Production of radioactive ion beams and light exotic nuclei study at ACCULINNA2 separator

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AIM OF OUR PROJECT

1

Getting familiar with principal of operation of ACCULINNA-1 and ACCULINNA-2 separators.

2

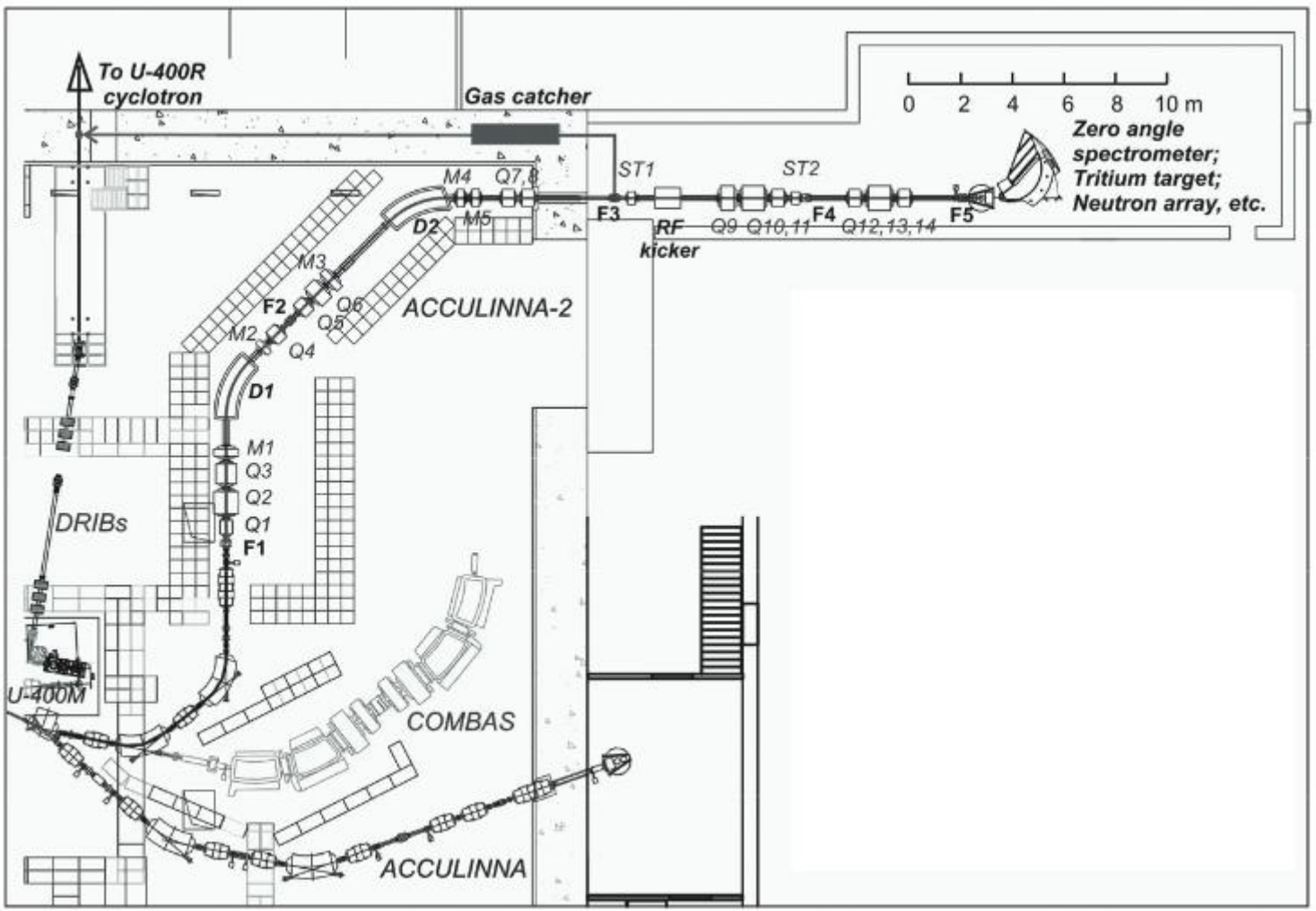
Analysis of data from the first experimental measurement at the ACCULINNA-2 separator.

3

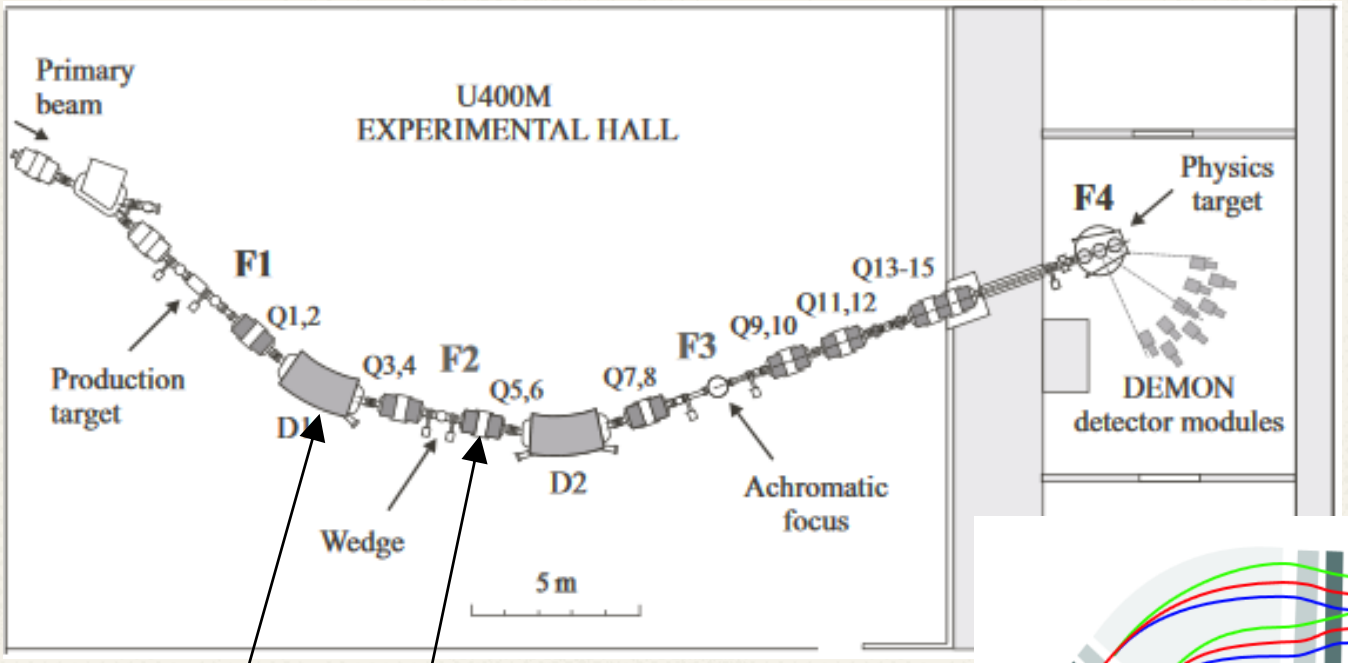
Identification of the reaction products at experimental spectra, performing simulations in the LISE++ program.

