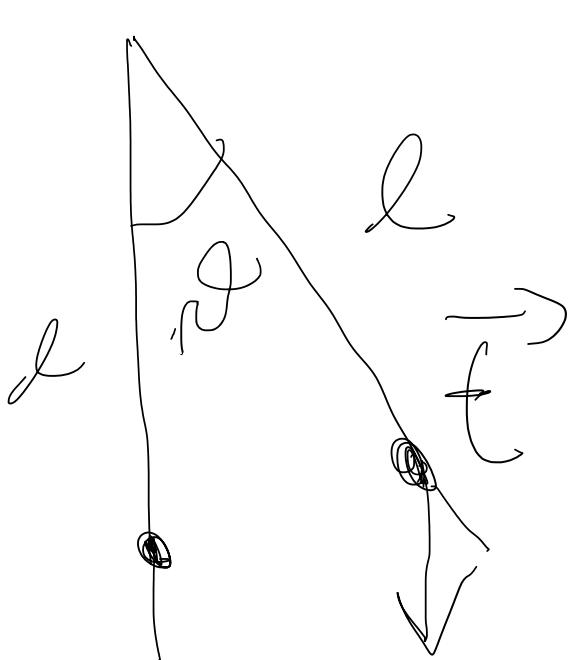


Dinamica 2

mercoledì 8 novembre 2023

11:12



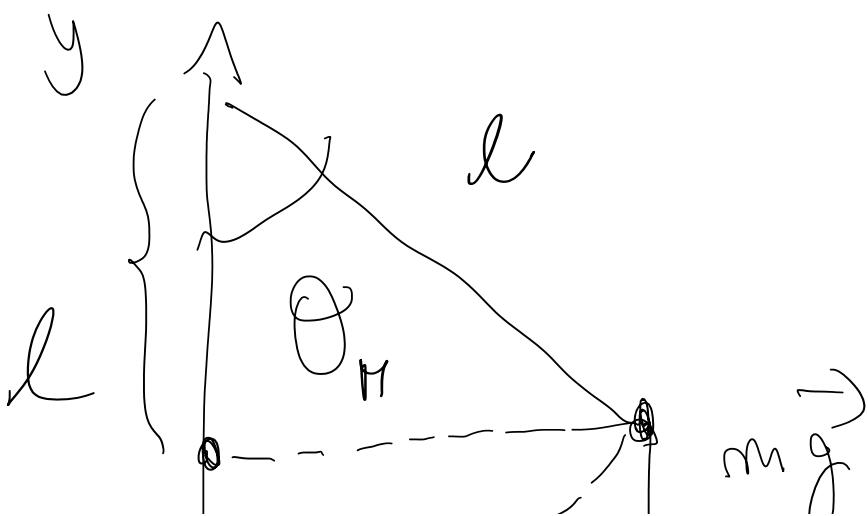
$$\theta(t) = \theta_m \cos \omega t$$

$$\omega^2 = g/l$$

$$T = 2\pi \sqrt{l/g}$$

$$E = \frac{1}{2} m \dot{\theta}^2 + U, \quad U = -m g y$$

$\vec{\psi} \perp \vec{e}_z \rightarrow dL = \sqrt{dx^2 + dy^2} =$

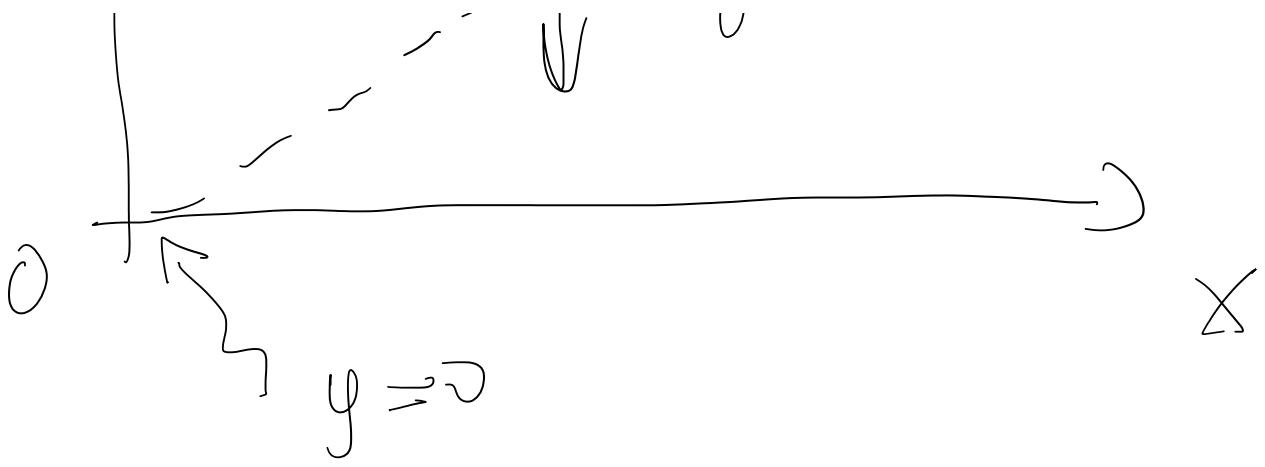


$$\mathcal{E} = TAD$$

$$L = -mg y$$

$$U = mg y$$

0 0 0 -



$$E_m = m g l (1 - \cos \theta_\mu)$$

