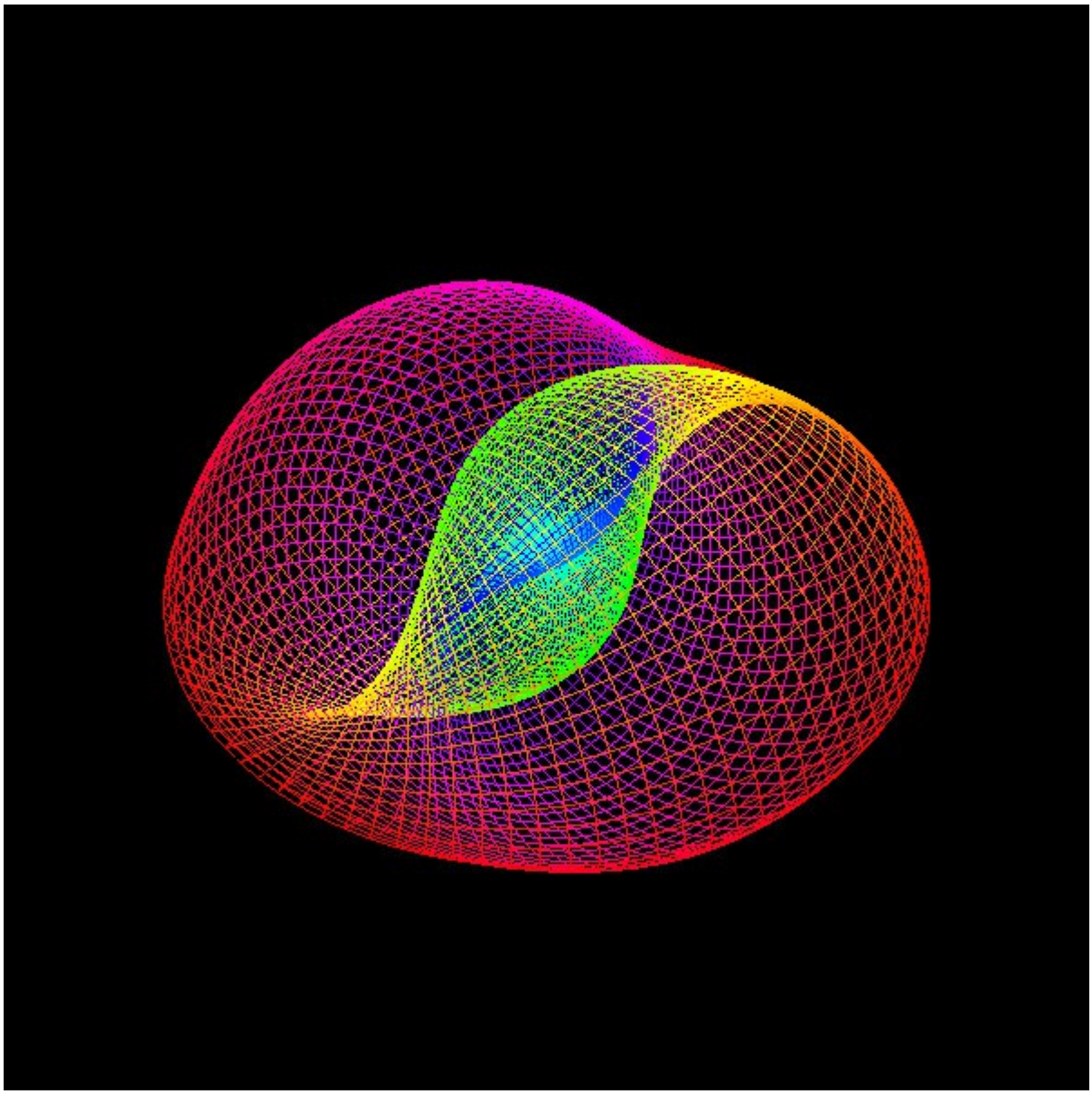
All material in this document was stolen from Paul Bourke's awesome website:
http://paulbourke.net/geometry/

