

- New target and beam settings
- New optical settings
- Matrix envelopes
- Transmission
- Transmission with disperse block recalculation

Beam [?] [X]

A	Element	q+
48	Ca	20
20		
Z		
Stable		
Table of Nuclides		
←	Z	→
←	N	→
[OK] [Cancel]		

Beam energy

Energy 4.505484 MeV/u

TKE 216 MeV

Brho 0.733435 Tm

P 4.39757 GeV/c

U 10800 KV

Beam intensity

20000 enA

1000 pnA

6.25e+12 pps

0.21626 KW

Emittance [#1]

Beam CARD (sigma, semi-axis, half-width...)

1D - shape (Distribution method)	2D mode	2D - shape (Monte Carlo method)	Correlated with
1. X mm 5 Ellipse uniform (proj.)	<input checked="" type="checkbox"/>	Ellipse uniform	Y
2. T mrad 6 Gaussian	<input type="checkbox"/>		
3. Y mm 5 Ellipse uniform (proj.)	<input checked="" type="checkbox"/>	Ellipse uniform	X
4. P mrad 4 Gaussian	<input type="checkbox"/>		
5. L mm 0 Gaussian	<input type="checkbox"/>		
6. D % 0.1 Gaussian	<input type="checkbox"/>		

mm cm

beam respect to spectrometer

dX mm

dT mrad

dY mm

dP mrad

dT degrees

dP degrees

Energy Loss in the target box [KW] RF frequency MHz

Bunch length ns

Beam Sigma Vector [#2] used for Optics Optimization ("Opt.Beam")

Target [X]

PbS Density g/cm3

comp*	Z	Element	Mass	Stoich	
<input checked="" type="checkbox"/>	82	Pb	PT	208	1
<input checked="" type="checkbox"/>	16	S	PT	32	1
<input type="checkbox"/>	14				
<input type="checkbox"/>	14				
<input type="checkbox"/>	14				

Compound dictionary

State Solid Gas

Dimension mg/cm2 & micron g/cm2 & mm

Angle degrees [Calculate]

