Analytical solution for two-body and fission reaction transmission; UserDiffCS

Update 2
V.9.6.65
From 07/03/13

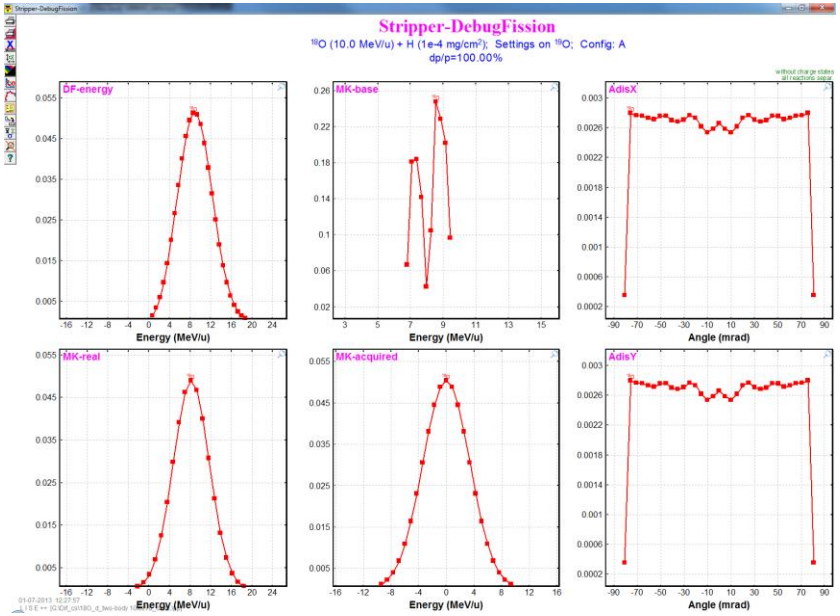
1. Modification analytical transmission calculations for two-body and fission reactions

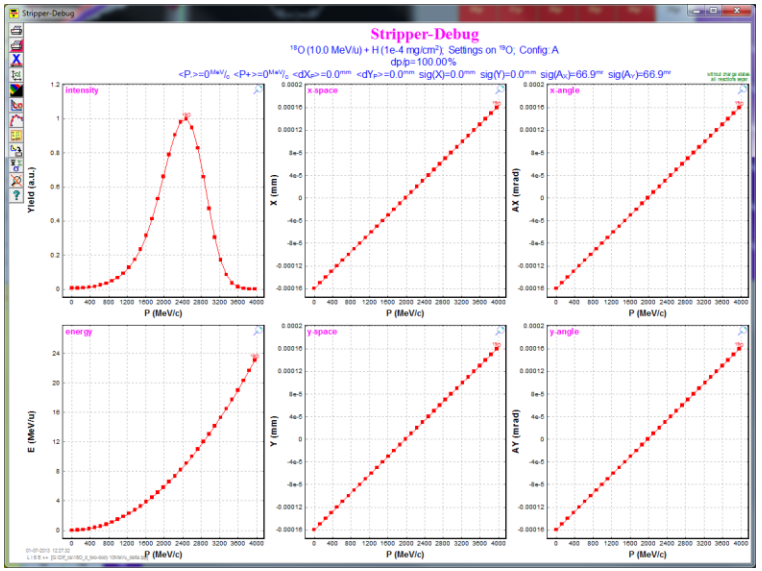
2. Use UserDiffCS in Analytical transmission calculations for two-body reactions

