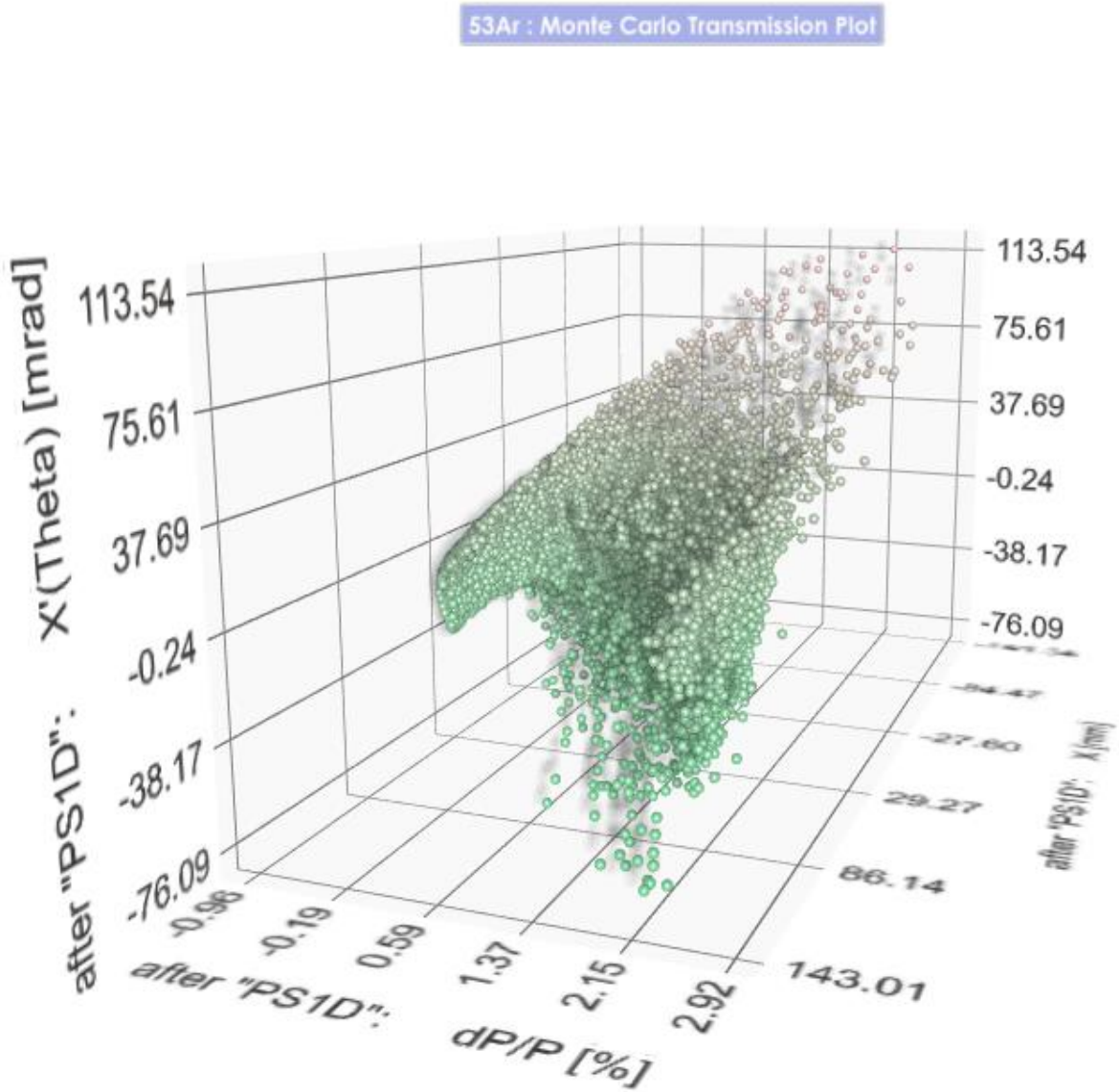
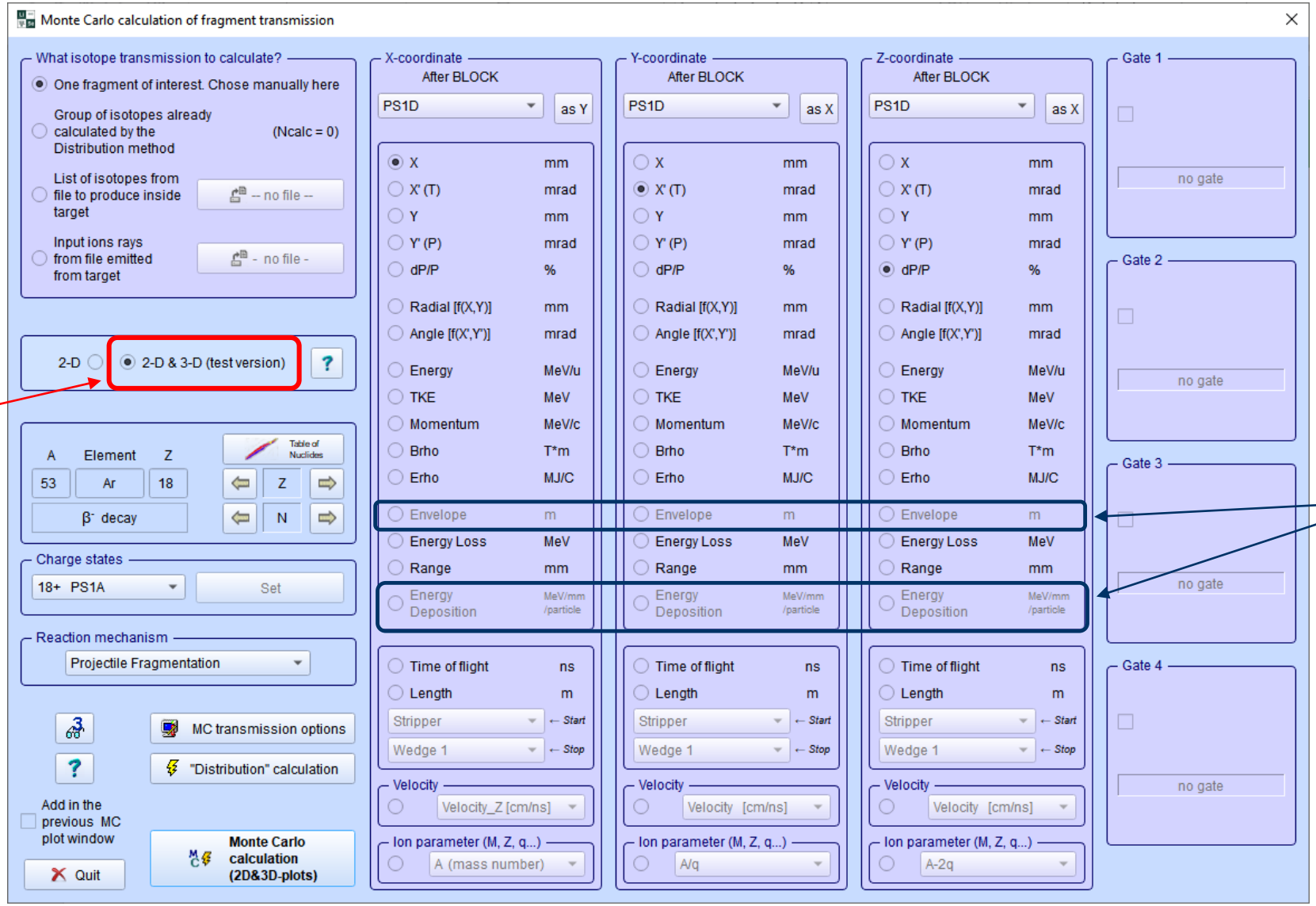
3-D Monte Carlo Transmission plot

v.15.23
08/31/21

- MC dialog modifications
- 3D-data accumulation in 2D-mode
- 3D-graph features
- Isotope separation in 3D-mode
- Fission products
- 3-D plots future development plans



