

## Termodinámica de procesos irreversibles

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```
Needs["VectorFieldPlots`"]
```

$$vr[x_, y_] = 3 x \left( 1 + 0.5 / \text{Sqrt}[x^2 + y^2]^3 - 1.5 / \text{Sqrt}[x^2 + y^2] \right)$$

$$vt[x_, y_] = -3 y \left( 1 - 0.25 / \text{Sqrt}[x^2 + y^2]^3 - 0.75 / \text{Sqrt}[x^2 + y^2] \right)$$

$$3 x \left( 1 + \frac{0.5}{(x^2 + y^2)^{3/2}} - \frac{1.5}{\sqrt{x^2 + y^2}} \right)$$

$$-3 y \left( 1 - \frac{0.25}{(x^2 + y^2)^{3/2}} - \frac{0.75}{\sqrt{x^2 + y^2}} \right)$$

$$vx[x_, y_] := x vr[x, y] - y vt[x, y]$$

$$vy[x_, y_] := y vr[x, y] + x vt[x, y]$$

```
field[x_, y_] := If[Sqrt[x x + y y] > 1.1, {vx[x, y], vy[x, y]}, {0, 0}]
```

```
lx = 4;
```

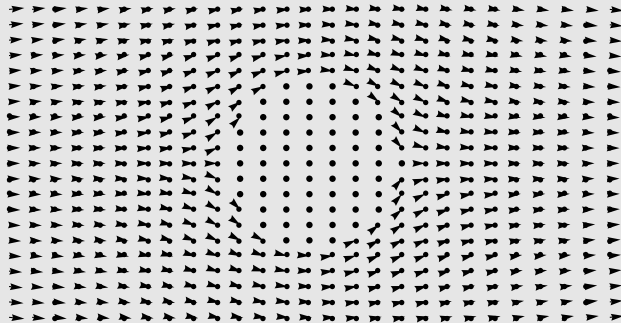
```
dlx = 0.3;
```

```
ly = 2;
```

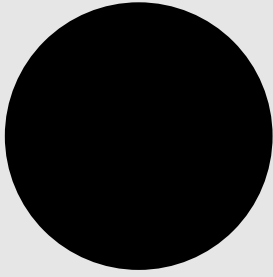
```
dly = 0.2;
```

```
g1 = VectorFieldPlot[field[x, y],
```

```
{x, -lx, lx, dlx}, {y, -ly, ly, dly}]
```



```
g2 = Graphics[Disk[{0, 0}, 1]]
```



```
Show[g1, g2]
```