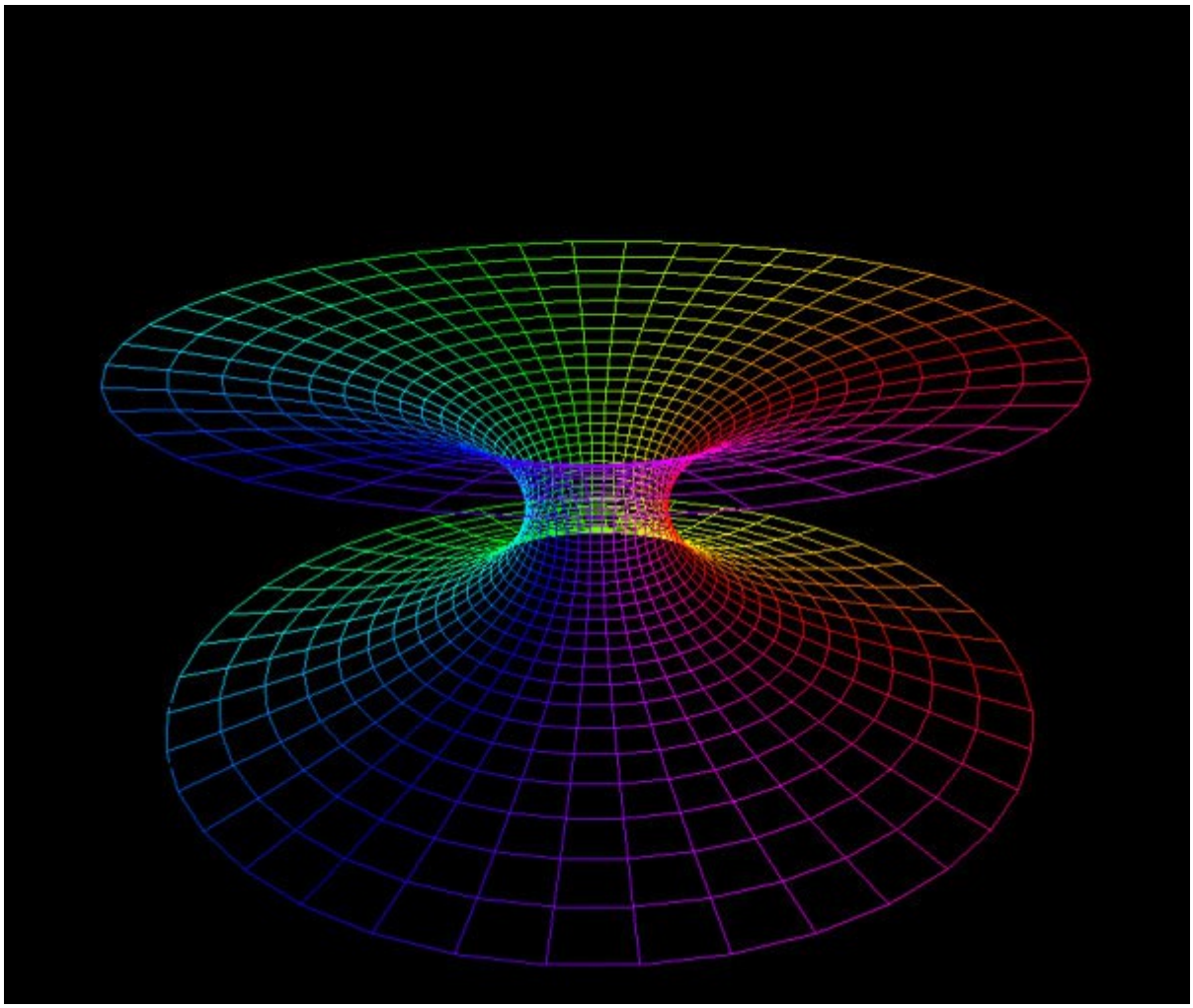
1. Snail Surface



```
x = u cos(v) sin(u)
y = u cos(v) cos(u)
z =-u sin(v)

0 <= u <= 2 pi, -pi/2 <= v <= pi/2
```