$$E_m = \frac{1}{2} m \dot{\theta}^2$$

$$E_m = \frac{1}{2} m \dot{\theta}^2 \Rightarrow m g l (1 - \cos \theta_\mu)$$

Velocità all'origine nota l' angolo e la lunghezza del filo

$$\dot{\theta}^2 = 2 g l (1 - \cos \theta_\mu)$$

$$E_m = E_{1m} \Rightarrow \frac{1}{2} m$$

$$m = k - k \cos \theta_M$$

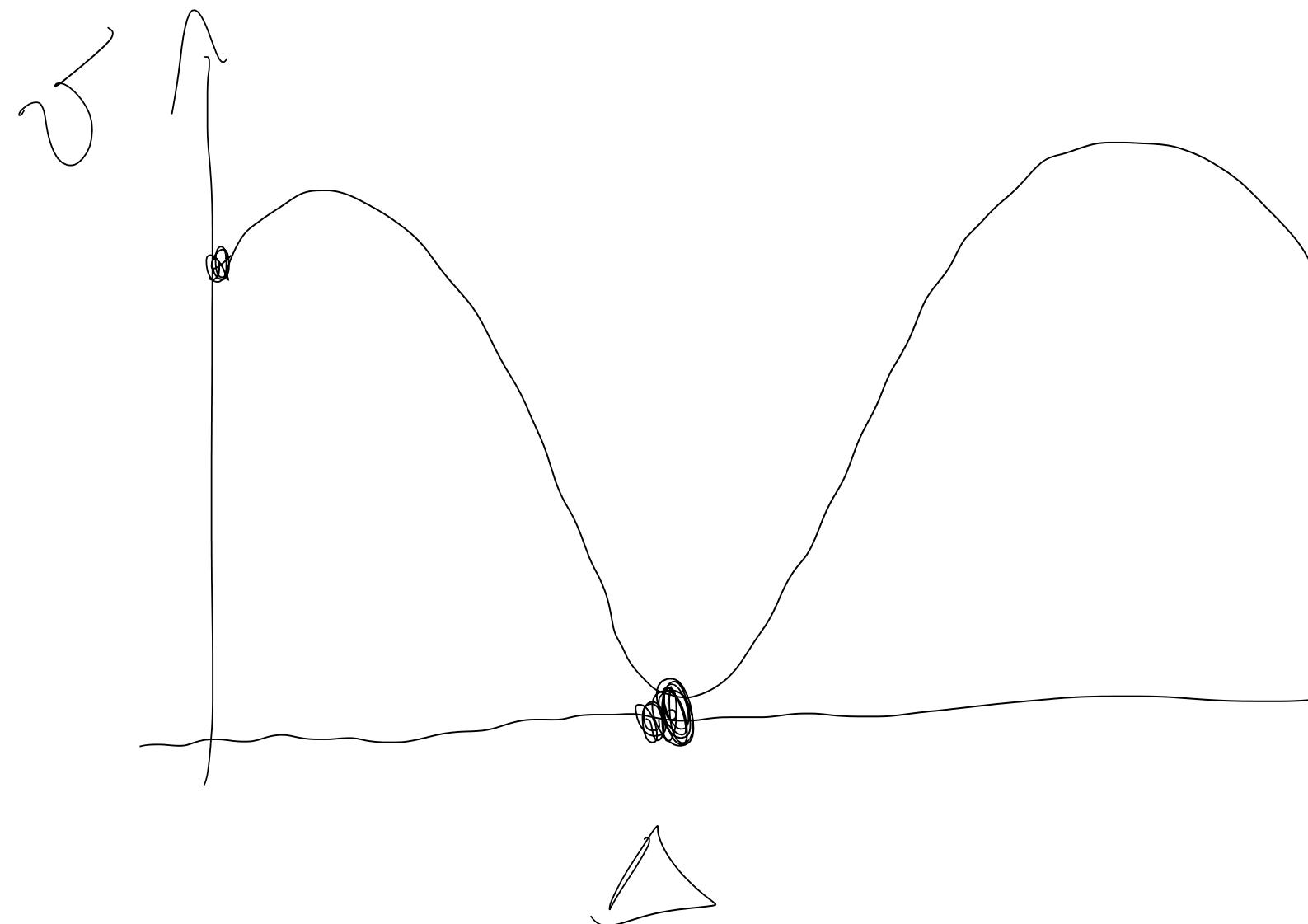
$$J = m g l (1 - \cos \theta_M)$$

$$- \cos \theta_M)$$

$$J^2 = m g l (\cos \theta - \cos \theta_e)$$

$$J^2_{\text{ORIGIN}} = \cos(\alpha - \omega)\theta$$