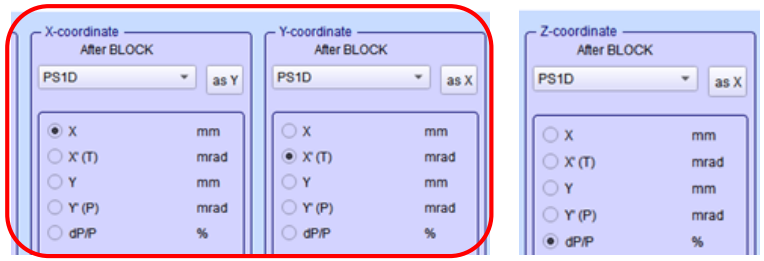
MC dialog



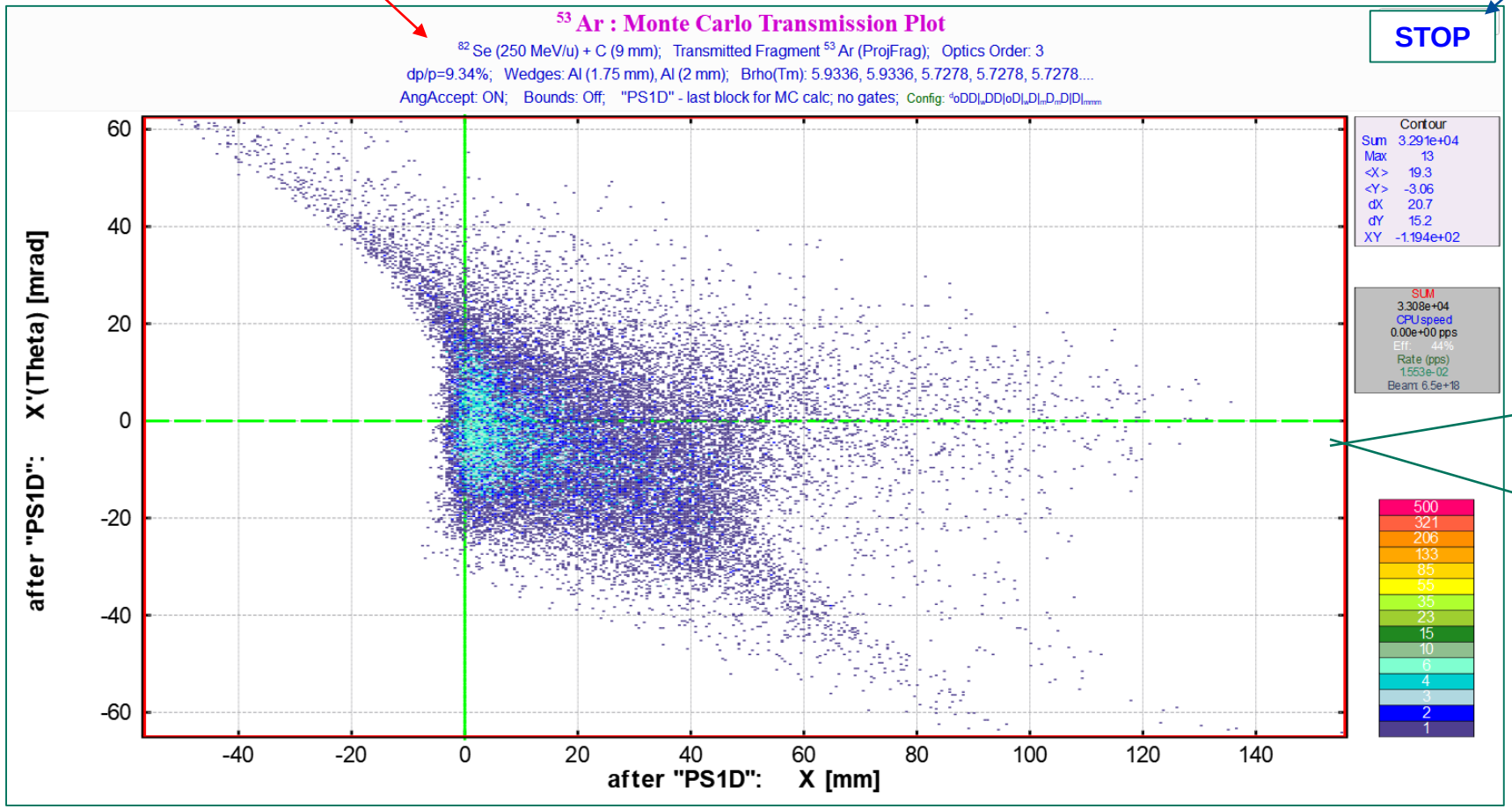
Switch to 2D&3D mode

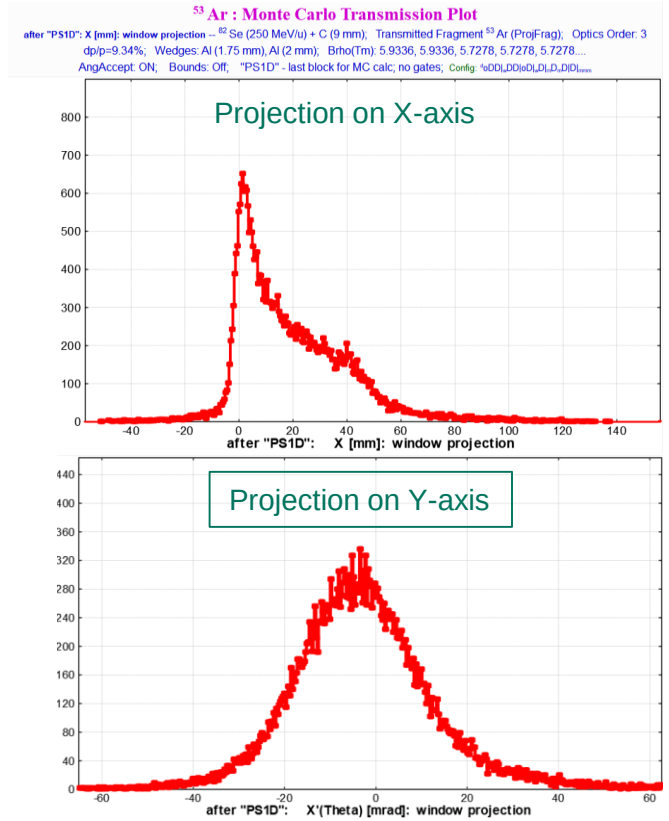
No Envelope and Deposition plots in 3D-mode

