

Instructions for Displaying the Computer Anatomical Man

The description of this input file can be found in:

NASA CR-134043

http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19730023290_1973023290.pdf

Modify the CAM file as follows:

1. Remove the message statement at the top.
2. Remove the void statement.
3. Remove the vol statement
4. Remove the tally statement
5. Include the surfaces, cells and materials in the input file (do not use the read statements).

To make the 3D ray trace with a cookie cutter:

Increase the dimensions of the enclosing surfaces:

1112 s 0 0 89 549

1113 s 0 0 89 550

Add cookie cutter surfaces:

2000 px 0.001

2001 py -3.001

2002 pz -20

2003 pz 200

2004 cz 100

Add cookie cutter cell:

10000 0 2000 -2004 2001 -2003 2002

In the left plot window set the following:

Plot origin: 0 0 80

Plot extents: 95 95

Plot Basis: -.7071 .7071 0 -.7071 -.7071 0

In the 3D Ray Tracing window set the following:

Cell numbers to plot: 1-576 697-873 884-889 899-1094 1110-1361 1387-1412 1425-1451 1464-1674 1725-1754 1779-1866 1875-1932 1949-2004 2013-2068 2094-2252 2278-2436 2444-2458

Select "Show cookie cutters" (bottom middle option)

Set Resolution to 1000

Select Normal 3D Plot:

MCNPX Visual Editor Version X_23V - 1: F:\SBIR_NASA\CAM_CAF\CAM_CAF\cam\CAM_ras

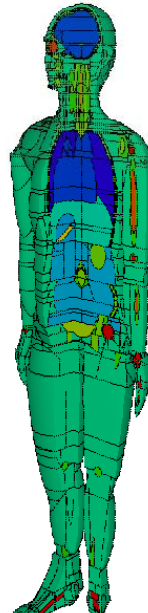
File Input Update Plots Surface Cell Source Data Run Particle Display Tally Plots Cross section plots 3D View CAD Import Read_again Backup Website Options View Help

wwinp: H transformations = 0
For support visit: WWW.MCNPX.ED.COM
rssa: FOUND: xsdir using DATAPATH ENVIRONMENT VARIABLE=> C:\Program Files\LANL\MCNPDATA\xsdir
creating file inpr.sav
srctp: FOUND: xsdir using DATAPATH ENVIRONMENT VARIABLE=> C:\Program Files\LANL\MCNPDATA\xsdir

1: F:\SBIR_NASA\CAM_CAF\CAM_CAF\cam\CAM_ras

Update Global 37.8700 92.7483 80.0000 XY -0.7071 0.7071 0
Last Next Label: MAT Level: 10 -0.7071 -0.7071 0
Reset Color By: MAT Zoom out Zoom in

Zoom
Origin
0
0
80
Extent
95
95
Refresh
Surf 18
Unused
Cell 18
Color
Facets
WWW Mesh
Cell Line
Rect
tal mesh
Rotate about
Axial -45
Vert 90
Horiz 15
no scale
Res 300
Pscript



3D Ray Tracing -- Click help for more information

Close Normal 3D Plot Radiographic 3D Transparent 3D Save Parameters Help

NPS = 998400 CTME (secs) = 250.515625

Viewpoint X 200 Y 200 Z 10

The viewpoint must be in a non-zero importance cell and must not be in one of the cells listed below

Cells Enter cell numbers to show in 3d in text box below
Enter cell numbers or cell ranges separated by spaces or commas. For example, 1 4 5-6
1-576 697-873 884-889 899-1094 1110-1361 1387-1412 1425-1451 1464-1674 1725-1754 1770-188

Ray tracing is from the viewpoint to the entire image plane (with extents) of the active 2D plot

3D data used to make the plot

Update Plot Basis Horizontal -0.707106 0.707106 0
Vertical -0.169874 -0.169874 -0.970711
Origin-Source Vector: 0.686398 0.686398 -0.240231

Radiography Options

Darkness indicates ray length
Ray length corresponding to pure black 10
Darkness indicates (ray length) * (cross section)

Transparency Options

Cell Transparency (0 - 1.0): 0.2
Average Cell 10

Color by Cell Draw lines around cell Color cells by material
Use 3D shading Use distance shading Point source
Hide plot plane image Show cookie cutters Plot to outside world

Resolution: 1000

warning: surface 1109 is not used for anything.
warning: surface 1111 is not used for anything.
imcn is done
plot is done
xact is done
mcun is done

To create the Radiographic 3D plot:

Select **“Darkness indicates (ray length)*(cross section).**

Set **“Energy of the Source to” :**

.06 (Incident energy of the X-ray is 0.06 Mev)

