Acculinna's ^{27}S file and calibrations

Original

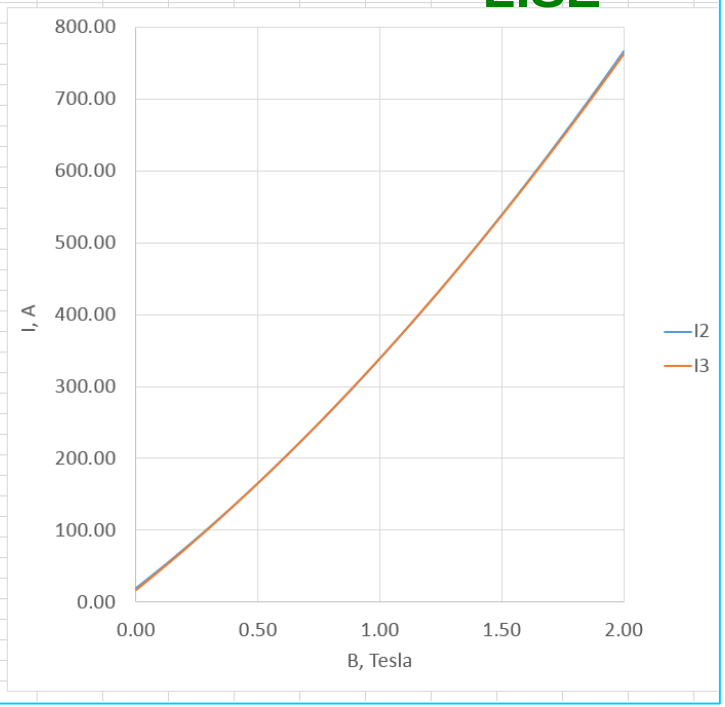
```
      program energy
                implicit REAL*8 (a-h,o-z)
                REAL*8 I2, I3

                data a0_2,a1_2,a2_2/20.19773,265.01317,54.27665/
                data a0_3,a1_3,a2_3/17.46898,272.31081,50.04487/
* calculation of ion energies from the Br value
* of the second ACCULINNA magnet
* (data of Feb. 2005)
      R=3.
      u=931.502
* U_ustavka in A
      iflag=0
10    if (iflag.eq.1) go to 30
      write(6,200)
200   format('  Enter    I2(ustavka,Amp), I3(ustavka,Amp)')
30    read(5,*) I2,I3
      if (I2.eq.0.) stop
          write(6,201)
201   format('   Enter    A_ion, Z_ion')
          read(5,*) A,Z
! Magnet #2 (Tesla)
          Discr_2 = sqrt(a1_2**2-4.*(a0_2-I2)*a2_2)
          if (Discr_2.ge.0.) then
                B2 = (-a1_2 + Discr_2
          else
                B2 = 0.
          endif
! Magnet #3 (Tesla)
          Discr_3 = sqrt(a1_3**2-4.*(
          if (Discr_3.ge.0.) then
                B3 = (-a1_3 + Discr_3
          else
                B3 = 0.
          endif
```

LISE^{++} development : v.9.10.82
from 04/06/15

$$I = a2*B^2 + a1*B + a0$$

	I = a2*B^2 + a1*B + a0	B2	I2	B3	I3
		0.00	20.20	0.00	17.47
		0.02	25.52	0.02	22.94
		0.04	30.89	0.04	28.44
	a0_2= 20.19773	0.06	36.29	0.06	33.99
	a1_2= 265.01317	0.08	41.75	0.08	39.57
	a2_2= 54.27665	0.10	47.24	0.10	45.20
		0.12	52.78	0.12	50.87
	a0_3= 17.46898	0.14	58.36	0.14	56.57
	a1_3= 272.31081	0.16	63.99	0.16	62.32
	a2_3= 50.04487	0.18	69.66	0.18	68.11
		0.20	75.37	0.20	73.93
		0.22	81.13	0.22	79.80
		0.24	86.93	0.24	85.71
		0.26	92.77	0.26	91.65
		0.28	98.66	0.28	97.64
		0.30	104.59	0.30	103.67
		0.32	110.56	0.32	109.73
		0.34	116.58	0.34	115.84
		0.36	122.64	0.36	121.99
		0.38	128.74	0.38	128.17
		0.40	134.89	0.40	134.40
		0.42	141.08	0.42	140.67
		0.44	147.31	0.44	146.97
		0.46	153.59	0.46	153.32
		0.48	159.91	0.48	159.71
		0.50	166.27	0.50	166.14
		0.52	172.68	0.52	172.60
		0.54	179.13	0.54	179.11
		0.56	185.63	0.56	185.66
		0.58	192.16	0.58	192.24
		0.60	198.75	0.60	198.87
		0.62	205.37	0.62	205.54
		0.64	212.04	0.64	212.25
		0.66	218.75	0.66	218.99
		0.68	225.50	0.68	225.78

LISE^{++}



B2 is assigned to Dipole1
B3 is assigned to Dipole2

Is it correct???

Acculinna.xlsx file has been attached to the mail

Acculinna' files in the 9.10.182 package

\lise\files\examples\dubna*

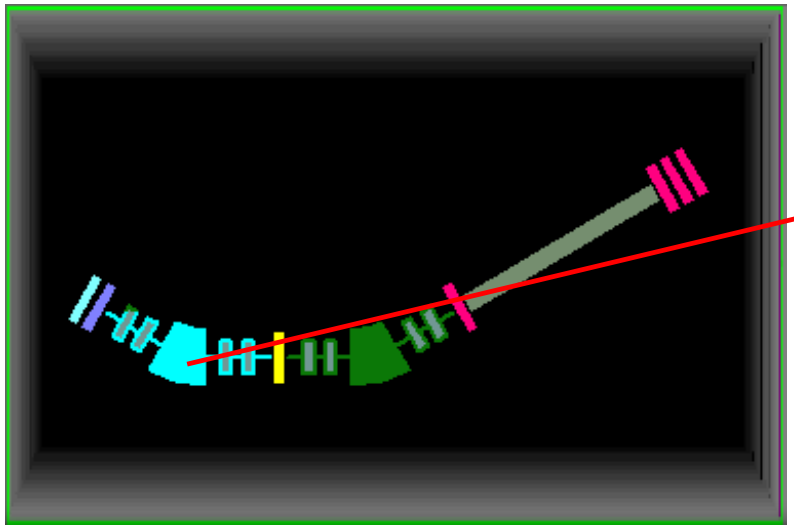
Name	Ext
[..]	
acculinna_27S	lpp
Dubna_GFS	lpp
Dubna_GFS 1.0mg	lpp
Dubna_GFS 0.3mg	lpp
eMSP144	lpp