Thickness at 0 degrees 0.404 mg/cm2 0.60244557 micron

Effective Thickness 0.404 mg/cm2 0.60244557 micron

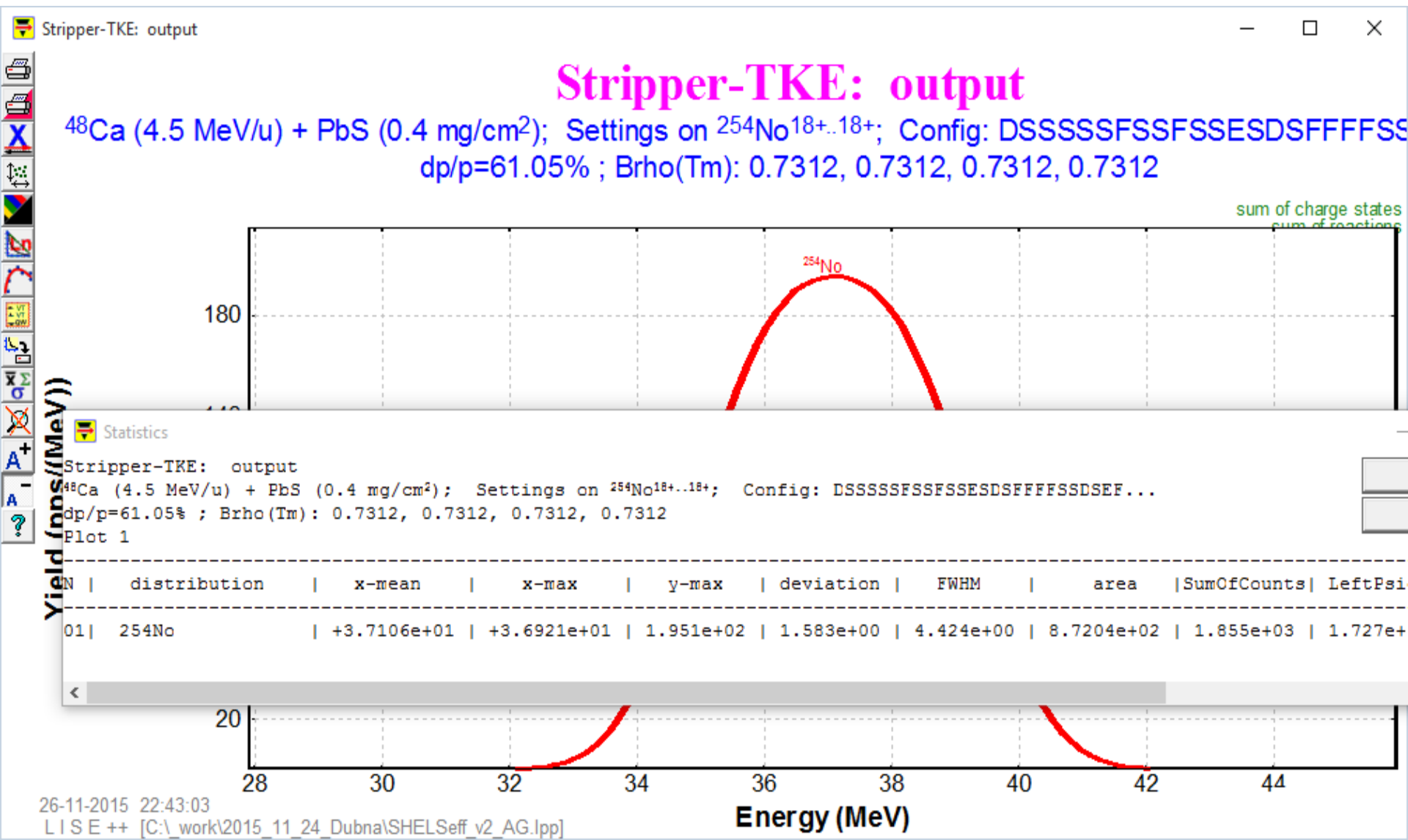
Thickness defect [OK] [Cancel]

Absorbed Dose

Thickness defect % micron [OK] [Cancel]

Use in Q-state calculations

d / Range (beam) Energy Loss in the target box [KW] Atoms / cm2



Для реакции $48\text{Ca}(216 \text{ МэВ}) + 208\text{Pb}(\text{PbS}, 0.35 \text{ mg/cm}^2 \text{ Pb}) \rightarrow 254\text{No} + 2n$
 $\langle E \rangle = 37.6 \text{ MeV}$, $\langle q \rangle = 18.2$ (Николаев - это наилучшее для медленных тяжёлых)
 Наилучшая трансмиссия получается при
 $\text{IQ1}=866.8 \text{ A}$, $\text{IQ2}=792.8 \text{ A}$, $\text{IQ3}=378.8 \text{ A}$,
 $\text{IQ4}=137.7 \text{ A}$, $\text{IQ5}=404.5 \text{ A}$, $\text{IQ6}=291.6 \text{ A}$,
 $\text{UC}(+)=87.9 \text{ kV}$, $\text{ID22}=507.2 \text{ A}$, $\text{ID8}=418.2 \text{ A}$.
 $\text{UC}(\text{total})=175.8$

C1

Electrostatic Dipole Settings

Separation plane
 Horizontal Vertical

E (electric field) 879 KV/m

U (voltage) 175.8 KV

Electric rigidity 4.1357 MJ/C

Magnetic rigidity 0.79991 Tm

for 19+
 (corresponds to the setting fragment)

C1

Electrostatic Dipole Settings

Separation plane
 Horizontal Vertical

E (electric field) 879 KV/m

U (voltage) 175.8 KV

Electric rigidity 4.1357 MJ/C

Magnetic rigidity 0.77738 Tm

for 18+
 (corresponds to the setting fragment)

1st dipole

D22_1

Dispersive block (M-dipole)

Brho 0.73123 Tm

B 0.4703 T

I 507.205 A

Bend Sector
 Radius = 1.5548 m
 Angle = 22 deg
 Length = 0.5970 m

2nd dipole

D22_2

Dispersive block (M-dipole)