FLNR

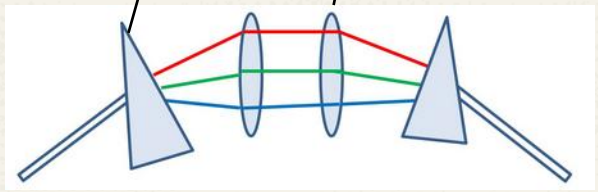
FLNR


To U-400R cyclotron
Gas catcher
0 2 4 6 8 10 m
Zero angle spectrometer; Tritium target; Neutron array, etc.
ST1
ST2
M4
Q7,8
M5
D2
F3
RF kicker
Q9 Q10,11
F4
Q12,13,14
F5
M3
F2
Q6
Q5
M2
Q4
ACCULINNA-2
D1
M1
Q3
Q2
Q1
F1
DRIBs
U-400M
COMBAS
ACCULINNA

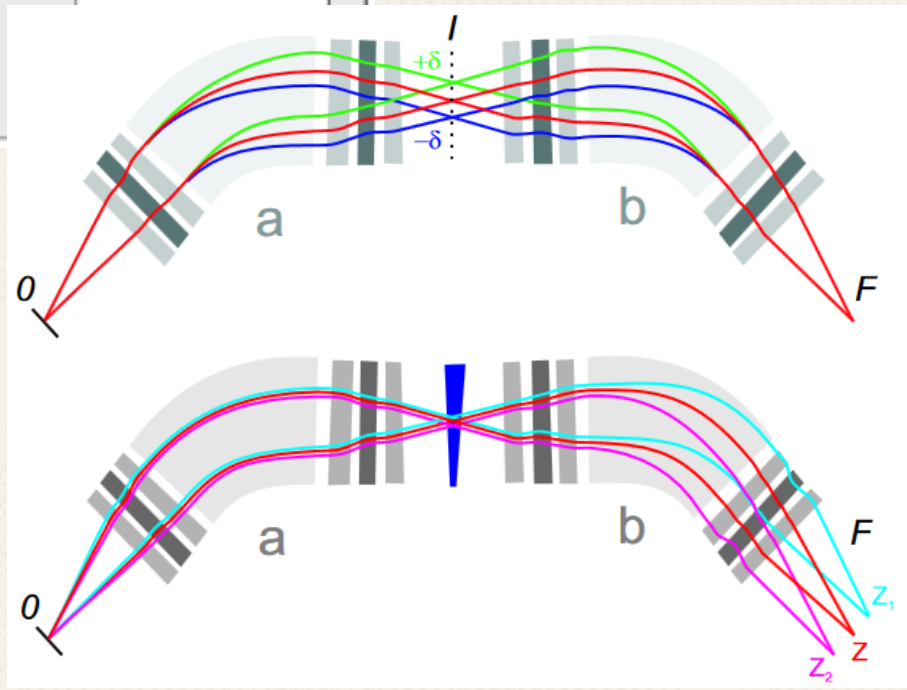