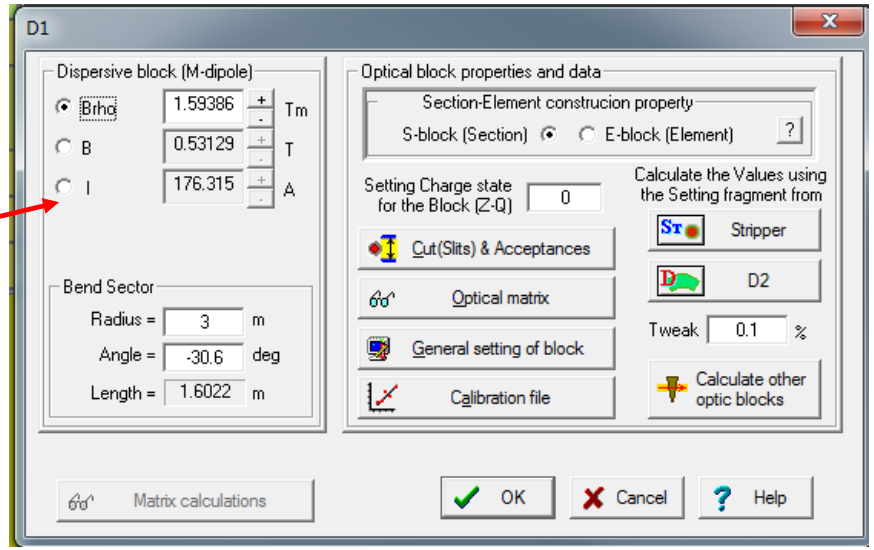
This file uses the dipole calibrations

\lise\calibrations\FLNR*.*

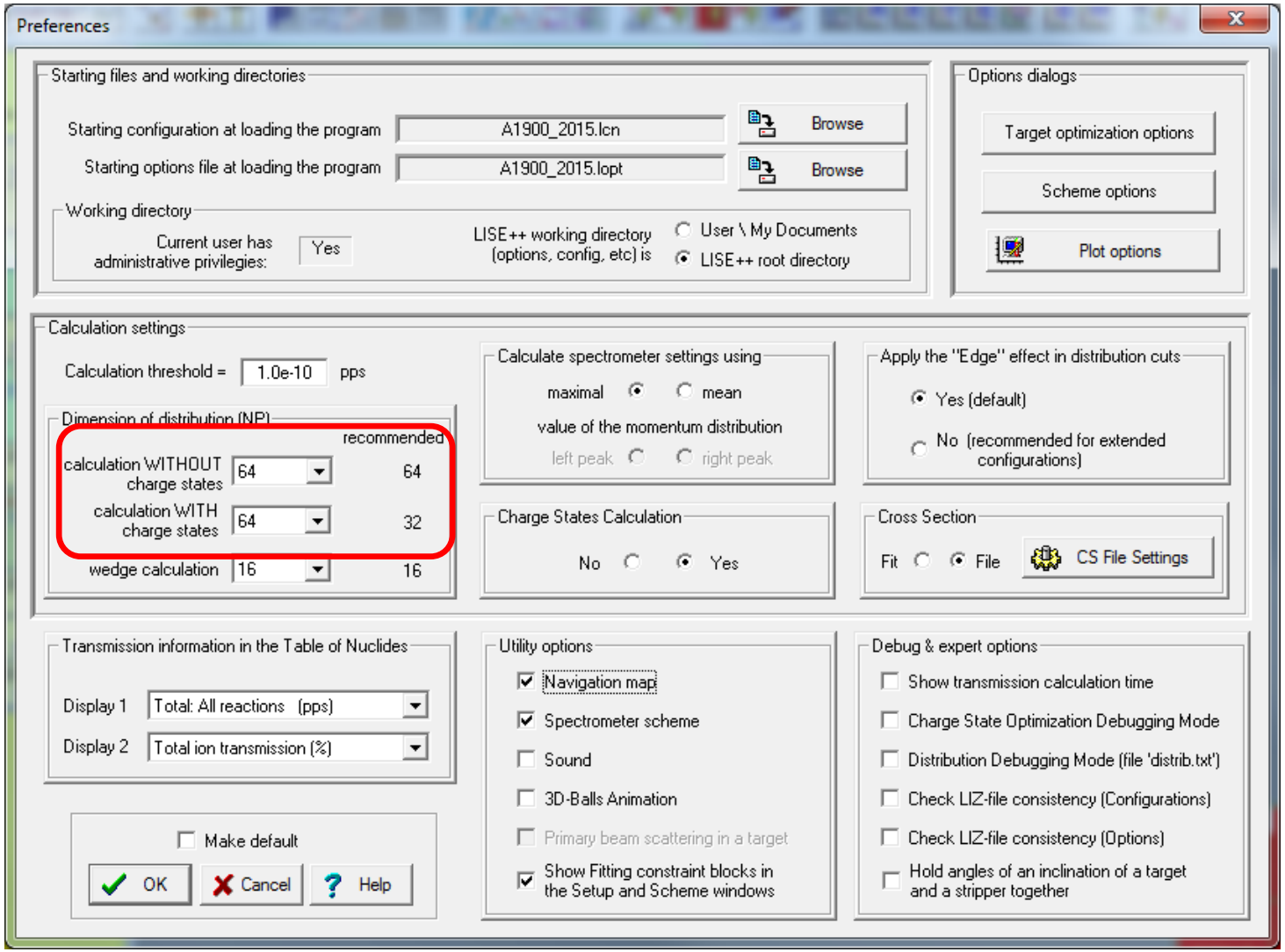
Name	Ext
[..]	
Acculinna_B3	cal
Acculinna_B2	cal
Q6	cal
Q5	cal
Q4	cal