3D-data accumulation in 2D-mode

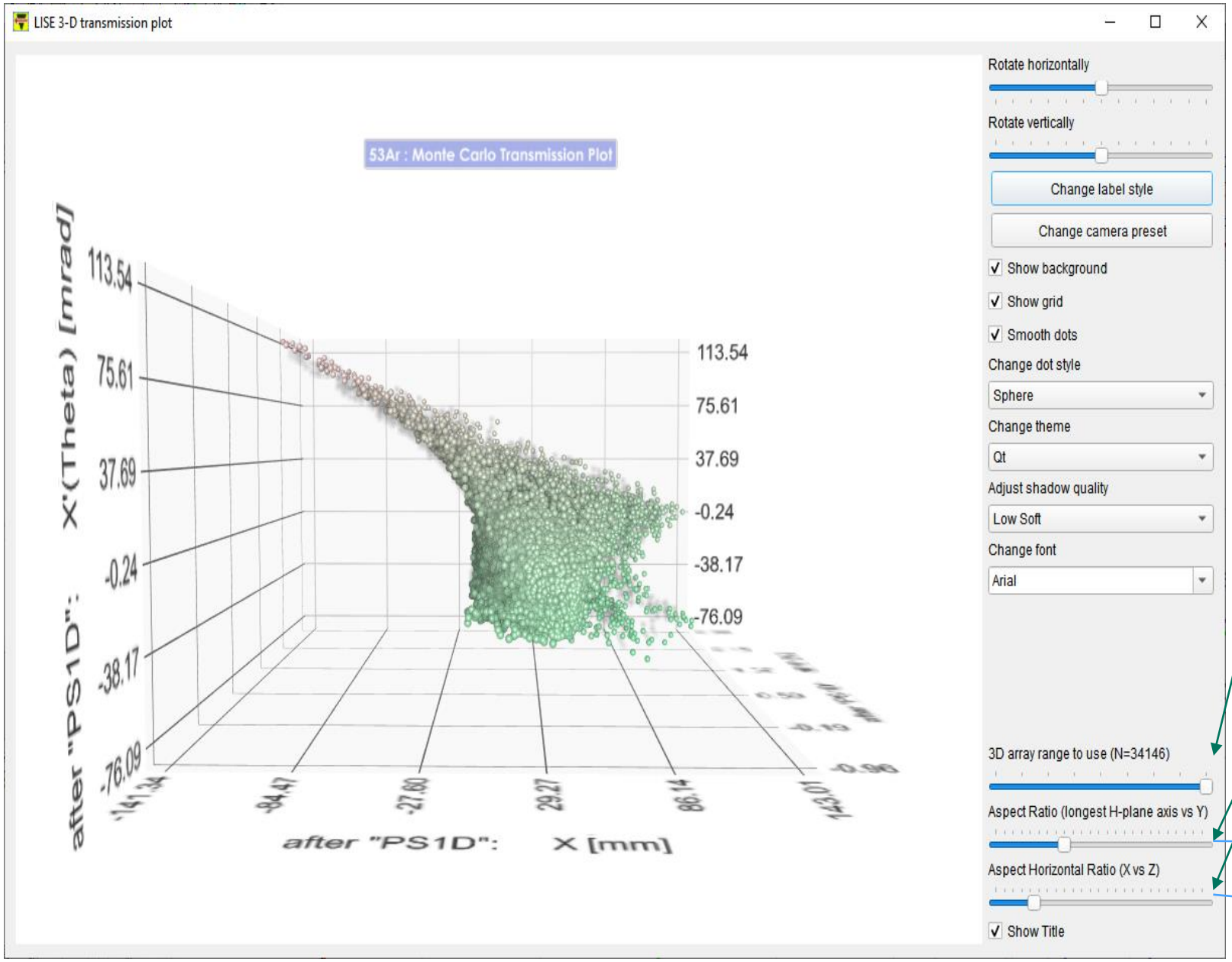


After clicking the button “STOP” ,
LISE^{++} generates a 3D-plot based on
an array created during 2D-graph plotting.
Maximum array size is 50 000 events.





3D-plot



Initially set to a maximum size of the array accumulated during 2D plotting

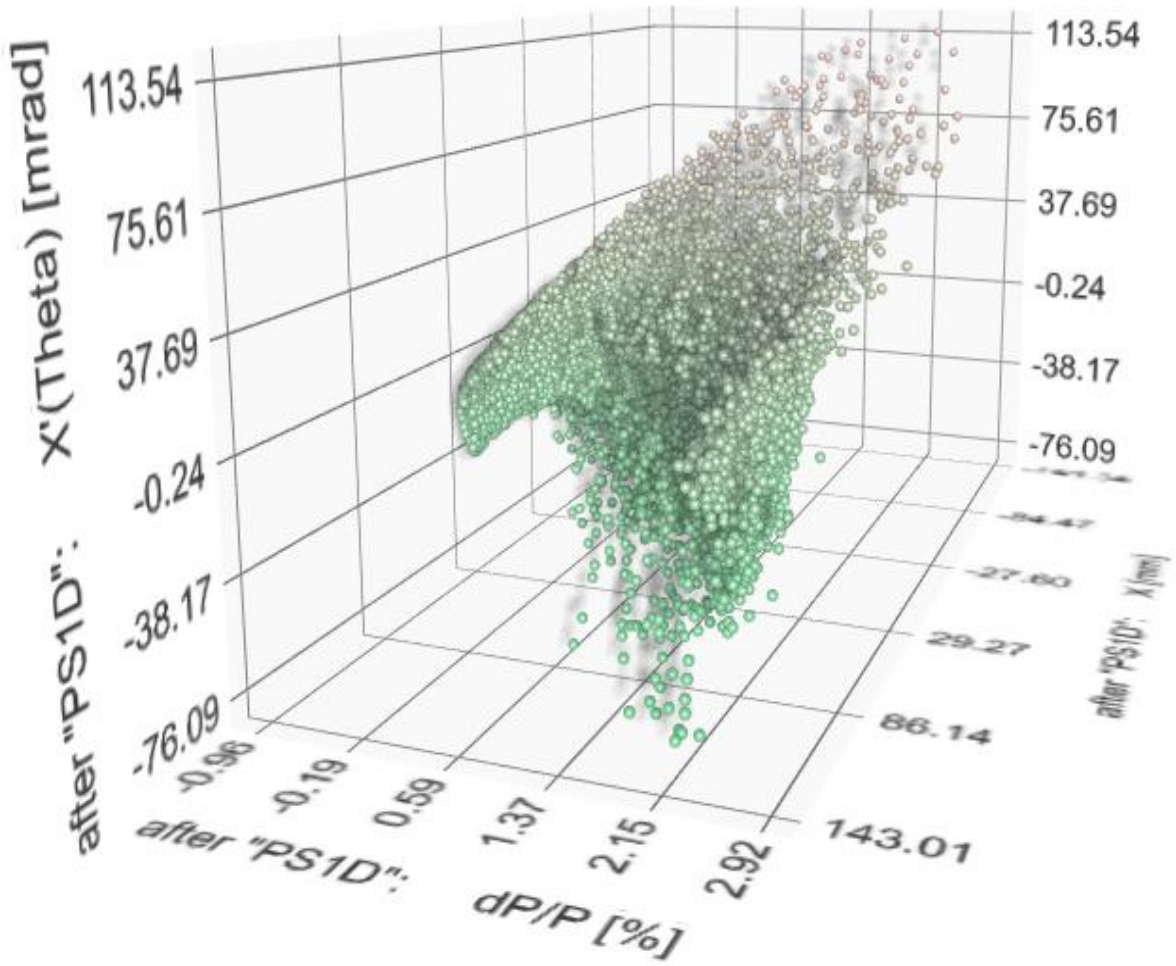
Initially set to 1 & 1

This property holds the ratio of the graph scaling between the longest axis on the horizontal plane and the y-axis

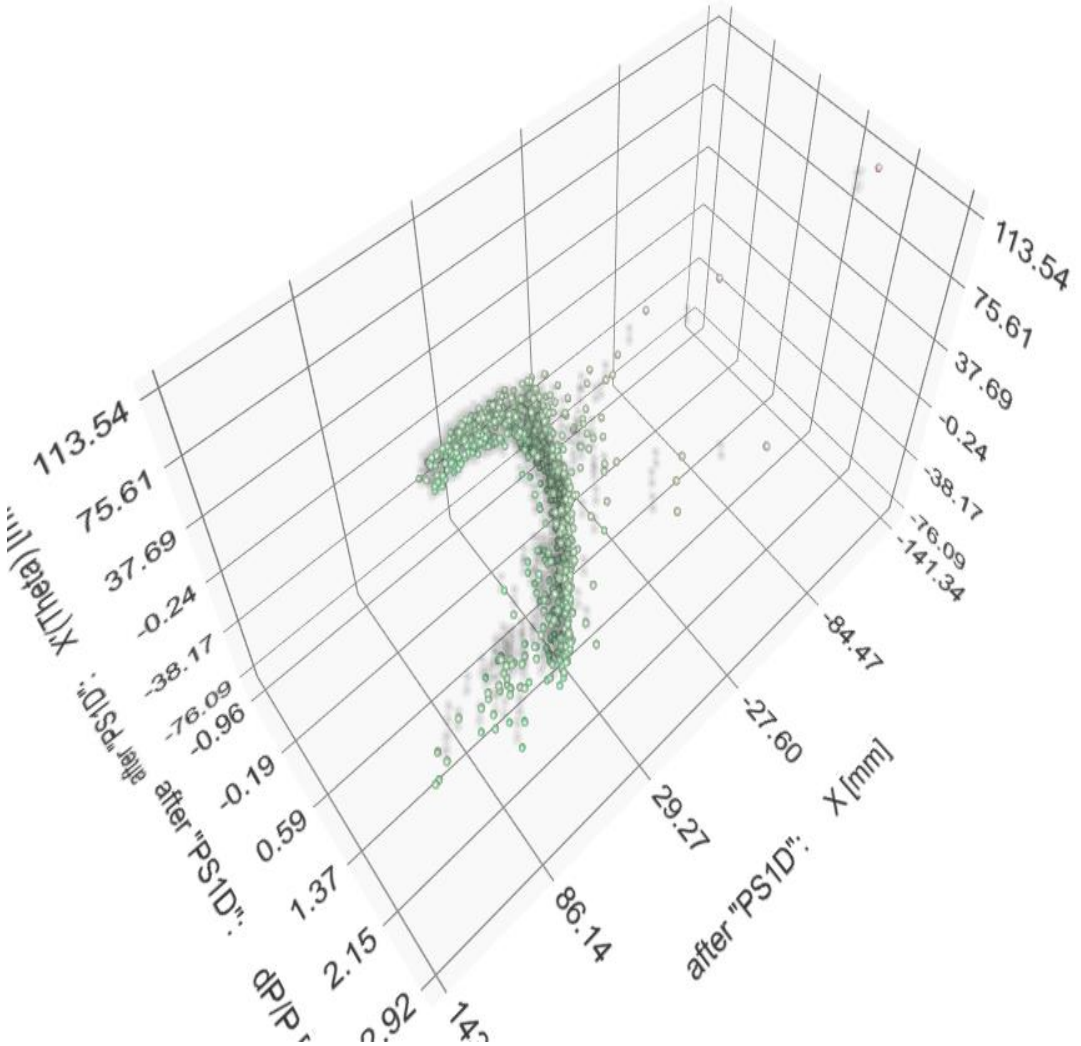
This property holds the ratio of the graph scaling between the x-axis and z-axis

