

## Esercitazione 8 -

## Tutti i casi di problemi

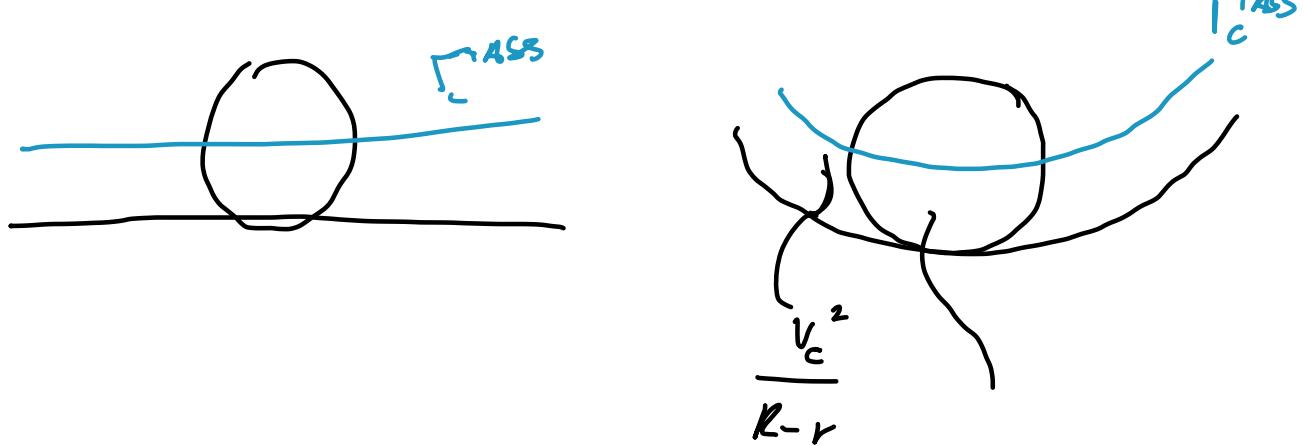


Diagram illustrating the motion of a point on the surface of a rotating cylinder of radius  $R$ . The center of the cylinder is  $C$ . A point on the surface is at a distance  $r$  from  $C$ , with velocity  $\vec{v}$  and angular velocity  $\omega$ .

Equations derived from the diagram:

$$C_p \cdot C = R \cdot r$$

$$(R - r) \sqrt{v} = \omega r$$

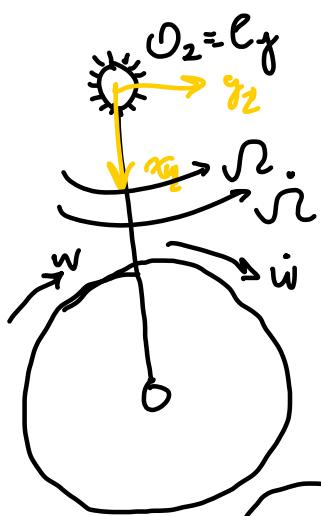
$$\sqrt{v} = \omega \frac{r}{R - r}$$

## Introducción

$\gamma$  pressiamo eliminare  $\gamma$  (✓)

e possiamo usare sistemi di fermenti  
traslante in C.

Se vogliamo usare tempo rotante:



$\Omega_2 x_2 y_2$ , rotante  
solidale con  
vella fittizia

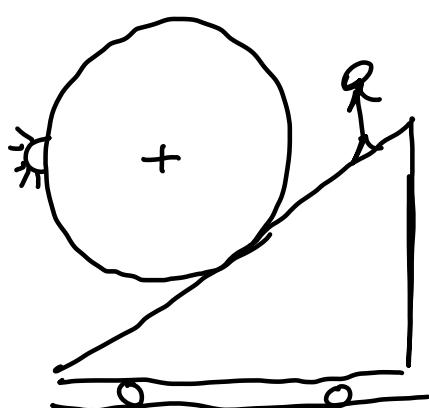
Con sistemi rotanti  
dobbiamo sapere  
se  $\vec{\omega}_{ASS} \circ \vec{\omega}_{REL}$

