

$$L: \begin{cases} x = u \\ y = v \\ z = w \end{cases}$$

$$O = z(0, 0, 0) \Leftrightarrow w = 0$$

$$\begin{array}{l|l} x' = 1 & x'' = 0 \\ y' = 2u & y'' = 2 \\ z' = 3u^2 & z'' = 6u \end{array} \quad \begin{array}{l} 0 \\ 2 \\ 0 \end{array}$$

~~$$L: \begin{cases} x = 1 \\ y = 0 \\ z = 0 \end{cases}$$~~

$$\begin{cases} y = 0 \\ z = 0 \end{cases}$$

~~$$\begin{array}{l|l} x & y & z \\ 1 & 0 & 0 \\ 0 & 2 & 0 \end{array} = 0$$~~

$$2z = 0$$

$$(x-a)^2 + (y-b)^2 + (z-c)^2 - Q = 0$$

$$Q = r_{\text{daggio}}^2$$

$$F(x, y, z) =$$

$$\Phi(h) = (u-a)^2 + (u^2-b)^2 + (u^3-c)^2 - Q$$

$$\left. \begin{aligned} \Phi'(h) &= 2u p_0 + 2u^3 \\ \Phi''(h) &= 0 \\ \Phi'''(h) &= 0 \\ \Phi^{(4)}(h) &= 0 \end{aligned} \right\}$$

$$\left. \begin{aligned} -Q + a^2 + b^2 + c^2 &= 0 \\ -2a &= 0 \\ 2 - 4b &= 0 \end{aligned} \right\} \begin{aligned} Q &= \frac{1}{4} + c^2 \\ a &= 0 \\ b &= \frac{1}{2} \end{aligned}$$

CIRC. OSC.

$$\left\{ \begin{aligned} z &= 0 \\ x^2 + (y - \frac{1}{2})^2 + z^2 - \frac{1}{4} &= 0 \end{aligned} \right.$$

$$\left\{ \begin{aligned} a &= 0 \\ b &= \frac{1}{2} \\ c &= h \\ Q &= \frac{1}{4} + h^2 \end{aligned} \right.$$

scelgo centro \in p. osc.
 $\Rightarrow h = 0$
 raggio = $\sqrt{\frac{1}{4}} = \frac{1}{2}$

$$x^4 + 2x^2y^2 + 2x^2z^2 - 10x^2 + y^4 + 4y^2z^2 - 10y^2 + z^4 + 6z^2 + 9 = 0$$

$$(1, 0, 0) \quad F_x(1, 0, 0) = -16 \quad F_y(1, 0, 0) = 0 \quad F_z(1, 0, 0) = 0$$

$$-16(x-1) + 0(y-0) + 0(z-0) = 0$$

P. tang: $x=1$ Retta norm: $\frac{x-1}{1} - \frac{y-0}{0} - \frac{z-0}{0} = 0$

$$\left. \begin{array}{l} y=0 \\ z=0 \end{array} \right\}$$

pidni normi

$$z = ky$$

rette tang: $\left. \begin{array}{l} x=1 \\ z=ky \end{array} \right\}$

$$\left. \begin{array}{l} x=1 \\ z=ky \end{array} \right\}$$

$$\left. \begin{array}{l} x=1 \\ y=4 \\ z=ky \end{array} \right\}$$

$$\left. \begin{aligned} \left(\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \end{array} \right) \cdot \left(\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \end{array} \right) &= 0 \\ \left(\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \end{array} \right) \cdot \left(\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \end{array} \right) &= 0 \\ \left(\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \end{array} \right) \cdot \left(\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \end{array} \right) &= 0 \end{aligned} \right\}$$

$$\left. \begin{aligned} 0 &= 0 \\ 0 &= 0 \end{aligned} \right\}$$

$$16k^2 - 16 = 0$$

for $g \cdot g$:

$$\left\{ \begin{aligned} k &= \pm 1 \\ x &= 1 \\ y &= 2 \end{aligned} \right.$$

$$\left\{ \begin{aligned} x &= 1 \\ z &= -y \end{aligned} \right.$$

