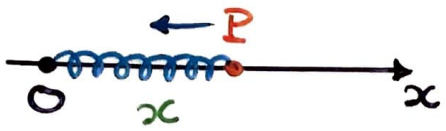
LA MOLLA

Esempi

1.)

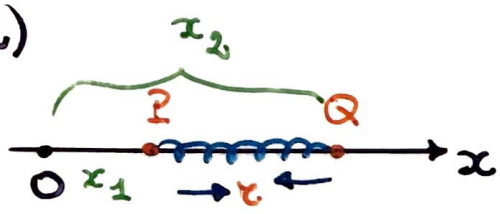


sist. mat. $\equiv (P, m)$

$\bar{F}_P = -k(P-O) = -kx\,\bar{\imath}$ f. ESTERNA

$\delta L = \delta U = -kx\,\delta x \quad U = -\frac{1}{2}kx^2 + c$

2.)



Sist. mat $= \{(P, m) + (Q, m)\}$

$\vec{F}_P = -k(P-Q) \quad \vec{F}_Q = -\vec{F}_P$

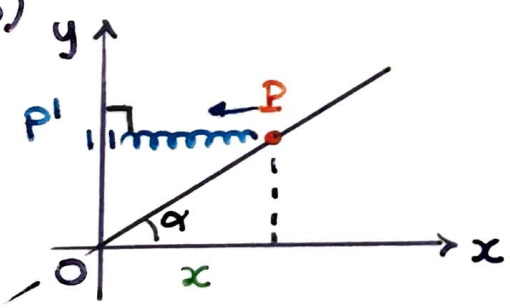
f. INTERNA

$\delta L = \bar{F}_P \cdot \delta P + \bar{F}_Q \cdot \delta Q = k(x_2 - x_1)\delta x_1 - k(x_2 - x_1)\delta x_2$

$= -k(x_2 - x_1)\,\delta(x_2 - x_1) = -kr\,\delta r$

$U = -\frac{1}{2}kr^2 + c$

3)



Sist. mat $\equiv (P, m)$

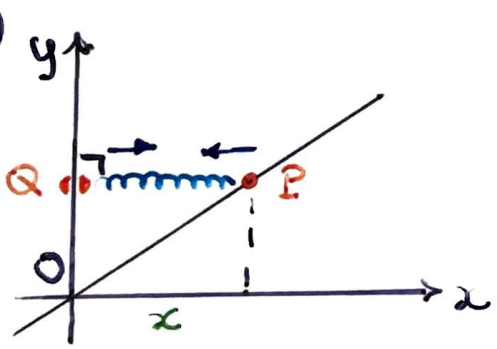
$\bar{F}_P = -k(P-P') \quad$ f. ESTERNA

$\delta L = \bar{F}_P \cdot \delta P = -kx\,\delta x$

$U = -\frac{1}{2}kx^2 + c \qquad \delta P = \delta x\,\bar{\imath} + \delta y\,\vec{\jmath}$

$F_P = -kx\,\vec{\imath}$

4)



Sist. mat $= \{(P, m) + (Q, m)\}$

$\bar{F}_P = -k(P-Q) \quad \bar{F}_Q = -\bar{F}_P$

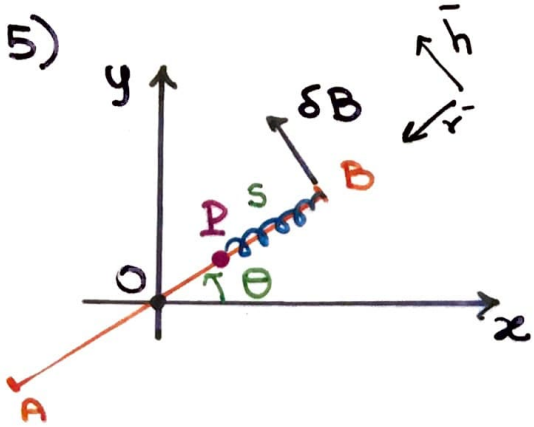
f. INTERNA

$\delta L = \bar{F}_P \cdot \delta P + \bar{F}_Q \cdot \delta Q = -k(P-Q)\cdot\delta P = -kx\,\delta x$

($\bar{F}_Q \perp \delta Q$)

$U = -\frac{1}{2}kx^2 + c$

5)



Sist. mat. $= \{ (\overline{AB}, m) + (P, m) \}$ $\overline{AB} = 2\ell$

$\bar{F}_P = -k(P-B)$ $\quad \vec{F}_B = -\vec{F}_P$

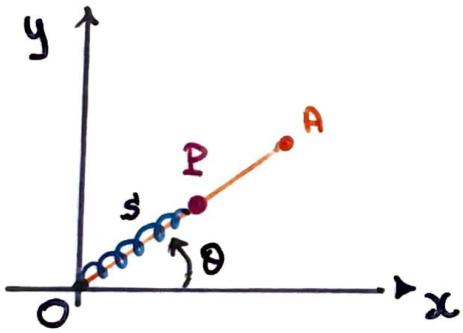
f. INTERNA $\quad \bar{F}_P = -ks\,\bar{r}^P(t)$

$\delta L = \bar{F}_P \cdot \delta P + \bar{F}_B \cdot \delta B$ ($\bar{F}_B \perp \delta B$)

$\delta P = \delta s\, \vec{\tau} + (\ell - s)\,\delta\theta\, \vec{n} \quad \Rightarrow \quad \delta L = -ks\,\delta s$

$U = -\frac{1}{2} k s^2 + c$

6)



CASO DUBBIO

1) $O \in \overline{OA}$ $\Rightarrow$ molla è f. INTERNA

2) $O \in Oxy$ $\Rightarrow$ molla è f. ESTERNA

si accettano entrambe le sol

Sist. mat $= \{ (OA, m) + (P, m) \}$