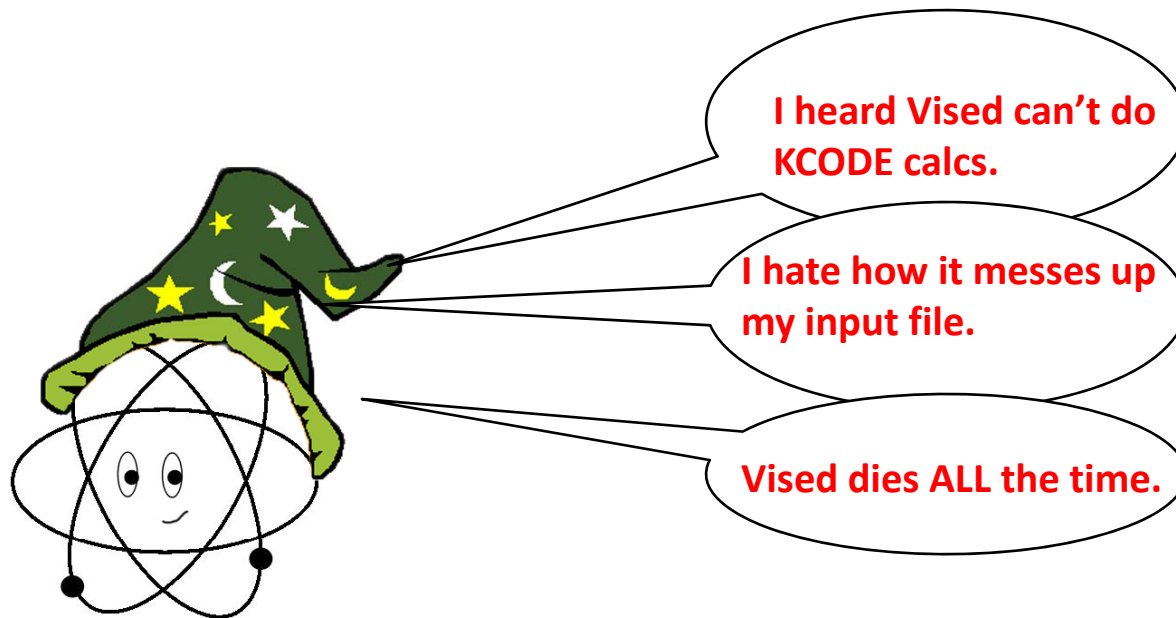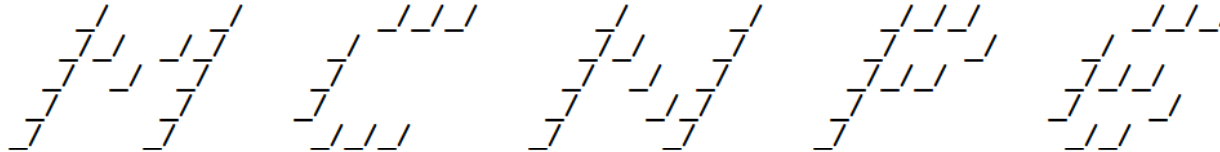# Visual MCNP Editor Lore

1. The Visual MCNP Editor can not run my input file.
2. I do not use the Visual Editor it dies all the time.
3. Vised died and I lost my input file.
4. Vised messes up my input file.
5. I can get my job done better without Vised.

The Visual Editor/Plotter is MCNP

```
Code Name & Version = MCNP6, 1.0
```



```
+-------------------------------------------------------------------+
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+-------------------------------------------------------------------+

1mcnp      version 6     ld=12/04/13                09/10/14 00:54:04
 ******************************************************************
   i=criti8a name=jcrit8a_v.
```

