

Preliminary data analysis. Comparison of simulation and experiment.

Simulated bremsstrahlung spectrum of photons:

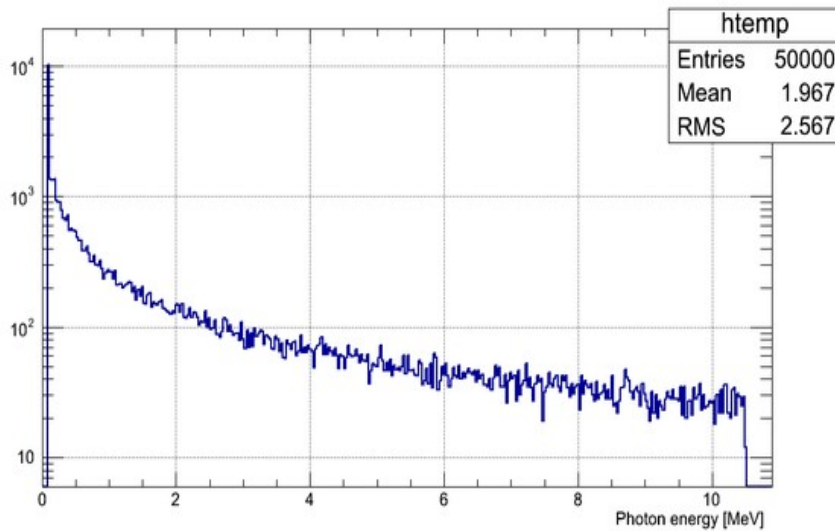


Fig.1. Sampled photon bremsstrahlung spectrum.

Simulated energy spectrum of neutrons created in elementary process of deuterium photo disintegration without the influence of the target material on the spectrum.

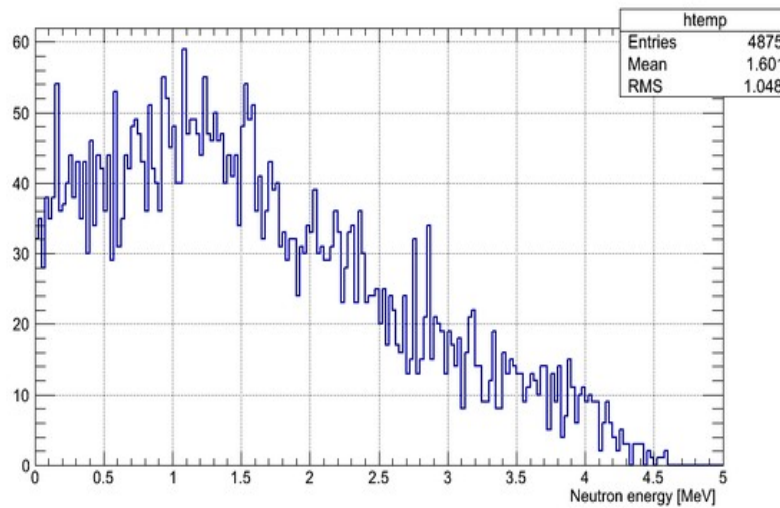


Fig.2. Simulation of the neutron energy spectrum from elementary process of deuterium photo disintegration process.

Experimentally measured neutron TOF by Det M placed right below the target (left PMT), run 4111, bremsstrahlung endpoint energy was 10.5 MeV.