$$\vec{\omega}_{DISCO}^{ASS} \rightarrow \vec{\omega}_{DISCO}^{REL}$$

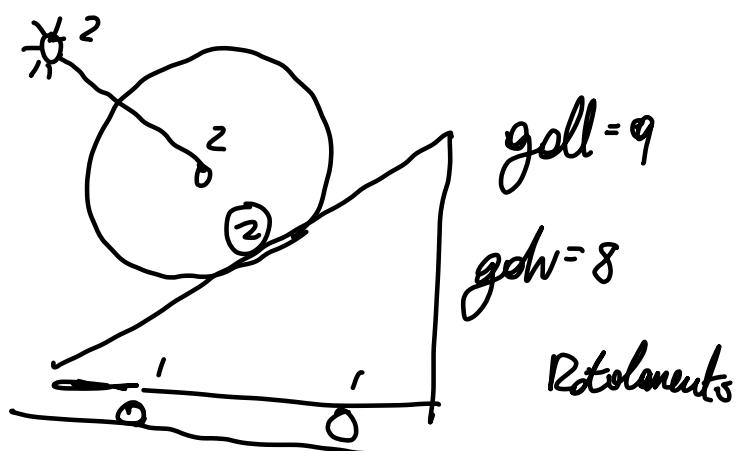
$$\vec{\omega}_{DISCO}^{ASS} = \vec{\omega}_{DISCO}^{REL} + \vec{\omega}_{Rif}^{TRA}$$

$$\vec{\omega}_{DISCO}^{REL} = \vec{\omega}_{DISCO}^{ASS} - \vec{\omega}_{Rif}^{TRA}$$

Esercizio, ci dobbiamo inventare esercizi



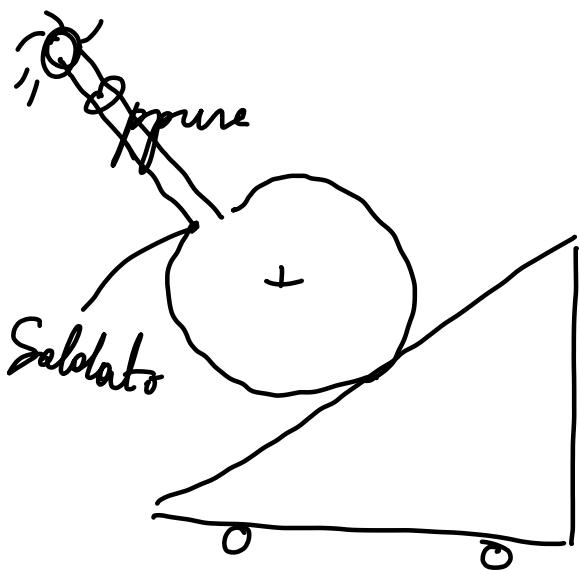
6 goll  $\Rightarrow$  5 gohv  $\Rightarrow$  Stisciamento  
con rotolamento



