Update of the Kinematics calculator

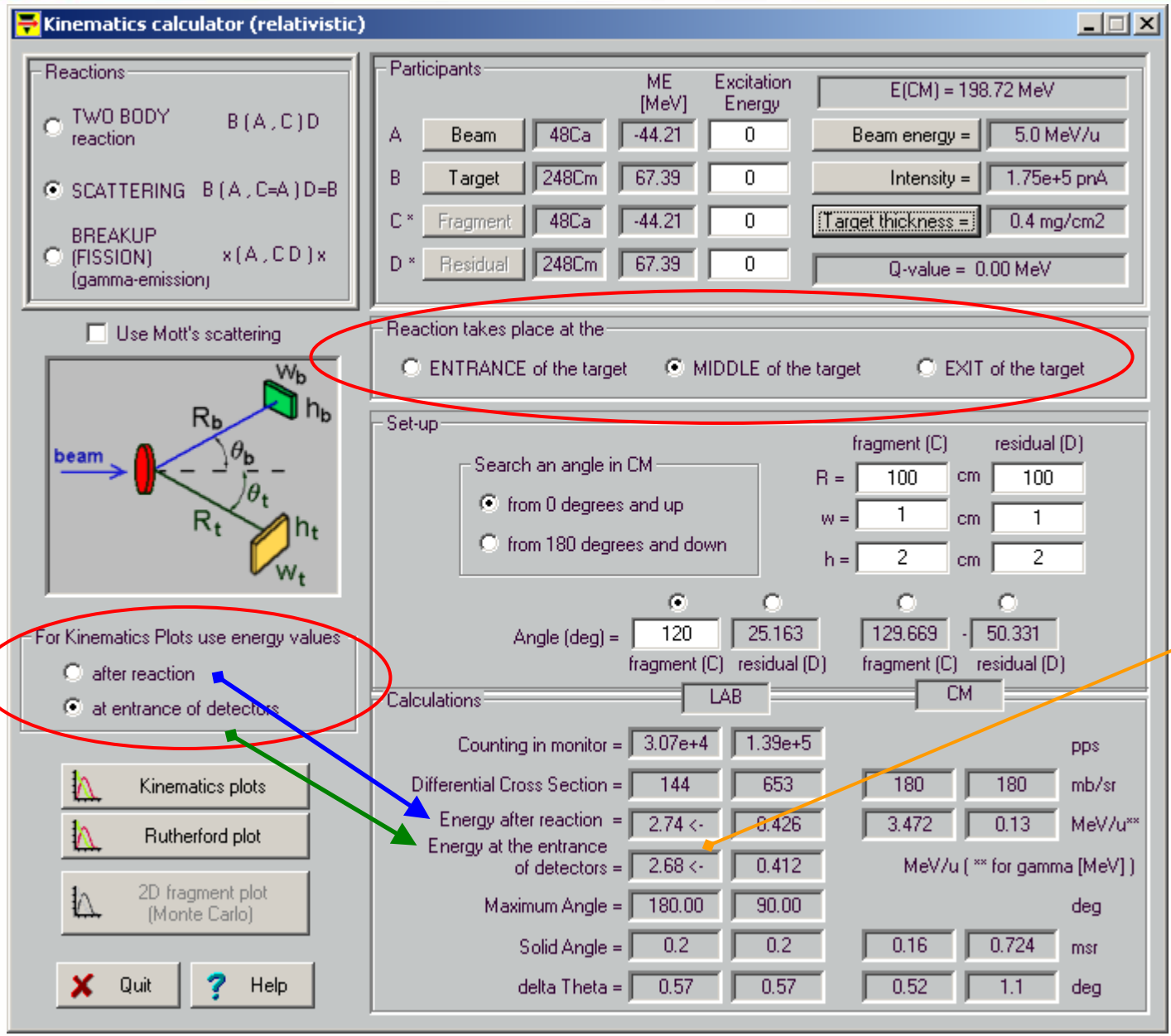
version 8.3.14

- **Update of the Kinematics calculator**
  - Increase of the Kinematics plot distribution dimension
  - Transportation of some dialog parameters to “Static”
- **Three possible reaction places**
  - entrance of the target
  - middle of the target
  - exit of the target
- **New Option: For Kinematics plots use energy values**
  - after reaction
  - at entrance of detectors

The code operates under MS Windows environment and provides a highly user-friendly interface.
It can be freely downloaded from the following internet addresses:
http://www.nscl.msu/edu/lise

C.Stodel’s request

Update of the Kinematics calculator



The sign « <- » shows that the fragment moves in direction backward to the projectile.