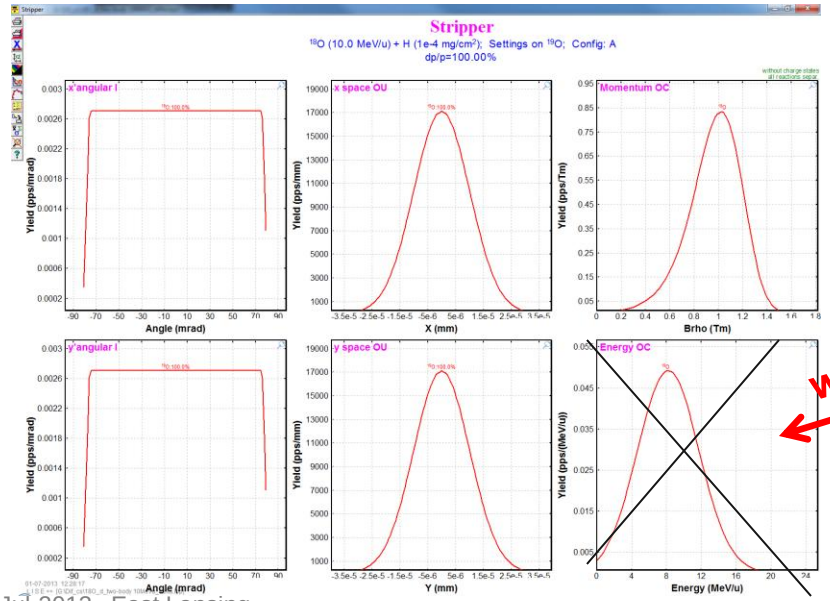
3. Excitation Energy of fragments

4. Correction in the MC Output rays dialog

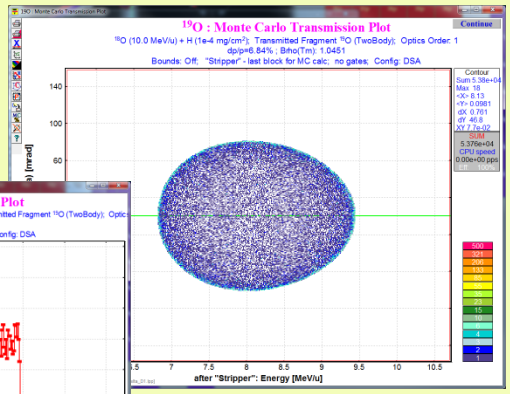
Old analytical solution

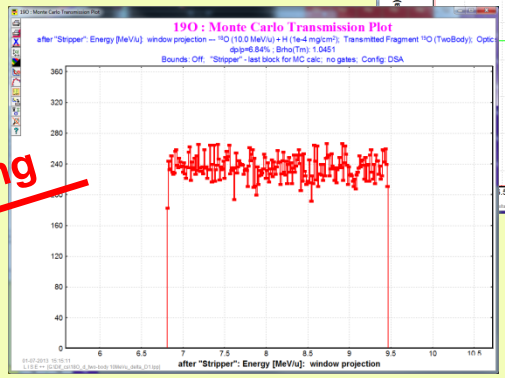






MC test

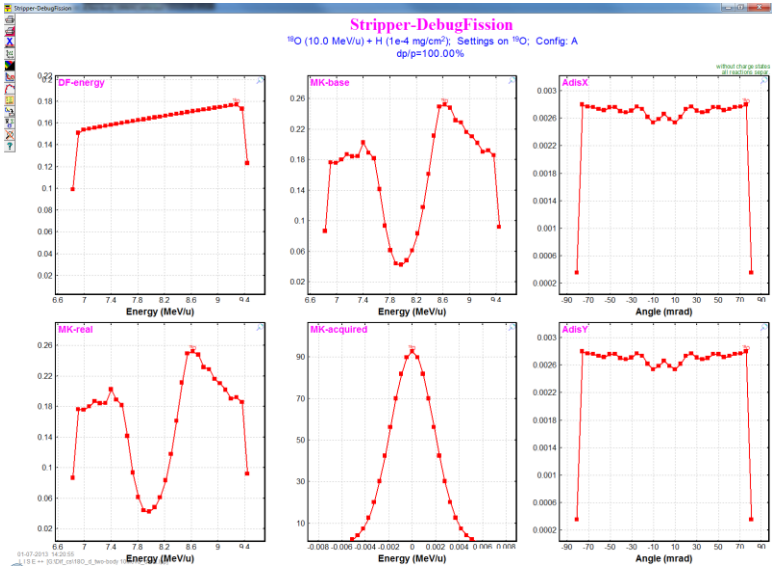


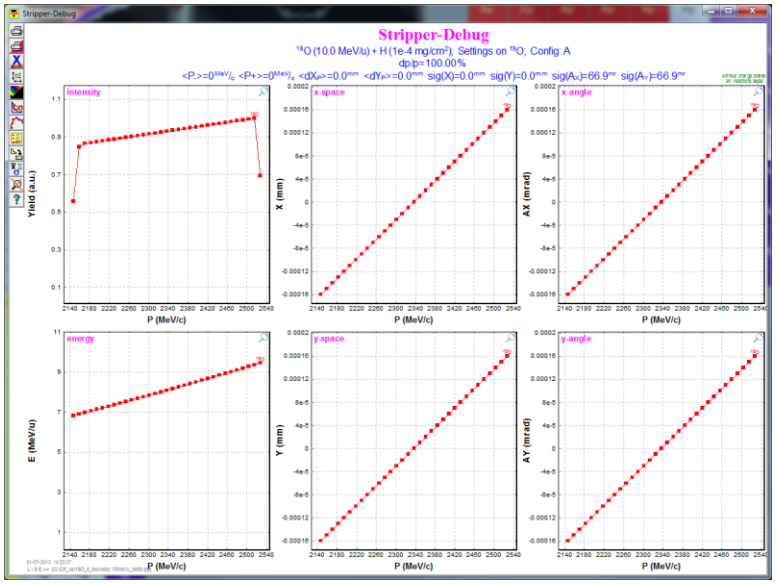