$$goll = 9$$

$$gohv = 8$$

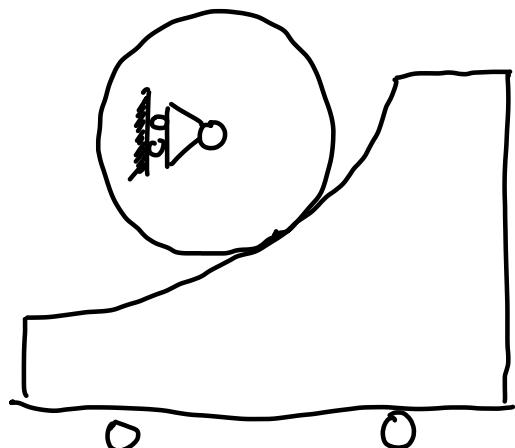
Rotolamento



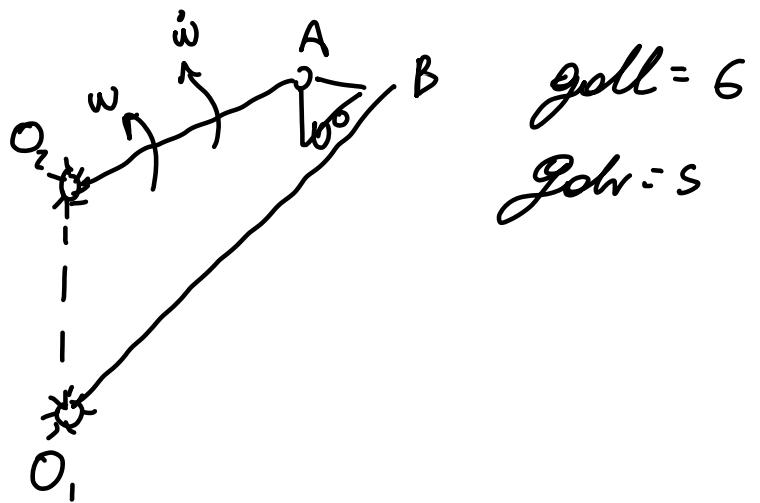
$gdl = 6$   
 $gdl = 5$  Strisciamento