Note: Lab Fragment angle is set to 120 degrees

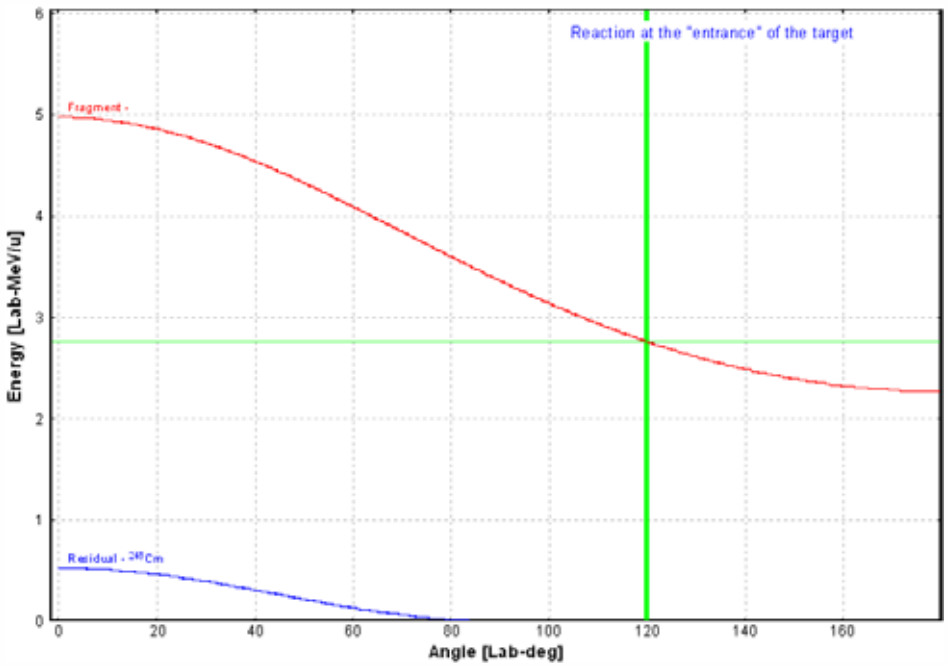
Energy plots after reaction

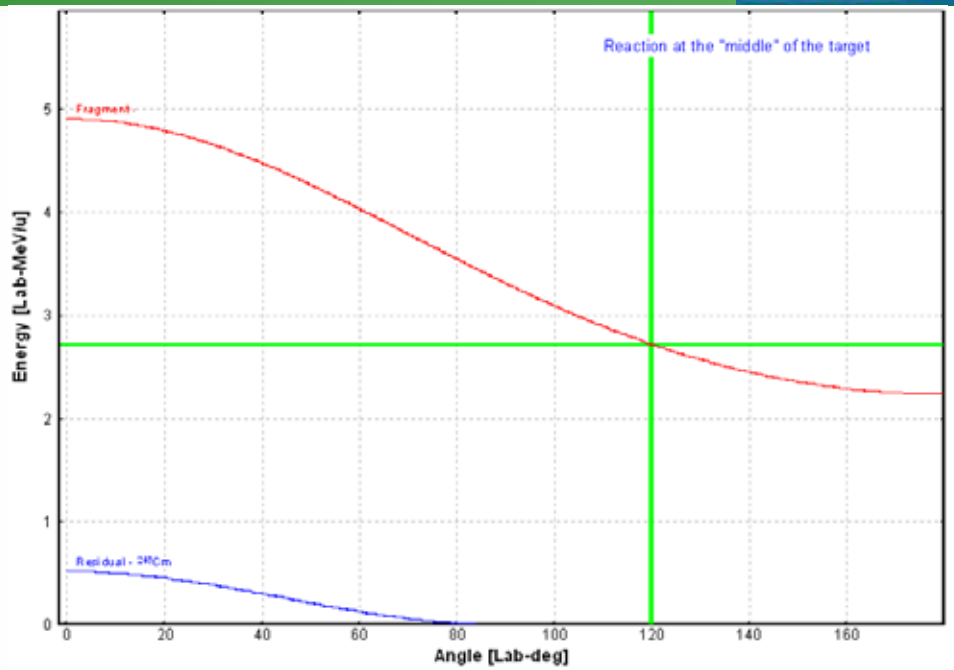
Reaction's Kinematics: A_lab & E_lab

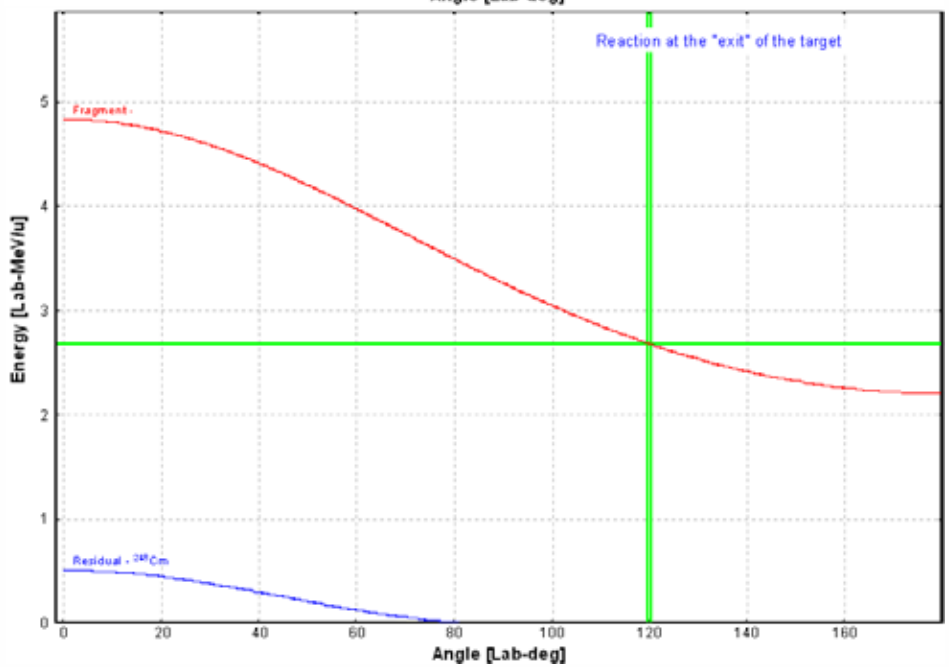
$^{48}Ca + ^{248}Cm => ^{48}Ca + ^{248}Cm$ $^{248}Cm(^{48}Ca,^{48}Ca)^{248}Cm$; Reaction at the "entrance" of the target

Projectile Energy at the reaction place: 4.97 MeV/u Grazing angle in CMS [$^{48}Ca+^{248}Cm$] = 167.67 deg

Q reaction : 0.00 MeV (Excitations 0.0+0.0=>0.0+0.0); Plotted Energy option is "after reaction"