These new files have been attached to the mail

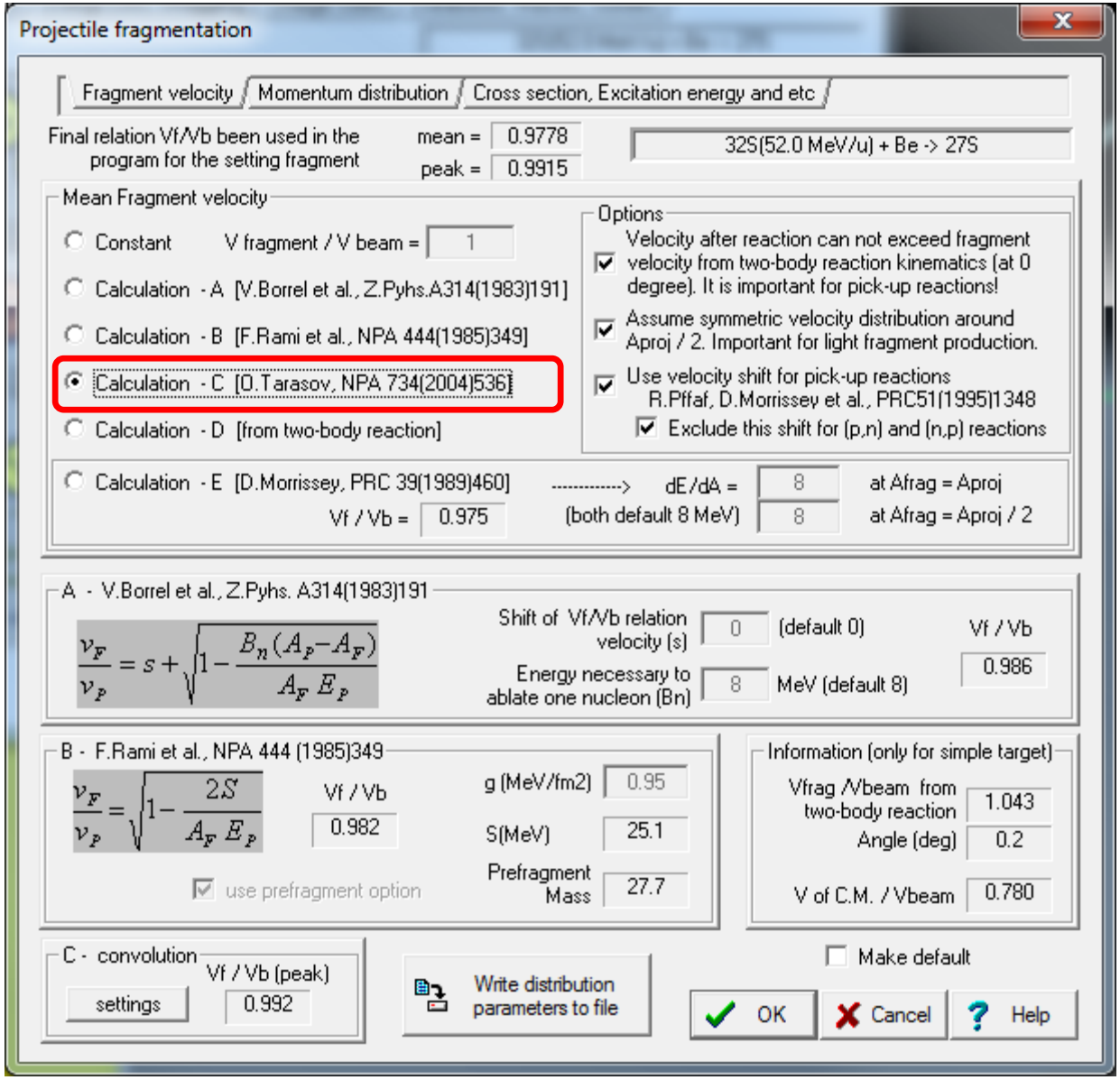




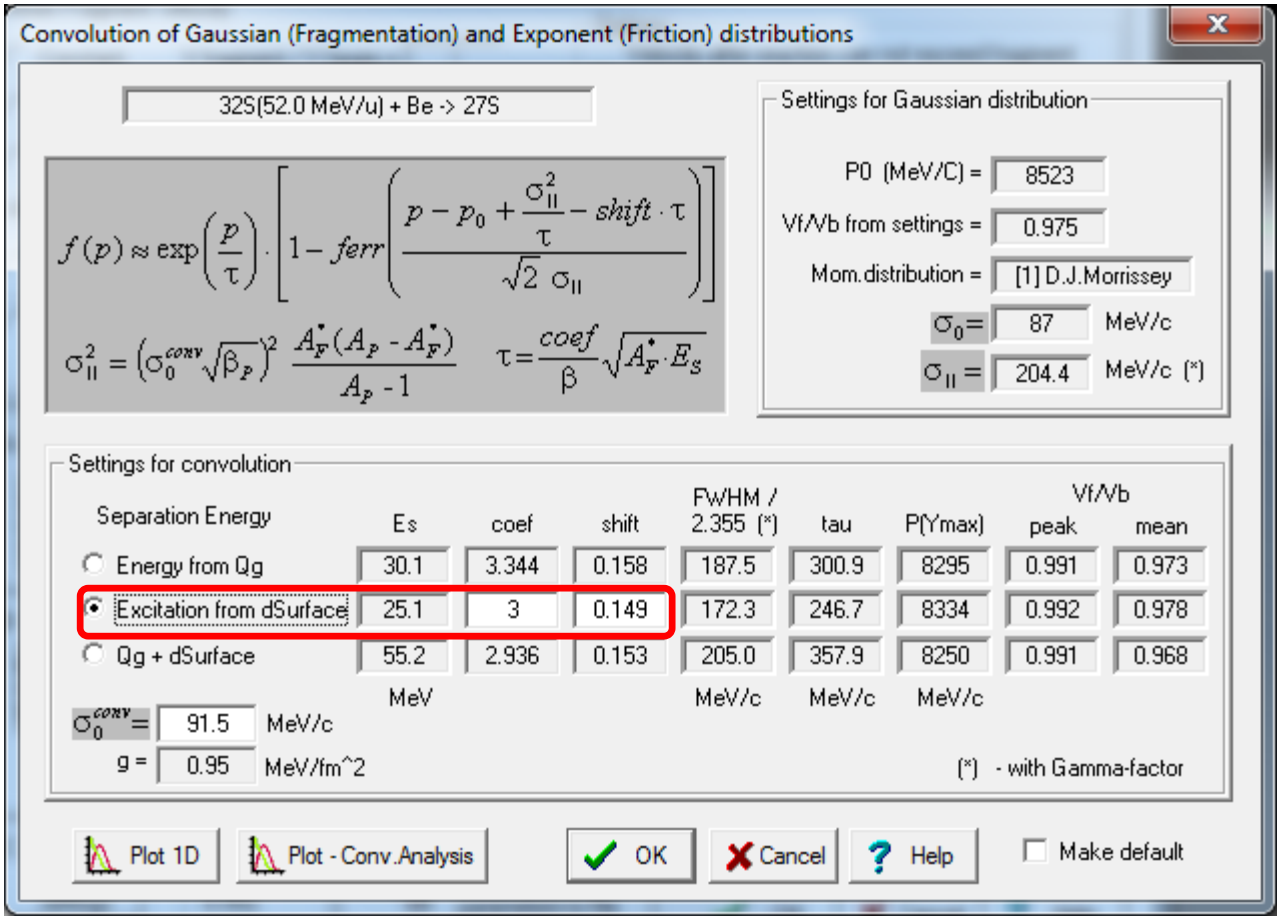
^{27}S file modifications