3D-plot (continue)

full statistics

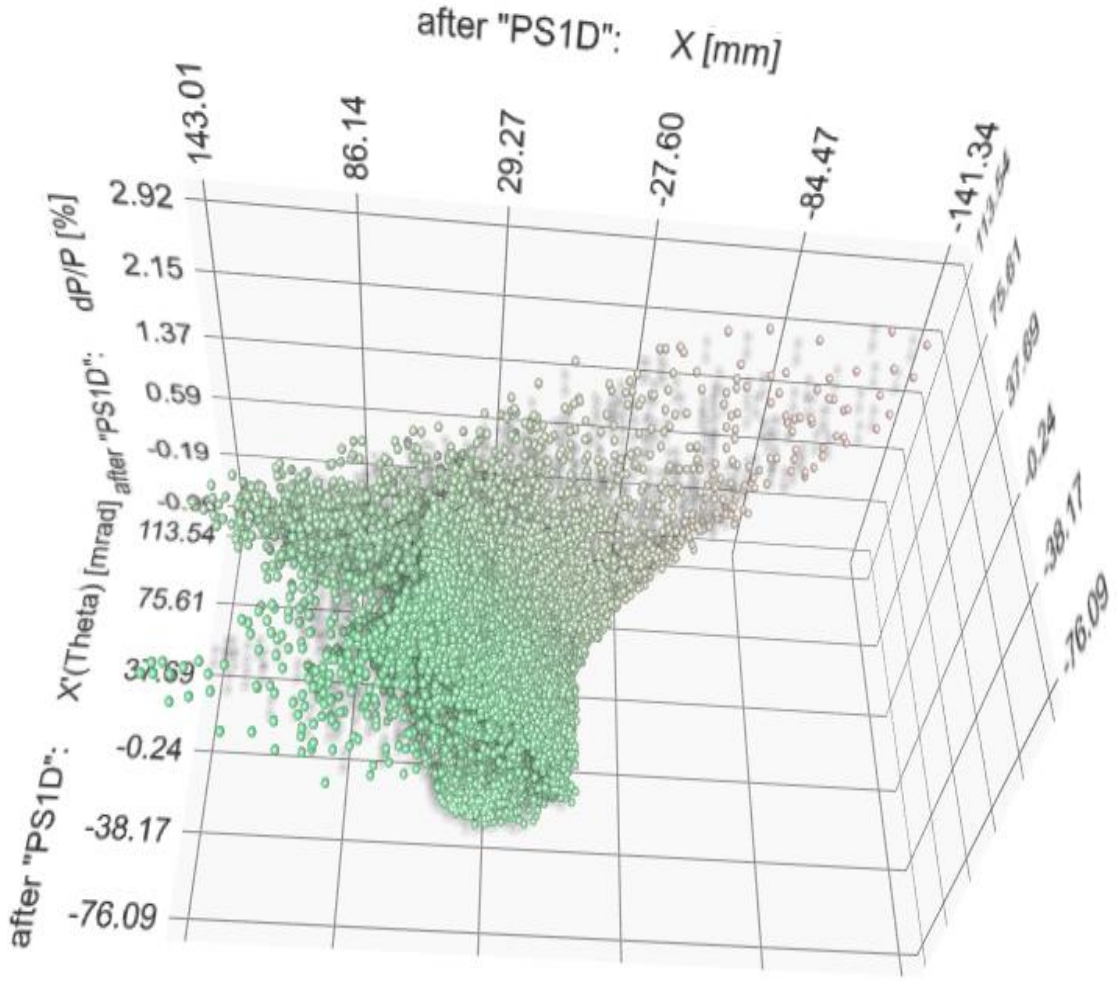


Small part of statistics



3D-plot (continue)