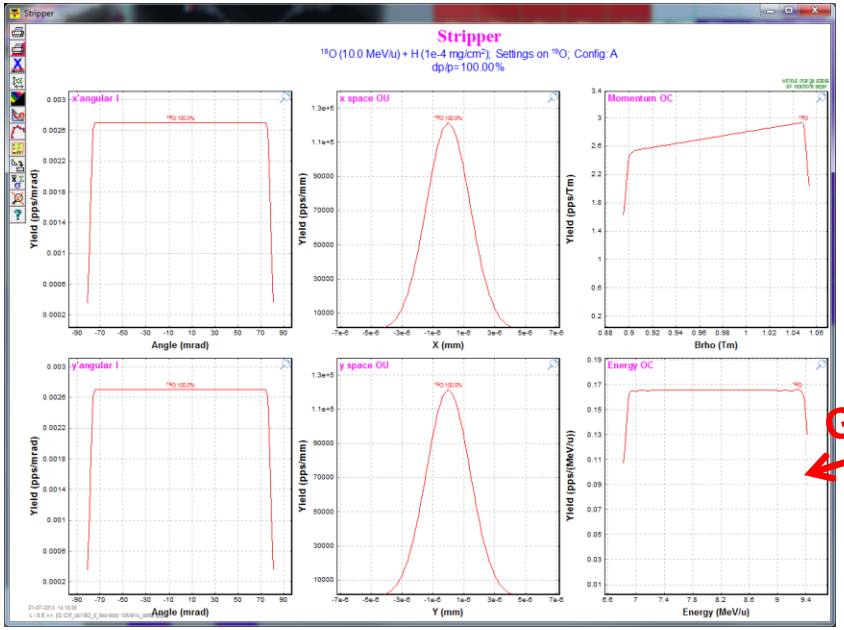
wrong

User Differential Cross Sections for Two-Body reactions : Analytical

New analytical solution

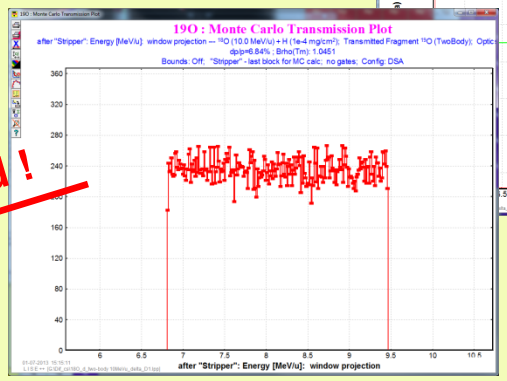


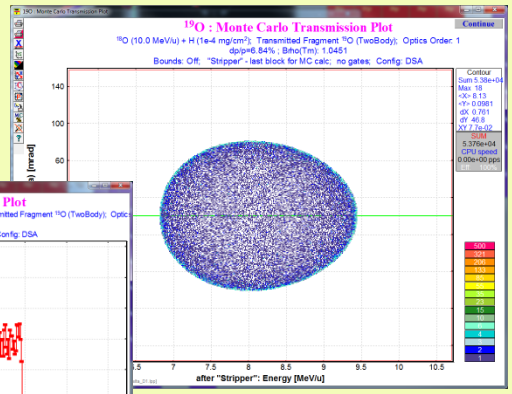




Good !

MC test





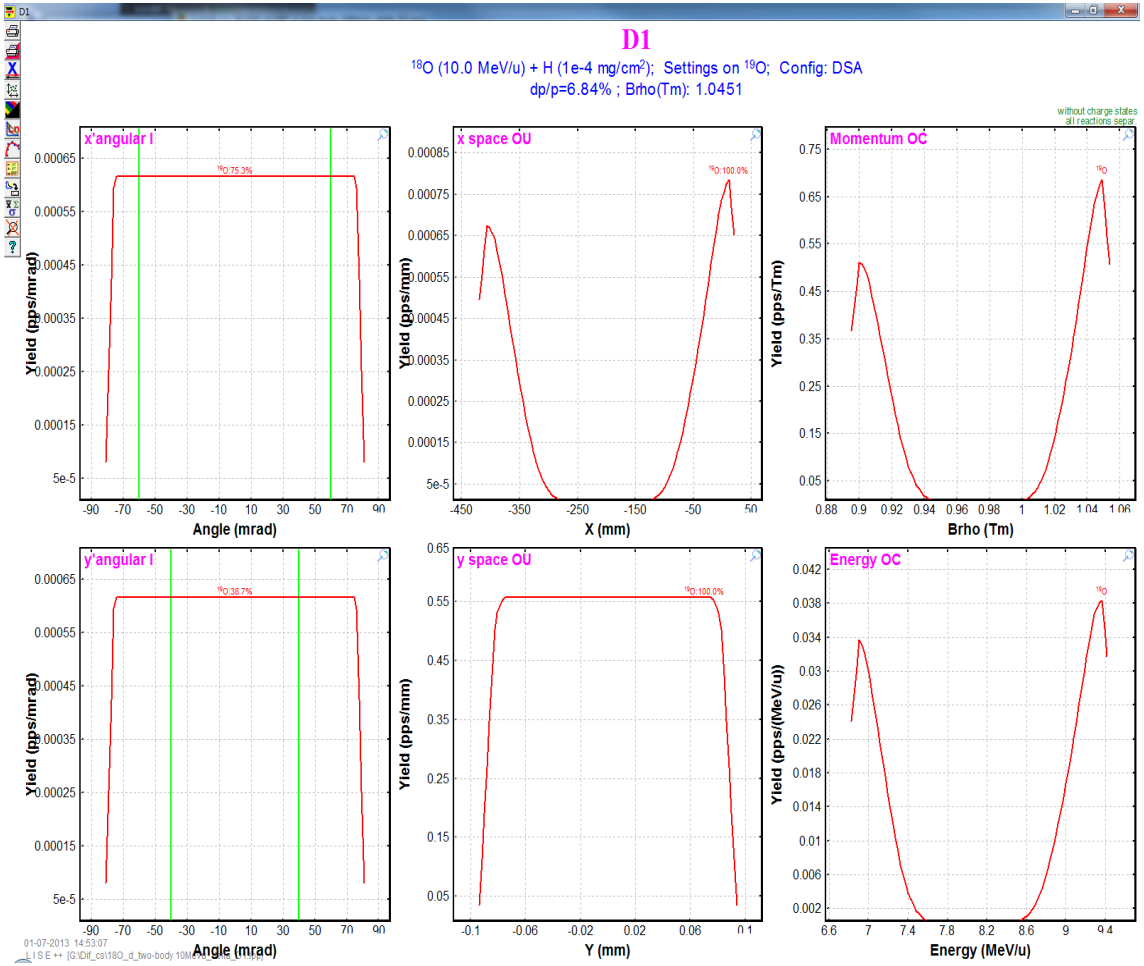
User Differential Cross Sections for Two-Body reactions : Analytical