Brho 0.73583 Tm

B 0.47326 T

I 507.204 A

Bend Sector
 Radius = 1.5548 m
 Angle = -22 deg
 Length = 0.5970 m

3rd dipole

D8

Dispersive block (M-dipole)

Brho 0.77178 m

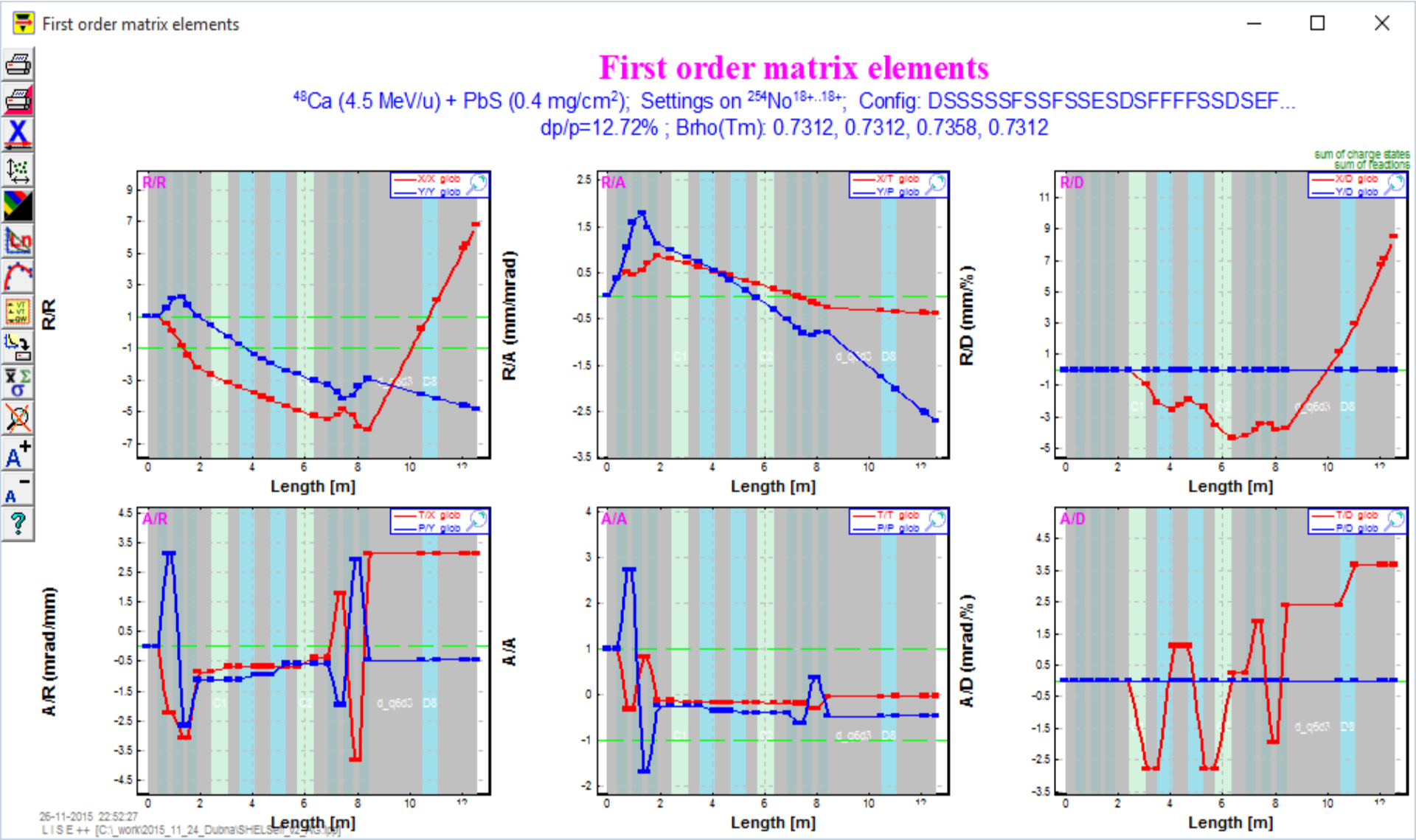
B 0.16723 T

I 418.21 A