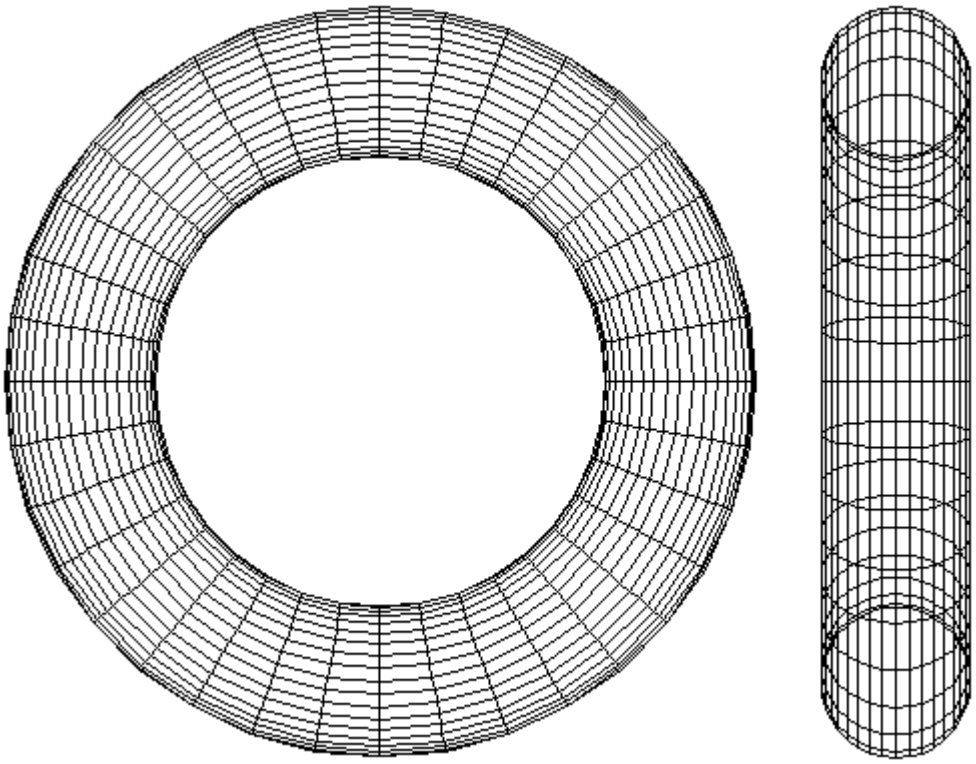
2. Catenoid



```
x = c cosh(v/c) cos(u)
y = c cosh(v/c) sin(u)
z = v

0 <= u <= 2pi, -infinity <= v <= infinity
```

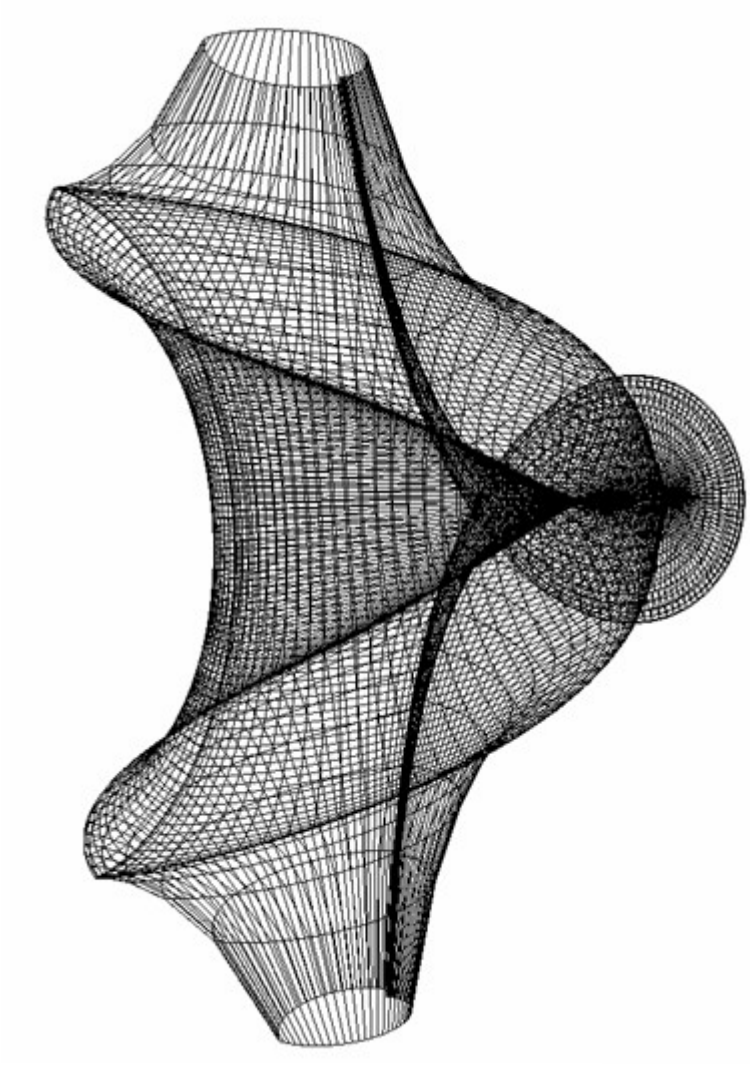
3. Torus



```
x = (r0 + r1 cos(v)) cos(u)
y = (r0 + r1 cos(v)) sin(u)
z = r1 sin(v)
```

```
0 <= u <= 2pi, 0 <= v <= 2pi
```