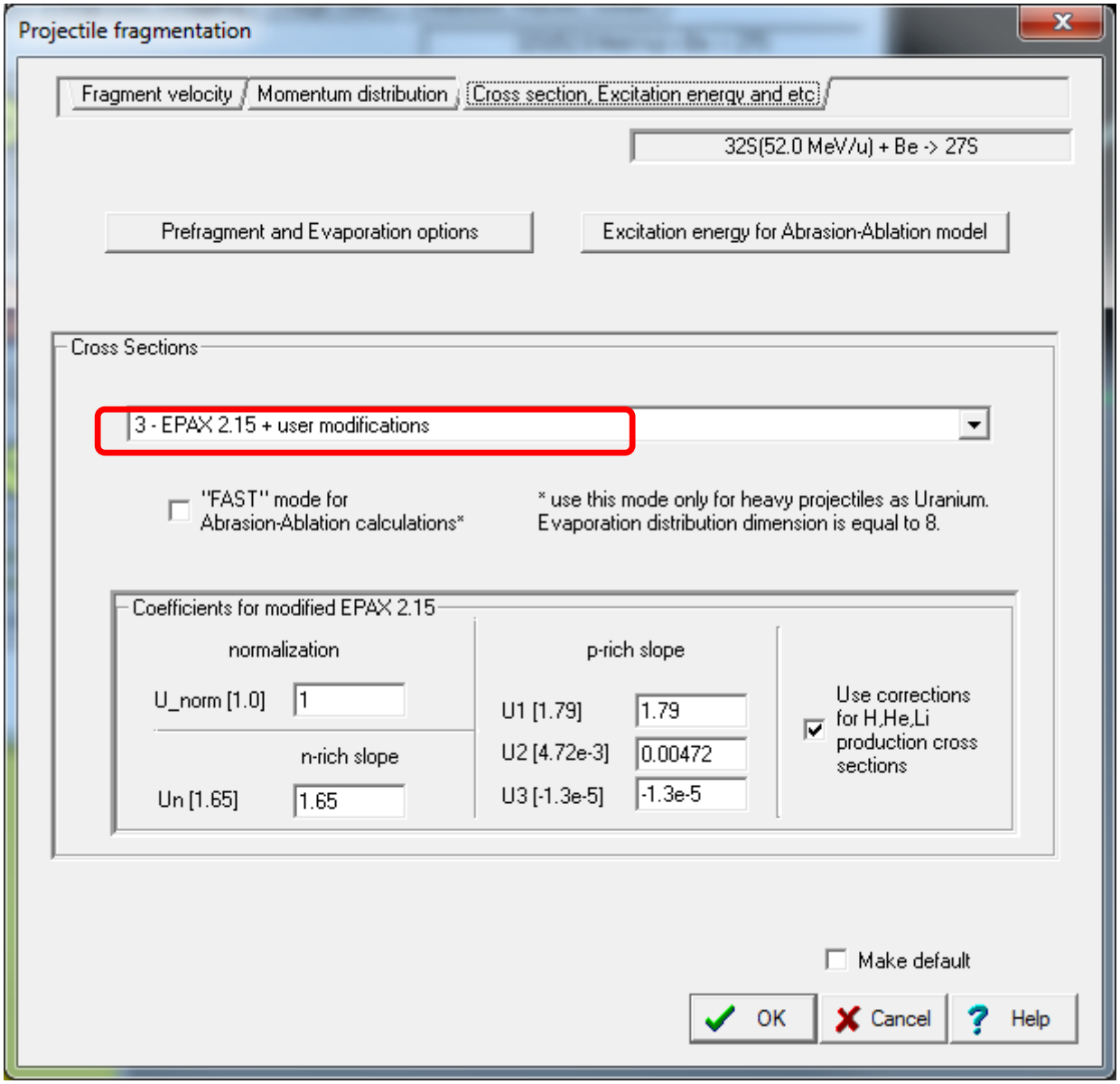
^{27}S file modifications



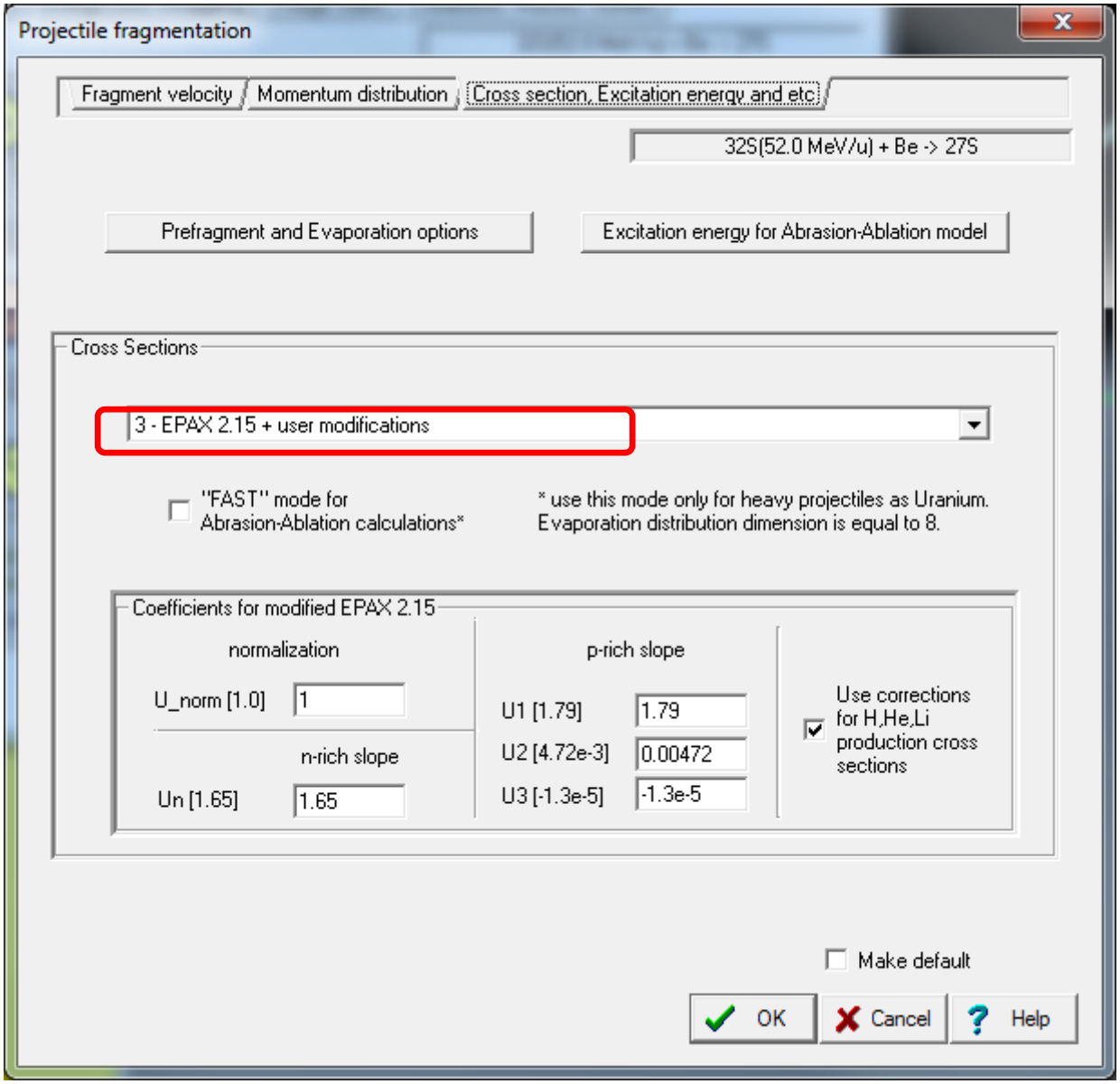
^{27}S file modifications