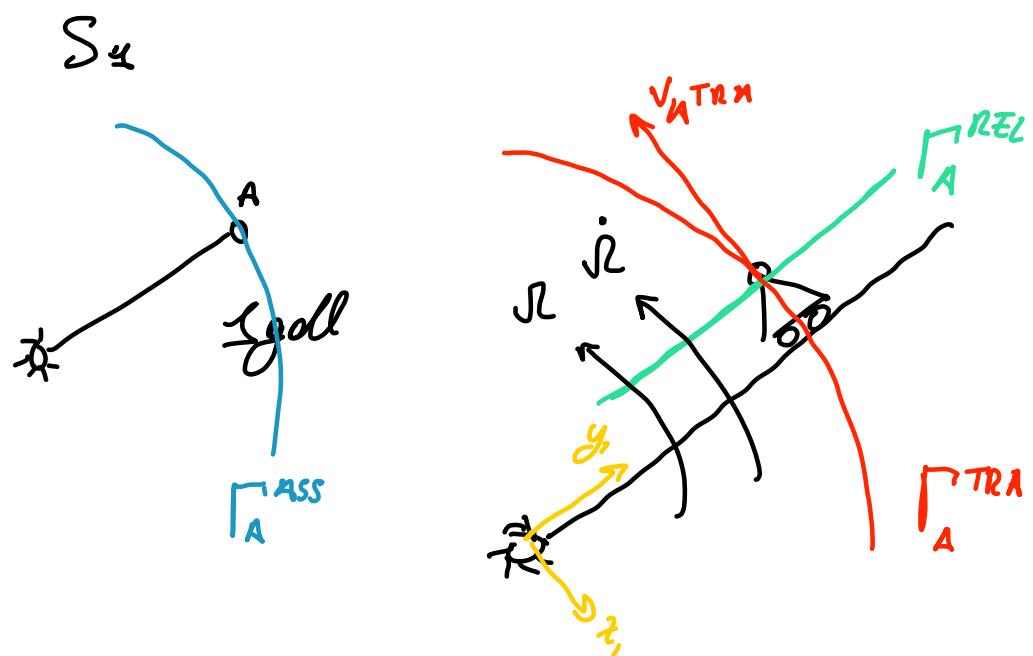
$6gdl$   
 $gdl = 5^-$   
Strisciamento



Golffo



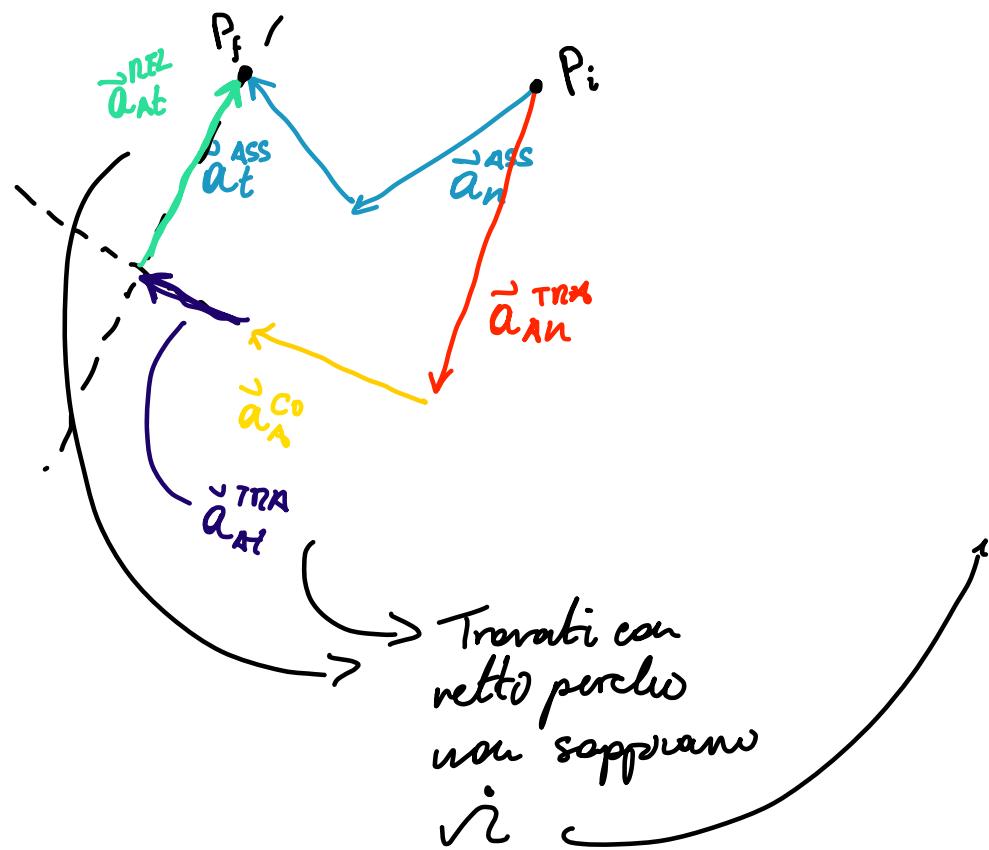
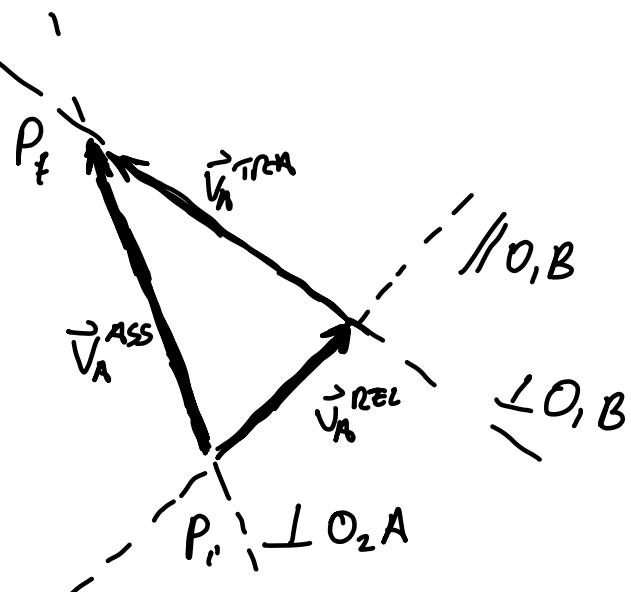
Spessiamo