4. Kuen Surface



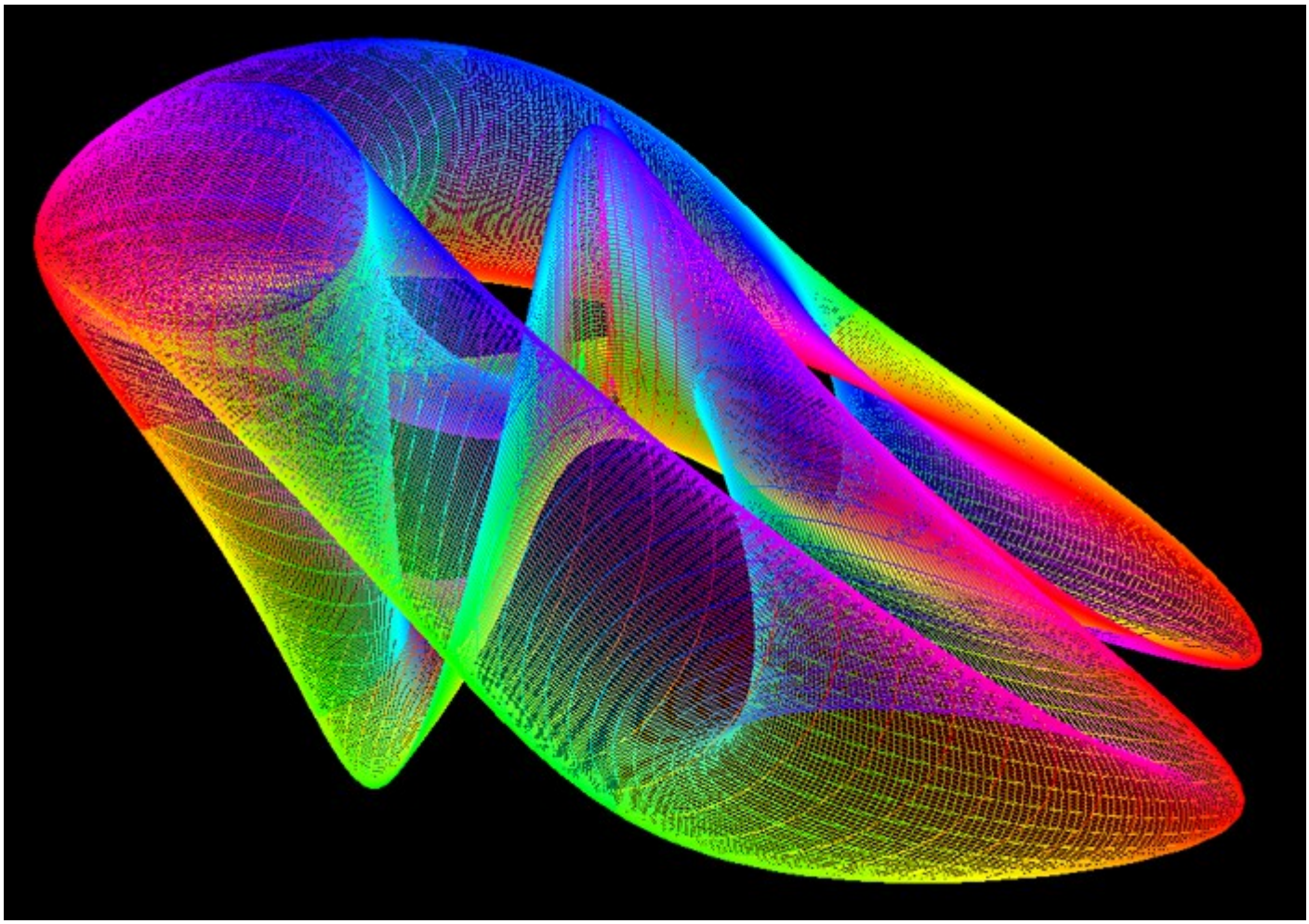
$$x = \frac{2\,(\cos(s) + s\,\sin(s))\,\sin(t)}{1 + s^2\,\sin(t)^2}$$