full statistics



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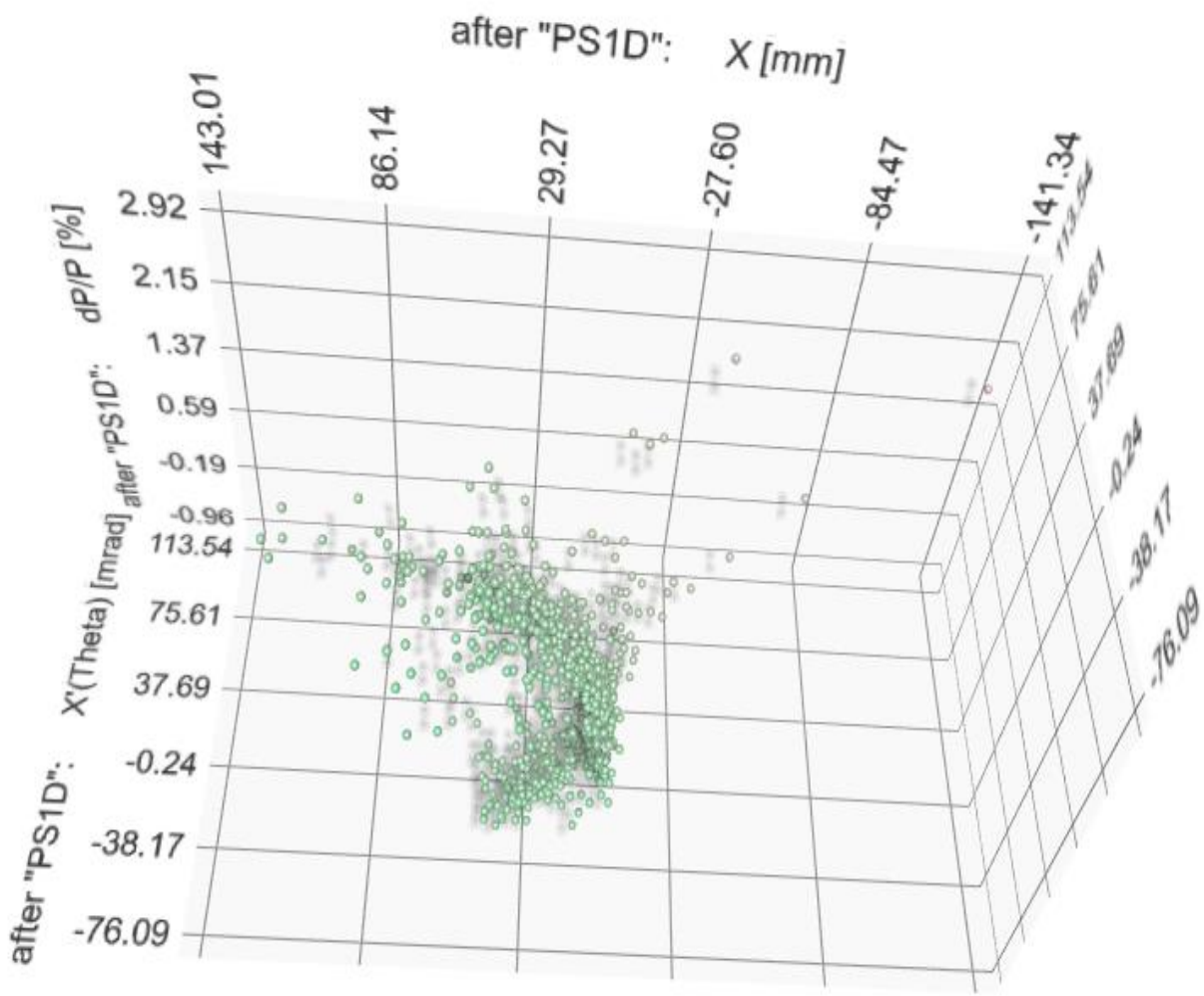
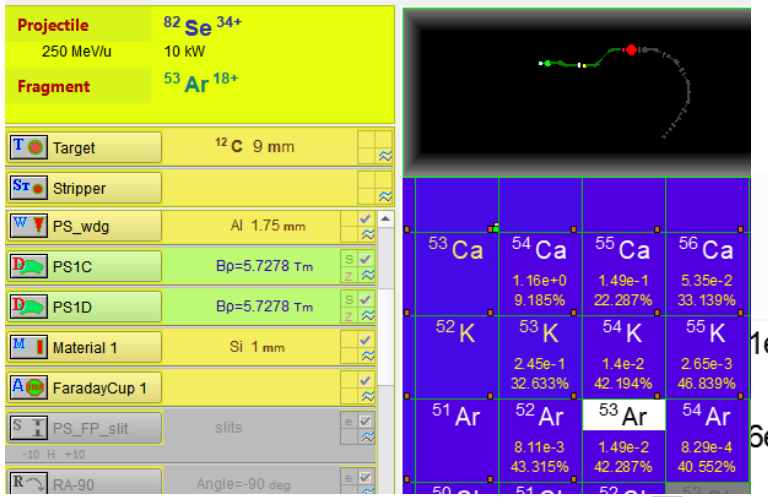
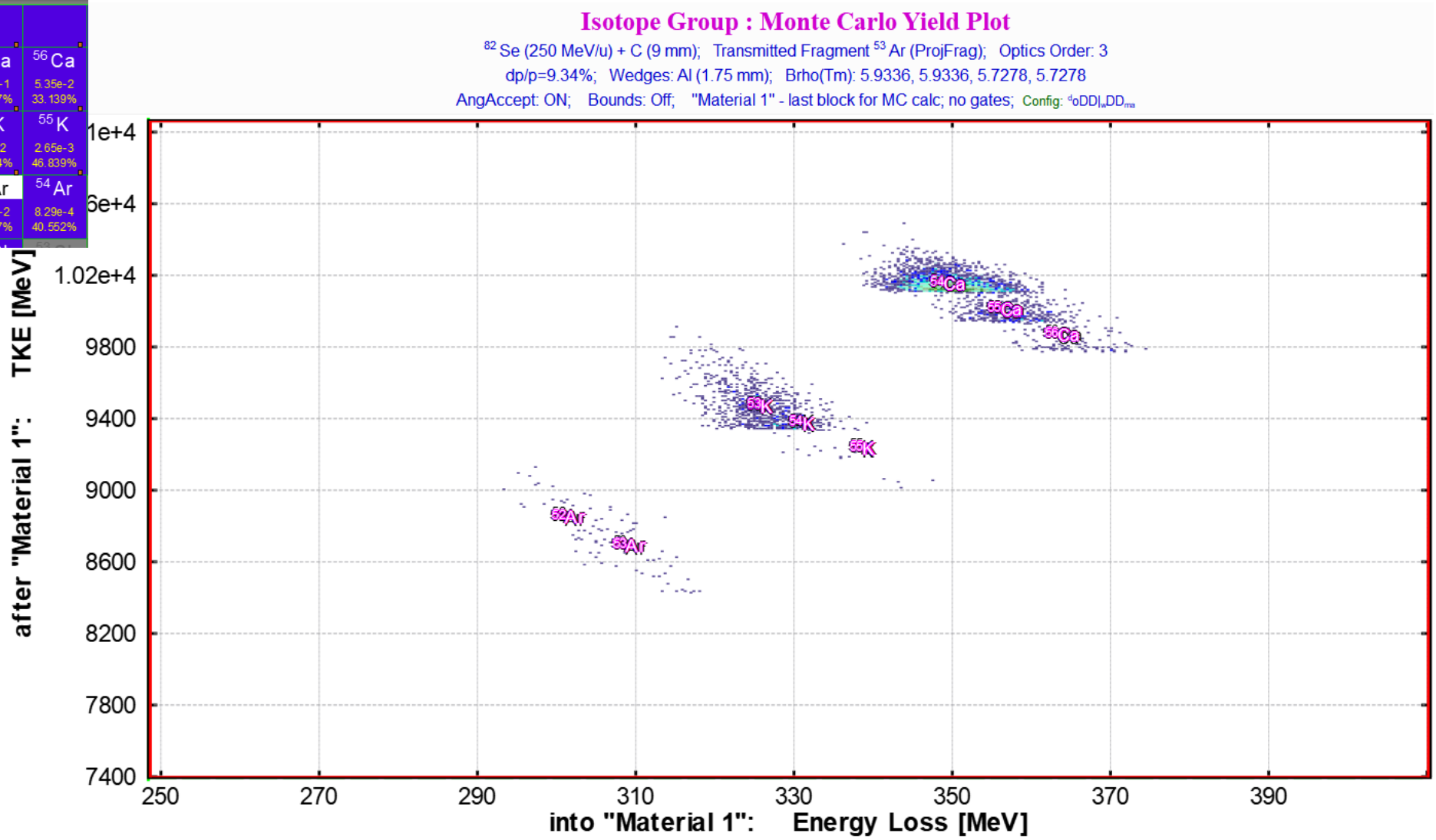


