

EXP1803 - Developing #216

Event selection for run14

07/19/2018 05:15 PM - Ivan Muzalevsky

Status:	Открыта	Start date:	07/19/2018
Priority:	Высокий	Due date:	
Assignee:	Ivan Muzalevsky	% Done:	0%
Category:	Software	Estimated time:	0.00 hour
Target version:			

Description

Create the macro for converting data from run14 into calibrated (MeV and ns) with using several event selections:

1) dE-ToF: F5-F3 and F3-F5
2) times F3 and F5 in the same event should be roughly the same (about 20 channels max difference)
3)SQX_R-[F5] in reasonable borders (same for SQY_R-[F5])
4)Cal_R-[F5] in reasonable borders
5) threshold for SQX_R,SQY_L (about 2MeV as far as minimum Edep of 3H in 1mm Si det is about 2.7 MeV)
6) get rid of Cal cross talks by selecting amplitudes with max value
7) select events with multiplicity=1 in MWPC1,MWPC2, SQX_R,SQY_R, Cal_R

7)create graphical cuts for pictures:

- SQX_R:tSQX_R-tF5
- SQY_R:tSQY_R-tF5
- Csl_R:tCsl_R-tF5

RESULTS

History

#1 - 07/20/2018 12:43 AM - Bogumił Zalewski

Please take into consideration, that one can get correct tracking for higher multiplicities in MWPC. Maybe change multilipcity for cluster multiplicity for clarification?

#2 - 07/20/2018 11:55 AM - Ivan Muzalevsky

- Description updated

#3 - 07/20/2018 03:47 PM - Ivan Muzalevsky

raw data: /analysis_nas/exp201804/rootfiles/h5_14_*
Data from MWPC,ToF, right telescope where processed

Several cuts where usedSeveral cuts for events where used:

TOF detector

time difference between diffrent modules F3, F5 less than 20 channels. (F3[i]-F3[j]) ToF is in borders between 100 and 200 ns

MWPC

multiplicity in X1,Y1,X2,Y2 = 1

SQ_R

multiplicity in X and Y strips=1. Multiplicity = number of signals with amplitude higher than 1.5 MeV in 1 event.
For all strips time selection where used:

For X strips [0-15] (LED-CFD)

□□

For X strips[16-31](CFD-CFD)

tSQX_R-tF5%2830,110%29.png

According to [page 215](#) only signals with maximum amplitude in one event where taken into account in the Csl detector. Also similar time selection where used for such signals:

On this picture u can see time selection (red) for crystals 4-7.

4-7timeCuts.png

After such selection de-E identification plots where obtained.

X axis: signals in chosen Csl, Y axis: signals in all SQX strips.

Selection: Amp in SQX>1 MeV, Amp in Csl>300 channels (any number!=0 will be the same)
trigger=3 (from left telescope)

4-7.png

We can find 3 bananas for H, banana for 4He, area for 6He

#4 - 07/23/2018 04:52 PM - Ivan Muzalevsky

- Description updated

#5 - 08/20/2018 02:33 AM - Ivan Muzalevsky

- File drawCuts.C added

- File fillChain.C added

I tried to make good selection for H5_14. With this selection I obtained 0 coincidences of signals in left telescope with tritium detection in right one.
Theoretical prediction was so that I should find about 30 events of 3He-3H coincidences in the case if we have CD3 target.

Files

drawCuts.C	4.57 KB	08/20/2018	Ivan Muzalevsky
fillChain.C	16.5 KB	08/20/2018	Ivan Muzalevsky