$$y = \frac{2\,(\sin(s) - s\,\cos(s))\,\sin(t)}{1 + s^2\,\sin(t)^2}$$

$$z = \log(\tan(t/2)) + \frac{2\,\cos(t)}{1 + s^2\,\sin(t)^2}$$

$-4.5 \le s \le 4.5$ $\qquad$ $0 < t < \pi$

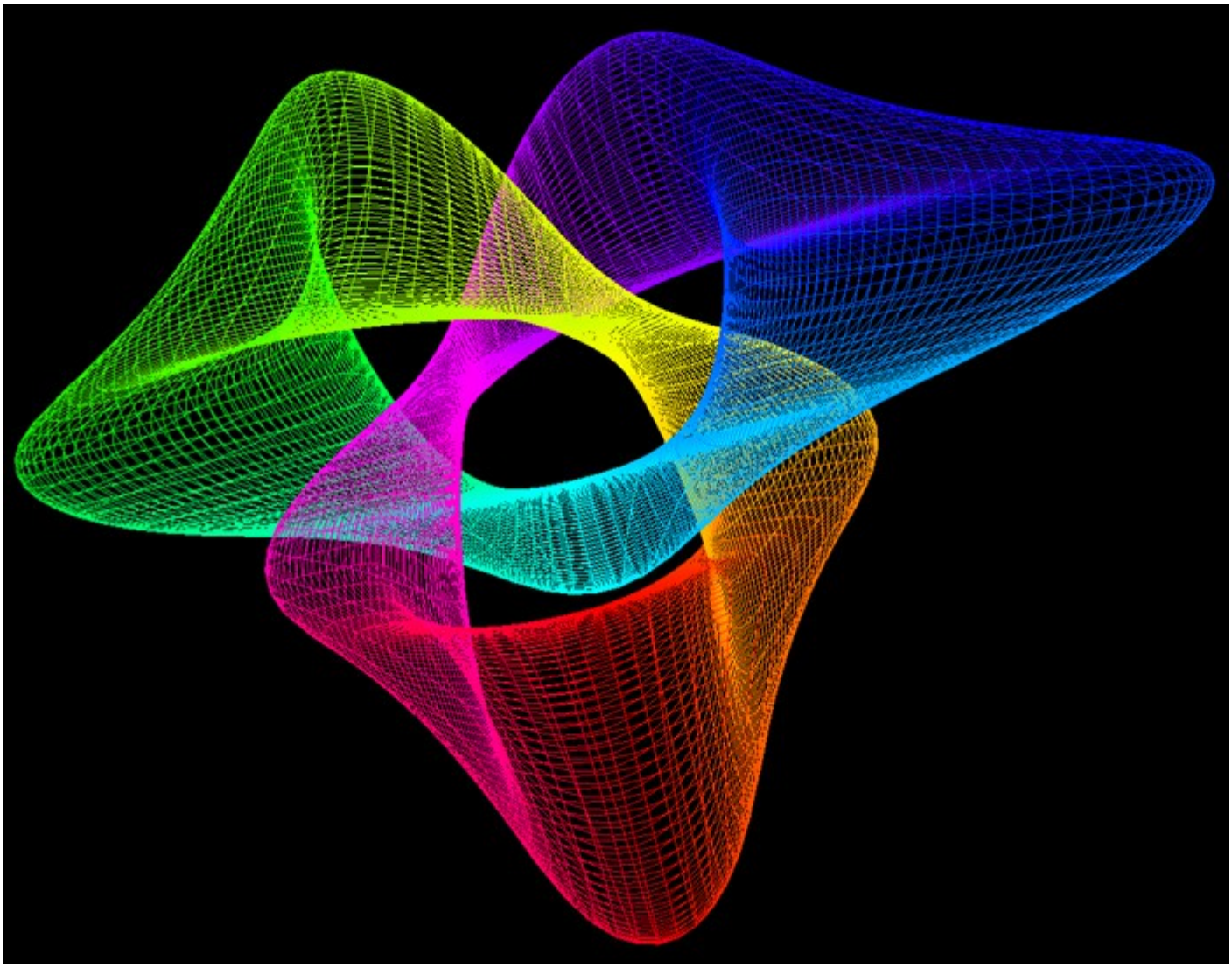
5. Slippers Surface



$$x = (2 + \cos(u))\cos(v)^3\sin(v)$$
$$y = (2 + \cos(u + 2\pi/3))\cos(2\pi/3 + v)^2\sin(2\pi/3 + v)^2$$
$$z = -(2 + \cos(u - 2\pi/3))\cos(2\pi/3 - v)^2\sin(2\pi/3 - v)^3$$