Bend Sector
 Radius = 4.615 m
 Angle = 7.3 deg
 Length = 0.5880 m

Allow remote matrices calculation

Matrix calculations



statistics: 254No

254No

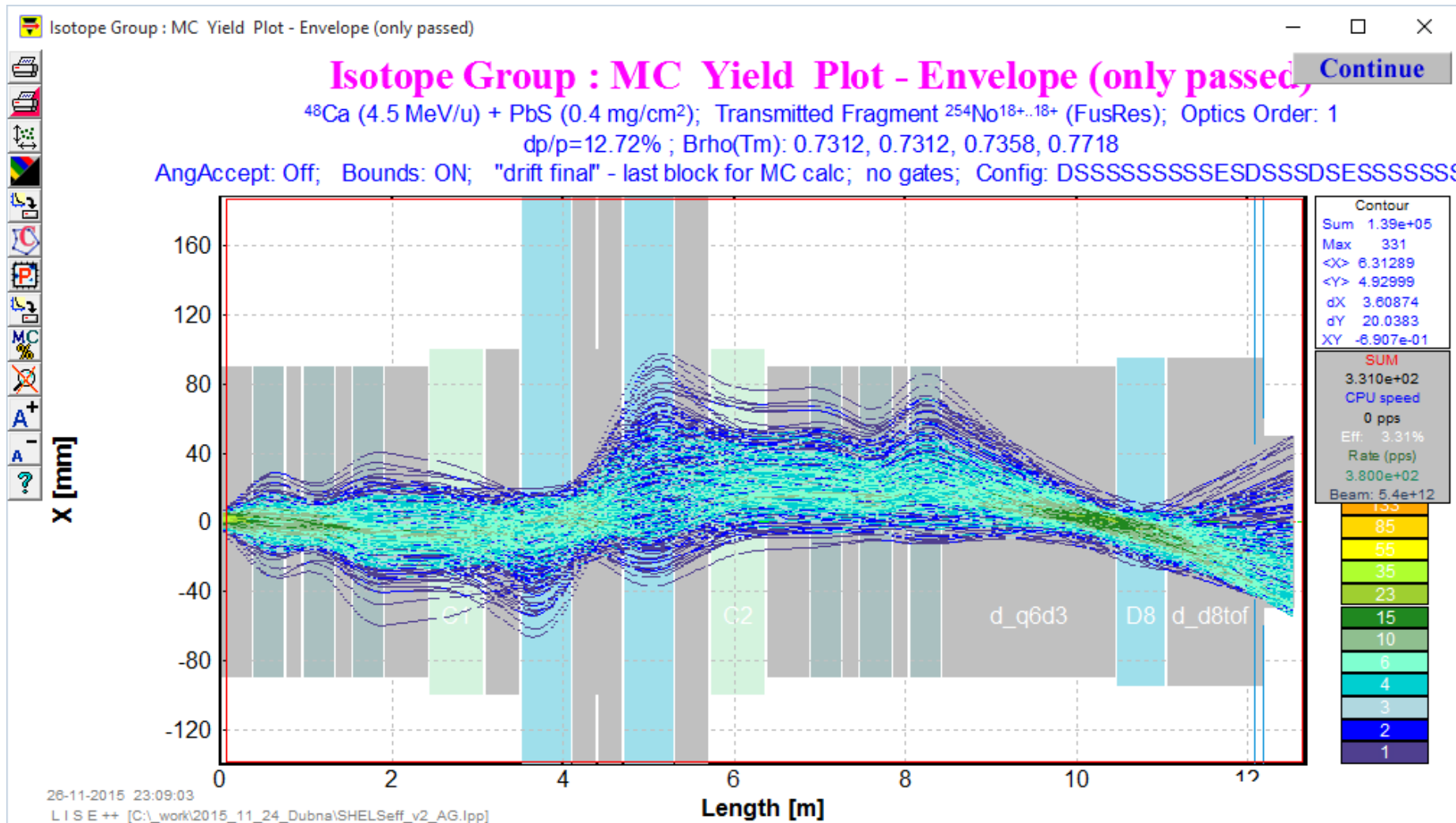
Alpha and Beta+ decay (Z=102, N=152)