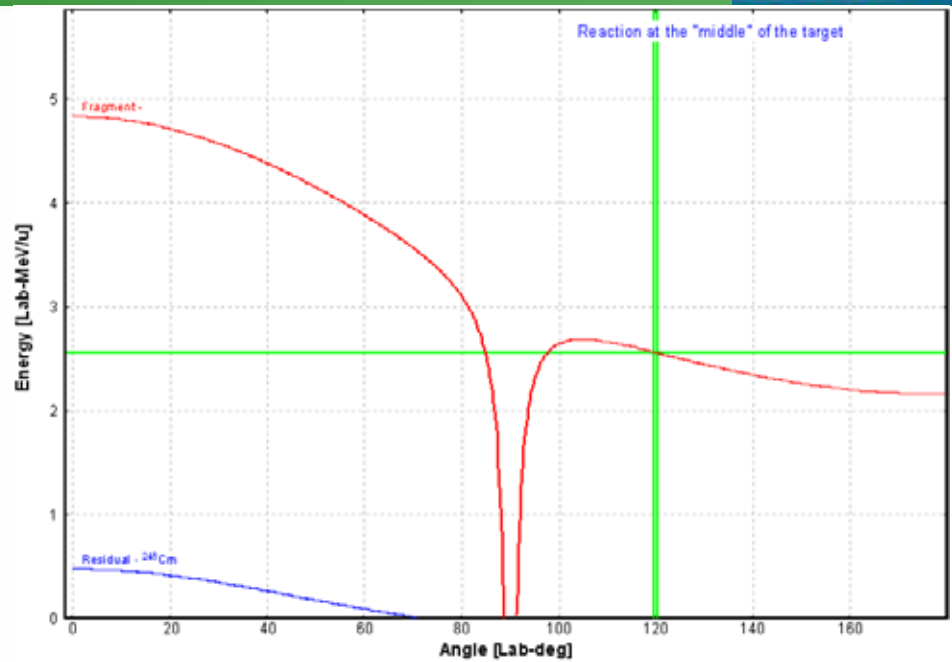
Energy plots at entrance of detectors

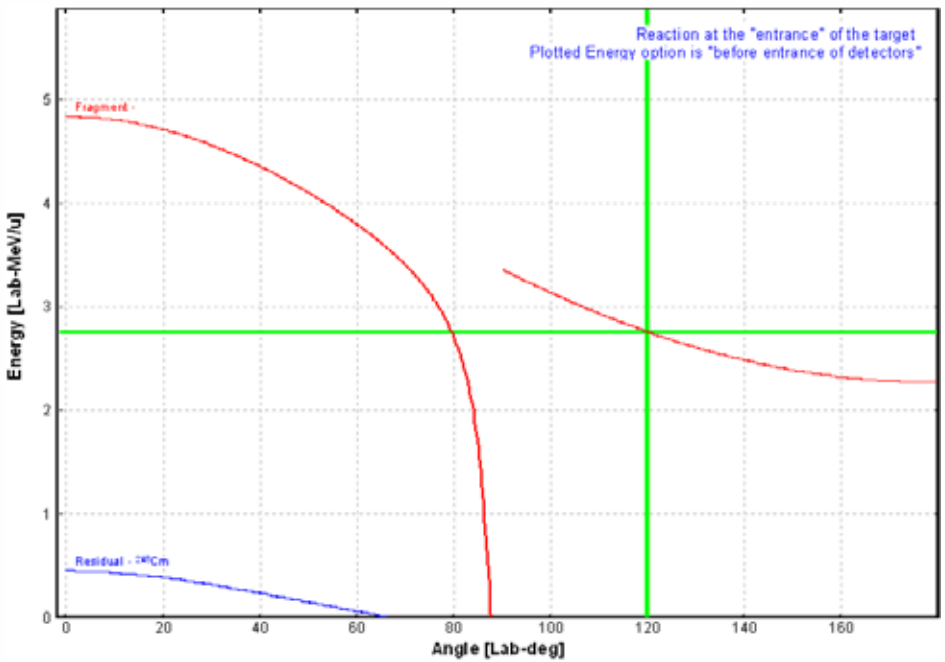
Reaction's Kinematics: A_lab & E_lab

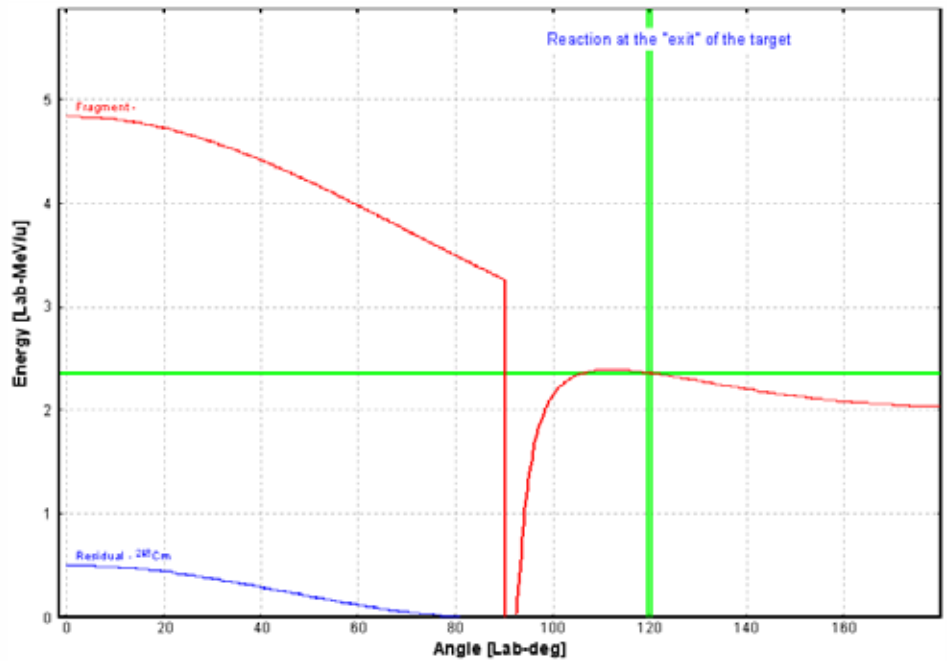
$^{48}Ca + ^{248}Cm \Rightarrow ^{48}Ca + ^{248}Cm$ $^{248}Cm(^{48}Ca,^{48}Ca)^{248}Cm$; Reaction at the "middle" of the target