Isotope separation in 3D-mode (dE-TKE-Brho) dP=3%

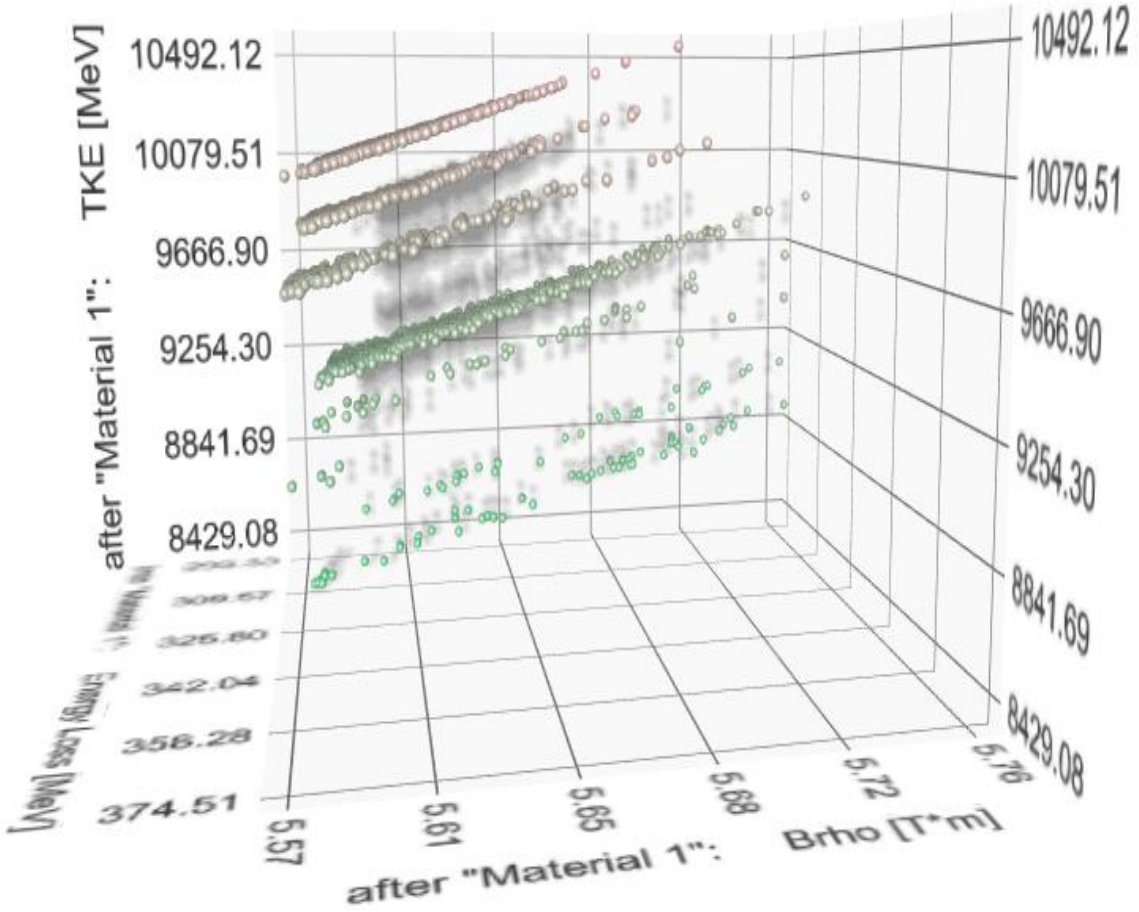


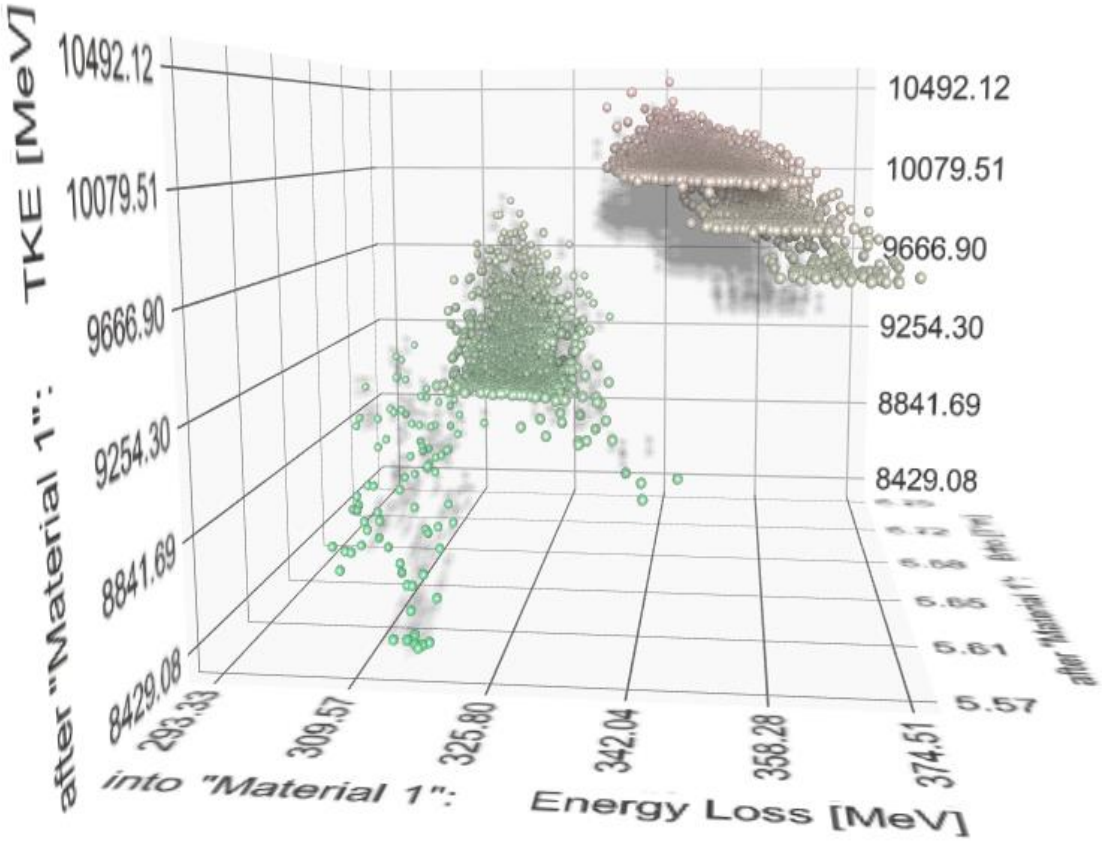
No isotope separation in this plane



Isotope separation in 3D-mode (dE-TKE-Brho) dP=3%

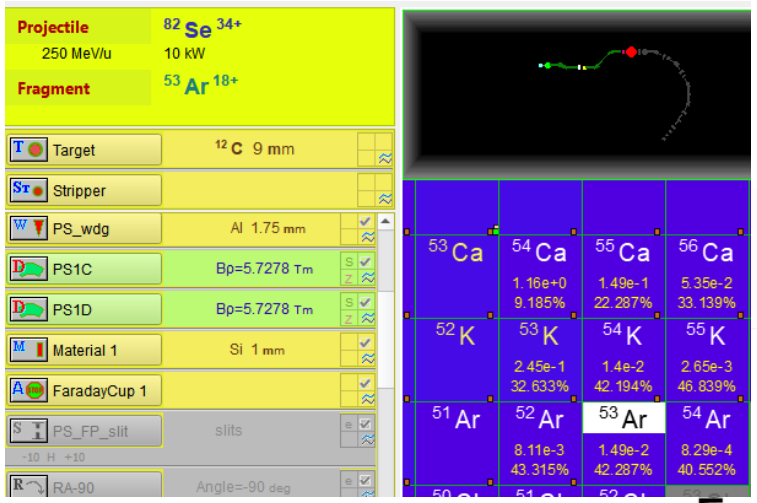
Includes resolution of energy loss and timing detectors