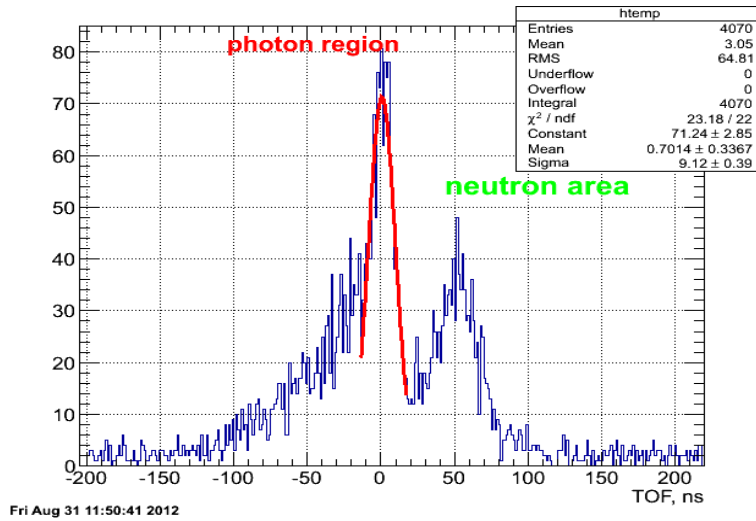


Fig. 3. Experimentally measured neutron TOF. Photon peak $\sigma = 9.12$ ns.

Experimental data on the neutron energy spectrum detected by Det M placed right below the target (left PMT), run# 4111. Neutron flight pass was corrected for the angular distribution over the surface of the detector. Time region in neutron TOF (see Fig. 3) was set to be 35 – 150 ns.

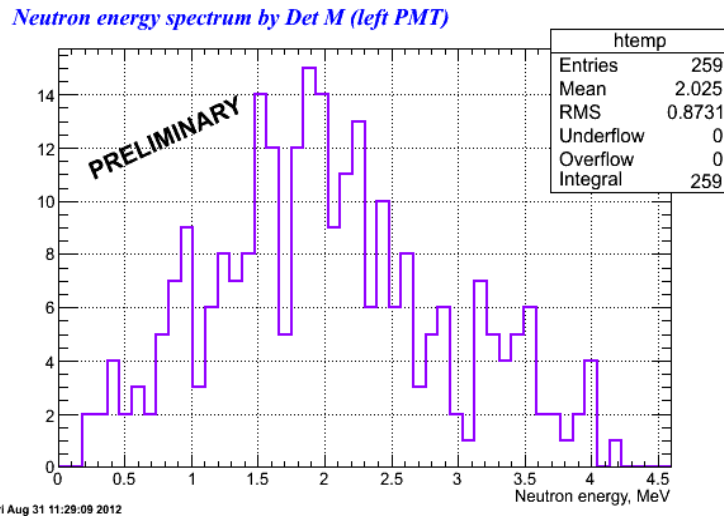


Fig. 4. Experimental neutron energy spectrum from deuterium photo disintegration process. Time cut 35 – 150 ns.

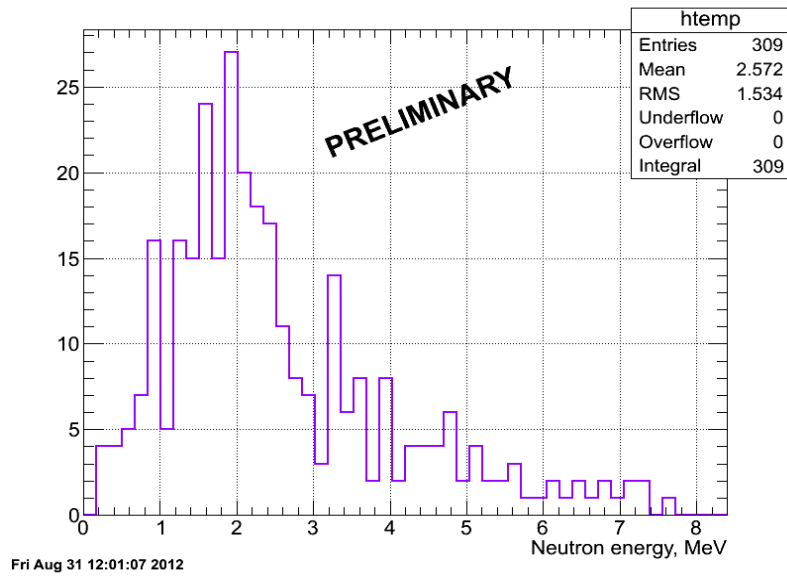


Fig. 5. Experimental neutron energy spectrum from deuterium photo disintegration process. Time cut 25 – 150 ns.

It can be seen in Fig. 4 and Fig. 5 the effect of target material influence on the low energy neutron absorption in the D2O target.

Additional simulation of the target influence on the neutron absorption is needed.