http://lise.nscl.msu.edu/9_6/DifCS/18O_d_two-body 10MeVu_delta_D1.lpp

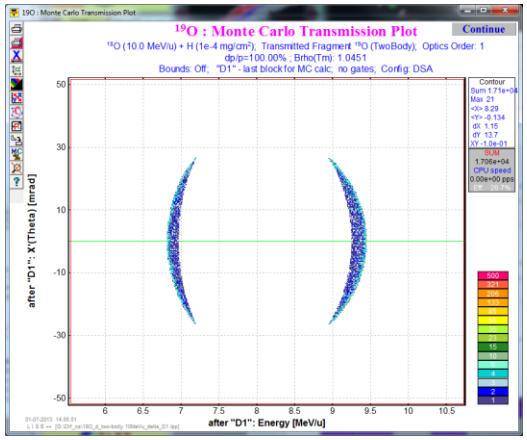
Thin target
Zero emittance

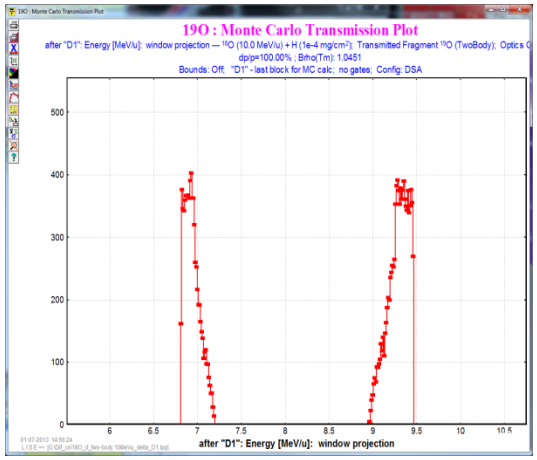
After Angular acceptance use

Analytical solution: 29% transmission



MC solution: 21% transmission





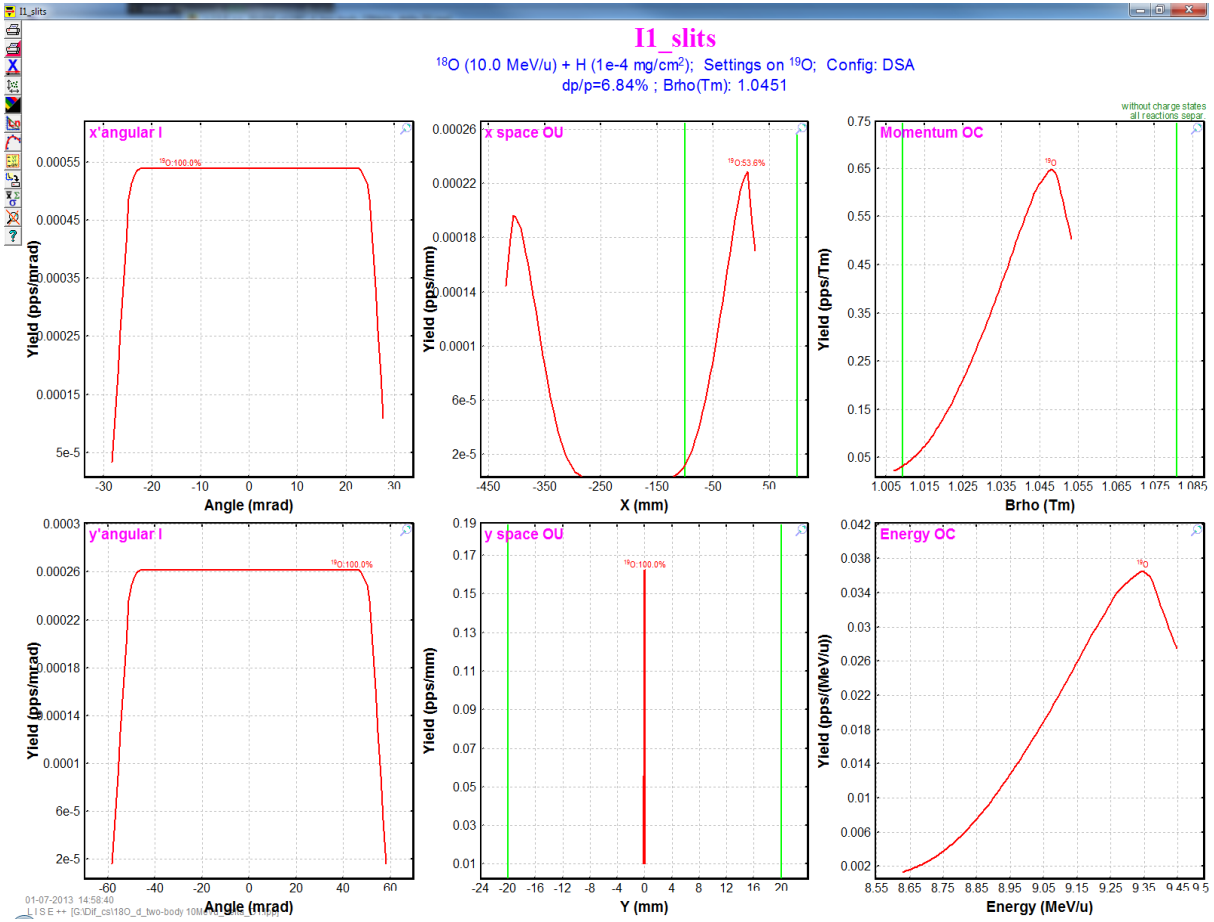
User Differential Cross Sections for Two-Body reactions : Analytical