Fragment separator ACCULINNA-1

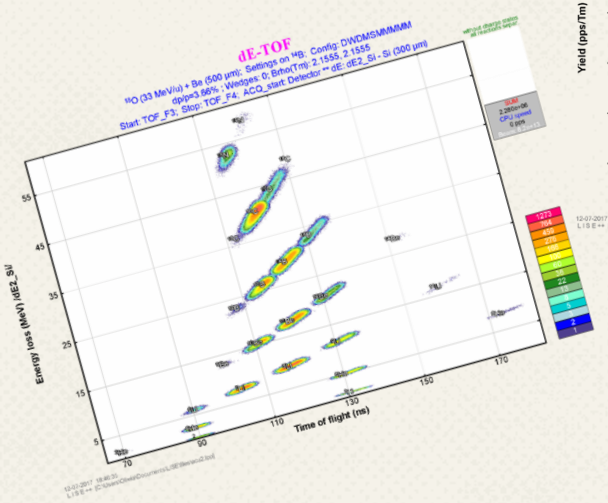


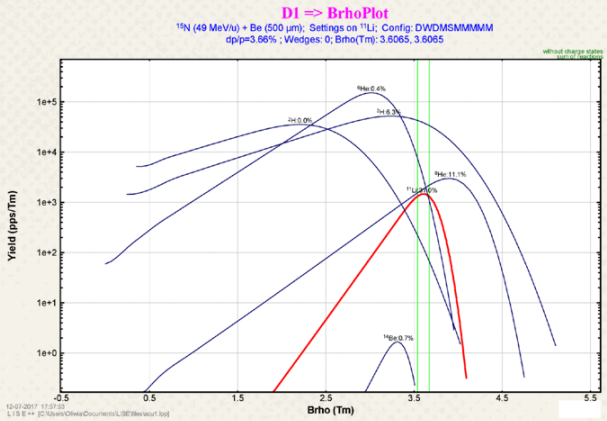
Quadrupole= lens

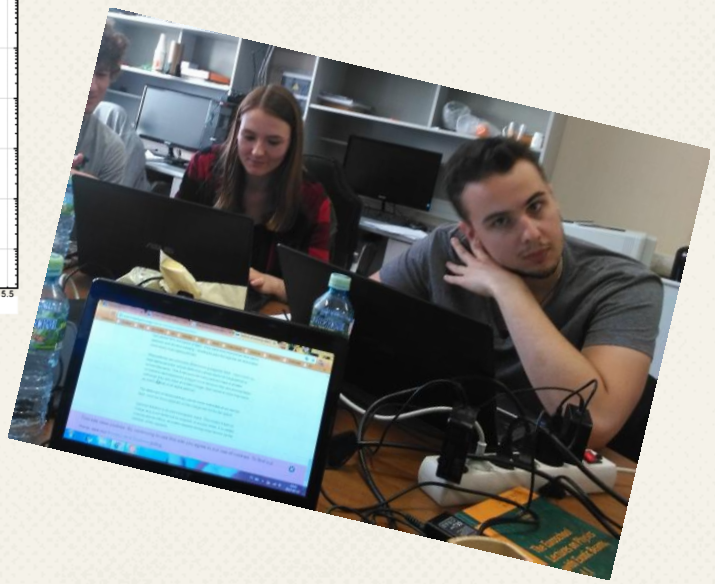


Dipole = prism



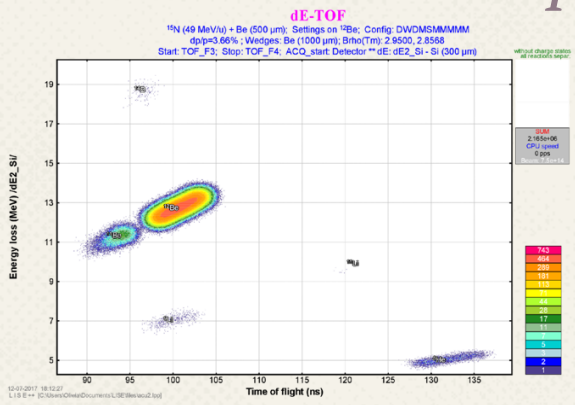


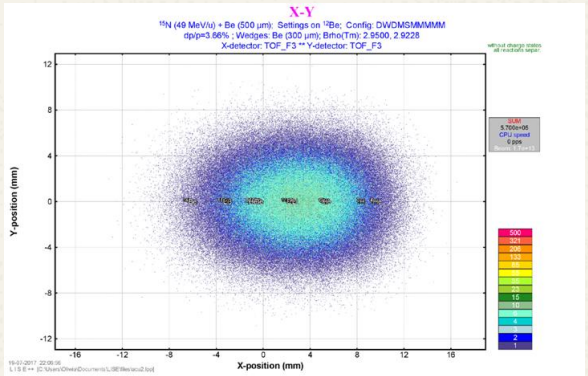


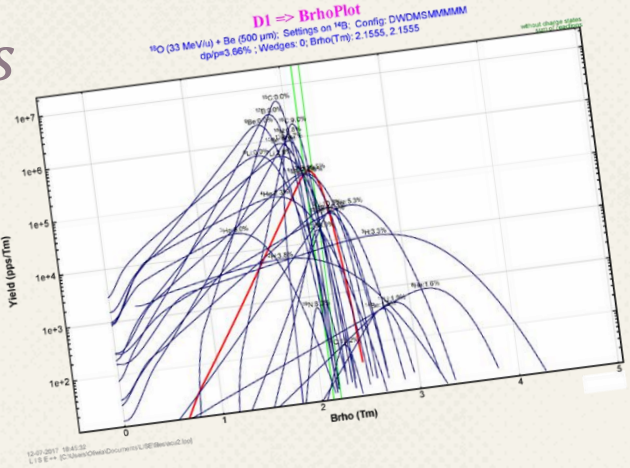