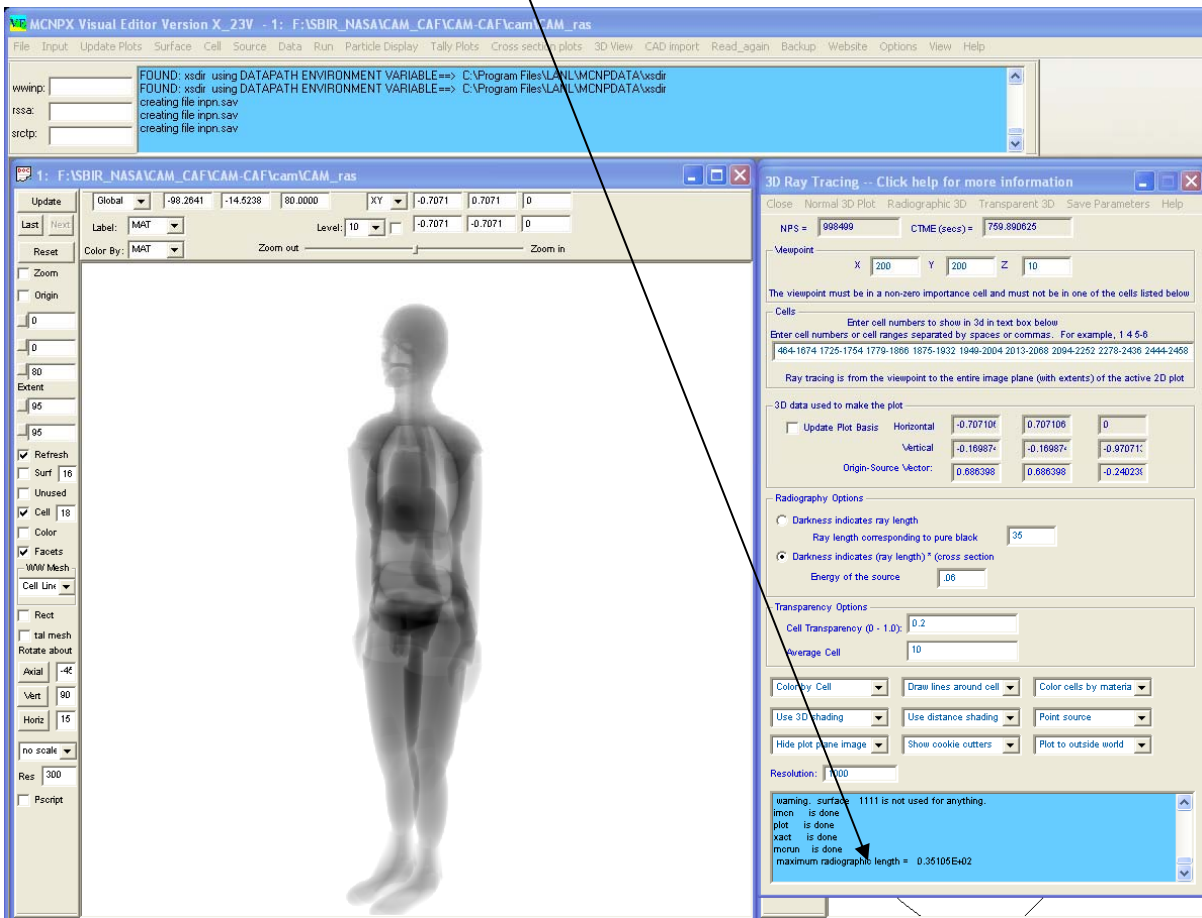
You can change this to get different plots for different incident energies.

Set **“Ray length corresponding to pure black” to:**

35

This value is calculated after each plot, update this to the value provided by MCNP.

Select **Radiographic 3D Plot:**



Set the Cell Transparency to:

0.065

Adjust this number so the maximum non-transparency is about 1.0

Set the Average Cell to:

1.64

This value is calculated after each plot, update this to the value provided by MCNP.

Select Transparent 3D Plot:

The screenshot displays the MCNPX Visual Editor interface. The main window shows a 3D rendering of a human figure with a color-coded internal structure. The interface includes a menu bar, a toolbar, and a control panel on the right. The control panel is titled "3D Ray Tracing" and contains various settings for the 3D plot, including NPS, CTME, Viewpoint, Cells, 3D data, Radiography Options, and Transparency Options. The Transparency Options section shows "Cell Transparency (0 - 1.0)" set to 0.065 and "Average Cell" set to 1.64. The status bar at the bottom of the control panel displays the following information:

```
imcr is done
plot is done
xact is done
mobj is done
average trans. cell length = 0.16185E+01
maximum non-transparency = 1.03719
```