$$J^2(0) = 2gl(0) \approx 0$$

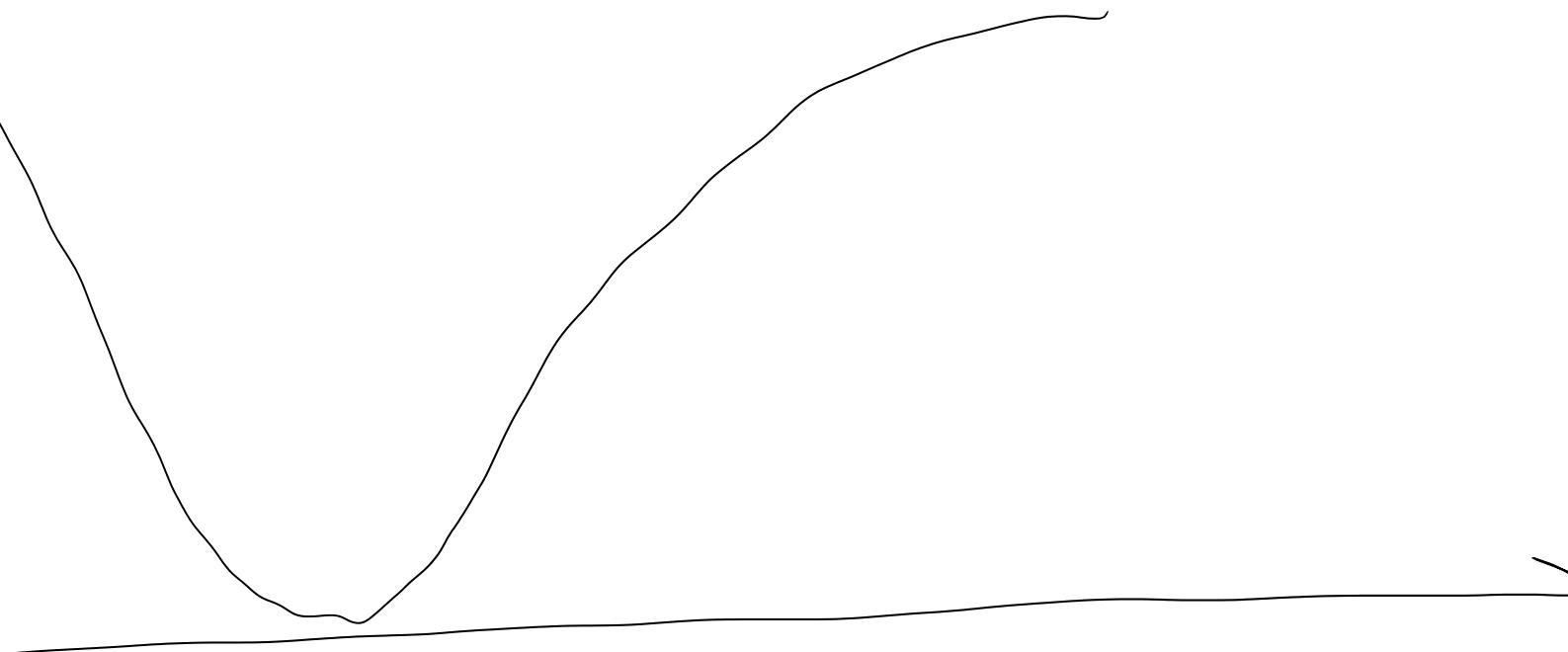


v

-v'

$\mathcal{D}_M)$

$\hookrightarrow \mathcal{O}_M)$



\mathcal{O}
 \mathcal{N}

1

2

3

ESTEPID

$$\theta_m = 5^\circ$$

$$l = 10 \text{ cm}$$

$$\theta_M = \pi/4 \rightarrow \cos \theta_M$$

$$1 - \cos \theta_M < 0.3$$

$$\beta^2 = 2gl(1 - \cos \theta)$$

$$2 \times 9.81 \times 0.1 \times 0.3 =$$

$$\tau \leq 0.7$$

$$\theta(n) = \\ = 0.6^{m/2}$$



$$\rightarrow \sigma = \sqrt{0,6} = 0.7$$

$$l = 100 \text{ cm} \rightarrow 1 \text{ m}$$