• Simulations in LISE++

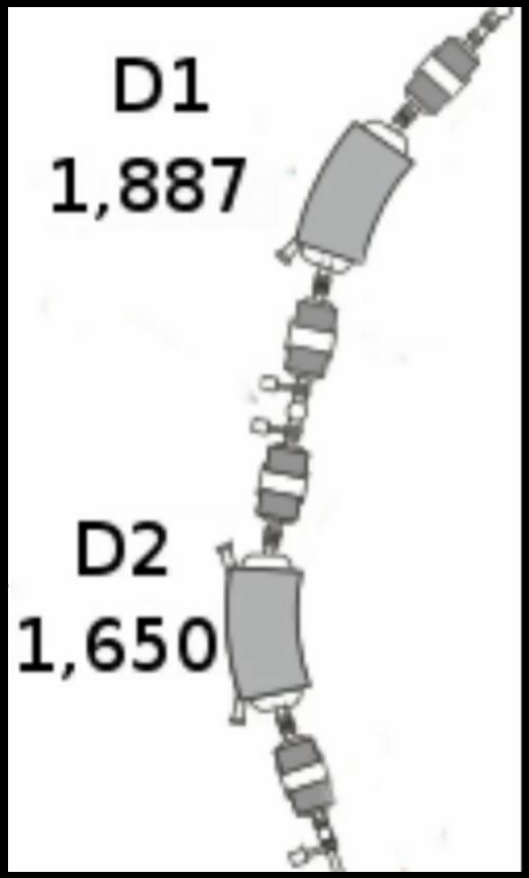
For the experiment settings

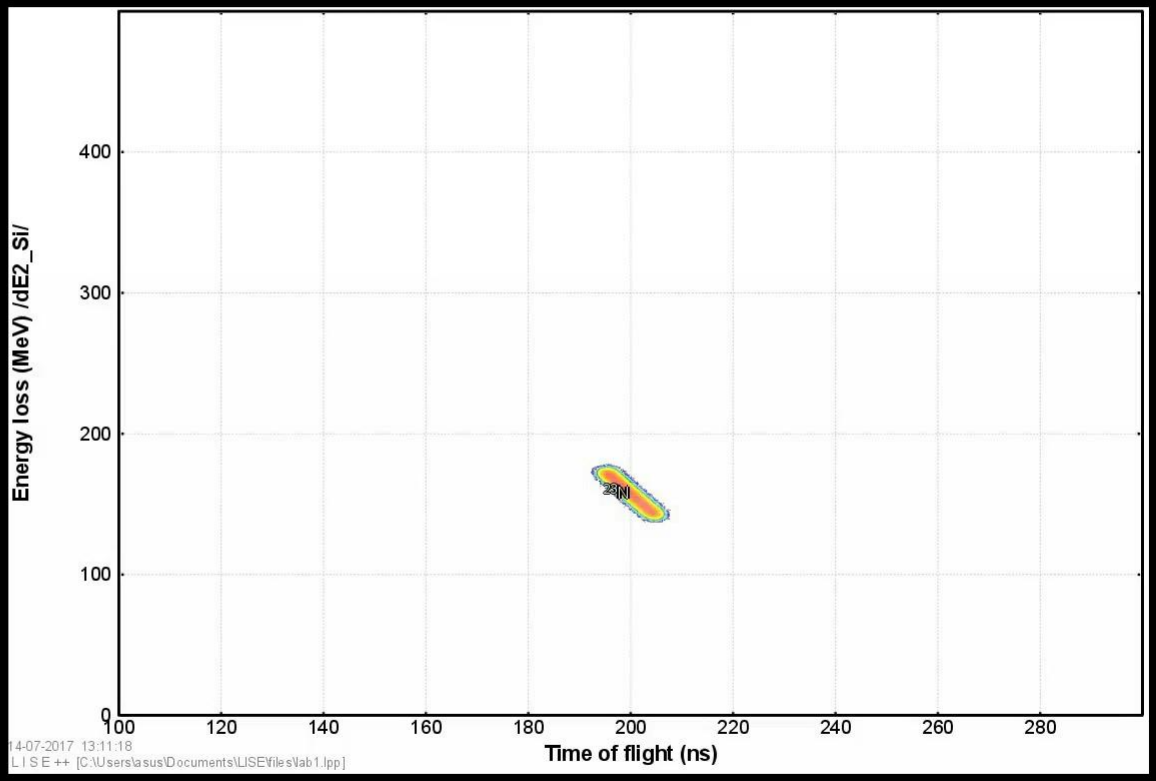






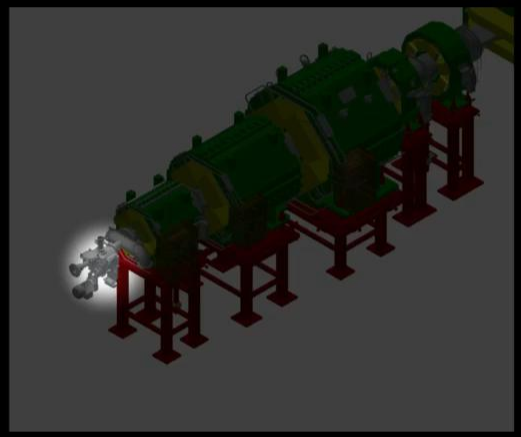
Changing magnetic field

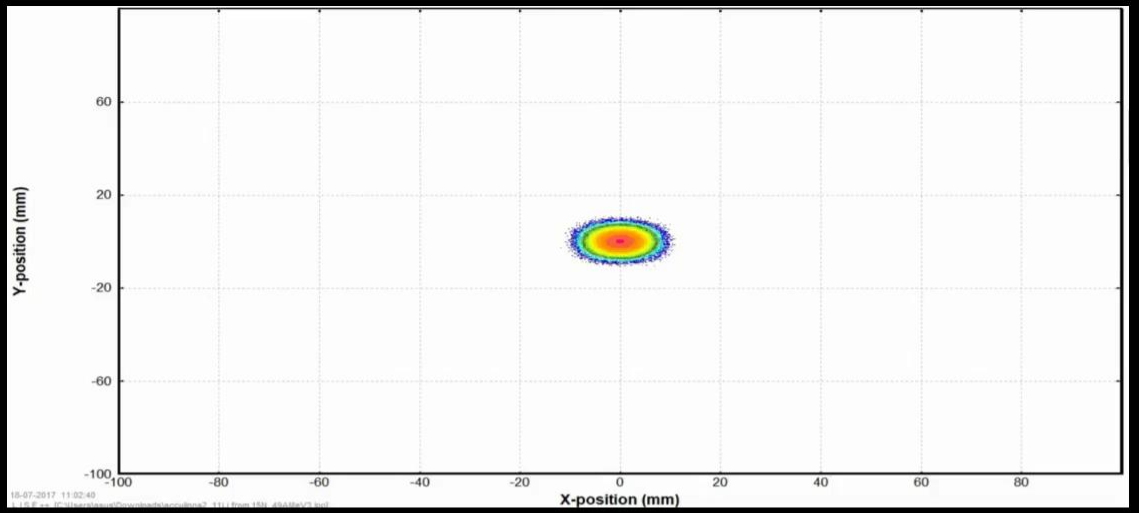


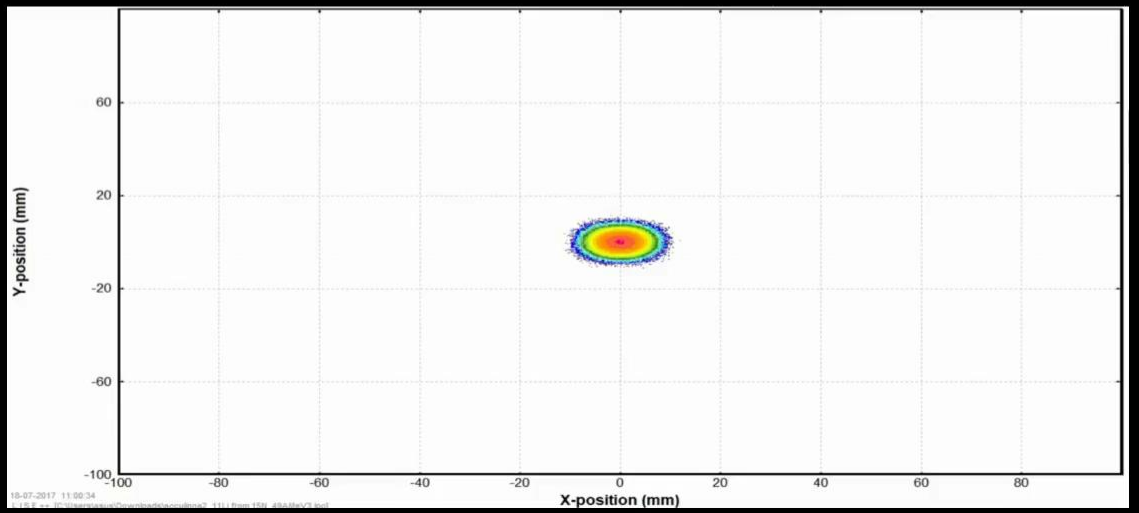


ACCULINNA 2

ACCULINA-2 beam track







target

projectile

