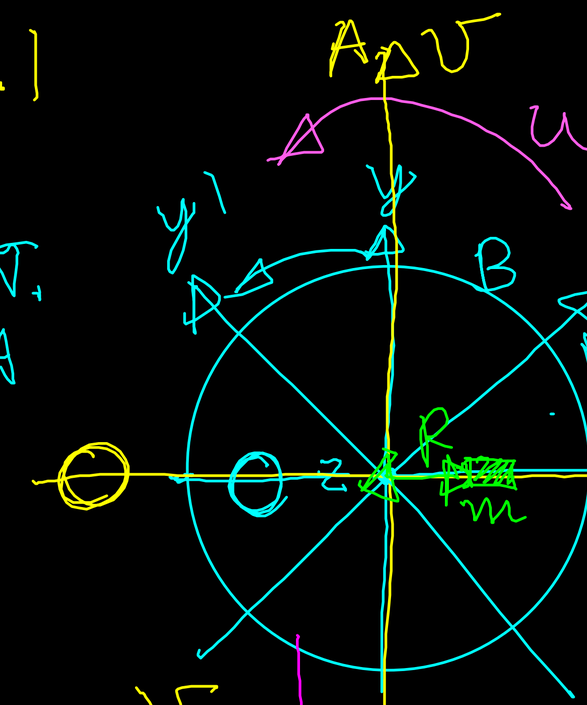
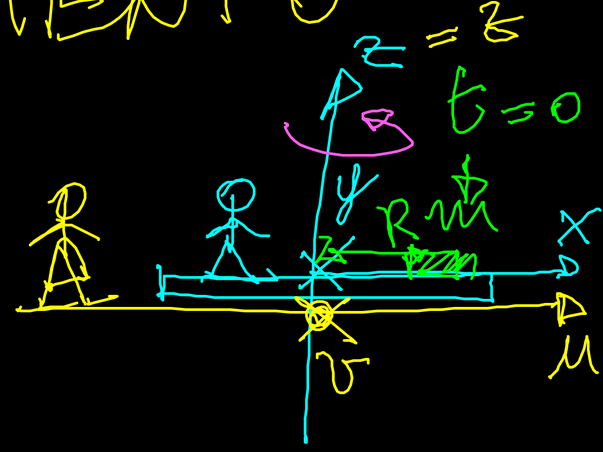
MOTO IN SISTEMI DI RIFERIMENTO NON INERZIALI

