

ogl.exe is a cpp application which shows 3D spheres created from an IFS[?] (iterated function system) using Open GL libraries. To run the program you need to have "freeglut.dll" library.

The IFS which is used to create spheres is defined as $\{h_0, h_1\}$ such that: $h_0 : R^3 \rightarrow R^3$, $X \rightarrow C_0$ and $h_1 : R^3 \rightarrow R^3$, $X \rightarrow aAX$.

- C_0 : a sphere of radius 1 at (0,4,4)
- $a = 0.95$
- $A = \begin{bmatrix} \cos(t) & \sin(t) & 0 \\ \sin(t) & \cos(t) & 0 \\ 0 & 0 & 1 \end{bmatrix}$
- $t = 2\pi/11$

In the program following shortcuts could help to get a better view:

- N , n : increase , decrease number of displaying spheres
- R , r : increase , decrease radius of first sphere
- S , s : increase , decrease scale factor for view
- A , a : increase , decrease the constant a in h_1
- T , t : increase , decrease the constant t in h_1
- L , l : increase , decrease the length of the drawn axes for x , y, z
- X , x : increase , decrease the center position on the window in x
- Y , y : increase , decrease the center position on the window in y
- Z , z : increase , decrease the center position on the window in z (you can also use mouse wheel to change z)
- Up , Down arrows : change eye position in z
- Right, Left arrows : change eye position in x,y around center
- h : hide, show labels