^{15}N

products

^{11}Li ^{12}Be ^{8}He

^{3}H

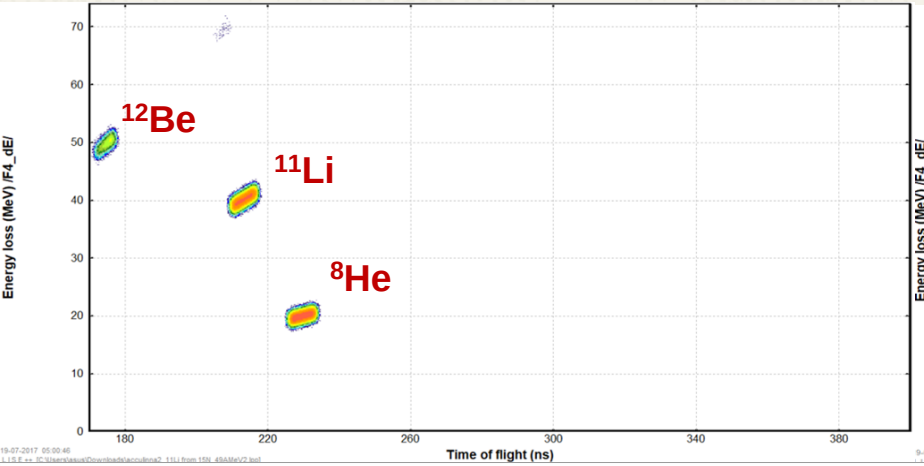
^{9}Li

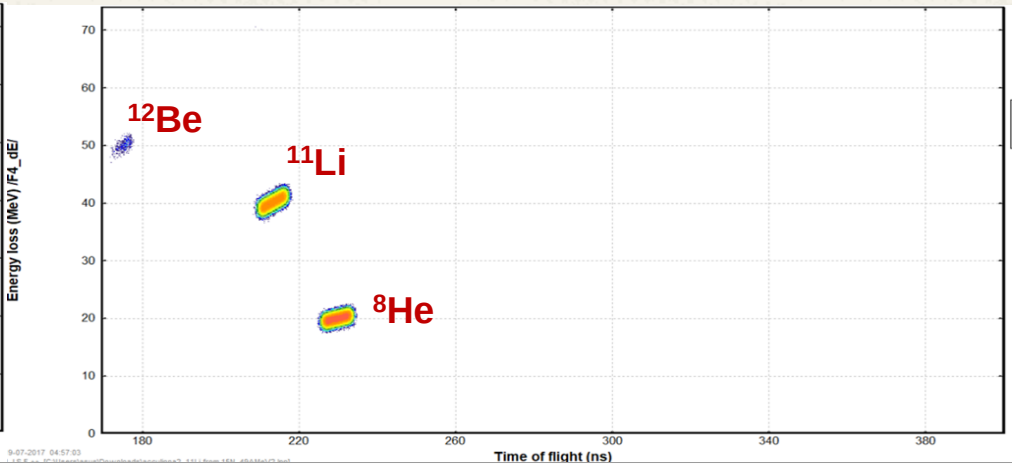
^{6}He

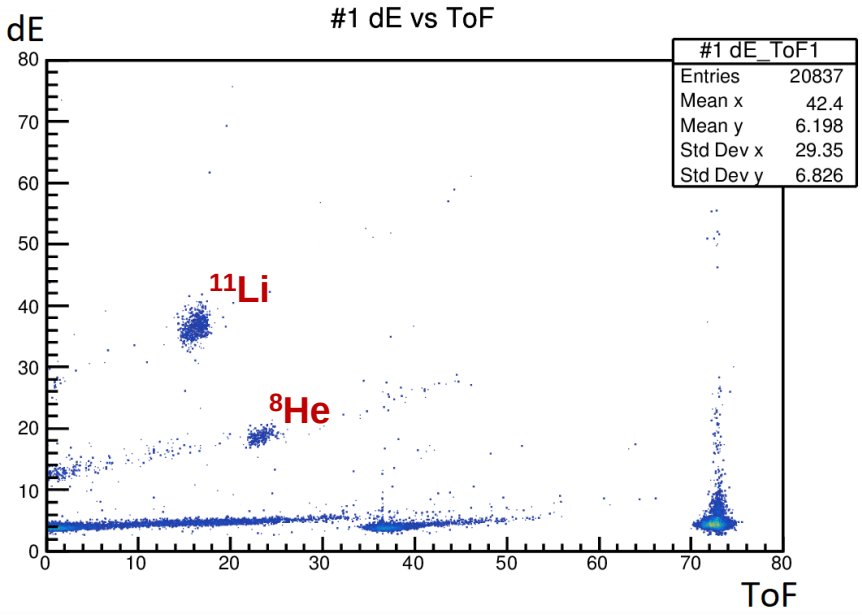
First experimental ACCULINNA-2 data

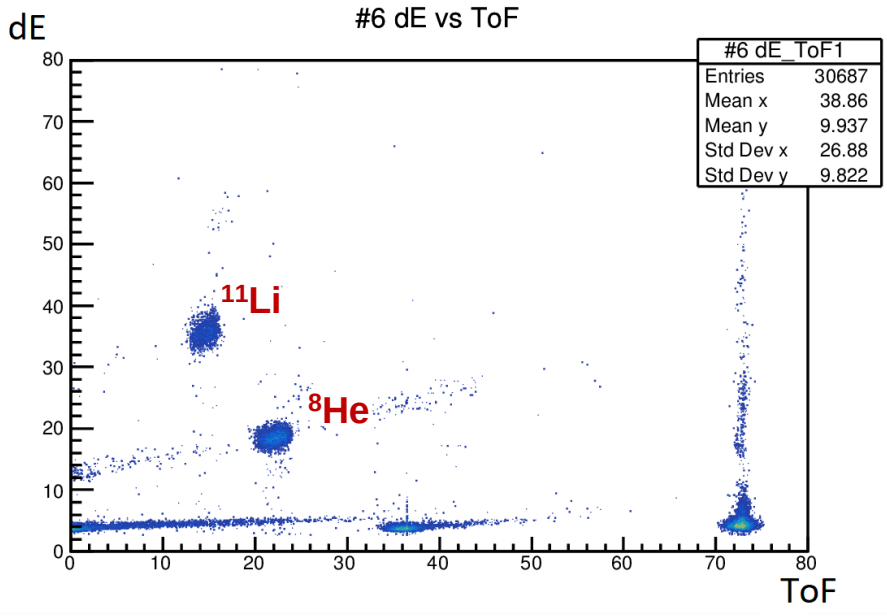
From march 2017

LISE++ vs EXPERIMENT



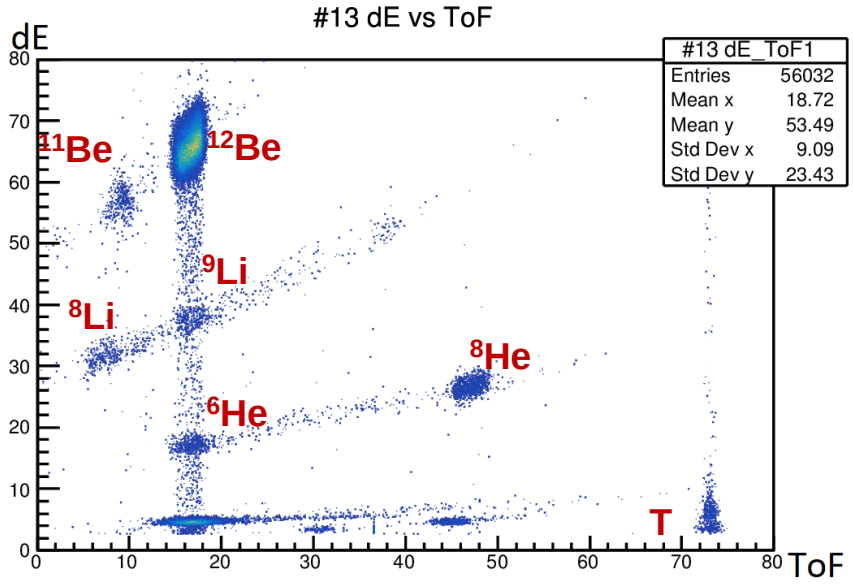


