

Построение неявных поверхностей

Construction of implicit surfaces

☒ — Dragilev's Method —

☒ — Algorithm —

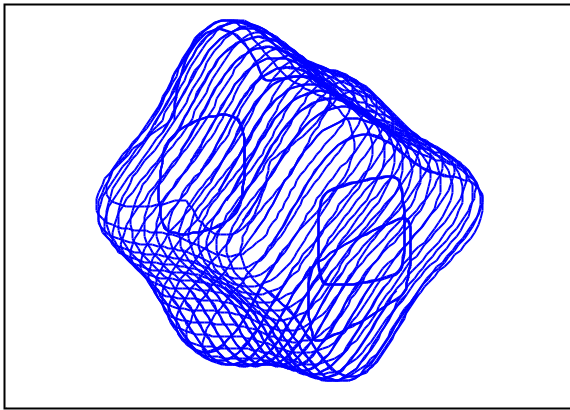
$$f_1 := (x_1)^4 + (x_2)^4 + (x_3)^4 - 2 \cdot \left((x_1)^2 + (x_2)^2 + (x_3)^2 \right) - 1 \quad \text{Goursat's Surface}$$

Ymax := 1.553774

Zmax := $-\sqrt{1+\sqrt{2}}$

tmax := 16

N := 160



Sur(15, Ymax, Zmax)

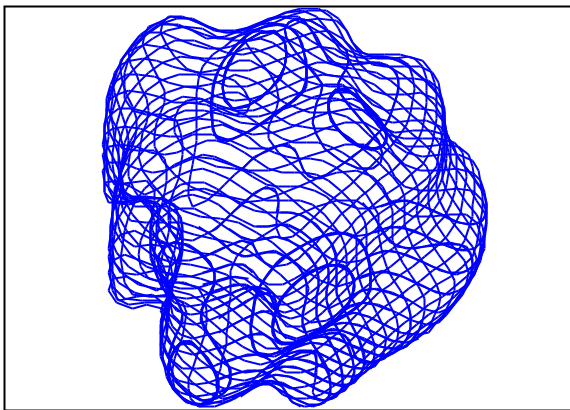
$$f_1 := (x_1)^2 + (x_2)^2 + (x_3)^2 + \sin(4 \cdot x_1) + \cos(3 \cdot x_2) + \sin(2 \cdot x_3) - 4.486 \quad \text{Blobby}$$

Ymax := 1.9076

Zmax := 2.0835

tmax := 16

N := 80



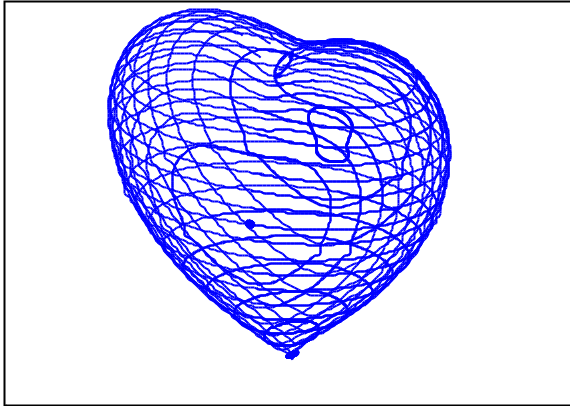
$$f_1 := \left| (x_1)^2 + \frac{9 \cdot (x_2)^2}{1} + (x_3)^2 - 1 \right|^3 - (x_1)^2 \cdot (x_3)^3 - \frac{9 \cdot (x_2)^2 \cdot (x_3)^3}{80} \quad \text{Heart Surface}$$