Nobelium

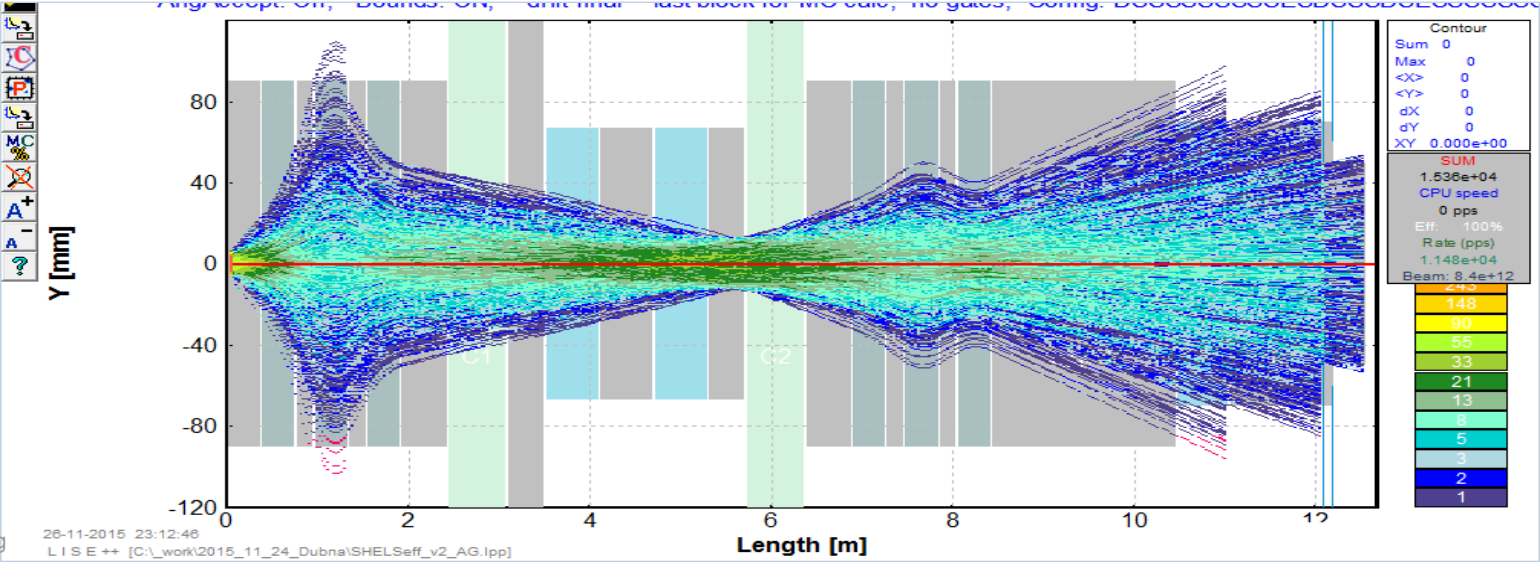
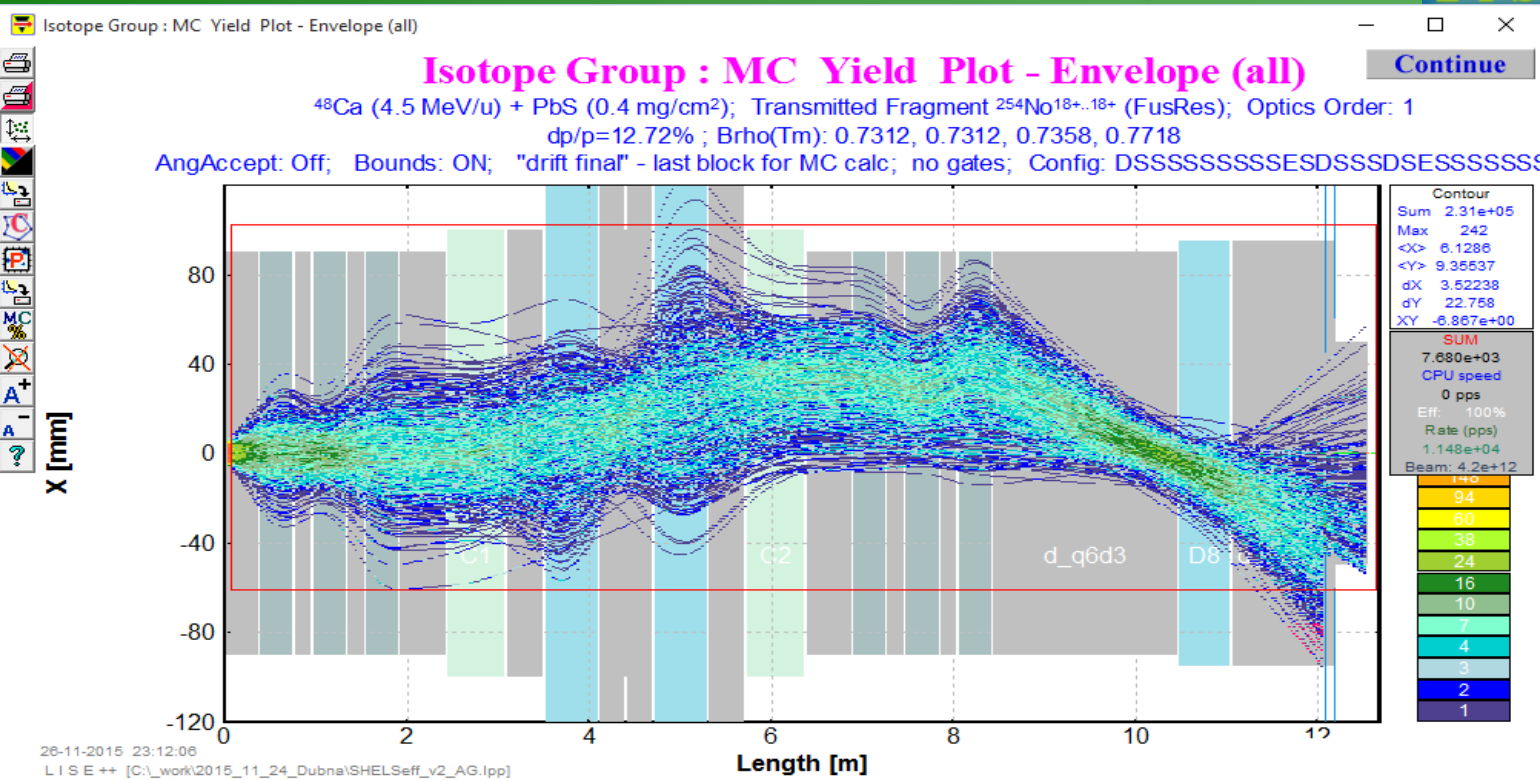
All reactions total isotope rate 0.03e+0 pps
 and Overall isotope transmission 33.232 %

Reaction	FusRes	FusRes	FusRes	FusRes	FusRes	FusRes
Q1 (tuning)	25	24	23	22	21	20
Q2 (C1)	25	24	23	22	21	20
Q3 (D22_1)	25	24	23	22	21	20
Q4 (D22_2)	25	24	23	22	21	20
Q5 (C2)	25	24	23	22	21	20
Q6 (D8)	25	24	23	22	21	20
Ion Production Rate (pps)	2.02e-1	9.25e-1	3.2e+0	8.93e+0	1.92e+1	3.3e+1
Total ion transmission (%)	0.023	0.105	0.362	1.011	2.179	3.75

Transmission 44%



Transmission : Monte Carlo (show all rays)



All block rigidities set to 0.77507 Tm

Analytical transmission	46.6%
Monte Carlo Transmission	60.7%

Files are included :

SHELSeff_v2.lpp
 SHELSeff_v2_AG_brho_calc.lpp