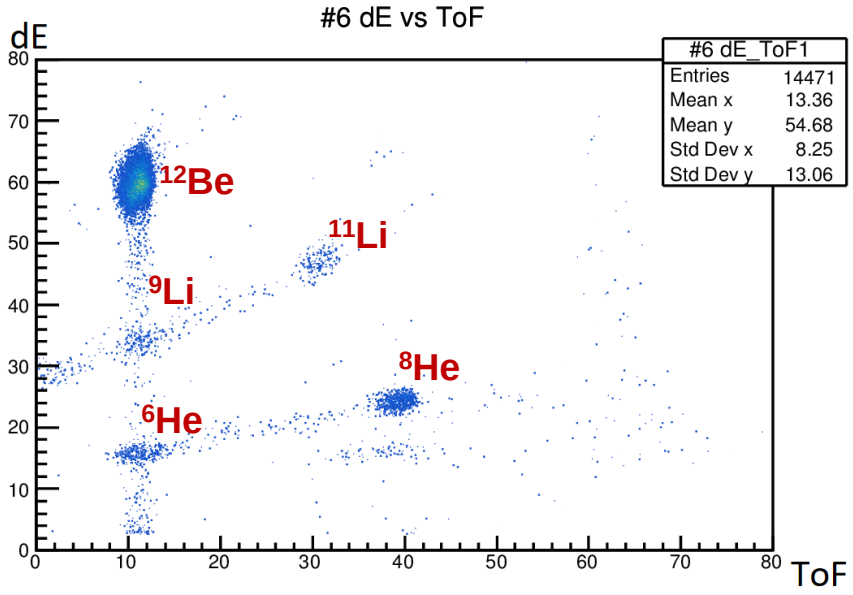


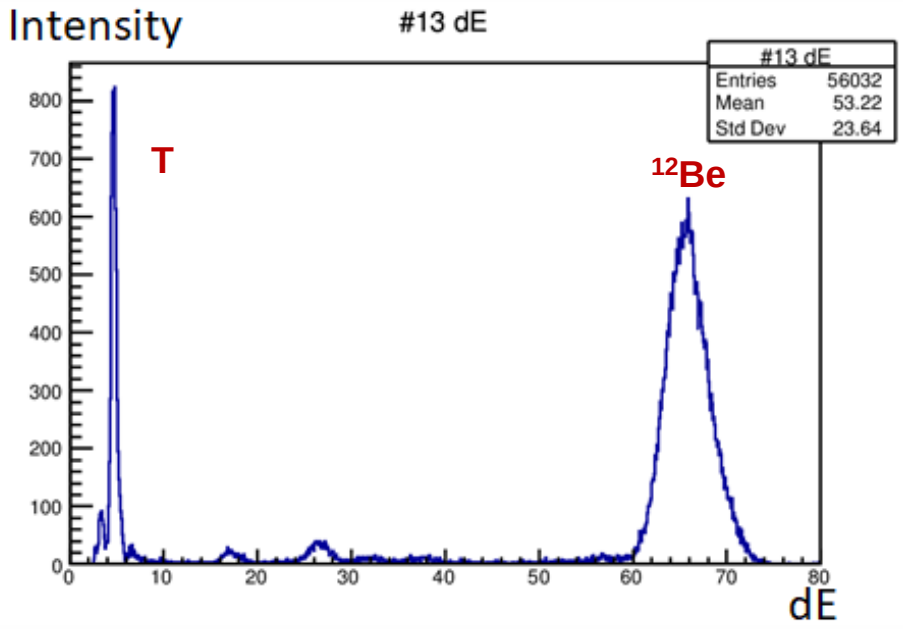


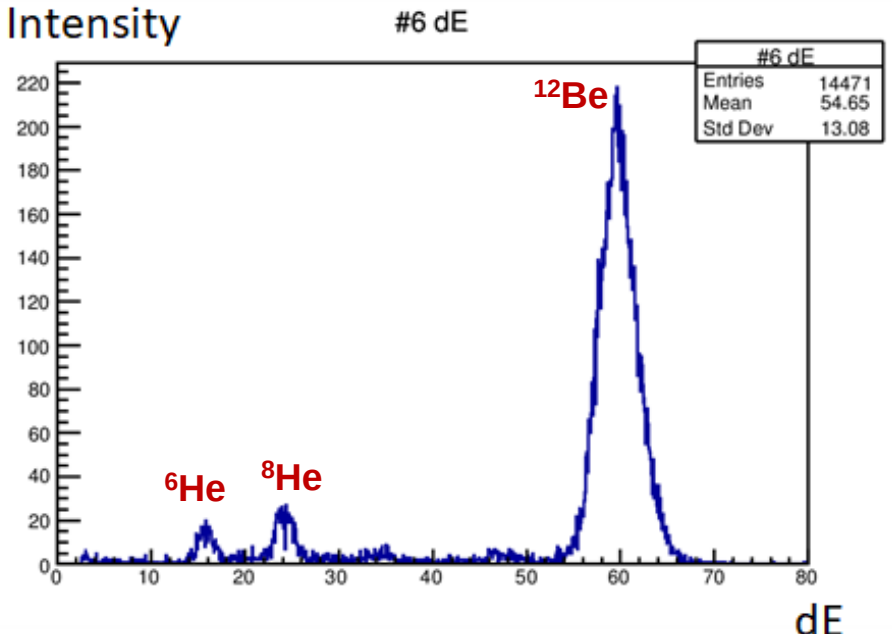
^{12}Be

IDENTIFICATION – ^{12}Be

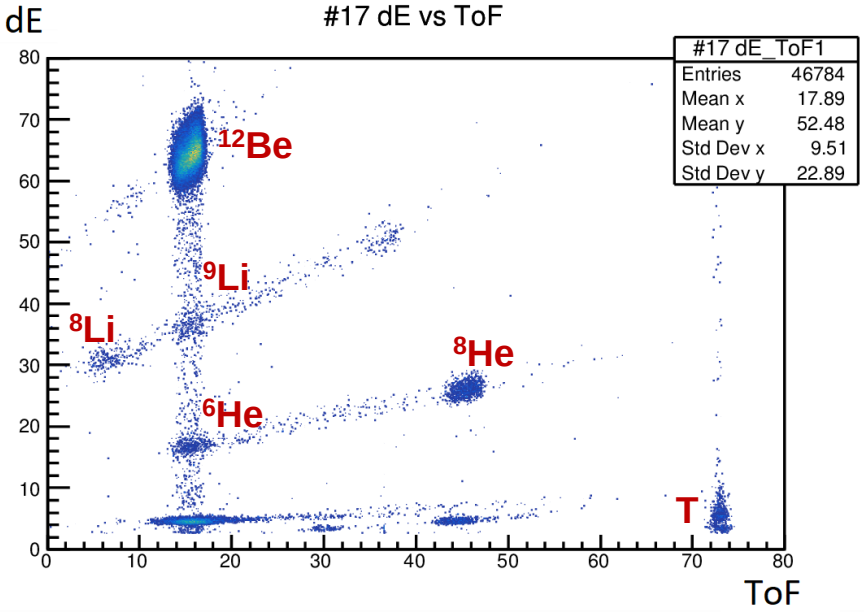


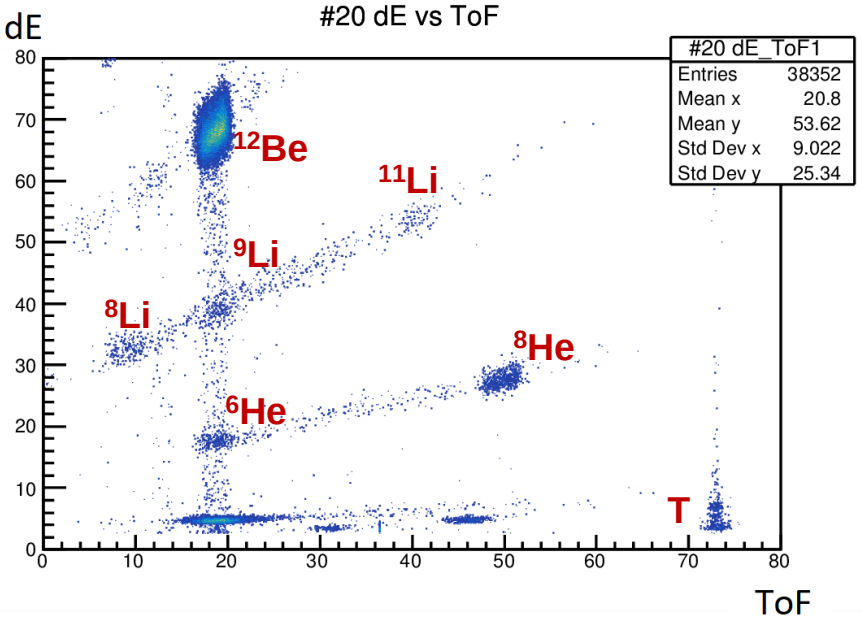


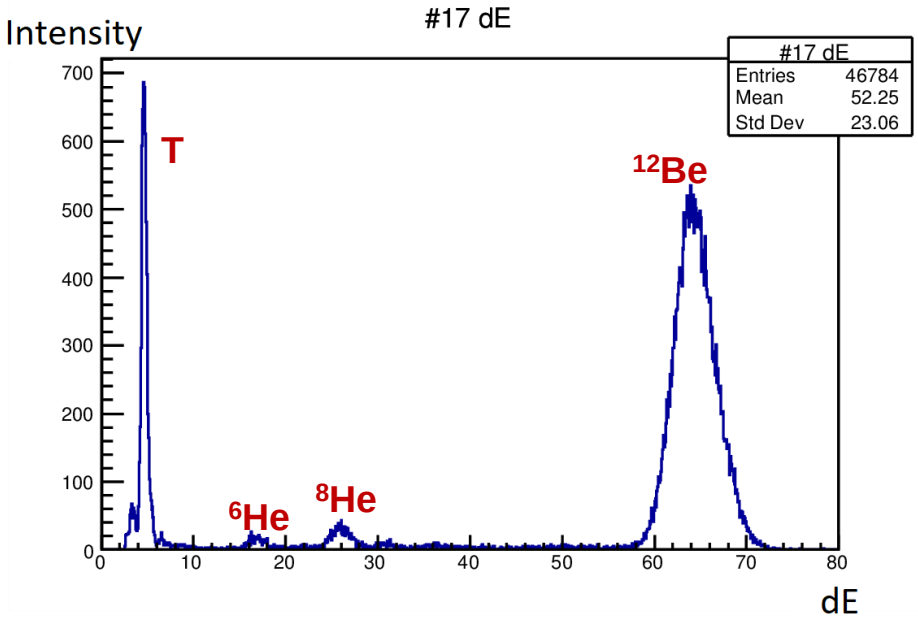


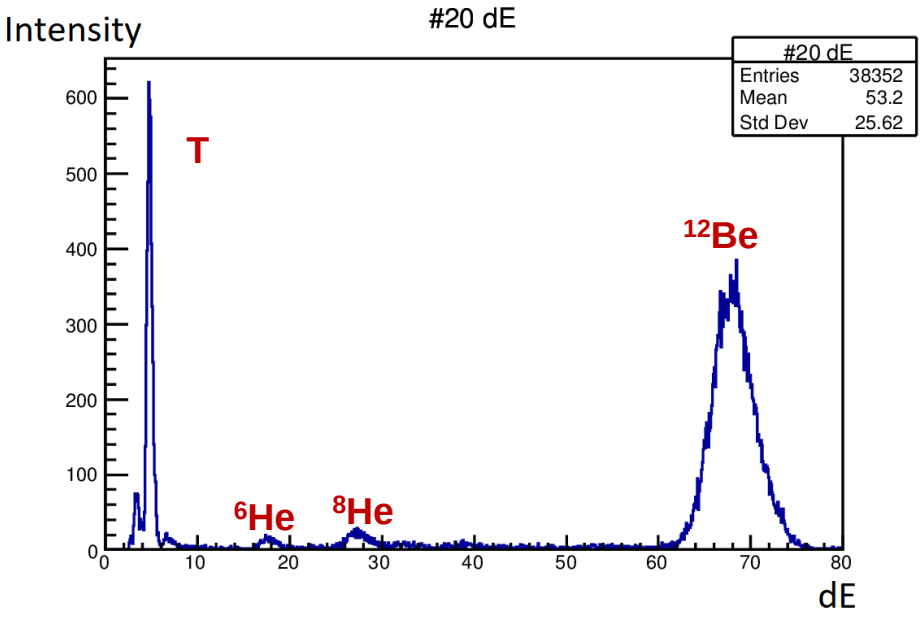