Visual MCNP Editor can not run my input file

Visual MCNP6 Plotter compared to MNCP6

```
----------------------------------------------------------------------------------------------------
|                                                                                                  |
| the final estimated combined collision/absorption/track-length keff = 1.29555 with an estimated standard deviation of 0.01163 |
|                                                                                                  |
| the estimated 68, 95, & 99 percent keff confidence intervals are 1.28382 to 1.30729, 1.27198 to 1.31912, and 1.26397 to 1.32713 |
|                                                                                                  |
| the final combined (col/abs/tl) prompt removal lifetime = 9.1859E-06 seconds with an estimated standard deviation of 4.1031E-07 |
|                                                                                                  |
| the average neutron energy causing fission = 3.9731E-01 mev                                      |
| the energy corresponding to the average neutron lethargy causing fission = 2.9451E-04 mev        MCNP6 |
|                                                                                                  |
| the percentages of fissions caused by neutrons in the thermal, intermediate, and fast neutron r  |
|         (<0.625 ev):  21.17%         (0.625 ev - 100 kev):  55.37%         (>100 kev):  23.46%    |
|                                                                                                  |
| the average fission neutrons produced per neutron absorbed (capture + fission) in all cells with fission = 1.7493E+00 |
| the average fission neutrons produced per neutron absorbed (capture + fission) in all the geometry cells = 1.5766E+00 |
|                                                                                                  |
| the average number of neutrons produced per fission = 2.457                                      |
|                                                                                                  |
----------------------------------------------------------------------------------------------------
```

```
----------------------------------------------------------------------------------------------------
|                                                                                                  |
| the final estimated combined collision/absorption/track-length keff = 1.29555 with an estimated standard deviation of 0.01163 |
|                                                                                                  |
| the estimated 68, 95, & 99 percent keff confidence intervals are 1.28382 to 1.30729, 1.27198 to 1.31912, and 1.26397 to 1.32713 |
|                                                                                                  |
| the final combined (col/abs/tl) prompt removal lifetime = 9.1859E-06 seconds with an estimated standard deviation of 4.1031E-07 |
|                                                                                                  |
| the average neutron energy causing fission = 3.9731E-01 mev                                      |
| the energy corresponding to the average neutron lethargy causing fission = 2.9451E-04 mev        |
|                                                                                                  |
| the percentages of fissions caused by neutrons in the thermal, intermediate, and fast neutron range   Vised |
|         (<0.625 ev):  21.17%         (0.625 ev - 100 kev):  55.37%         (>100 kev):  23.46%    |
|                                                                                                  |
| the average fission neutrons produced per neutron absorbed (capture + fission) in all cells with fission = 1.7493E+00 |
| the average fission neutrons produced per neutron absorbed (capture + fission) in all the geometry cells = 1.5766E+00 |
|                                                                                                  |
| the average number of neutrons produced per fission = 2.457                                      |
|                                                                                                  |
----------------------------------------------------------------------------------------------------
```
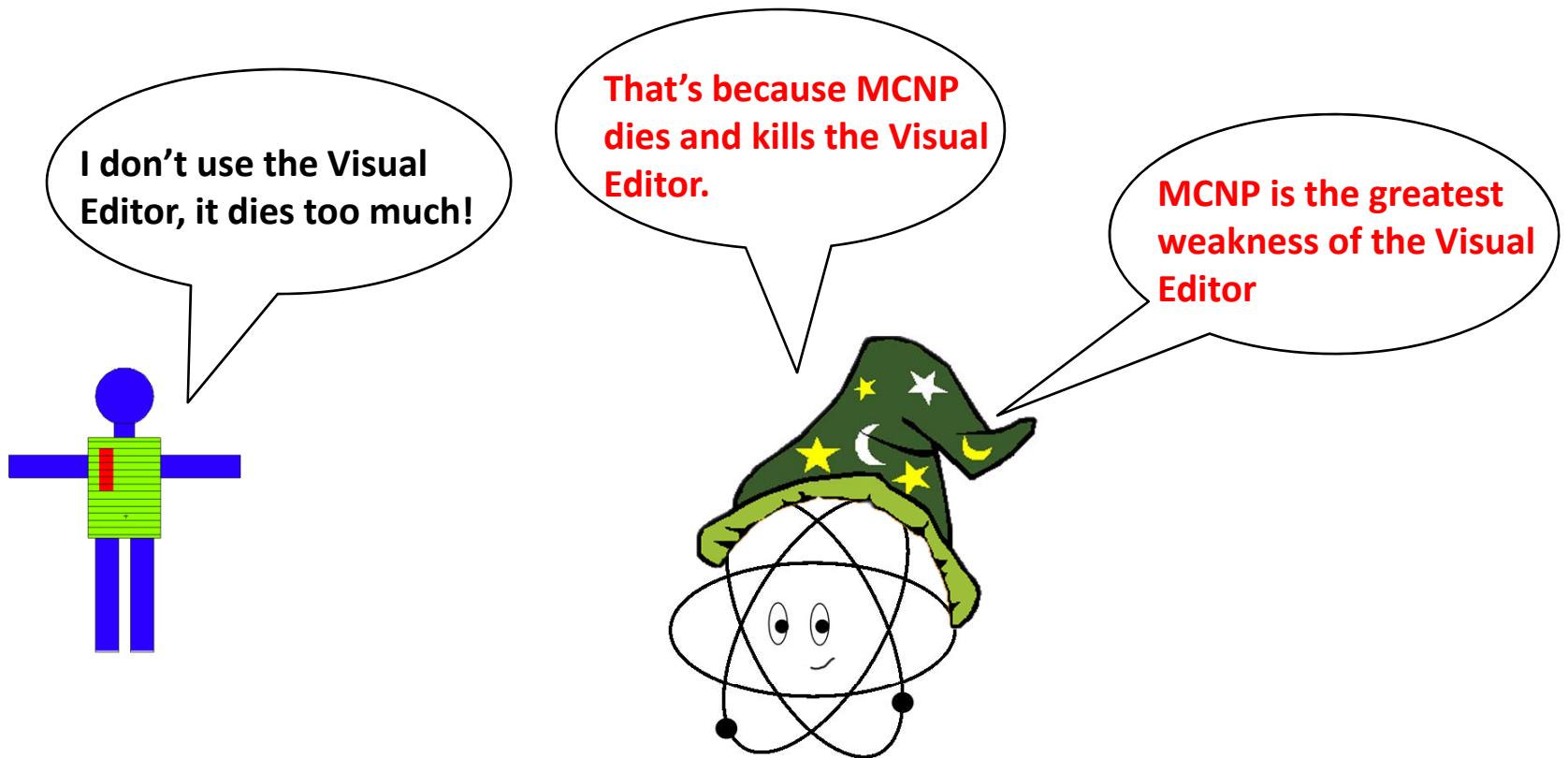
I do not use the Visual Editor it dies all the time.

