

4.0 Introduction to Geometry Files - Lab

Files: C:\Advanced SIMION Class\0.4 Geometry Files Introduction\Lab

Modifying the Trap Geometry File into a Stretched Trap

The contents of the trap geometry file above will be modified to define a Finnigan stretched trap which will be saved as the STRETCH.GEM geometry file

No After Installation Files Need to be Created

1. Remove all PAs From RAM
2. Use New to load TRAP.GEM from directory:
C:\Advanced SIMION Class\4.0 Geometry Files Introduction\Lab
3. Examine the array with Modify.
5. Click the GeomF button to access the geometry file development system.

6. Click the Edit button to edit the geometry file with EDY.
7. Rename the File STRETCH.GEM
EDY keystrokes: **Esc N STRETCH.GEM** and press **Enter**
8. Now Let's save the file, exit EDY and Select and use this file as the geometry file:
Esc Q Y and you're back in SIMION.
9. Click the Select button and click both mouse buttons on STRETCH.GEM to make it the currently selected .GEM file.
10. Use the Erase Entire PA button and then the Insert into PA button to verify that the geometry file still makes the array OK.

11. Now the task is to shift both end caps 0.76 mm away from the trap center to create a stretched trap. The nominal scaling of this potential array is 0.1 mm/grid unit. Thus we need to shift the left end cap (and its contents) 7.6 grid units to the left and the right end cap 7.6 grid units to its right.

The best strategy is to insert **locate** commands that have the proper shifts and enclose the proper electrode definitions. This will result in the caps being shifted properly.

Go for it!

12. Assuming you've given it a good college try and failed. Use the Select button and click both mouse buttons on the STRETCH1.GEM file. Insert the geometry from this file. It works! Look at the file with EDY to see how it was done.

Files: C:\Advanced SIMION Class\0.4 Geometry Files Introduction\Lab

Modifying the Trap Geometry File to Include End Cap Apertures

The contents of the trap geometry file will be modified to define apertures in the end caps and then saved as the HOLE.GEM geometry file.

No After Installation Files Need to be Created

1. Remove all PAs From RAM
2. Use New to load TRAP.GEM from directory:
C:\Advanced SIMION Class\4.0 Geometry Files Introduction\Lab
Look at it with Modify.
3. Click the GeomF button to access the geometry file development system.
4. Click the Edit button to edit the geometry file with EDY.
5. Rename the File HOLE.GEM
EDY keystrokes: **Esc N HOLE.GEM** and press **Enter**
6. Now let's Save the file and exit EDY: **Esc Q Y** and you're back in SIMION.
7. Click the Select button and click both mouse buttons on HOLE.GEM to make it the currently selected .GEM file.
8. Use the Erase Entire PA button and then the Insert into PA button to verify that the geometry file still makes the array OK.
9. Now the task is to modify the geometry file to put a 2 mm hole through both end caps. The electrodes are all defined in units of mm. Hint the notin family of commands can be very useful for this. Notin_inside works perfectly for this assignment. A simple notin does not. Why?

You might explore use of both the box and circle commands to make these apertures.

Go for it!

10. Assuming you've given it a good college try and failed. Use the Select button and click both mouse buttons on the HOLE1.GEM file. Insert the geometry from this file. It works! Look at the file with EDY to see how it was done.