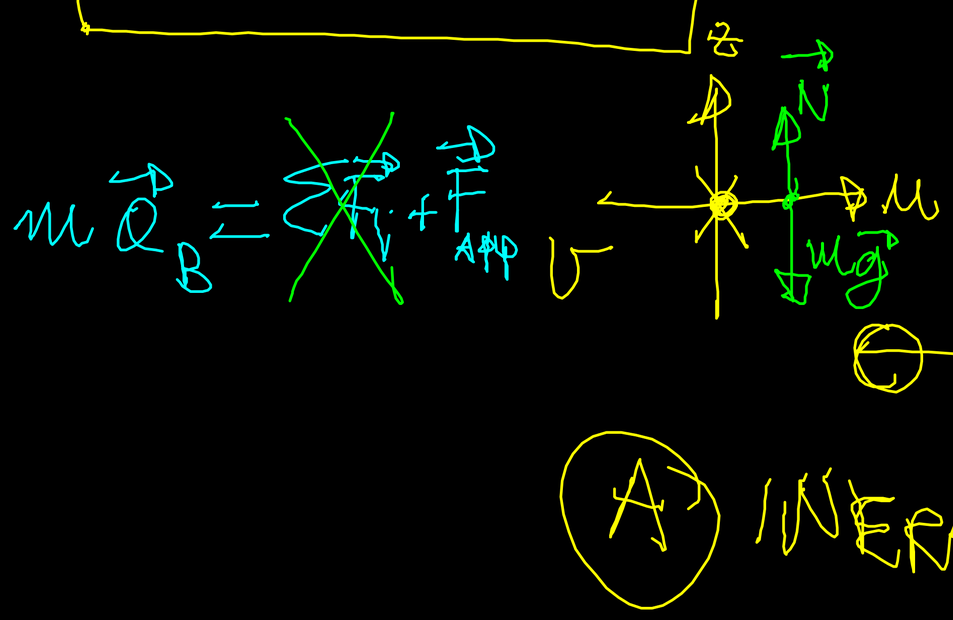
$$\sum_{i=1}^{n} \vec{F}_i = m\vec{a}$$

NEI SIST. DI RIF. INERZIALI

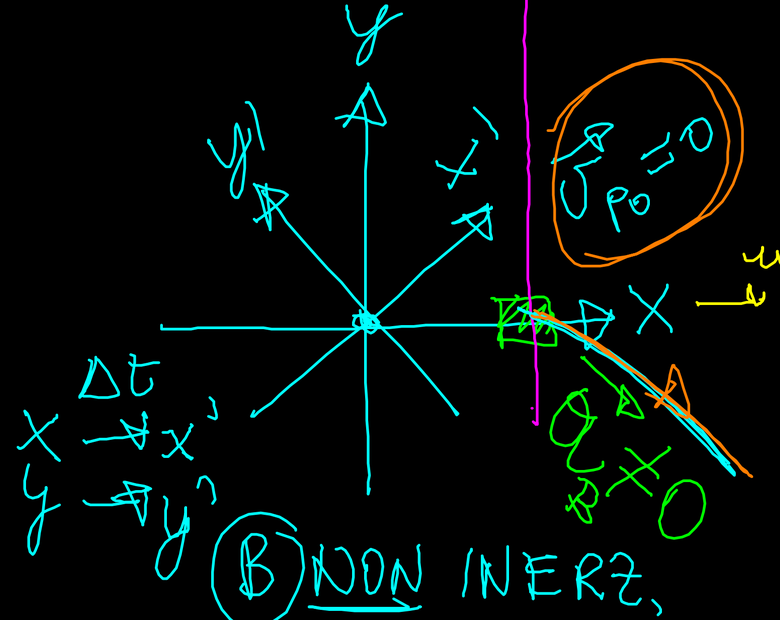
PIANT. LISCIA



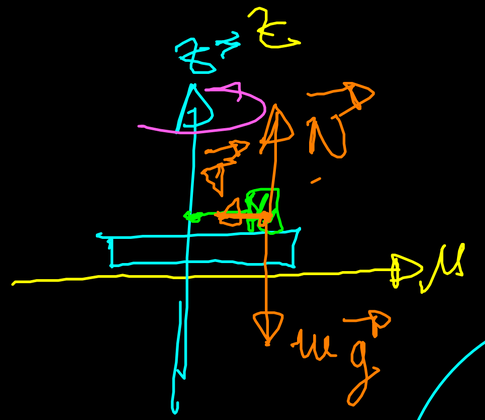


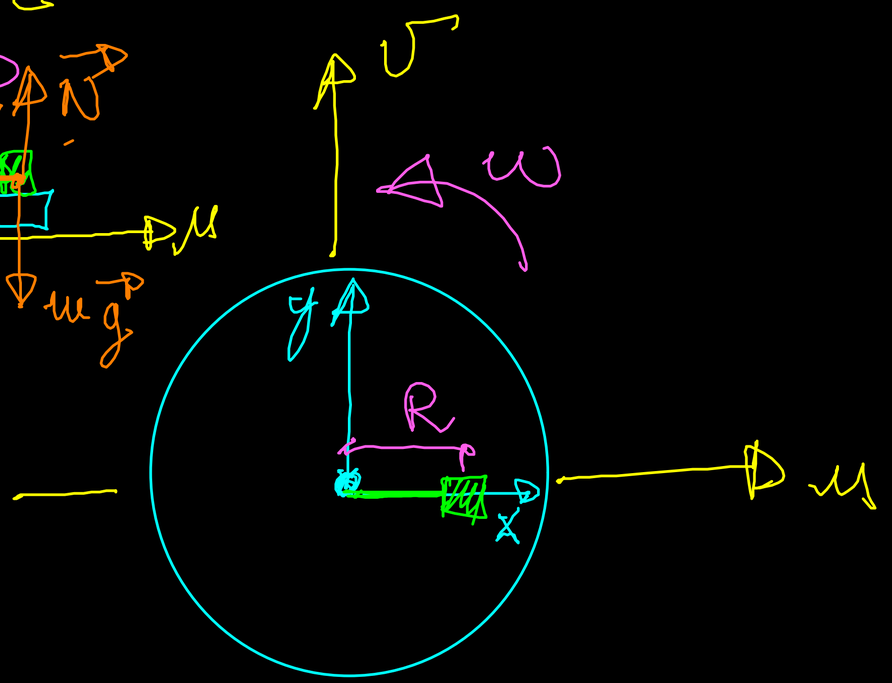


(A) INERZ.



(B) NON INERZ.





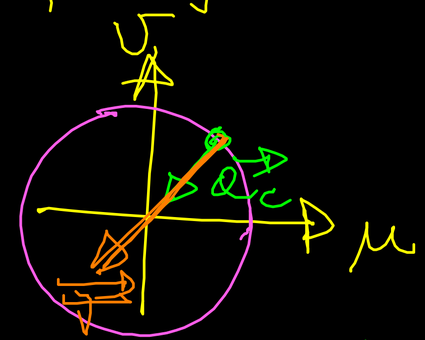
INERZIALE

MOTO CIRC. UNIF.

INERZ.