IDENTIFICATION – ^{12}Be



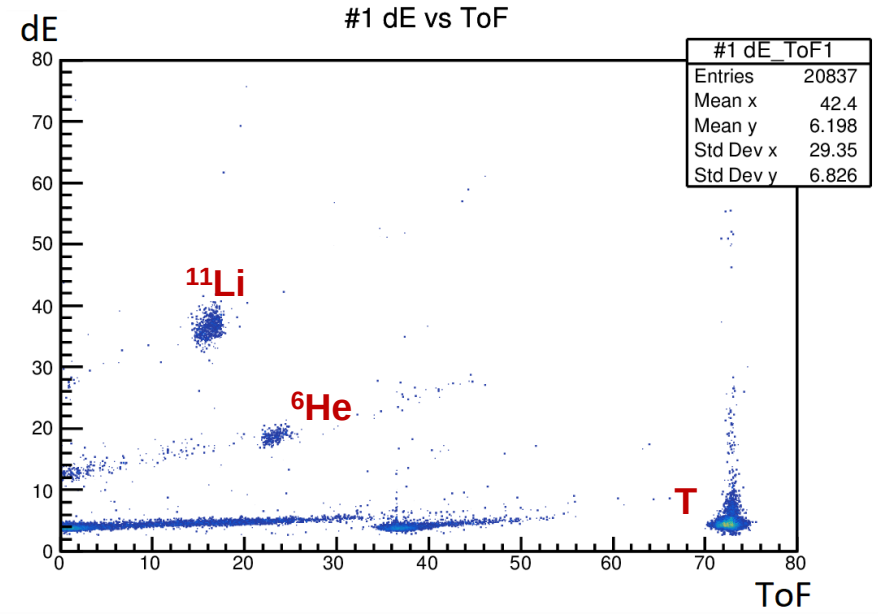


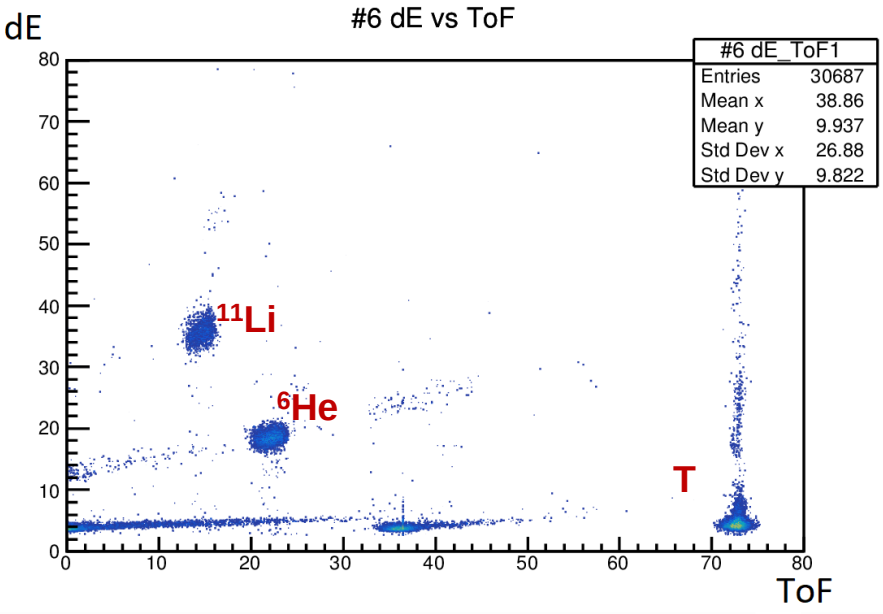


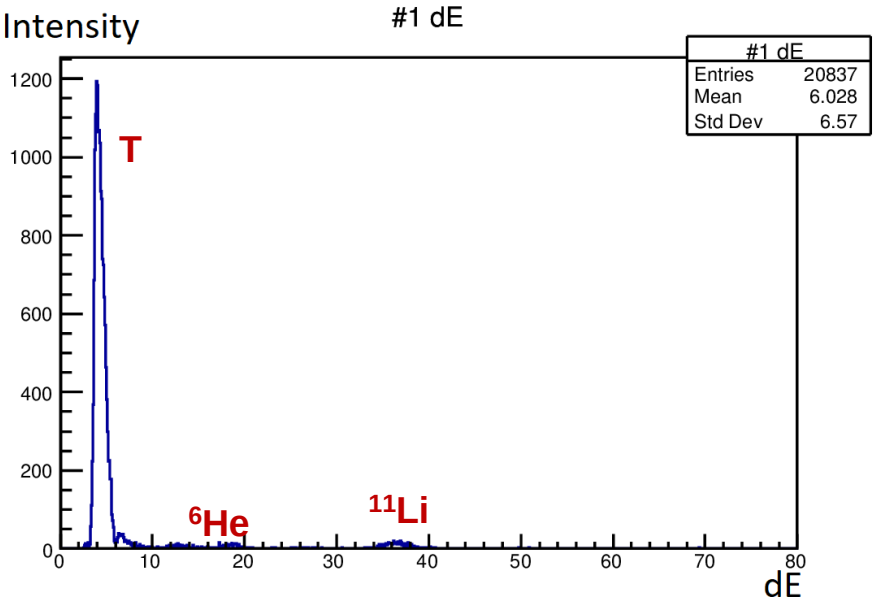


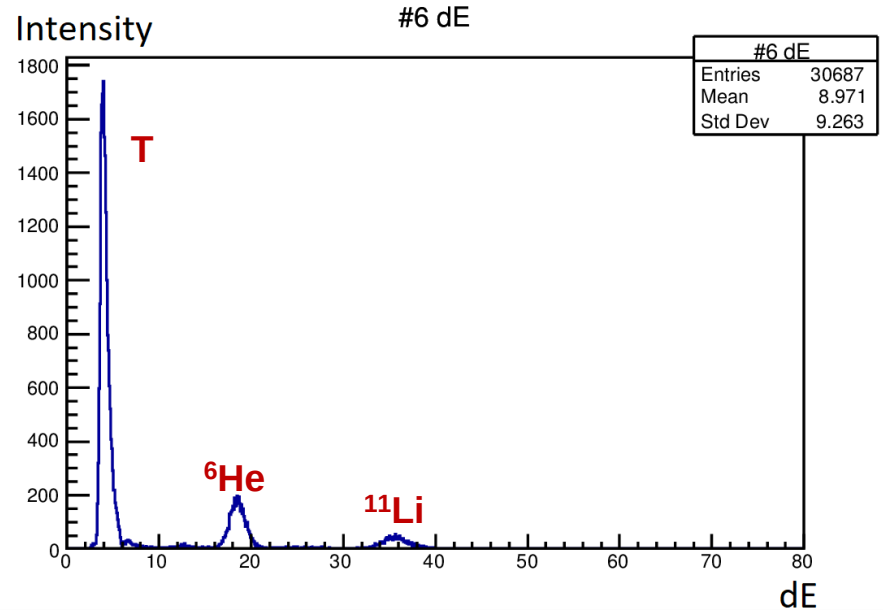
^{11}Li

IDENTIFICATION – ^{11}Li

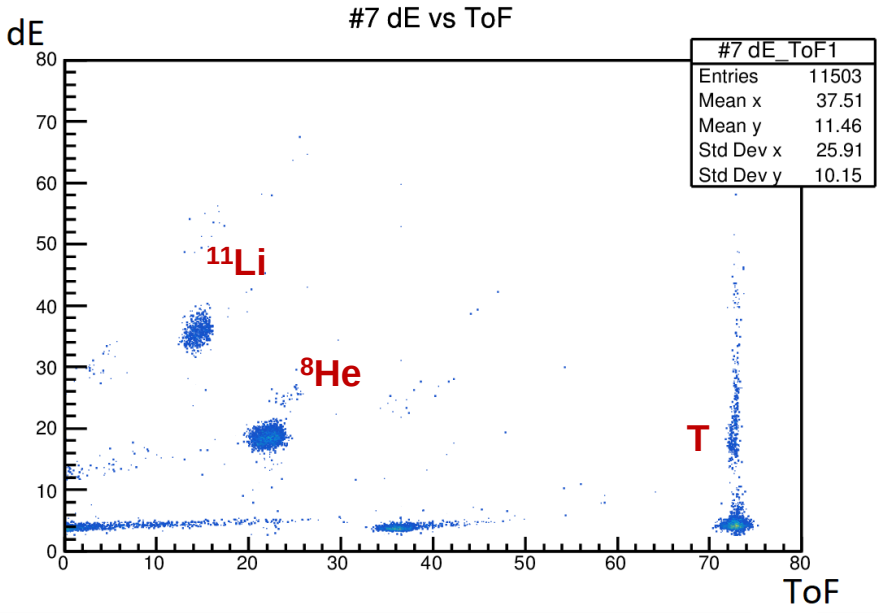


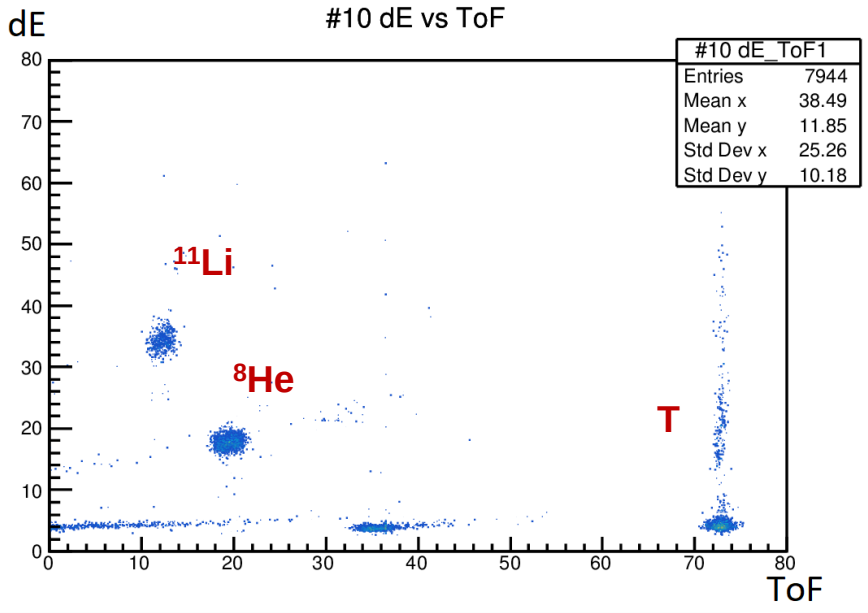