$$\sigma^2 = 2 \times 0.81 \times 1 \times 0.3 =$$

$$\sigma = 2.5 \text{ m/s} = 0.7 \text{ m/s}$$

$$\vec{f} = \vec{f}_C + \vec{f}_{NC}$$

$$L_{AB} = \int_A^B \vec{f} \cdot d\vec{l} = \int_A^B \vec{f}_C \cdot d\vec{l}$$

$\rightarrow \lambda \approx 1$

$\neq m/0$

$$6 m^2 \int_0^2$$



$C =$ Conservation

$\cancel{NC} =$ non Conservation

$$+ \oint_A B \cdot d\vec{l} + \oint_{NC} \phi \vec{E}$$

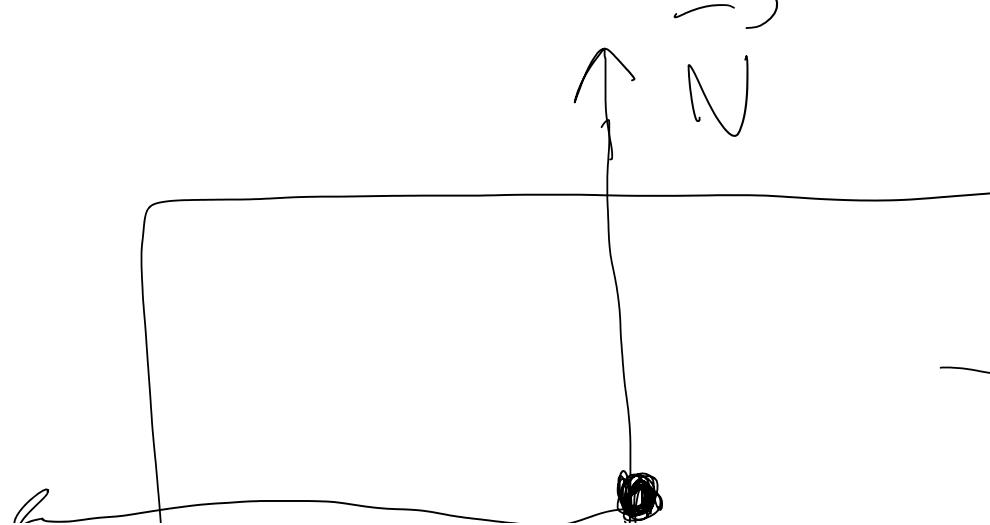
- $\Delta U + L_{NC} \Rightarrow (k_B - k_A)$