Vised's greatest strength is MCNP

1. Anything MCNP can calculate, the Visual Editor could visualize.
2. Reads input files using the MCNP Fortran
3. Can create 3D ray traced images
4. Can display particle tracks
5. Cross section plotting
6. Tally plotting, including mesh tallies
7. Weight window meshes

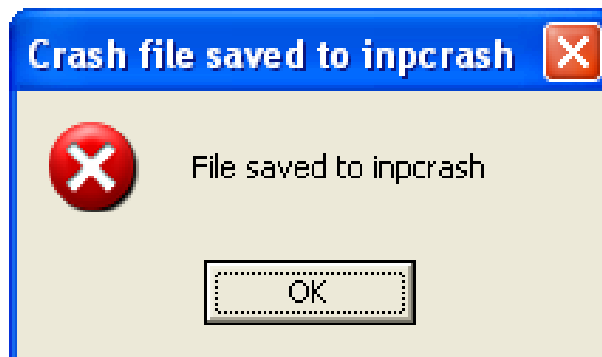# Visual Editor's greatest weakness is MCNP

1. **Give the Visual Editor an invalid input file and it may die**

I don't use the Visual Editor, it dies too much!

That's because MCNP dies and kills the Visual Editor.

MCNP is the greatest weakness of the Visual Editor

It is easy to kill the MCNP Visual Editor

- **Just insert a blank line in the input cell section**
- **Do Save-Update**

Fatal Error

❌ fatal error. no m card for material no.   3

Ignore remaining FATAL error messages

[Yes]   [No]

Crash file saved to inpcrash

❌ File saved to inpcrash

[OK]

It is easy to kill MCNP

- **MCNP will also die for this same input file.**

```
C:\WINDOWS\system32\cmd.exe                                          _ □ ×
 fatal error.  surface    -37 of cell    6 is not defined.
 fatal error.  surface      8 of cell    6 is not defined.
 fatal error.  surface      2 of cell    6 is not defined.
 fatal error.  surface     -7 of cell    6 is not defined.
 fatal error.  surface     -6 of cell    7 is not defined.
 fatal error.  surface     10 of cell    7 is not defined.
 fatal error.  surface     -9 of cell    8 is not defined.
 fatal error.  surface     -5 of cell    8 is not defined.
 fatal error.  surface    -10 of cell    9 is not defined.
 warning.     37 surfaces were deleted for being the same as others.
 warning.  there are no tallies in this problem.
 warning.  no cross-section tables are called for in this problem.
forrtl: severe (157): Program Exception - access violation
Image              PC        Routine              Line       Source
mcnpx.exe          006EF37A  Unknown              Unknown    Unknown
mcnpx.exe          0067C432  Unknown              Unknown    Unknown
mcnpx.exe          005E93AA  Unknown              Unknown    Unknown
mcnpx.exe          00585797  Unknown              Unknown    Unknown
mcnpx.exe          00571F6A  Unknown              Unknown    Unknown
mcnpx.exe          00401037  Unknown              Unknown    Unknown
mcnpx.exe          008AAFB3  Unknown              Unknown    Unknown
mcnpx.exe          008824A5  Unknown              Unknown    Unknown
kernel32.dll       7C817077  Unknown              Unknown    Unknown

C:\VIS_old>
```

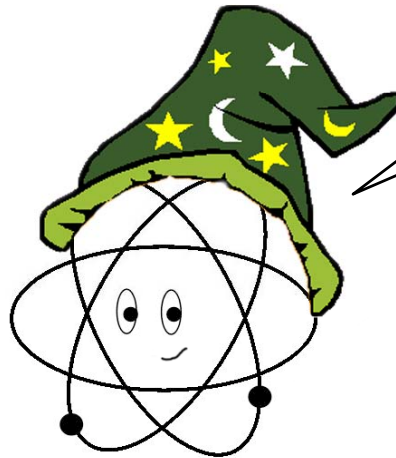# With Great Power Comes …
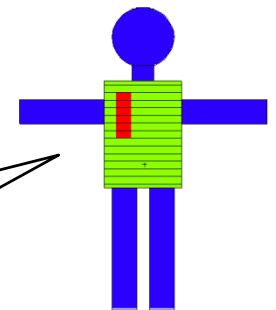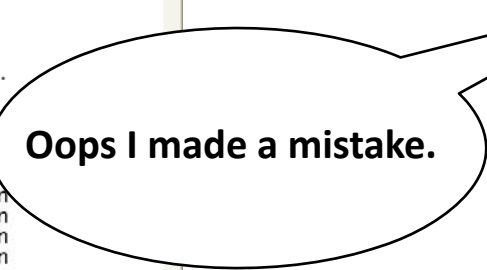
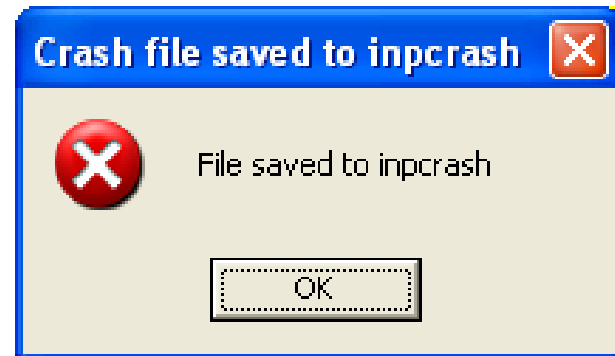# The Visual Editor died and I lost my input file.

- On some fatal errors MCNP will stop execution. Vised saves the file to inpcrash.