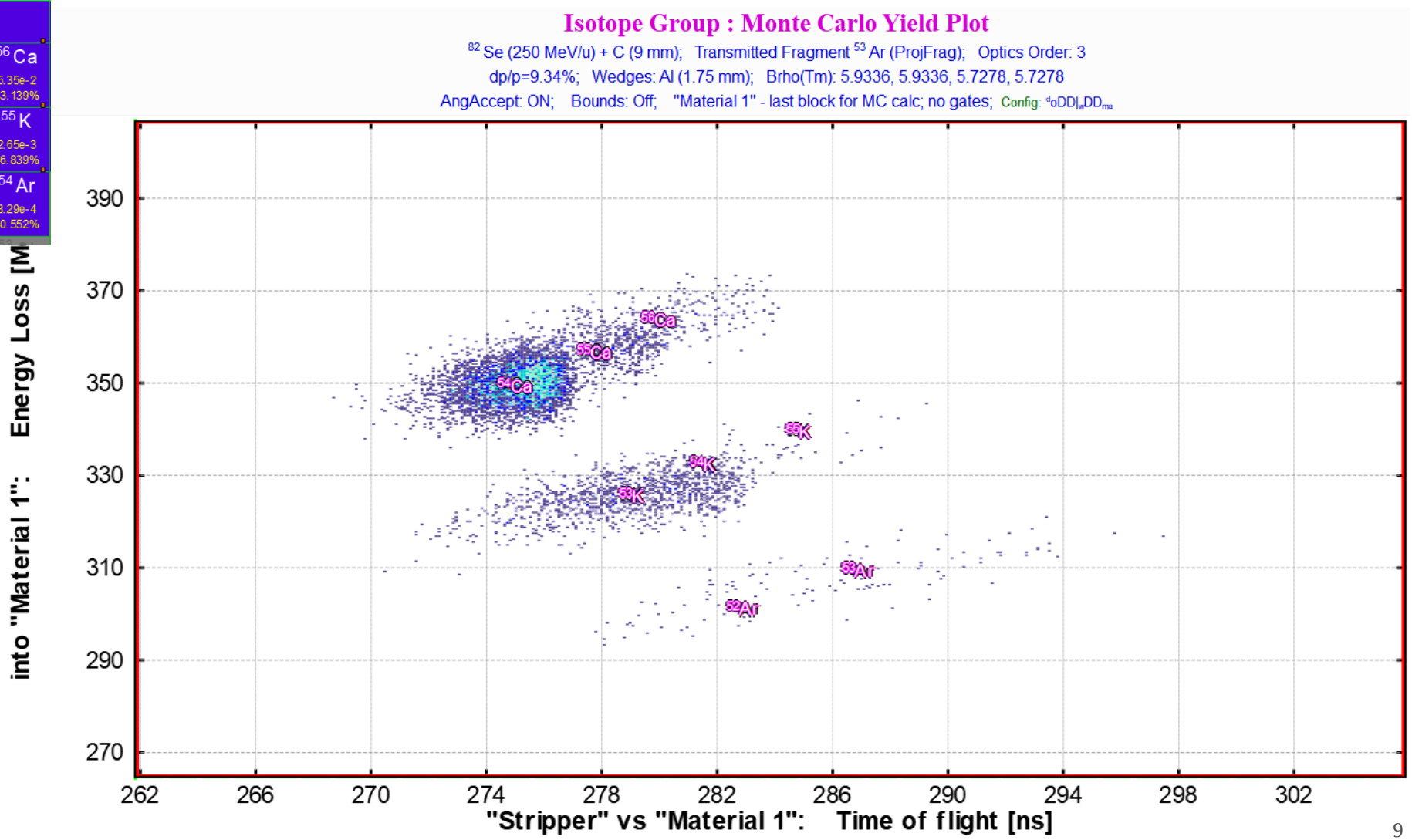


Good isotope separation in this plane

Isotope separation in 3D-mode (dE-TOF-Brho) dP=3%



No isotope separation in this plane



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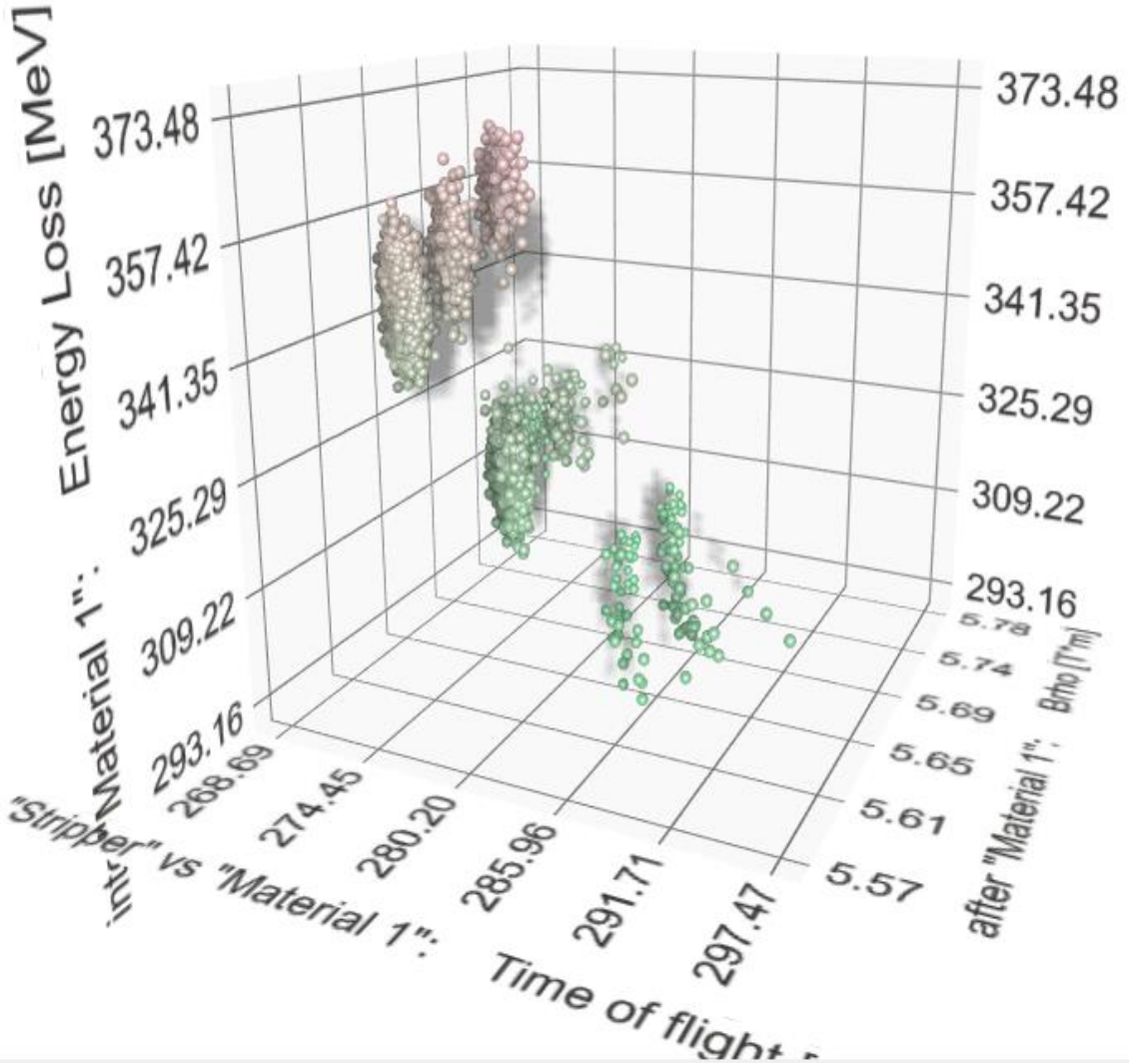
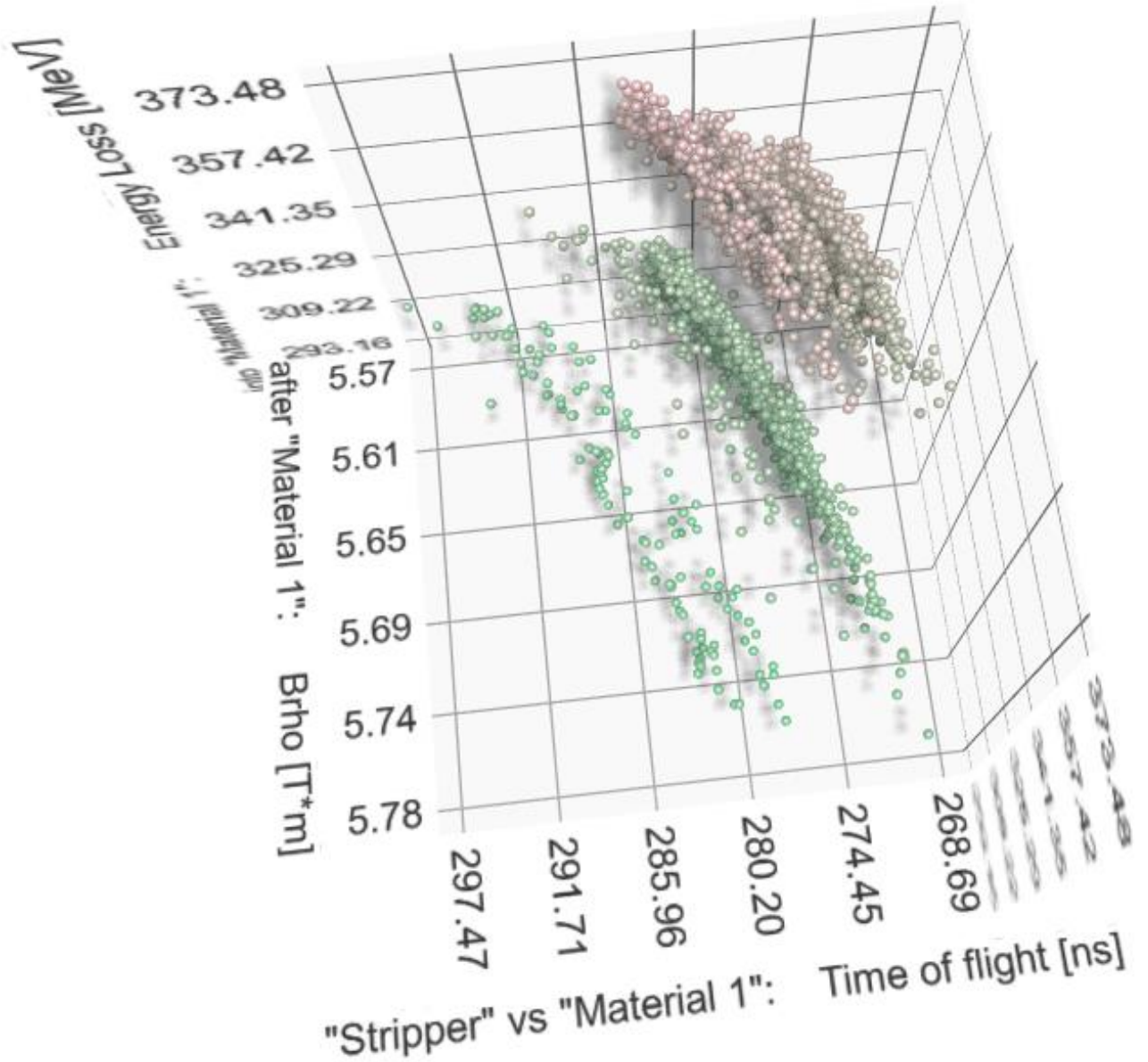