$$\Rightarrow (k_B + U_B) - (k_A + U_A) = L$$

$$\Delta E = L_N$$

$$\Delta E = L_{NC}$$

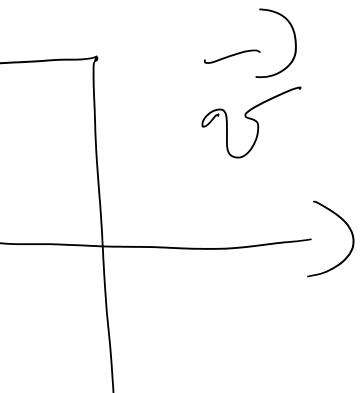
$$L_{NC} < 0 \Rightarrow \Delta E < 0 \Rightarrow$$

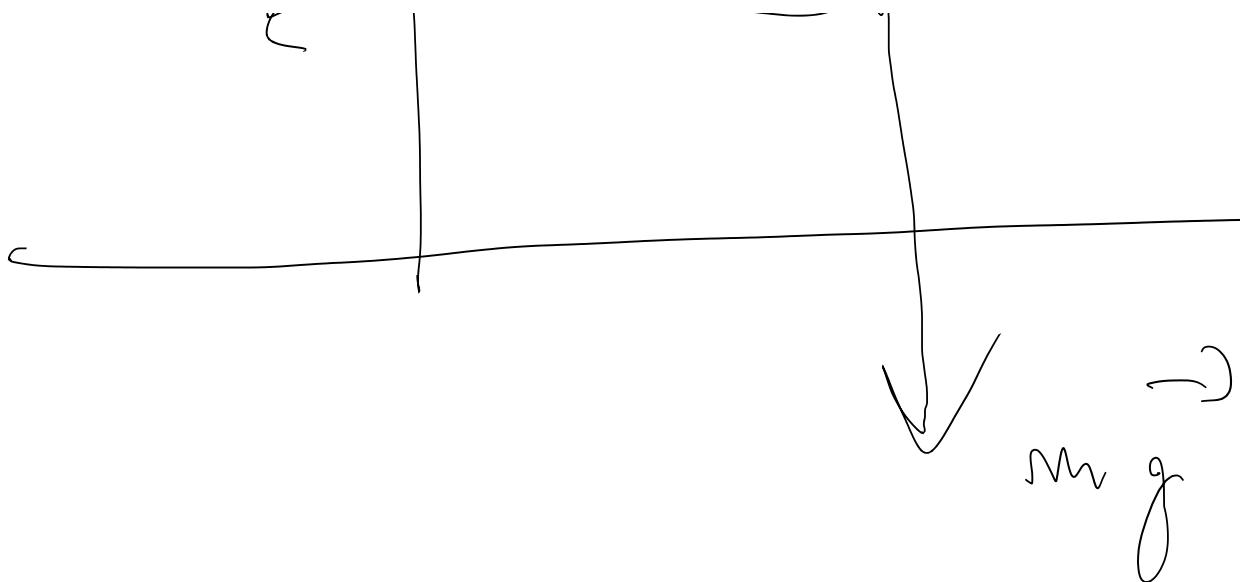


$$J = (\cup_B - \cup_A) + L_{NC}$$

$$\Rightarrow \\ \rightarrow NC$$

$$E_B < E_A$$





$$\vec{N} + m \vec{g} = 0 \Rightarrow \vec{N} = -m \vec{g}$$

$$f = f_a = \mu_s N = \mu_s m g$$

In um weiteren unerlaubte erste
D... D...