Projectile Energy at the reaction place: 4.90 MeV/u Grazing angle in CMS [$^{48}Ca+^{248}Cm$] = 180.00 deg

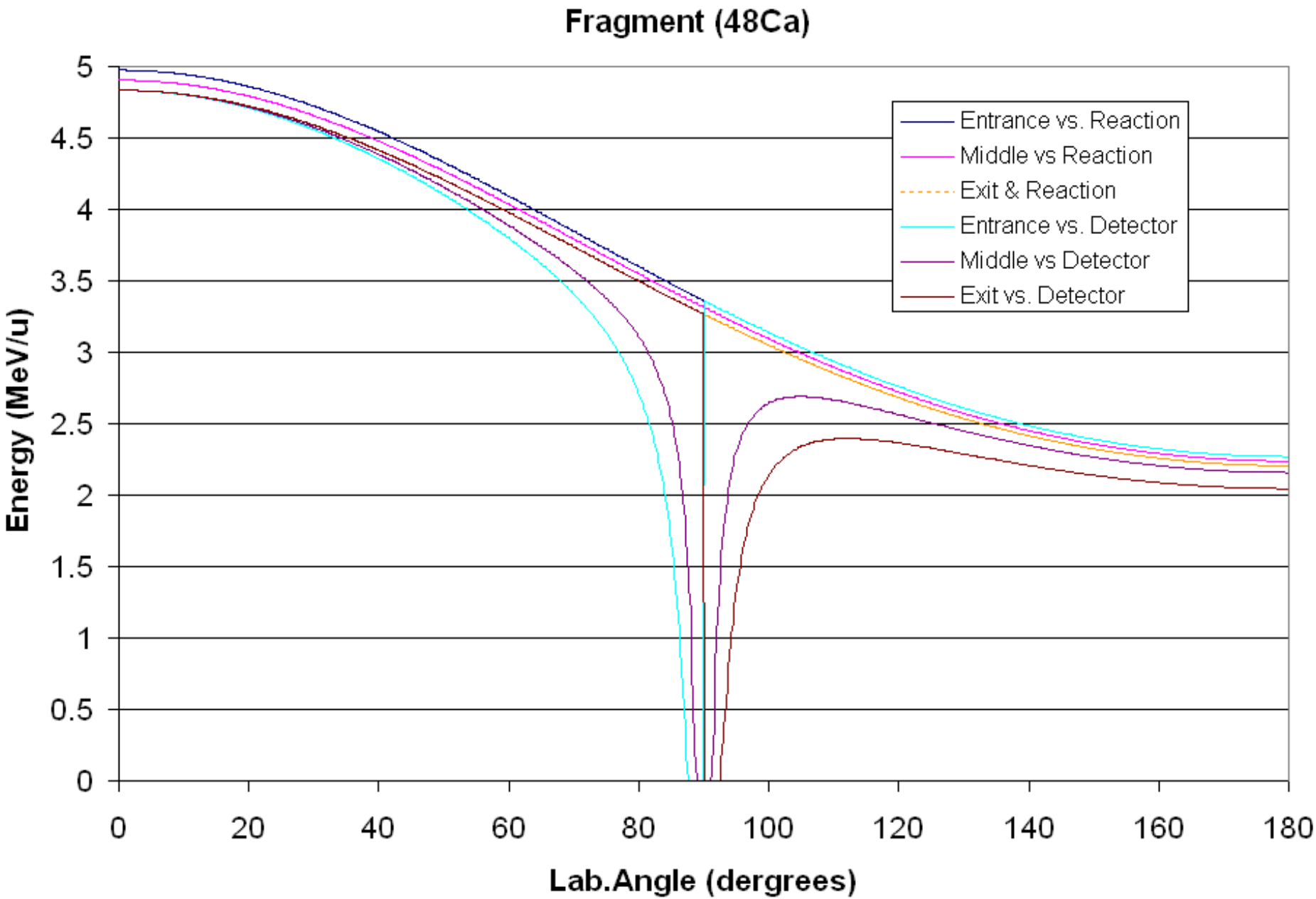
Q reaction : 0.00 MeV (Excitations 0.0+0.0=>0.0+0.0); Plotted Energy option is "before entrance of detectors"