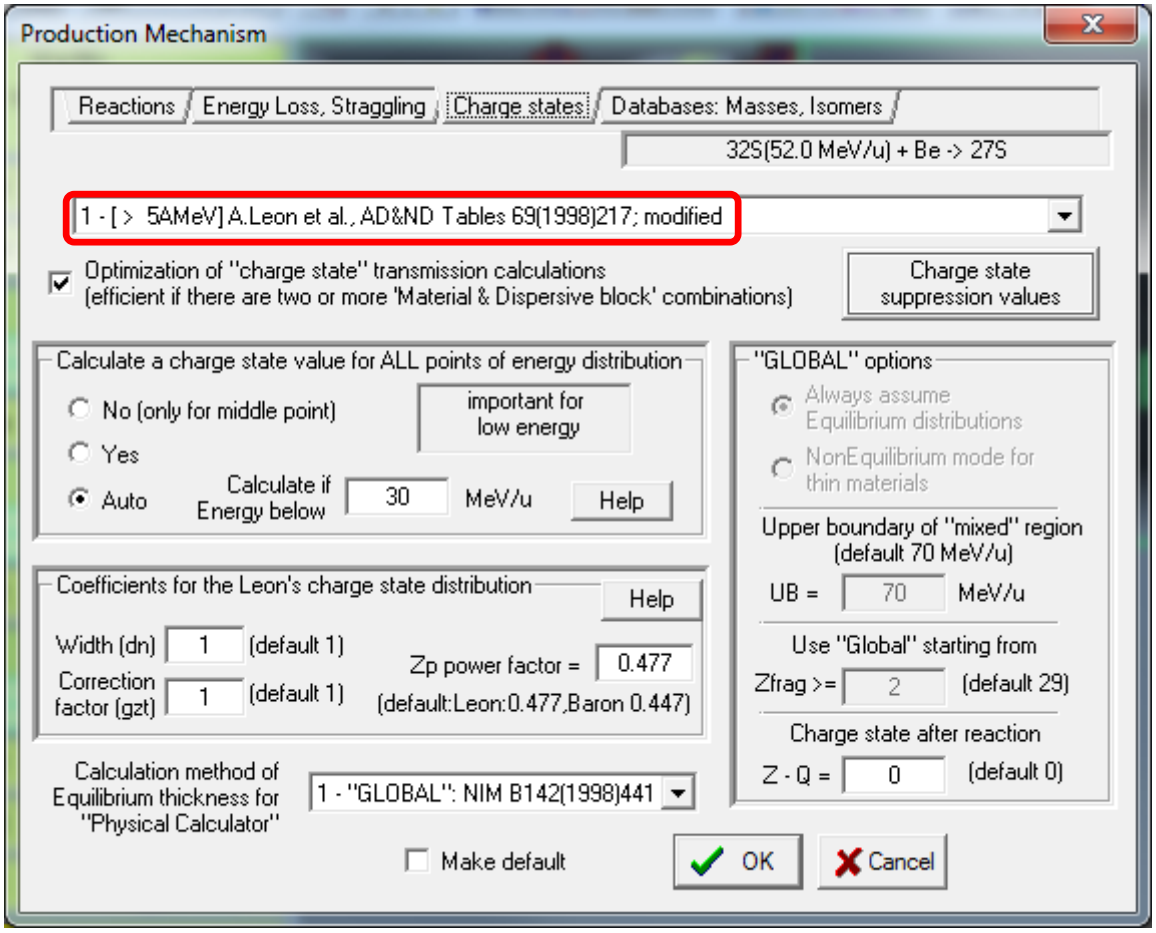
^{27}S file modifications



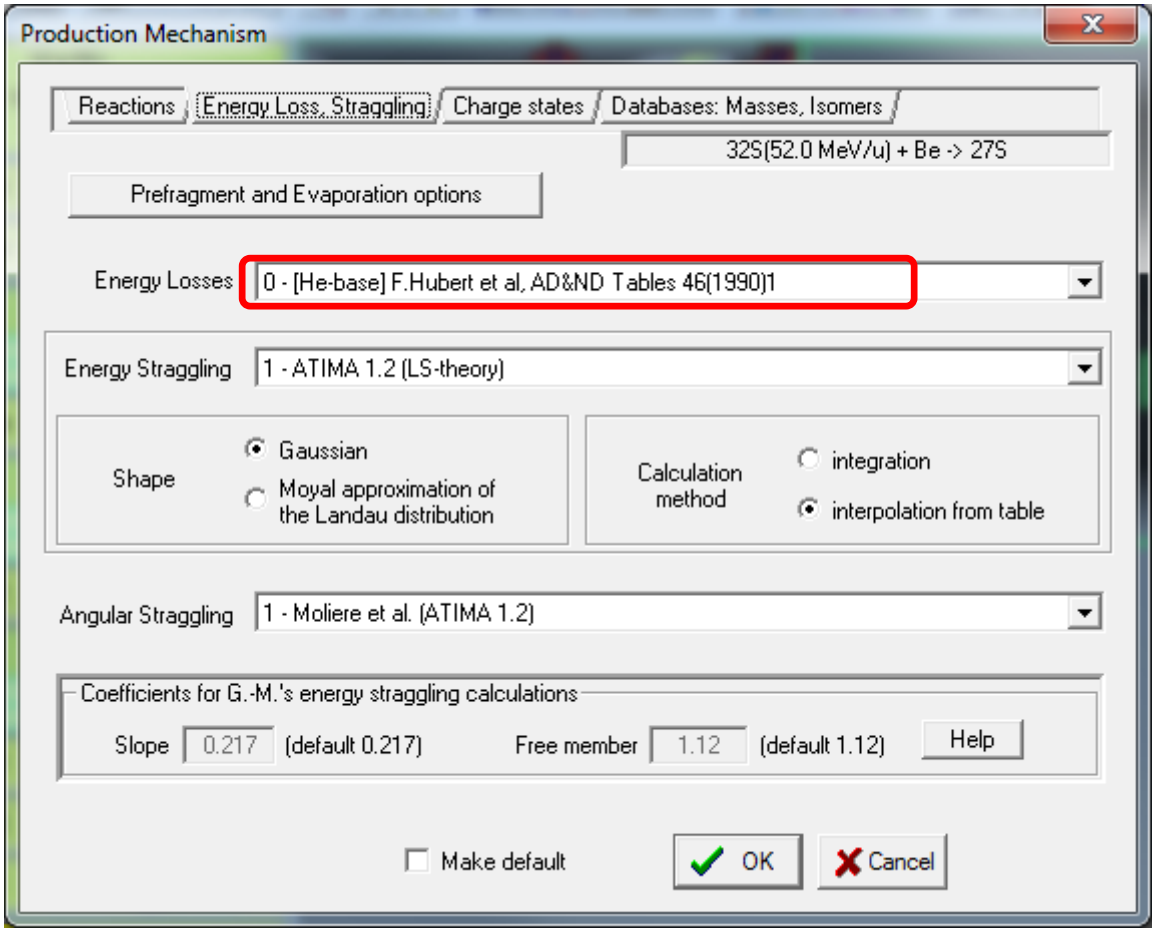
^{27}S file modifications



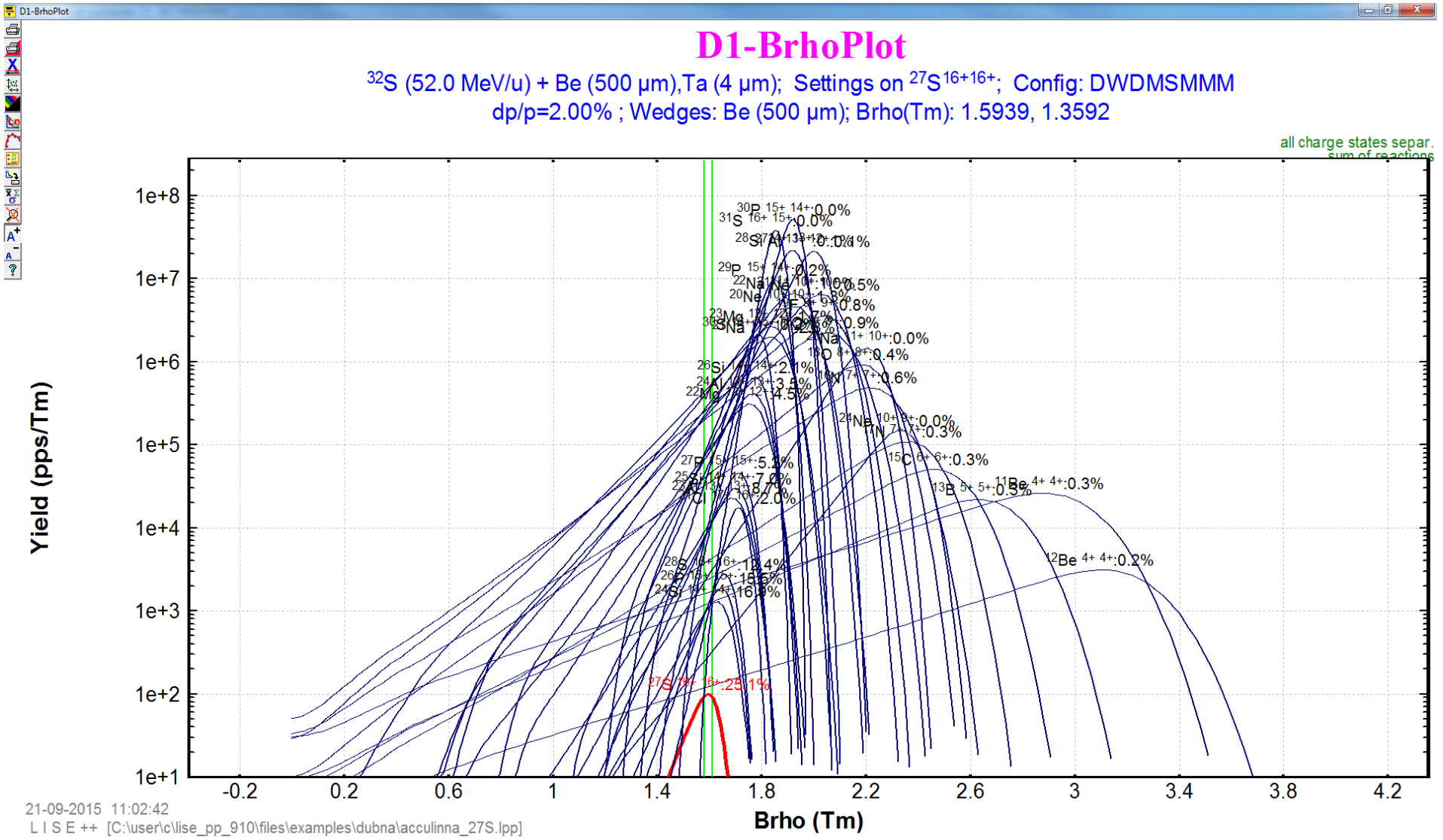