MOTO CIRC. UNIF

$$|\vec{a}_c| = \omega^2 R$$



$$m\vec{a}_c = \sum_i \vec{F}_i =$$

$$= \vec{N} + m\vec{g} + \vec{T}$$

$$m\vec{a}_c = \vec{T}$$

FORZA CENTRIPETA

NON INERZ.

$$\vec{a}_B = 0$$

$$\sum \vec{F}_i = \vec{N} + m\vec{g} + \vec{T}$$

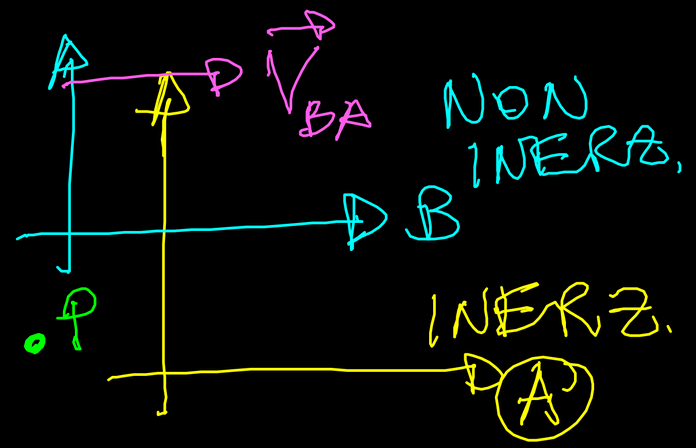
$$\sum_i \vec{F}_i = \vec{T}$$

$$m\vec{a}_B = \vec{T} + \vec{F}_{APP}$$

$$0 = \vec{T} + \vec{F}_{APP}$$

$$\vec{F}_{APP} = -m\vec{a}_c$$

FORZA CENTRIFUGA



$$\vec{V}_{PA} = \vec{V}_{PB} + \vec{V}_{BA}$$

$$\vec{a}_{PA} = \vec{a}_{PB} + \vec{a}_{BA} + \vec{a}_{CO}$$

$$\vec{a}_{PB} = \vec{a}_{PA} - \vec{a}_{BA} - \vec{a}_{CO}$$

$$m\vec{a}_{PB} = m\vec{a}_{PA} - m\vec{a}_{BA} - m\vec{a}_{CO}$$

$$m\vec{a}_{PB} = \sum_{i=1}^{n} \vec{F}_i$$

$$-m\vec{a}_{BA} = \vec{F}_{app} \qquad -m\vec{a}_{CO} = \vec{F}_{CO}$$

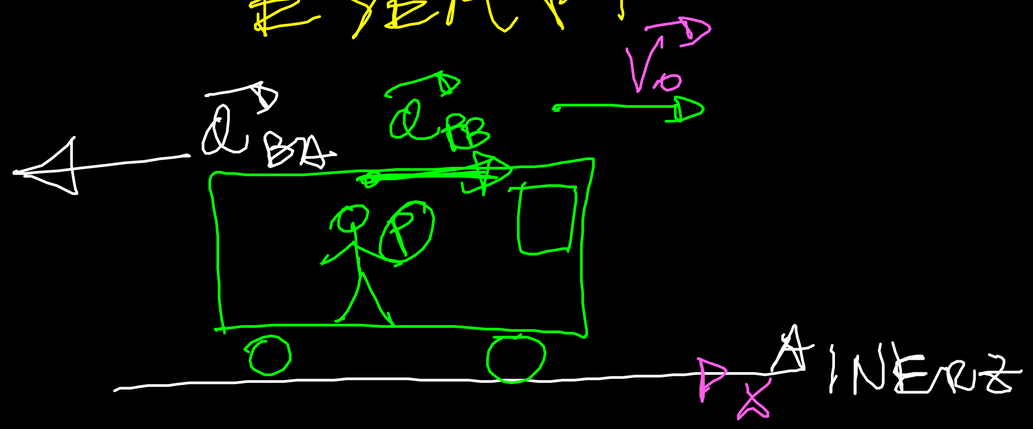
$$m\vec{a}_{PB} = \sum_{i=1}^{n} \vec{F}_i + \vec{F}_{app} + \vec{F}_{CO}$$

NON INERZ.

$$\vec{F}_{app} = -m\vec{a}_{BA}$$

$$\vec{F}_{CO} = -m\vec{\omega} \times \vec{V}_{PB}$$

ESEMPI

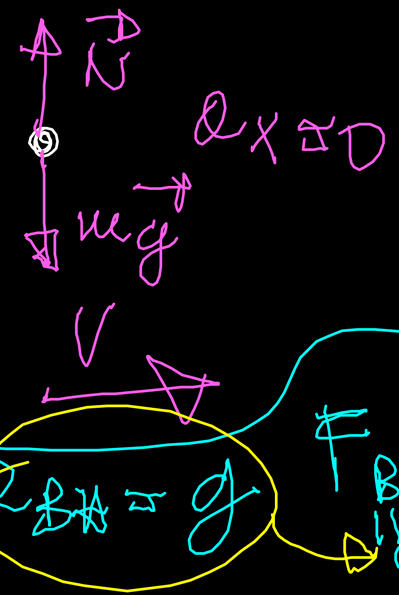


$\vec{a}_{BA} \neq 0$ (BUS)

NON INERZ.

$m\vec{a}_{PB} = \sum_i \vec{F}_i - m\vec{a}_{BA}$

INERZ



$\vec{a}_{PB} = -\vec{a}_{BA}$

$a_{BA} = g$

$F_{BIL} = m(g - a_{BA})$