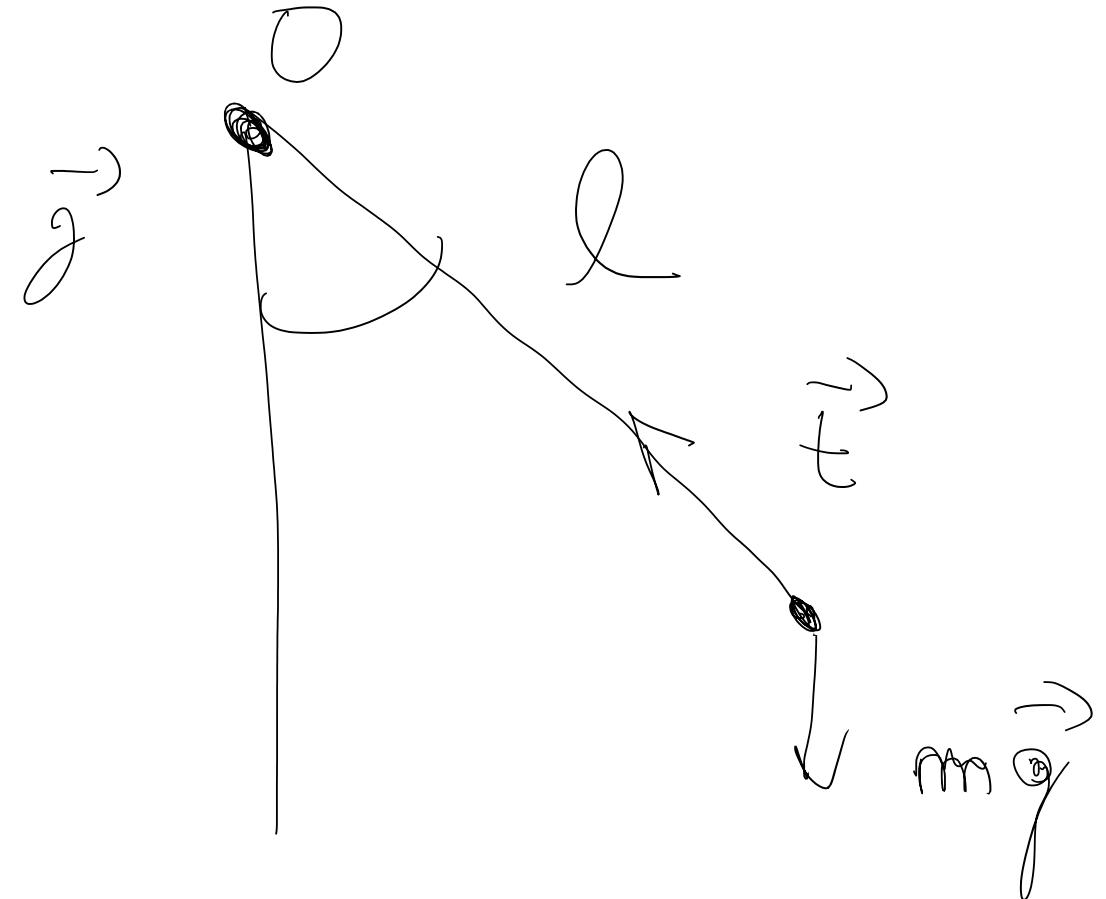
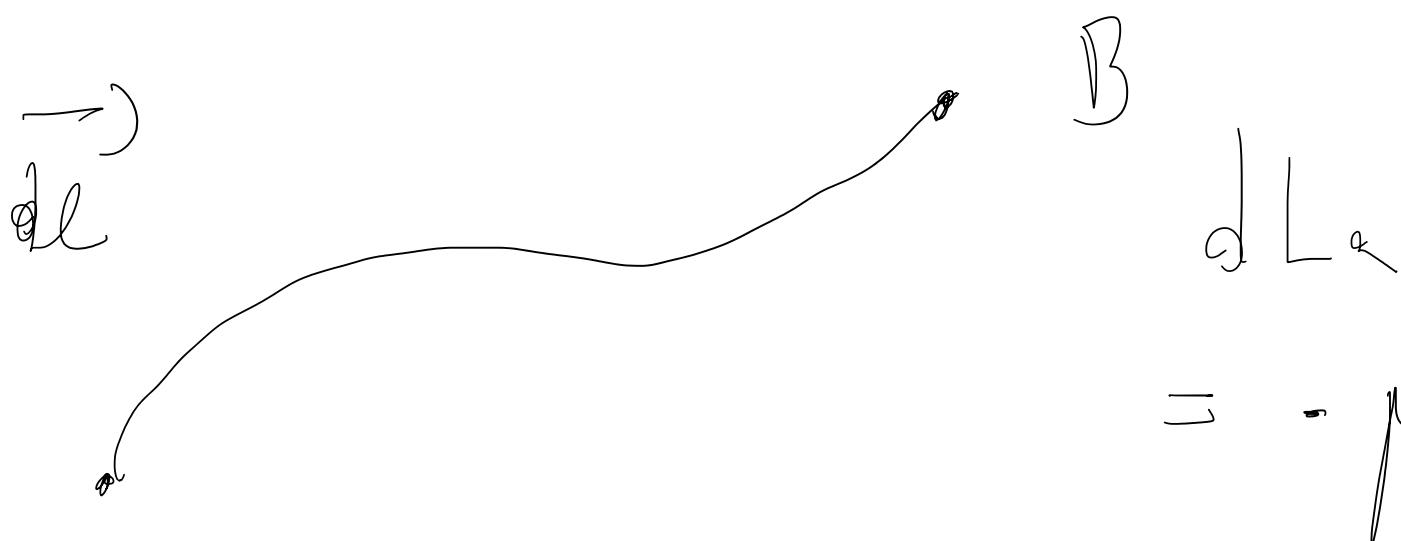