M
C
N
P

I am dying and there is nothing you can do about it.

Well at least let me save the file first!

Crash file saved to inpcrash

File saved to inpcrash

OK

If the Visual MCNP Editor dies on save-update?

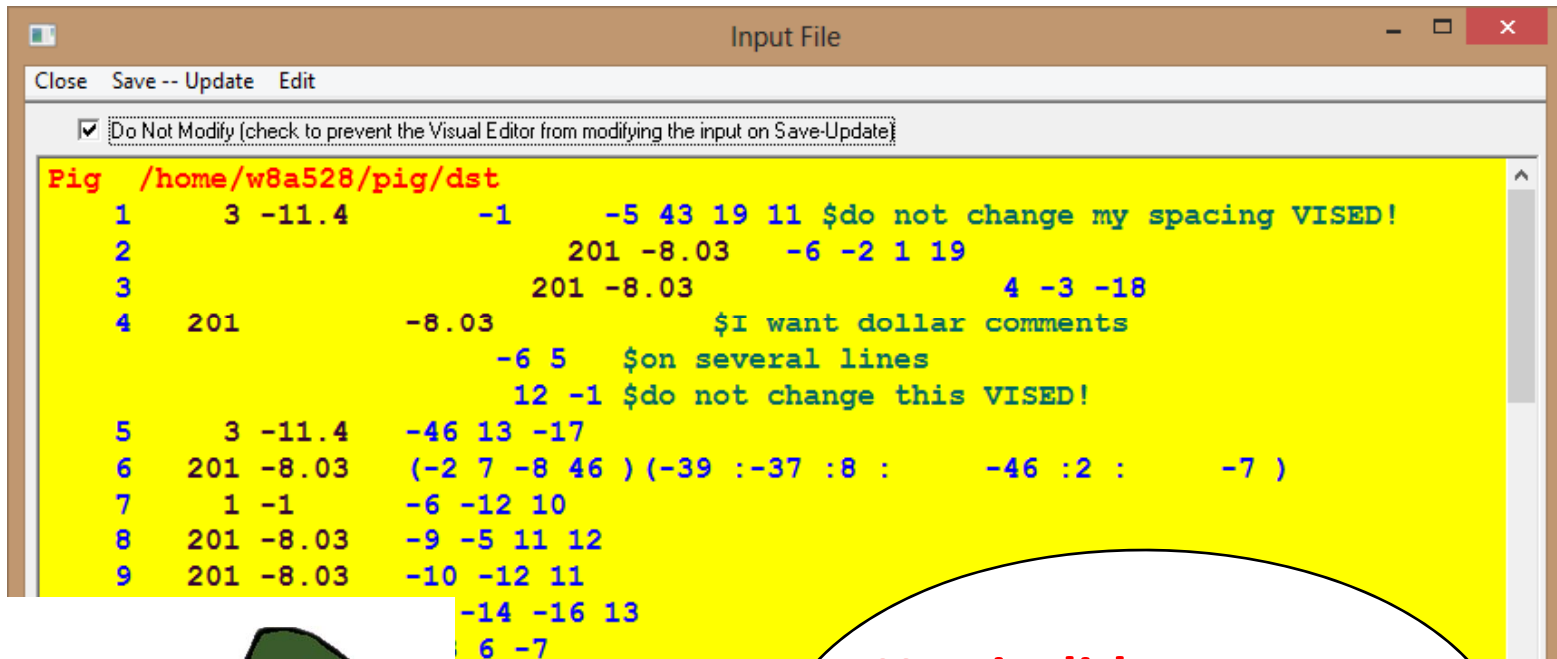# If Visual Editor dies randomly?