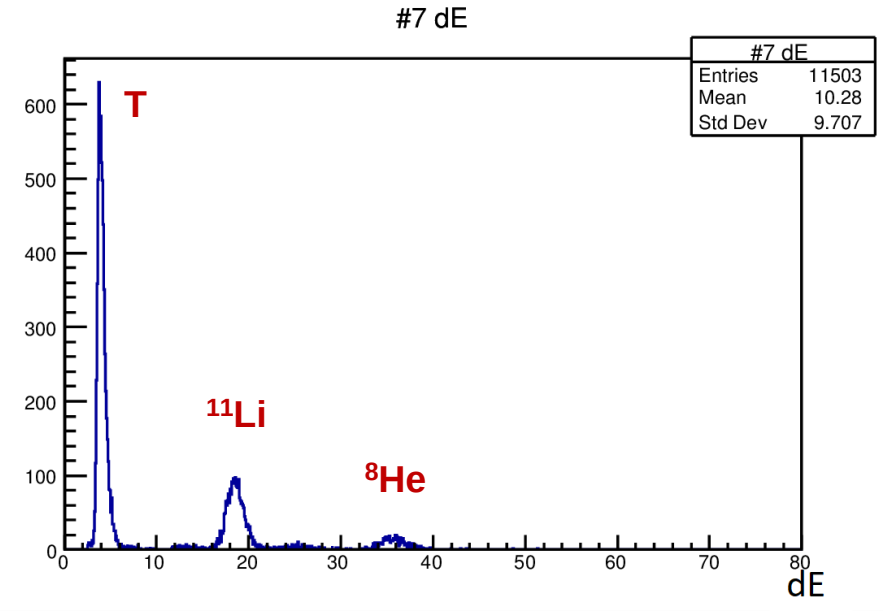


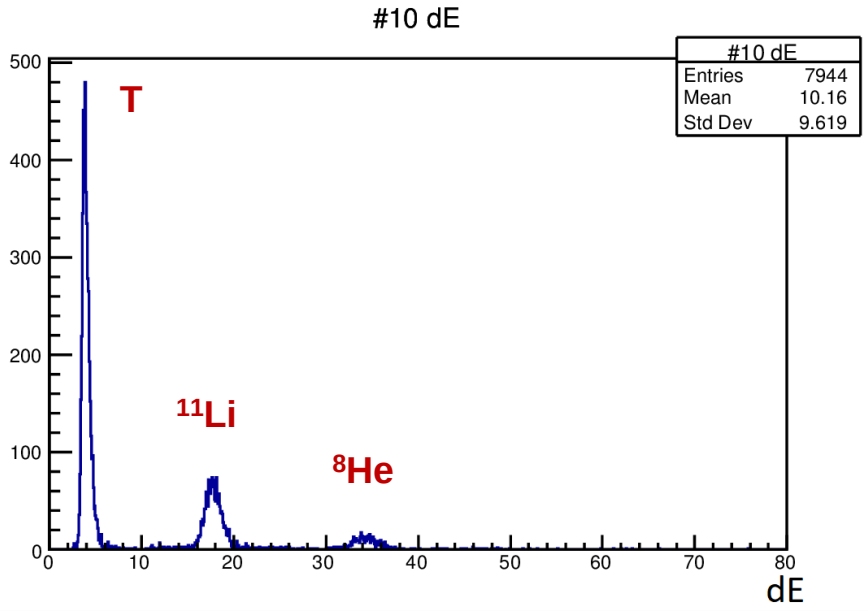


IDENTIFICATION – ^{11}Li

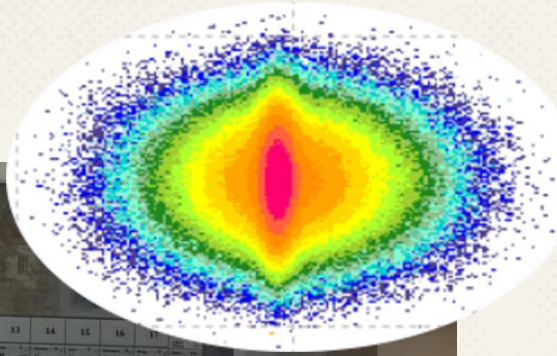


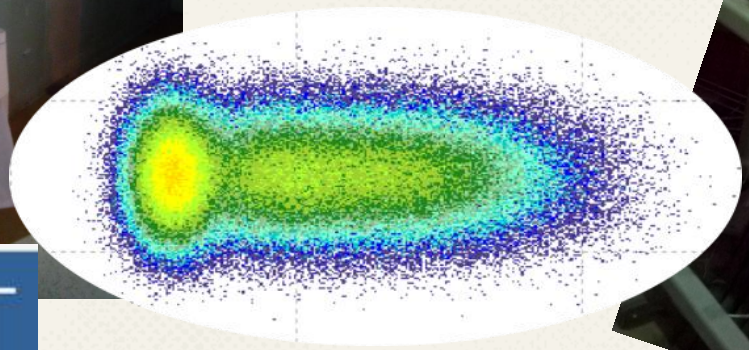


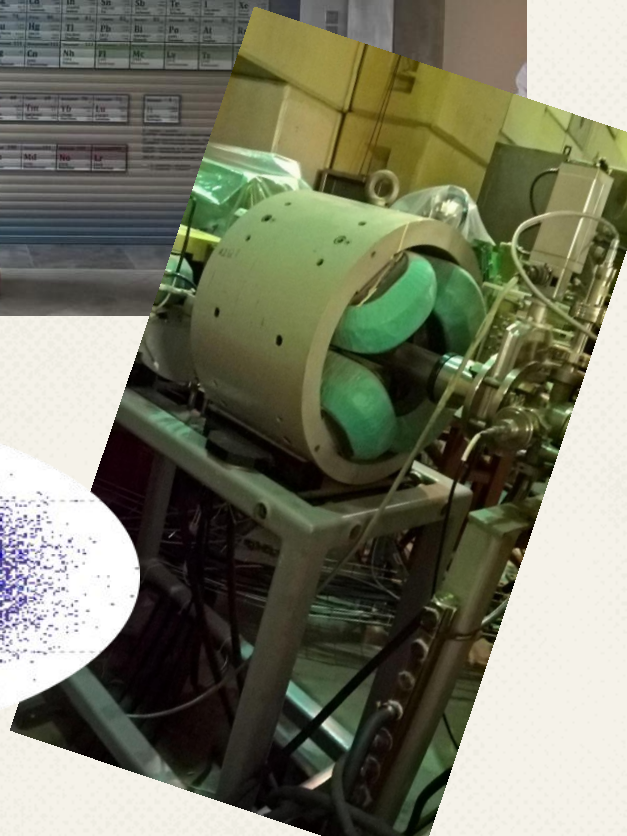




Our experience in practice







ROOT
Data Analysis Framework

THANK YOU FOR YOUR ATTENTION

Any questions?