^{27}S file modifications



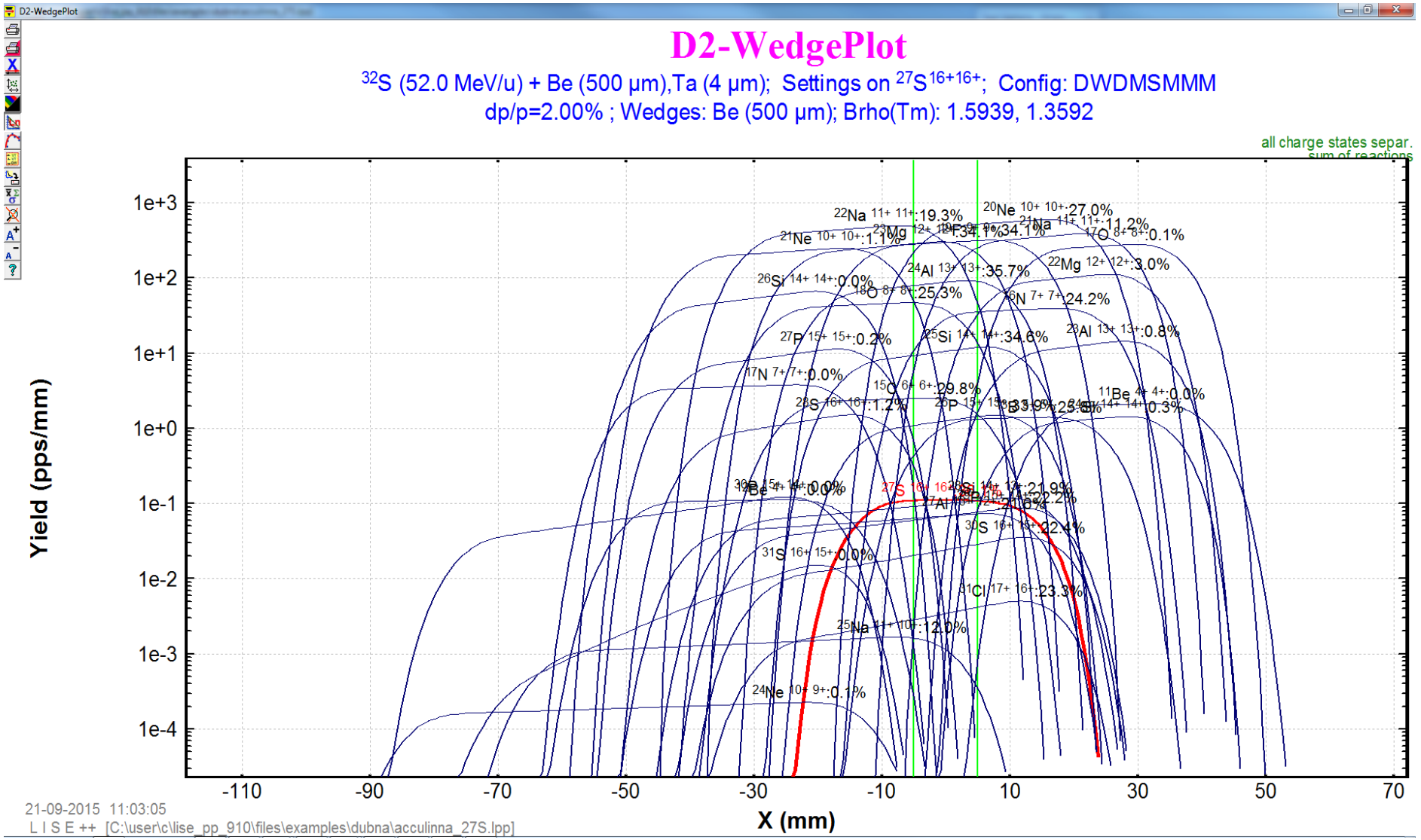
^{27}S file modifications



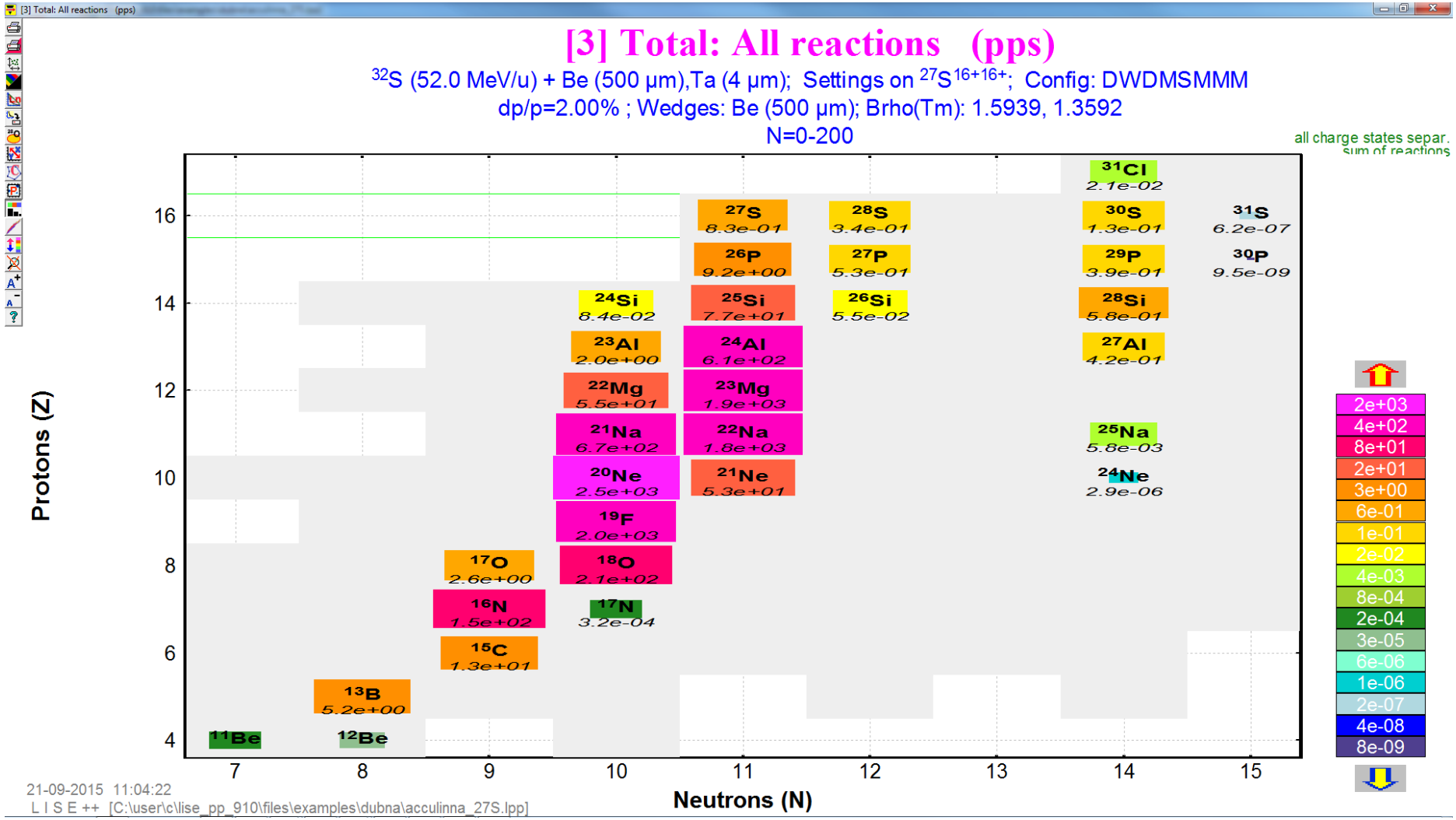
Simulation with ^{27}S file



Simulation with ^{27}S file



Simulation with ^{27}S file



Total rate is 1e+4 pps per 100 pnA

^{27}S file -> conclusions

1. Use achromatic wedge instead homogeneous
2. Play more with target-wedge-slits combination for better purity
3. Think about a velocity filter in the proton-rich region