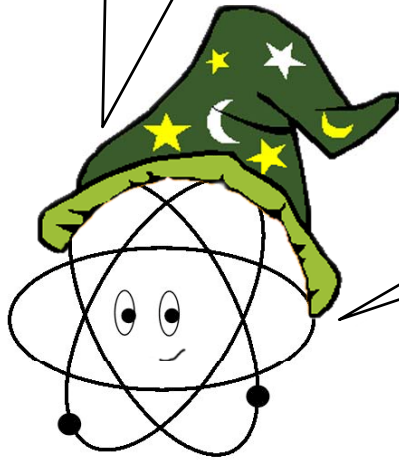
If Death bothers you?
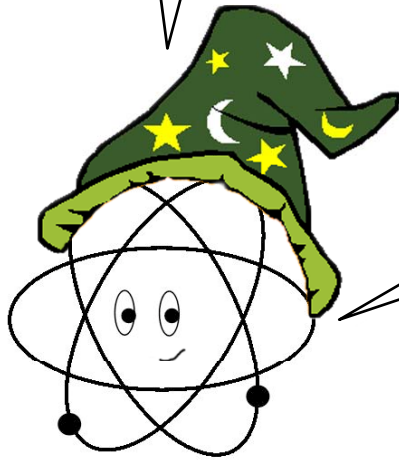
The Visual Editor messes up my input file.
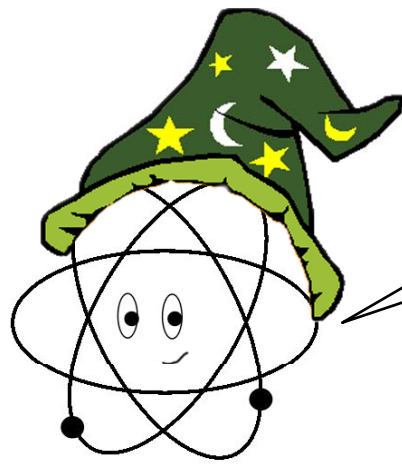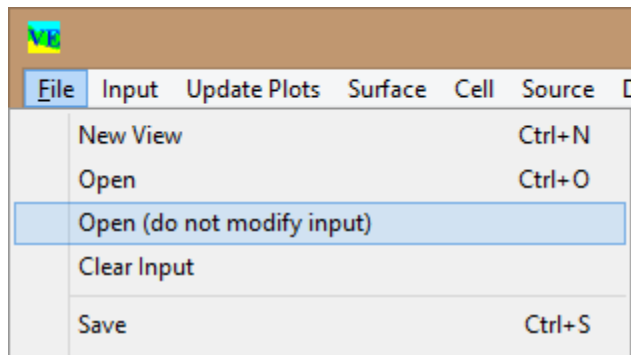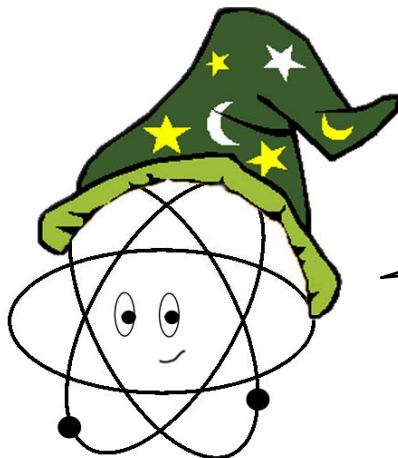

