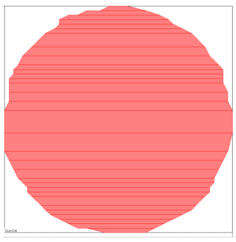
Various Modes of Fracturing in Beamer

- Segment mode = can only recognize circles and rectangles.
- Sequence mode = can more or less recognize all other arbitrary shapes.

1. **Fracturing Mode: Conventional**

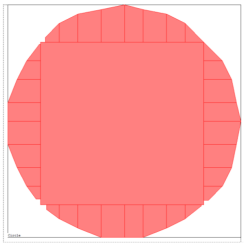
   Conventional fracturing will divide the circle into polygons while respecting the original vertices from the CAD file. The output of this looks like:



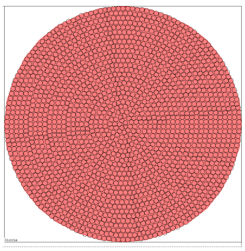
   Clearly, this does not look like a nice rounded circle.

3. **Fracturing Mode: Curved**

   This mode is able to recognize circles and tries to optimize the fracturing by moving around vertices. The output is shown below:



   This looks slightly better but still not perfect.

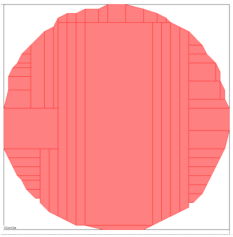


Further, if we view the writing order (CircleWriteOrder), we see that the circle is being filled in a nice spiral fashion. This is pretty much perfect!

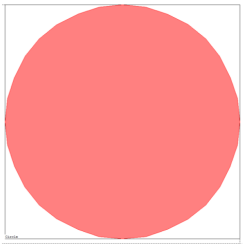
Note: You may need to play with the tolerance setting in segment mode to make BEAMER recognize your circle.

2. **Fracturing Mode: LRFT (Large Rectangle Fine Trapezoid)**

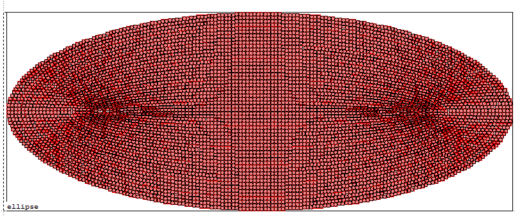
   As the name suggests, this mode will try to fit a large rectangle in the middle and then go around the edges and fill in smaller trapezoids. It will still respect the vertices of the original file.



The output of segment fracturing is shown below:



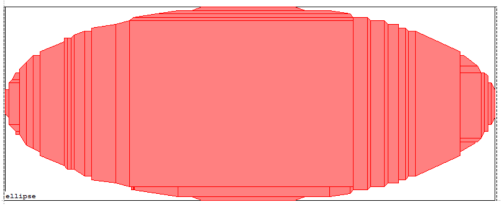
As you can see, the circle is no longer broken up into smaller polygons but is instead recognized as a primitive. We can also see how this circle will be filled by enabling 'view beam shots'. (in the Viewer click on the button circled below)



Sequence mode

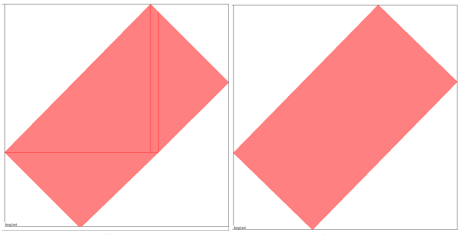
A full discussion of Sequence mode however, is out of the scope of this tutorial.

Finally, I would like to point out that segment mode can only recognize circles and rectangles. It cannot recognize ellipses for example. I have found that the Sequence mode seems to do a good job of fracturing ellipses as shown below:



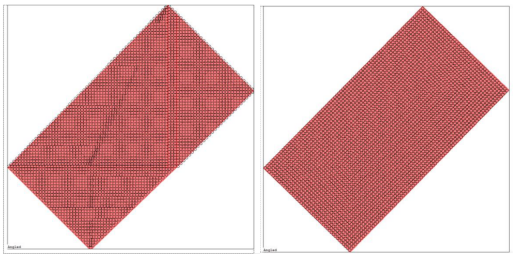
Segment mode

Segment mode is also able to recognize rectangles that are at an angle, as primitives. For example, here is a comparison of LRFT vs Segment mode for fracturing a rectangle at a 45 degree angle.



LRFT Segment

With the beamshots:



LRFT Segment