Status:
  - (a) Simulated NDE extracted using *gemc* simulated events and modified version of C++ Socrat. See CLAS-NOTE 2011-015.
  - (b) MOU with Richmond in hand.
3. For June software review -
  - (a) Test SOT  $\rightarrow$  C++ communication (Gilfoyle/Carbonneau, mid April).
  - (b) Implement new C++ container to read synchronized data from SOT and match with FTOF hits (Gavalian, end of March).
  - (c) Use existing algorithm from CN 2011-015 to extract NDE (Gilfoyle/Carbonneau, late May).
4. Beyond June review: explore a similar study using the electromagnetic calorimeters.