In "do not modify" mode, vised does not change the input file.

Visual MCNP6 Plotter only opens files in "do not modify" mode
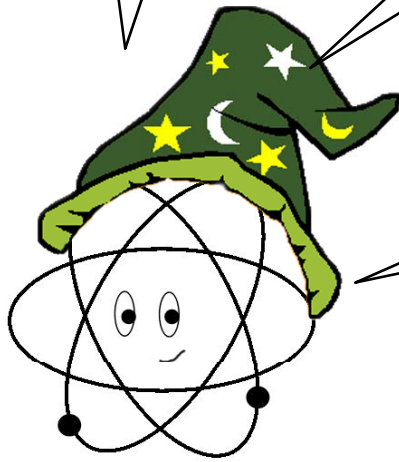
I can get my job done better without the Visual Editor

Many changes are done easier by hand.

Visual Editor does not create tallies, variance reduction cards, WW mesh, etc.

What is the most important thing the Visual Editor does?

What is the most iportant thing the Visual Editor does?

I want a source in cell 1.
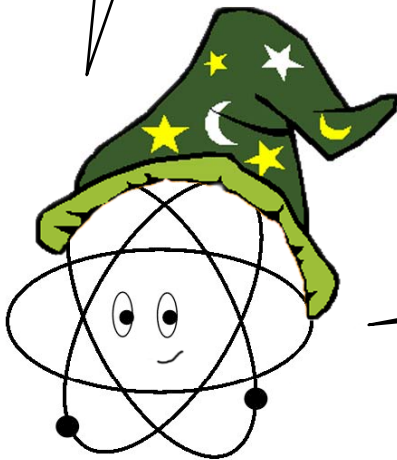
```
MCNPX Visual Editor Version X_24J
c    Created on: Wednesday, September 10, 2014 at 15:10
   1    0        -2  imp:n=1
   2    0        2 -1  imp:n=1
   3    0        1  imp:n=0

   1        so 100
   2      rcc 0 0 -50 0 0 100 50

mode  n
sdef  rad=50 ext=d2
si2 -50 50
print
nps 1     00
```

Is this source correct?

Look at first 50 particles.