http://lise.nscl.msu.edu/9_6/DifCS/18O_d_two-body 10MeVu_delta_D1.lpp

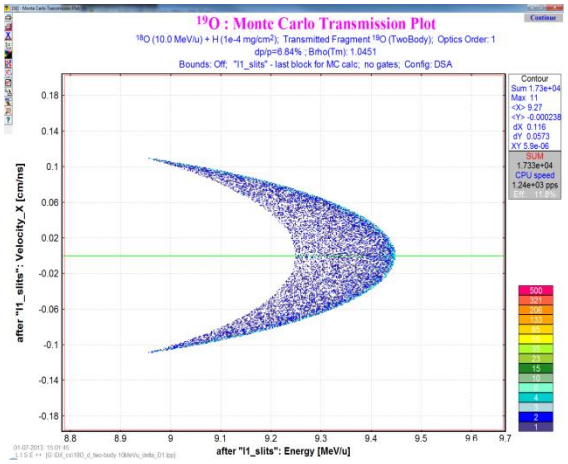
Thin target
Zero emittance

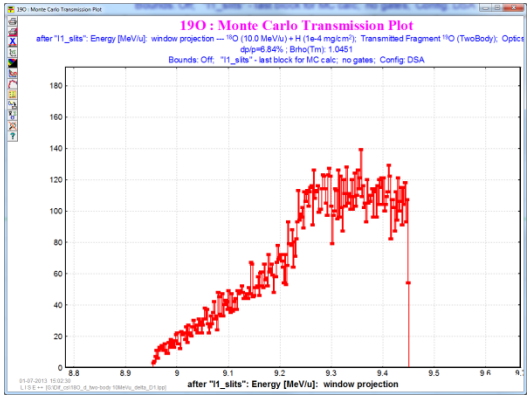
After Angular acceptance + slits use

Analytical solution: 17.2% transmission



MC solution: 12% transmission



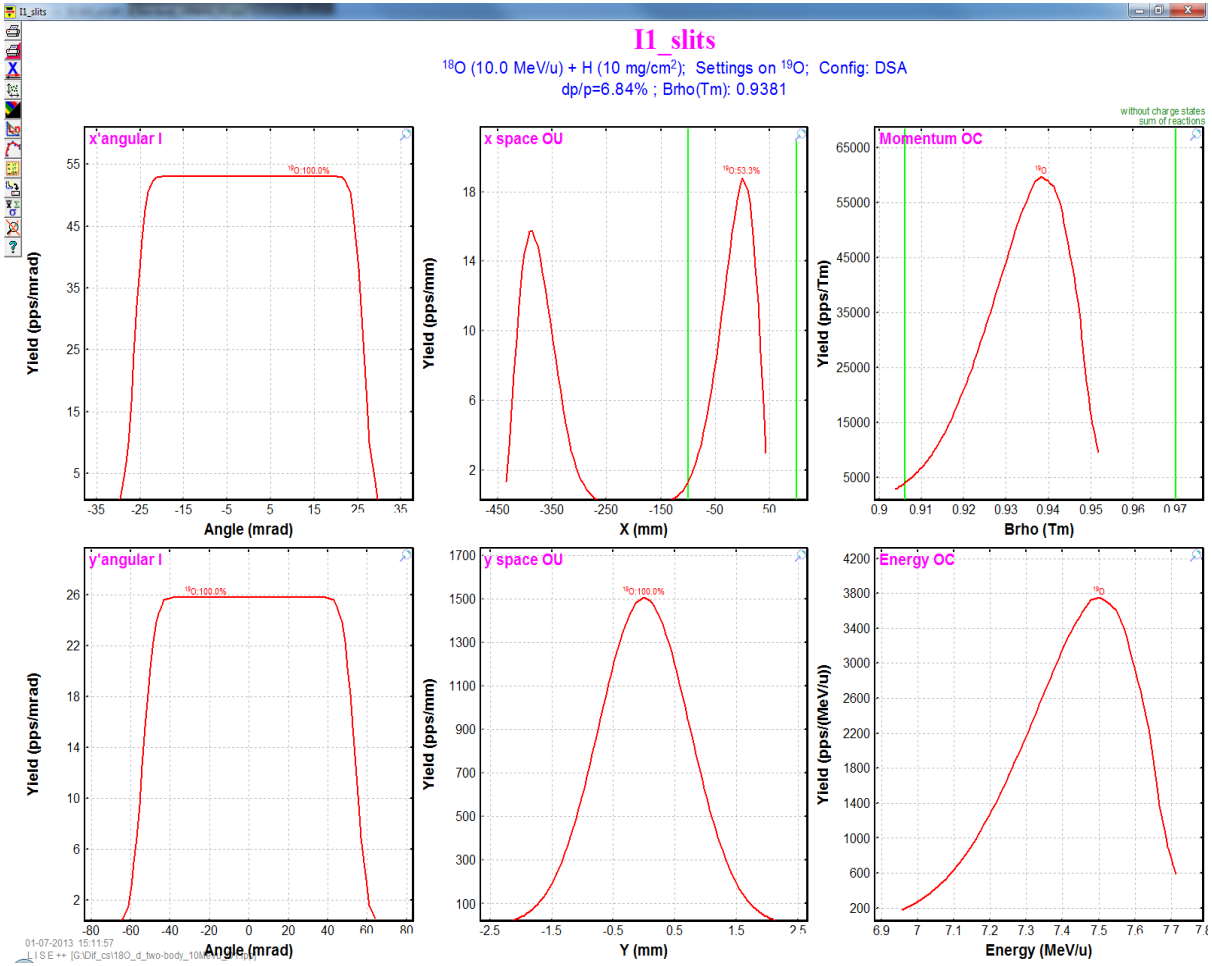


http://lise.nscl.msu.edu/9_6/DifCS/18O_d_two-body_10MeVu_D1.lpp

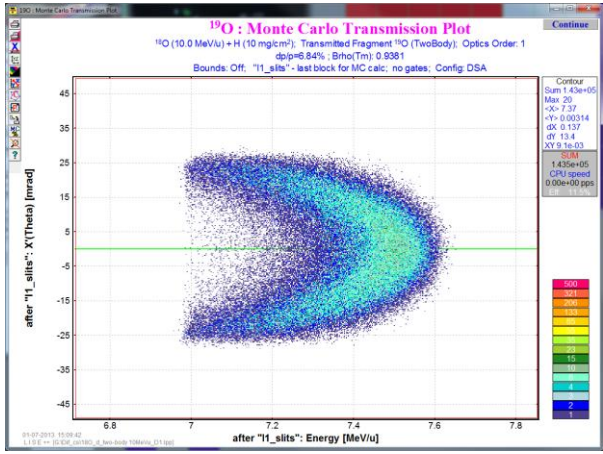
Target 10mg/cm²