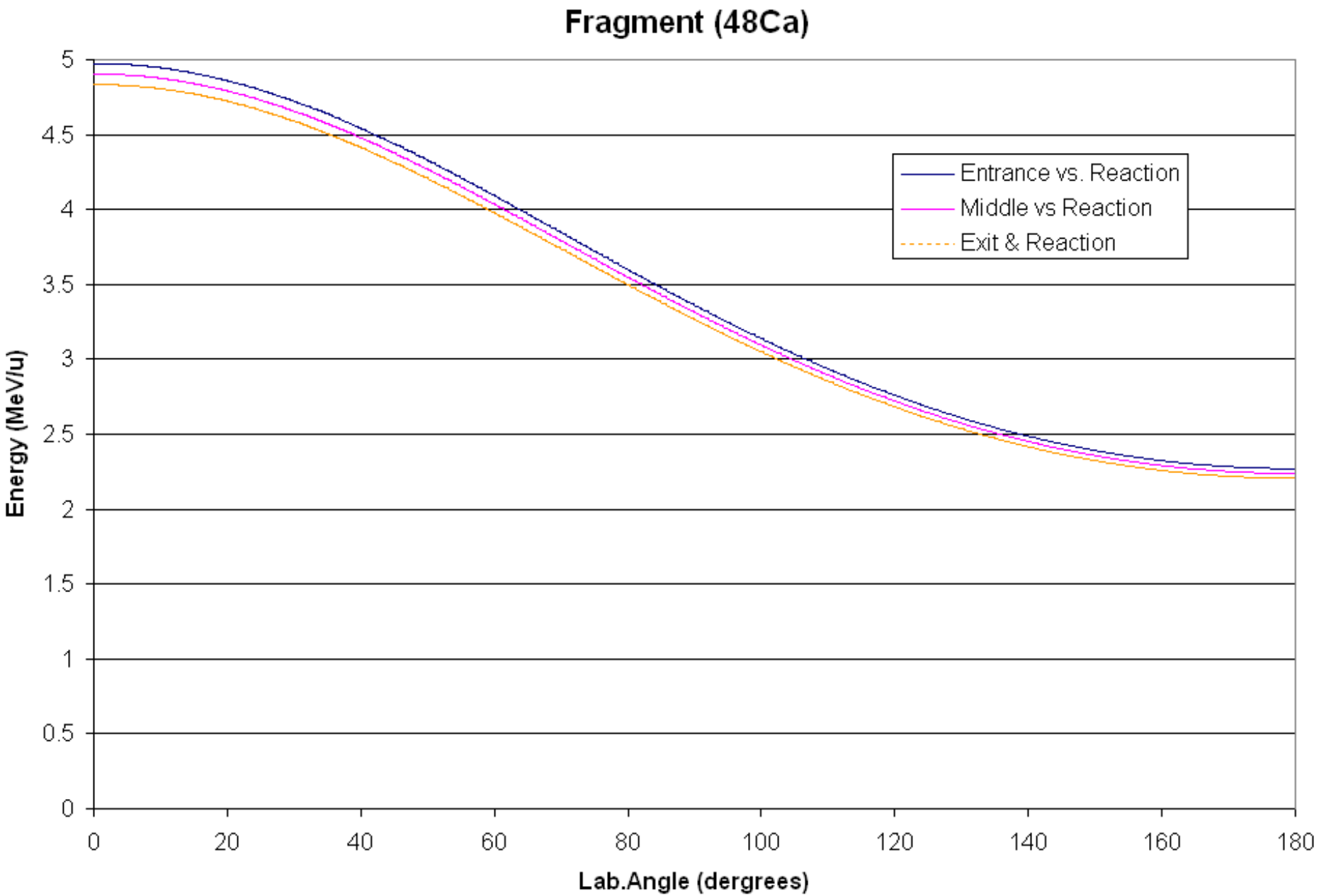




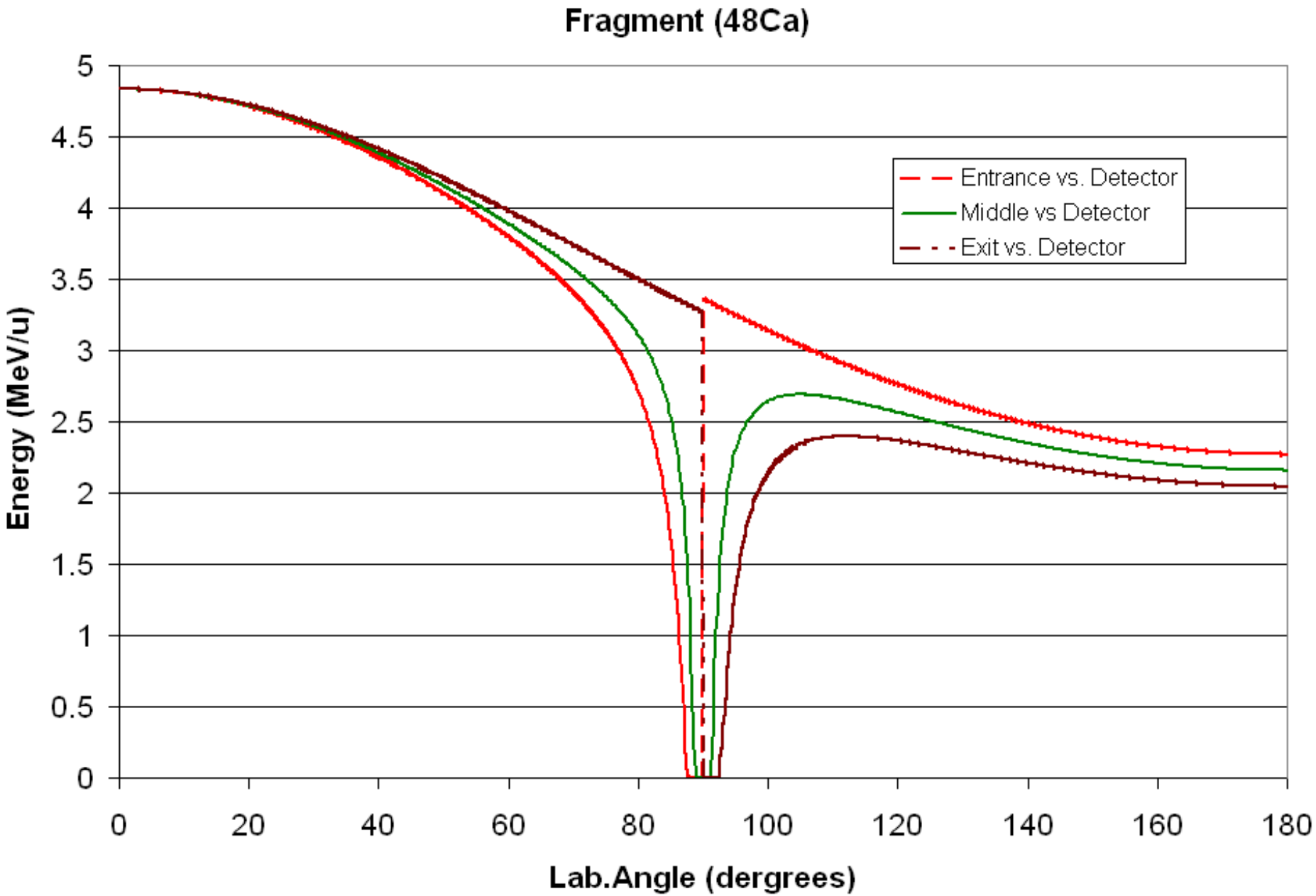
Fragment Energy Plot



Fragment Energy Plot ("Reaction" option)



Fragment Energy Plot ("Detector" option)



Residual Energy Plot