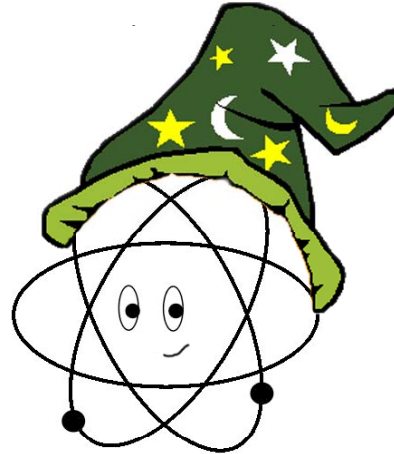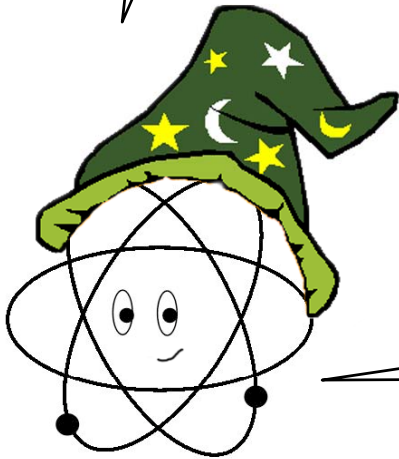| nps	x	y	z	cell	surf	u	v	w	energy	weight	time
1	1.103E+01	2.893E+01	2.980E+01	1	0	5.166E-01	5.185E-01	6.814E-01	1.400E+01	1.000E+00	0.000E+00
2	5.706E+00	1.097E+00	-1.445E+00	1	0	-8.244E-02	-9.427E-01	-3.233E-01	1.400E+01	1.000E+00	0.000E+00
3	-2.609E+01	-1.896E+01	2.719E+01	1	0	-7.618E-01	-6.038E-01	-2.346E-01	1.400E+01	1.000E+00	0.000E+00
4	-2.559E+01	-4.767E+00	-1.669E+01	1	0	1.557E-02	-9.797E-01	-1.998E-01	1.400E+01	1.000E+00	0.000E+00
5	1.052E+01	2.685E+00	-1.429E+01	1	0	7.831E-01	-1.660E-01	-5.994E-01	1.400E+01	1.000E+00	0.000E+00
6	-2.754E+01	1.604E+01	9.750E+00	1	0	-6.936E-01	6.748E-01	2.520E-01	1.400E+01	1.000E+00	0.000E+00
7	1.324E+00	3.560E+01	2.966E+00	1	0	2.292E-01	5.611E-01	-7.954E-01	1.400E+01	1.000E+00	0.000E+00
8	-1.885E+01	-2.449E+01	-2.538E+01	1	0	-8.157E-01	-5.283E-01	-2.355E-01	1.400E+01	1.000E+00	0.000E+00
9	2.224E+01	-4.933E+00	3.826E+01	1	0	-5.711E-01			E+01	1.000E+00	0.000E+00
10	-1.526E+01	-1.540E+01	-2.155E+01	1	0	-1.				1.000E+00	0.000E+00
11	-1.301E+01	1.572E+01	1.851E+01	1	0					00E+00	0.000E+00
12	-2.617E-01	3.118E+01	2.992E+00	1	0					0E+00	0.000E+00
13	3.223E+00	8.016E-01	2.322E+01	1	0					00E+00	0.000E+00
14	1.498E+01	-2.329E+00	2.481E+01	1	0					000E+00	0.000E+00
15	-1.455E+01	1.042E+01	4.580E+01	1	0	3.734			E+01	1.000E+00	0.000E+00
16	6.972E+00	-4.913E+01	6.009E+00	1	0	-1.418E-01	9.0		1.400E+01	1.000E+00	0.000E+00
17	-5.505E+00	-6.757E+00	6.604E+00	1	0	-9.929E-01	-1.1	2.391E-02	1.400E+01	1.000E+00	0.000E+00
18	-1.811E+01	2.055E+01	2.941E+01	1	0	5.765E-01	-5.1	-6.319E-01	1.400E+01	1.000E+00	0.000E+00