$$Y_{\max} := \frac{2}{3}$$

$$Z_{\max} := 1$$

$$t_{\max} := 7$$

$$N := 280$$



$$f_1 := \frac{1}{6} \cdot (x_1)^2 + (x_2)^2 + 10 \cdot (x_3)^4 - 1$$

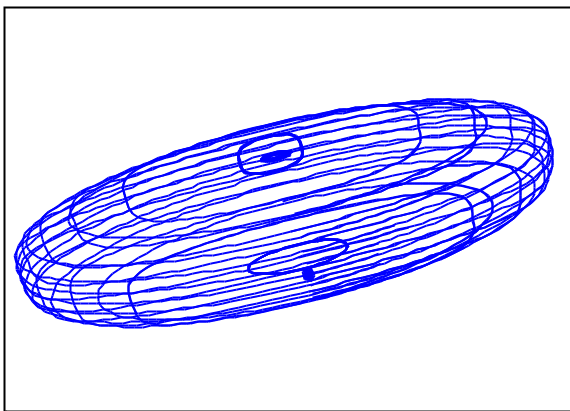
Pseudo Ellipsoid

$$Y_{\max} := 1$$

$$Z_{\max} := 0.5623$$

$$t_{\max} := 12$$

$$N := 150$$



$$f_1 := (x_1 - 2)^2 + (x_2 - 2)^2 + (x_3 + 0.5 \cdot \sin(11 \cdot x_1))^2 - 9$$

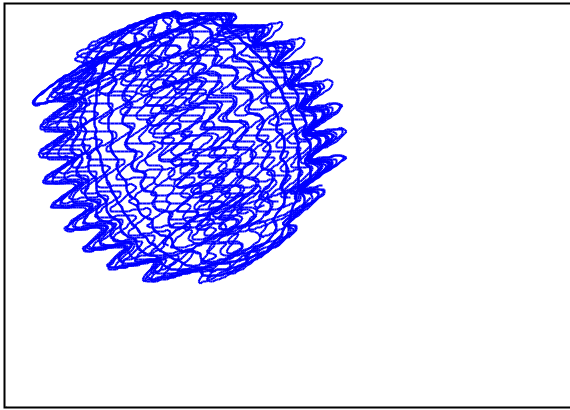
transcendental surface

$$Y_{\max} := 2 + \sqrt{5}$$

$$Z_{\max} := 1$$

$$t_{\max} := 44$$

$$N := 440$$



$a := 4$

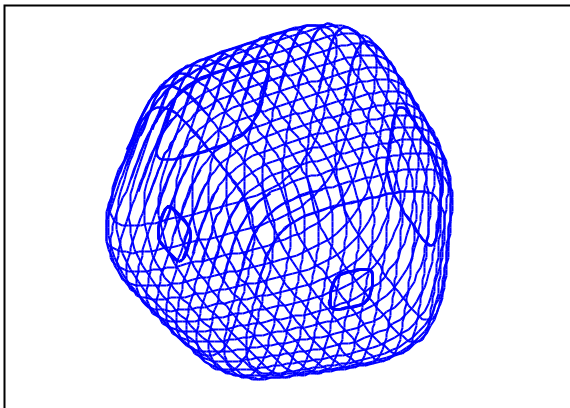
$$f_1 := \left(x_1\right)^a + \left(x_2\right)^a + \left(x_3\right)^a - 12 \quad \text{Pseudo Cube}$$

$Y_{\max} := \sqrt[a]{12}$

$Z_{\max} := \sqrt[a]{12}$

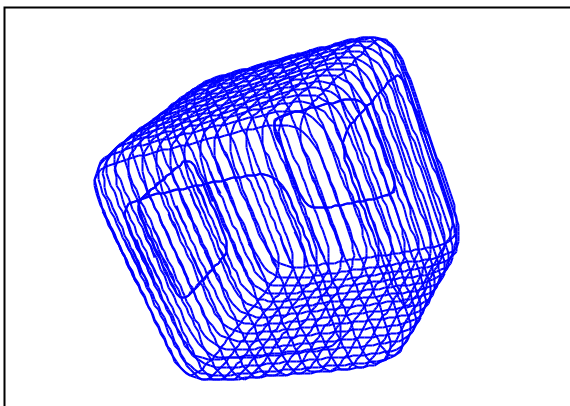
$t_{\max} := 14.4$

$N := 144$



$a := 8$

$$f_1 := \left(x_1\right)^a + \left(x_2\right)^a + \left(x_3\right)^a - 12$$



a:=2

$$f_1 := \left(x_1\right)^a + \left(x_2\right)^a + \left(x_3\right)^a - 12$$

Sphere

tmax:=18

N:=180

