The result of the simulation of the 2n opening angle in the case of isotropic neutron source and for the case when only geometrical parameters used in the detection of neutrons is presented below.

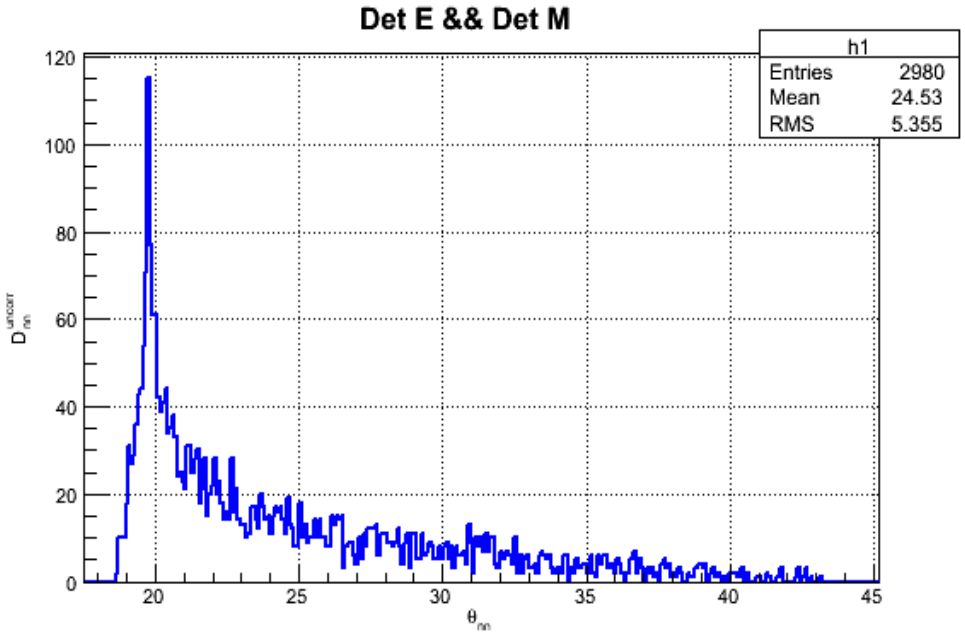

Fig 1 D_{nn}^{uncorr} for the neutron detectors E and M in the case of isotropic neutron source. Simulation.

The plot shown in Fig. 1 was obtained for one pair of the neutron detectors E and M the number of initial pair of neutrons sampled was 5E+7 (1E+8 single neutrons sampled).

The result of experimental data processing for the pair of neutron detectors E and M and for the case when the opening angle for two neutrons was calculated using neutrons from different pulses detected by Det E and Det M is presented in Fig. 2.

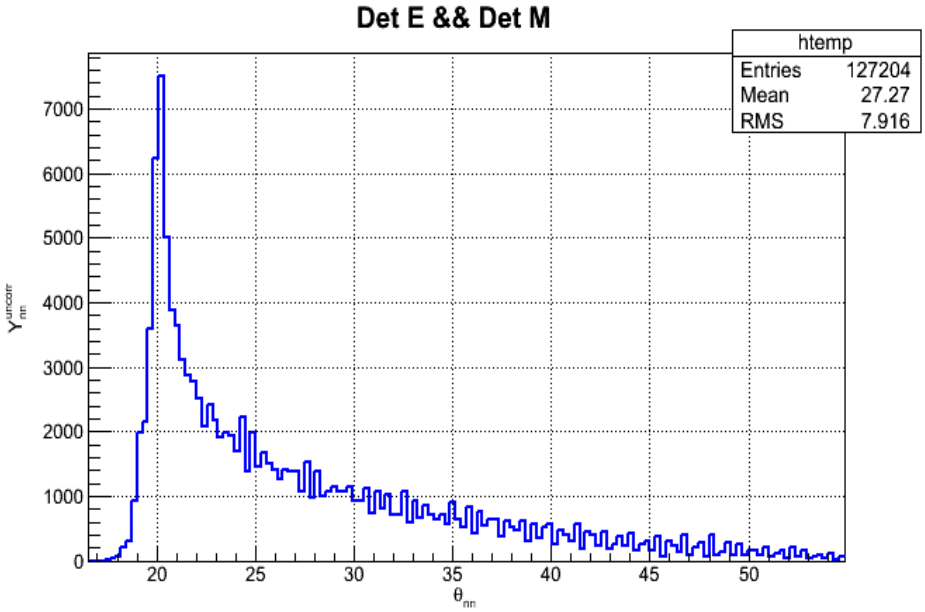

Fig. 2 Y_{nn}^{uncorr} for the neutron detectors E and M in the case of opening angle calculated for two neutron from different pulses. Data.

The following algorithm was used to calculate the opening angle. The opening angle was calculated for the data from single run 4172. The opening angle was first computed for neutron from the first pulse of Det E and neutrons from the rest of the pulses from Det M where thre was no real coincidence. Then the data on the opening angle was added for the data formed by the neutron from the second pulse of Det E and the neutrons from all other pulses from Det M excluding the pulse where there was real coincidence and so on:

$$\theta\left(n_i^{DetE}, n_j^{DetM}\right), i \neq j$$

Now we need to calculate the efficiency based on these two data samples $\epsilon = \frac{Y_{nn}^{uncorr}(\theta_{nn})}{D_{nn}^{uncorr}(\theta_{nn})}$. For doing that there should appropriate normalization done. The number of events in D_{nn} plot was 2980 and the number of events in the experimental data for Y_{nn} was 127204. The question is how to define the appropriate normalization? Should we just match the bin width for the two histograms and then divide each bin content by the integral number of events in the corresponding histogram?

Also is the statistics good enough for the angular distribution for the detectors E and M obtained from just one run or we should do this procedure for all the runs?

Is the algorithm of the selection of the events to extract the opening angle in the case of experimental data satisfactory?