19	-6.271E-01	-2.125E+01	2.668E+01	1	0	1.294E-01	9.8 01	-1.336E-01	1.400E+01	1.000E+00	0.000E+00
20	-2.452E+01	-3.792E+01	7.960E+00	1	0	3.339E-01	-9.4 01	-5.451E-02	1.400E+01	1.000E+00	0.000E+00
21	-2.503E+01	2.975E+01	-2.302E+01	1	0				400E+01	1.000E+00	0.000E+00
22	2.948E+01	1.162E+01	-3.607E+00	1	0				400E+01	1.000E+00	0.000E+00
23	-2.945E+01	-2.535E+01	-1.893E+01	1	0				400E+01	1.000E+00	0.000E+00
24	3.450E+01	5.145E+00	1.877E+01	1	0				400E+01	1.000E+00	0.000E+00
25	-3.871E+01	-3.830E-01	-1.752E+01	1	0				400E+01	1.000E+00	0.000E+00
26	6.131E+00	2.656E+01	1.775E+00	1	0				400E+01	1.000E+00	0.000E+00
27	-1.371E+01	-4.050E+01	-7.130E+00	1	0	-			400E+01	1.000E+00	0.000E+00
28	2.752E+00	-1.778E+01	5.055E+00	1	0	-			400E+01	1.000E+00	0.000E+00
29	-9.243E+00	-1.925E+01	-1.619E+01	1	0				400E+01	1.000E+00	0.000E+00
30	-3.137E+00	3.109E+00	-3.280E+00	1	0	-			400E+01	1.000E+00	0.000E+00
31	2.410E+01	9.443E-01	3.220E+01	1	0				400E+01	1.000E+00	0.000E+00
32	1.579E+01	-2.035E+01	1.673E+01	1	0				400E+01	1.000E+00	0.000E+00
33	3.082E+01	-6.544E+00	1.756E+00	1	0	-			400E+01	1.000E+00	0.000E+00
34	2.029E+01	1.402E+01	-4.020E+01	1	0	-			400E+01	1.000E+00	0.000E+00
35	4.038E+01	1.954E+01	-1.793E+00	1	0				400E+01	1.000E+00	0.000E+00
36	1.452E+01	-4.202E-01	5.715E+00	1	0	-			400E+01	1.000E+00	0.000E+00
37	-4.916E-01	2.569E+00	-3.041E-01	1	0	-			400E+01	1.000E+00	0.000E+00
38	4.293E+00	-3.291E+01	1.823E+01	1	0	-			400E+01	1.000E+00	0.000E+00
39	-5.483E+00	-2.755E+01	-2.222E+00	1	0	-			400E+01	1.000E+00	0.000E+00
40	4.316E+00	-2.220E+01	3.499E+00	1	0	-7.220E-01	-3.510E-01	5.963E-01	1.400E+01	1.000E+00	0.000E+00

Plot the Source