Real emittance

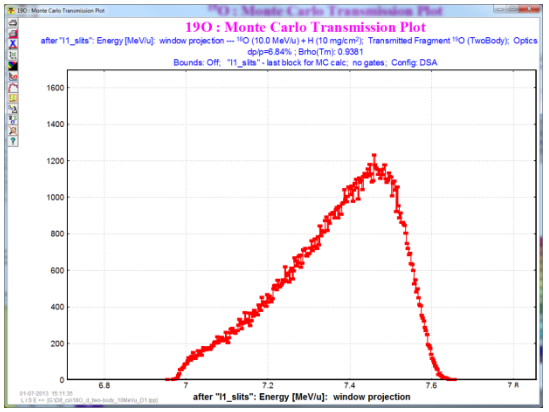
After Angular acceptance + slits use

Analytical solution: 15.1% transmission

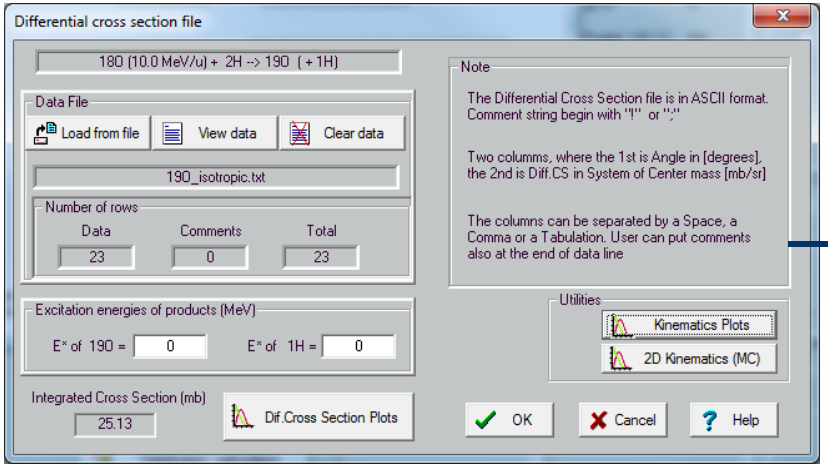


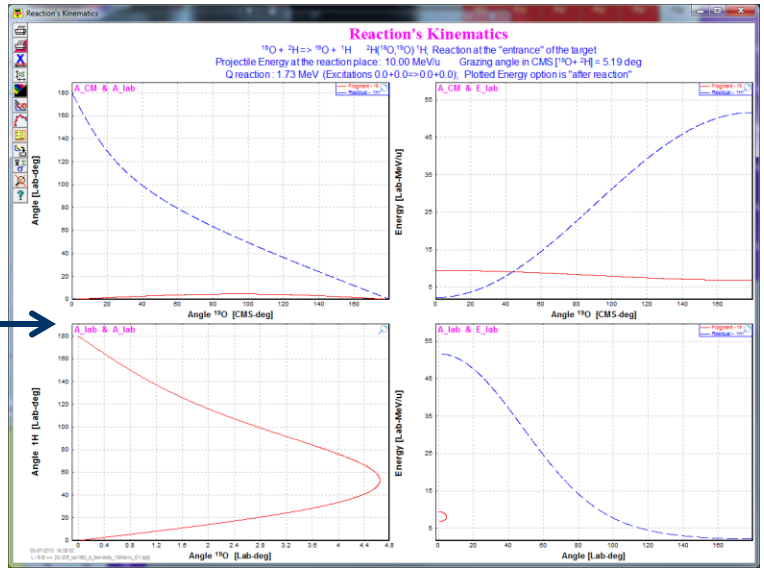
MC solution: 11.5% transmission

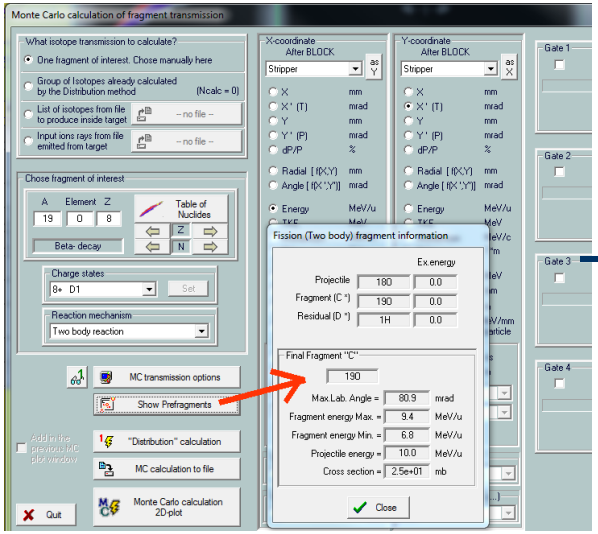


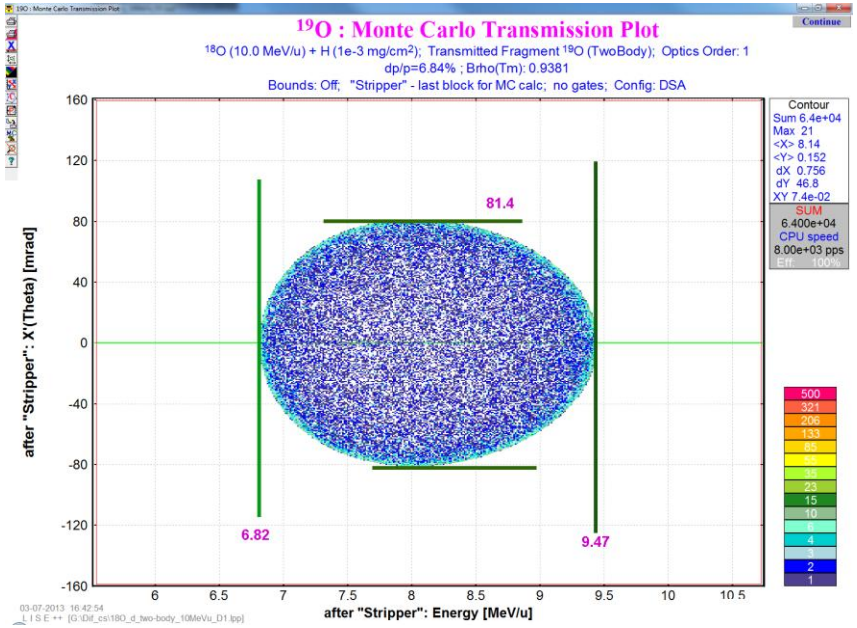


Isotropic, E* = 0



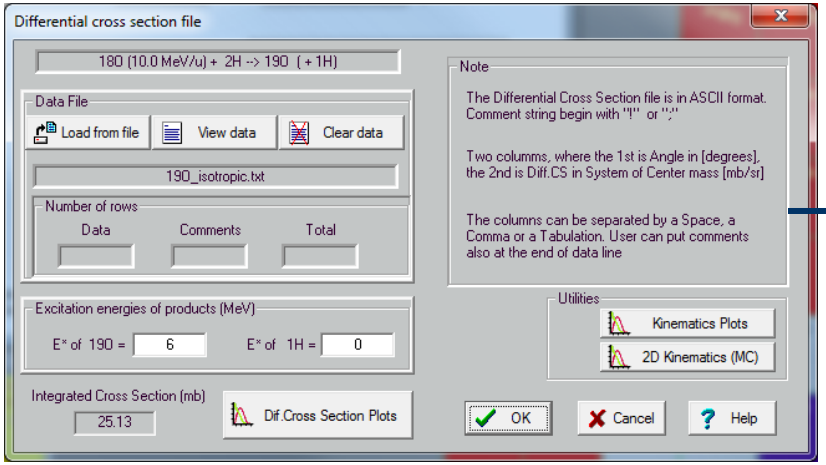


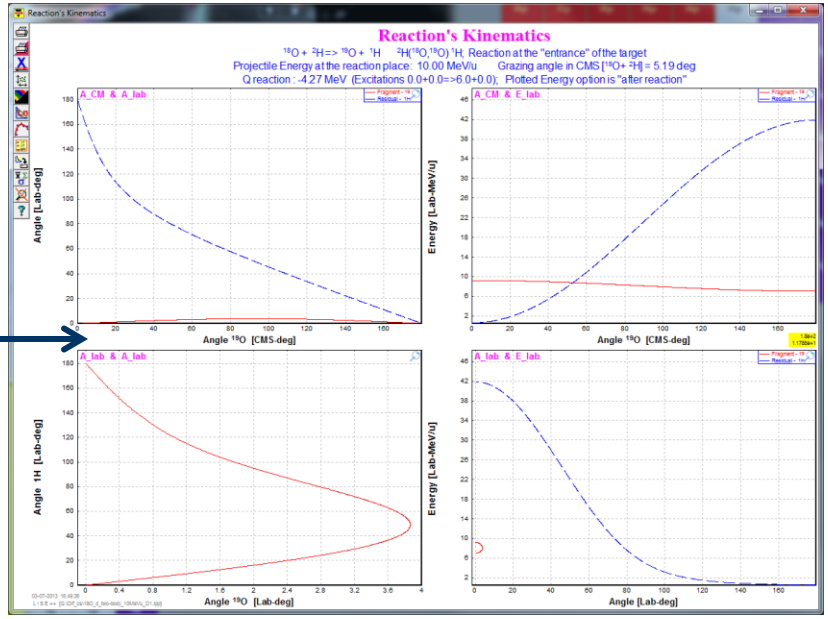