$$0 \le u \le 2\pi,\ 0 \le v \le 2\pi$$

6. Trianguloid Trefoil



```
x = 2 sin(3 u) / (2 + cos(v))
y = 2 (sin(u) + 2 sin(2 u)) / (2 + cos(v + 2 pi / 3))
z = (cos(u) - 2 cos(2 u)) (2 + cos(v)) (2 + cos(v + 2 pi / 3)) / 4

-pi <= u <= pi,  -pi <= v <= pi
```

7. Triaxial Tritorus

$$x = \sin(u)\,(1 + \cos(v))$$

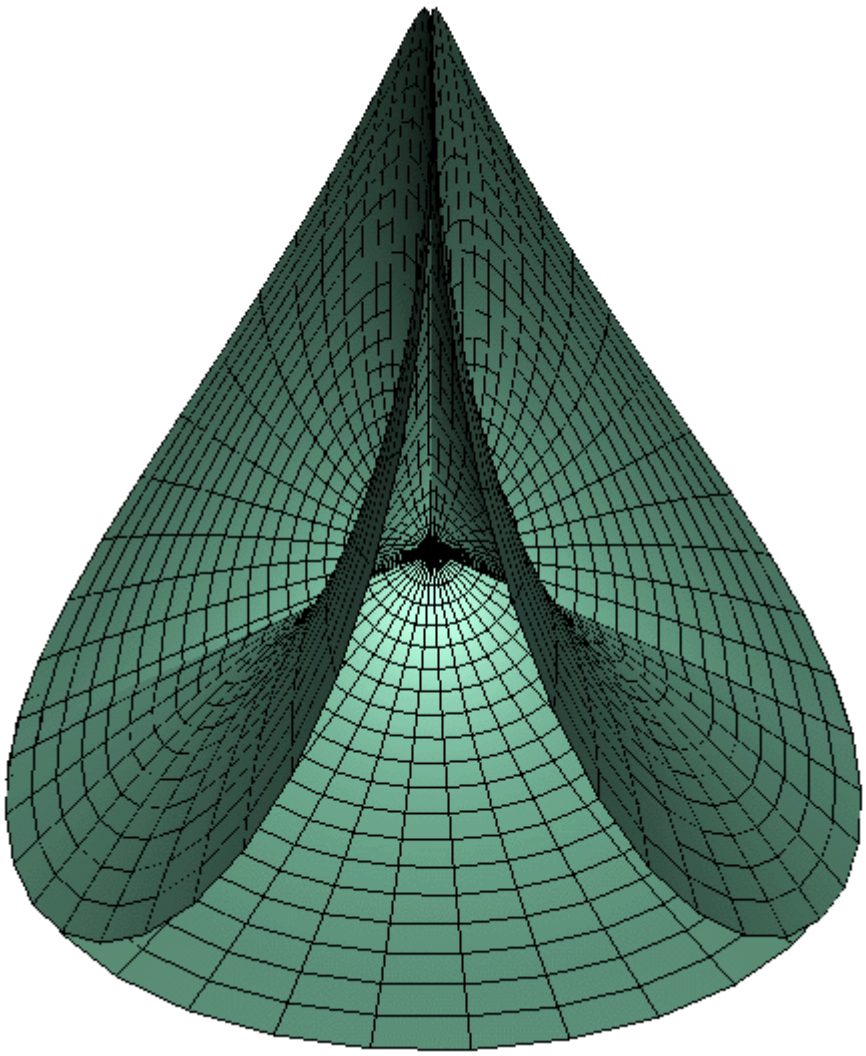
$$y = \sin(u + 2\pi/3)\,(1 + \cos(v + 2\pi/3))$$

$$z = \sin(u + 4\pi/3)\,(1 + \cos(v + 4\pi/3))$$

Where

$$-\pi <= u <= \pi \text{ and } -\pi <= v <= \pi$$

8. Maeders Owl



$x = v \cos(u) - 0.5\, v^2 \cos(2u)$

$y = -v \sin(u) - 0.5\, v^2 \sin(2u)$

$z = 4\, v^{1.5} \cos(3u / 2) / 3$

$0 <= u <= 4\pi$ and $0 <= v <= 1$