Fission products in 3-D

Projectile	$^{238}U^{92+}$
200 MeV/u	1 pnA
Fragment	$^{132}Sn^{50+..50+}$
EERs: $^{237}U_{(34)}$ $^{232}Th_{(108)}$ $^{222}Rn_{(394)}$	
Target	^{12}C 0.01 g/cm²

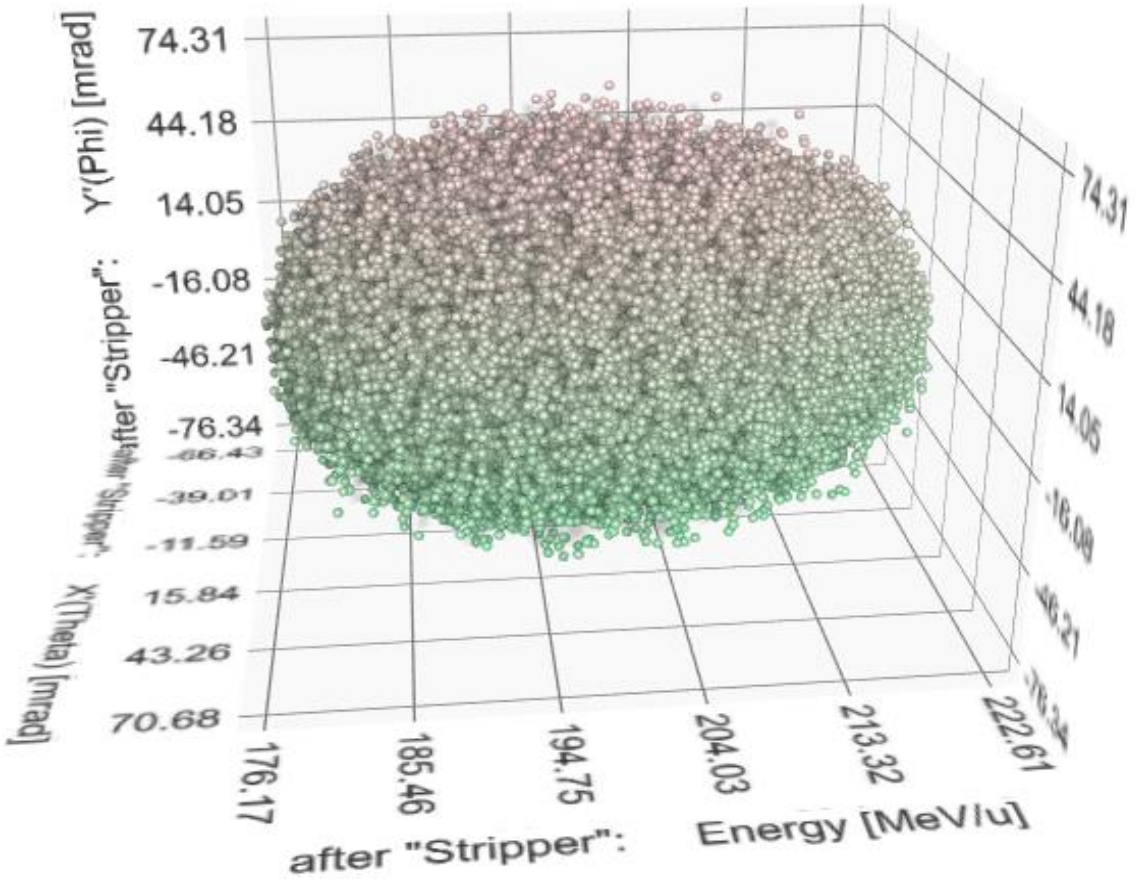
Gate 1

Settings

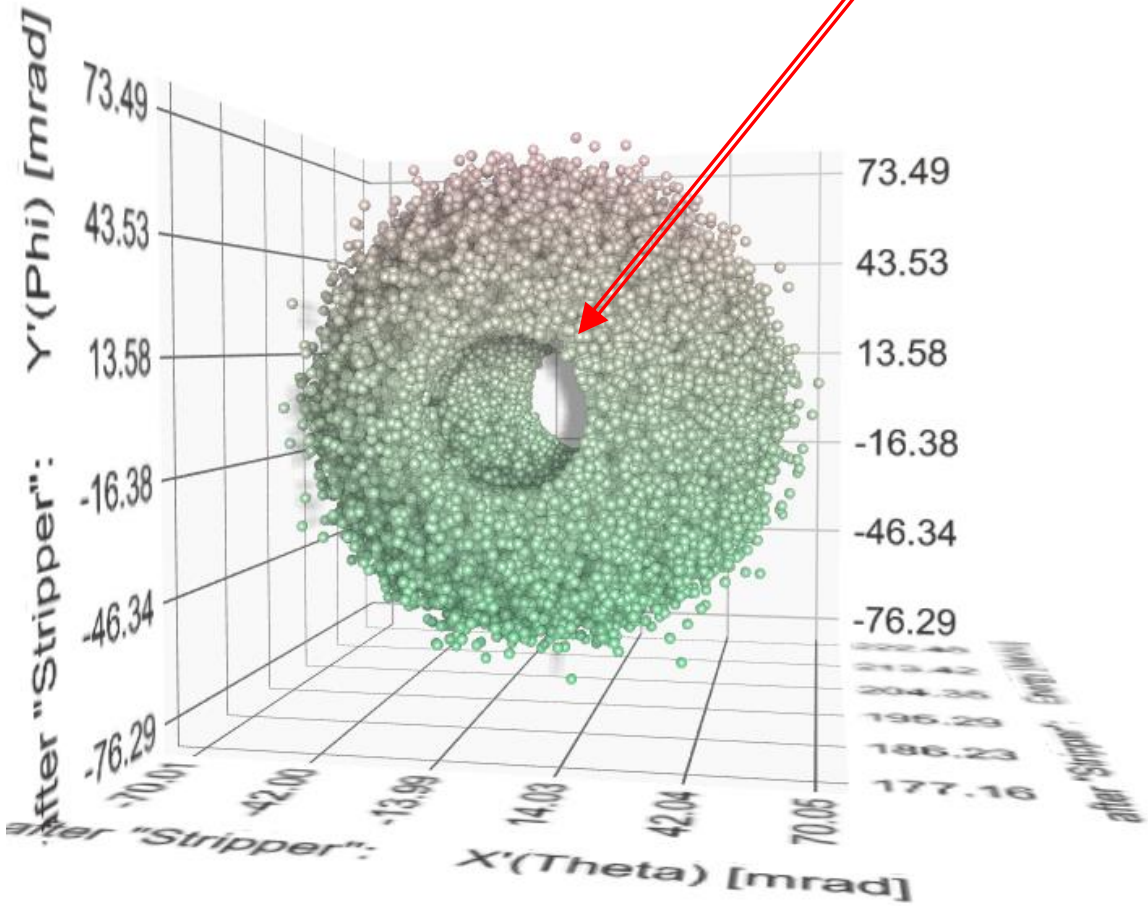
"NOT" [0, 20]

< Angle [mrad] > after Stripper

132Sn : Monte Carlo Transmission Plot



132Sn : Monte Carlo Transmission Plot



3-D plots future development plans

- Statistics Binning to use intensity color
- Multi-isotope mode: specific color for each isotope + labels
- 3D Envelope mode development
- Use absolute coordinates in the envelope mode (for example using dipole angles)
- Use 3D semi-transparent objects to show separator elements