Diagram of a simple pendulum

che 7V opposite ~~exist~~ + 0'11m

$$f_a = -\mu_c N \vec{v}$$



$$= -\mu_c$$

$$\rightarrow L_{..} = \int B \cdot dl$$

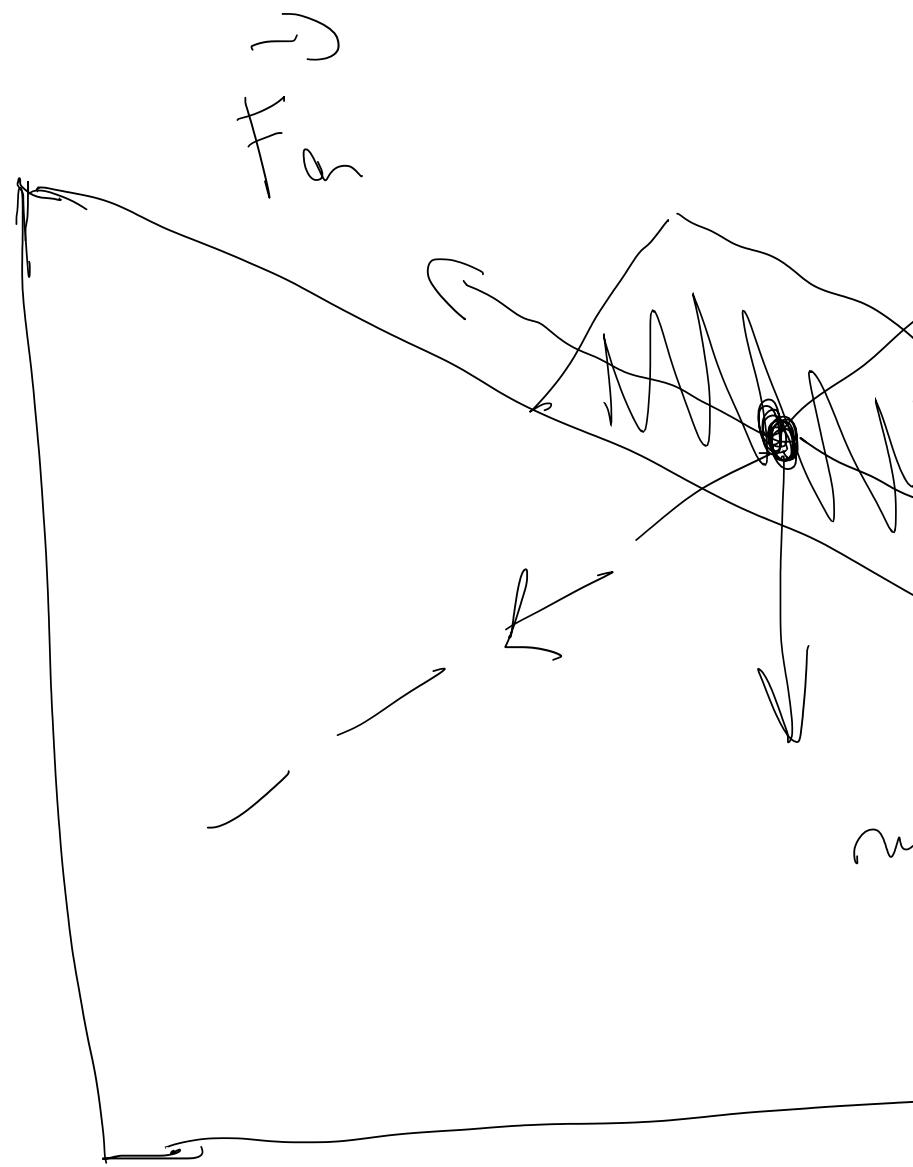
for, q

$\mu_s = \text{coefficiente di}$
 attrito statico

$$\begin{aligned} & \rightarrow \quad \rightarrow \\ & = f_g \cdot d \cdot l \\ -\mu c N \cdot \vec{v} \cdot \vec{l} & = -\mu c N \vec{v} \cdot \vec{l} \cdot dt \\ -N v_{\text{alt}} & = -\mu c N v_{\text{alt}} < 0 \end{aligned}$$

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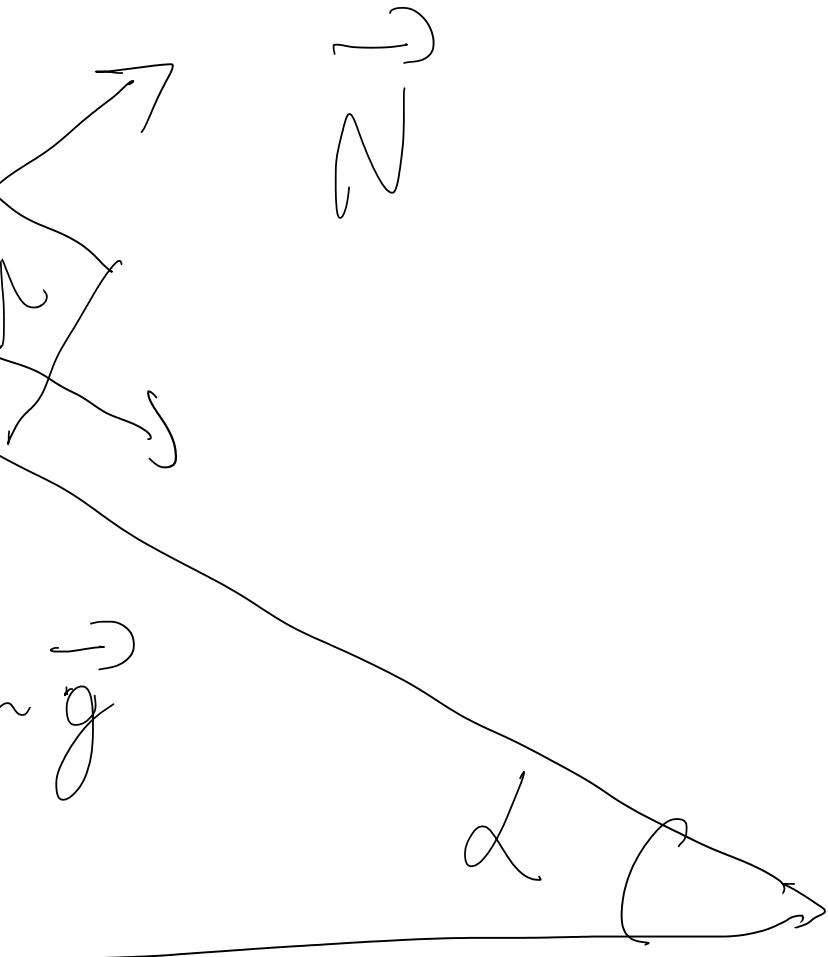
ΔV - A



$$N \cdot \sin \alpha = 0$$

and a condition \Rightarrow α

$\curvearrowleft \curvearrowright \curvearrowleft \curvearrowright$



$$\mu_s \neq 0$$

$$\mu_c \neq 0$$

$$\Rightarrow N = m g \cos \alpha$$

$$\Rightarrow \sin \alpha = \mu_s N$$