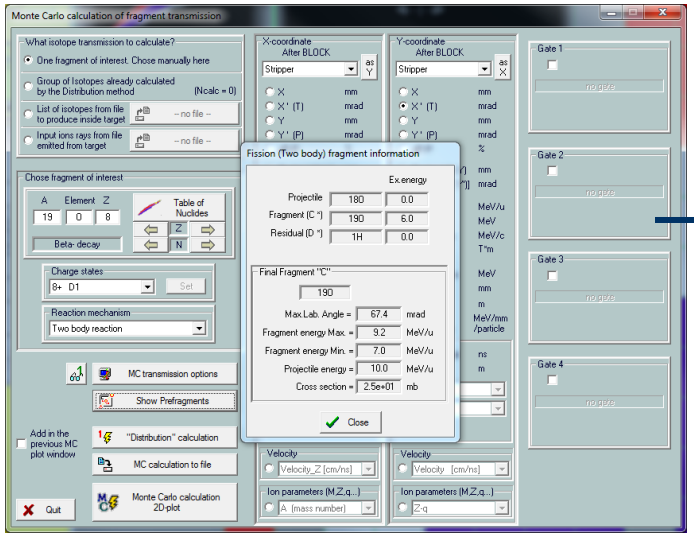


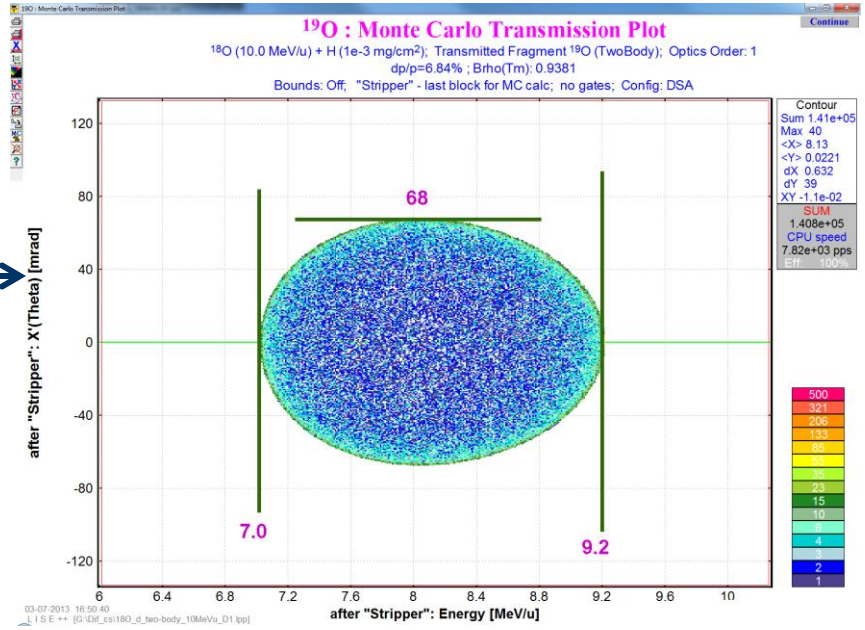
3. User Differential Cross Sections for Two-Body reactions

Isotropic, E* = 6









4. Correction in the MC Output rays dialog

MC_LISE.ray

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	! Last block "Stripper", setting fragment: 19O8+..8+ (Two body reaction); N_Locations=1; N_fields=7; N_Rays=100												
2	! location #01 : Stripper												
3	! N	01-Z (atomic number)	01-A (mass number)	01-N (neutron number)	01-q (ion charge)	01-Z-q	01-A-2q	01-A-3q					
4	1	8	19	11	8	0	3	-5					
5	2	8	19	11	8	0	3	-5					
6	3	8	19	11	8	0	3	-5					
7	4	8	19	11	8	0	3	-5					
8	5	8	19	11	8	0	3	-5					
9	6	8	19	11	8	0	3	-5					
10	7	8	19	11	8	0	3	-5					
11	8	8	19	11	8	0	3	-5					
12	9	8	19	11	8	0	3	-5					
13	10	8	19	11	8	0	3	-5					
14	11	8	19	11	8	0	3	-5					
15	12	8	19	11	8	0	3	-5					
16	13	8	19	11	8	0	3	-5					
17	14	8	19	11	8	0	3	-5					