$$|\dot{\gamma}| = \frac{|V_A^{\text{TRA}}|}{O_A}$$

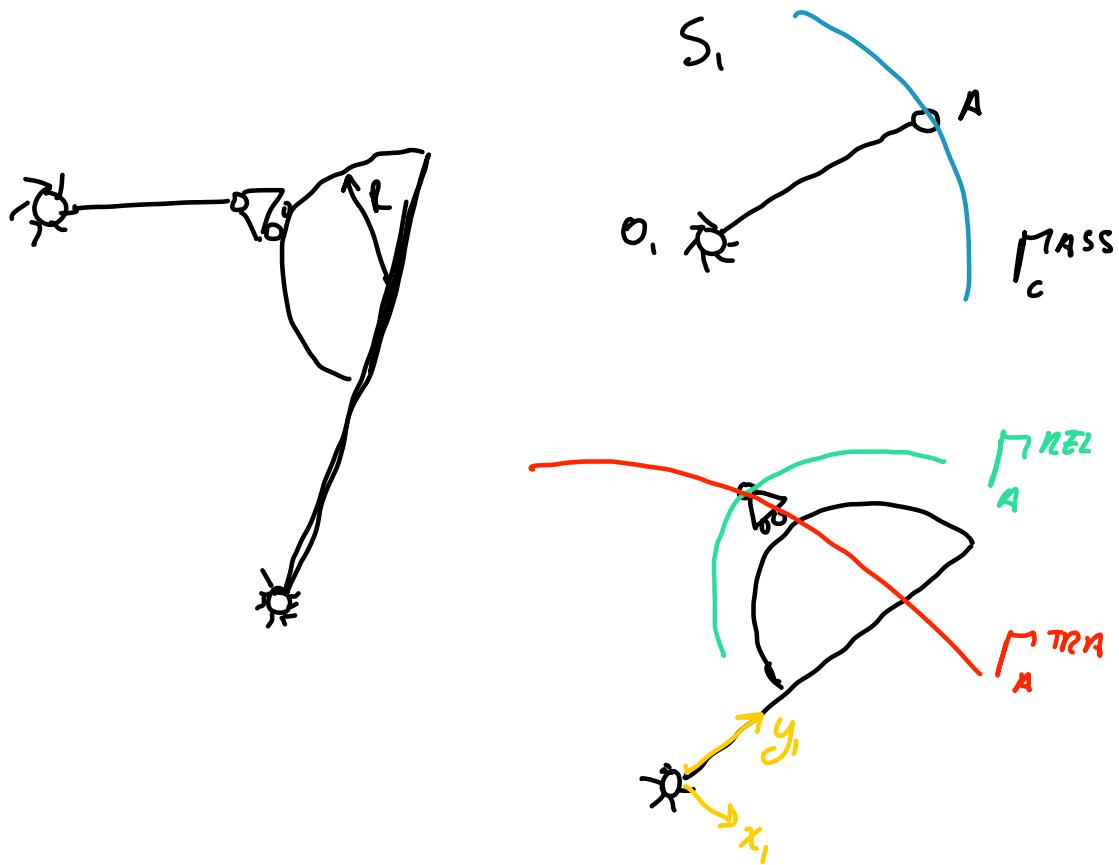
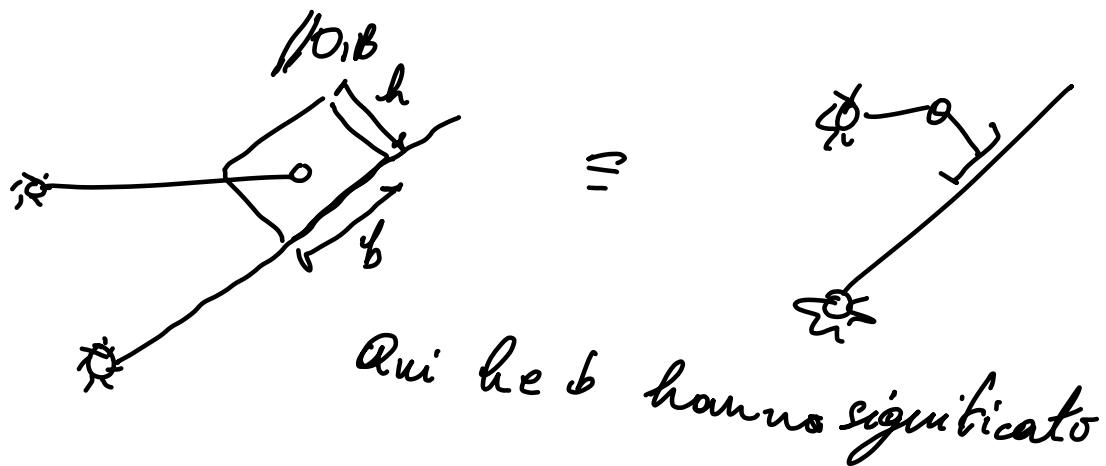
$\vec{V}_A^{\text{ASS}}$	$\vec{V}_A^{\text{REL}}$	$\vec{V}_A^{\text{TRA}}$
$\omega_{O_2 A}$	?	?
$\perp O_2 A$	$\parallel O_2 B$	$\perp O_2 B$

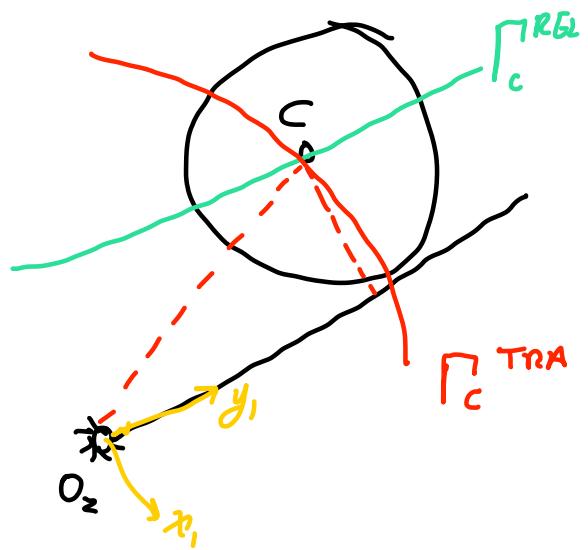
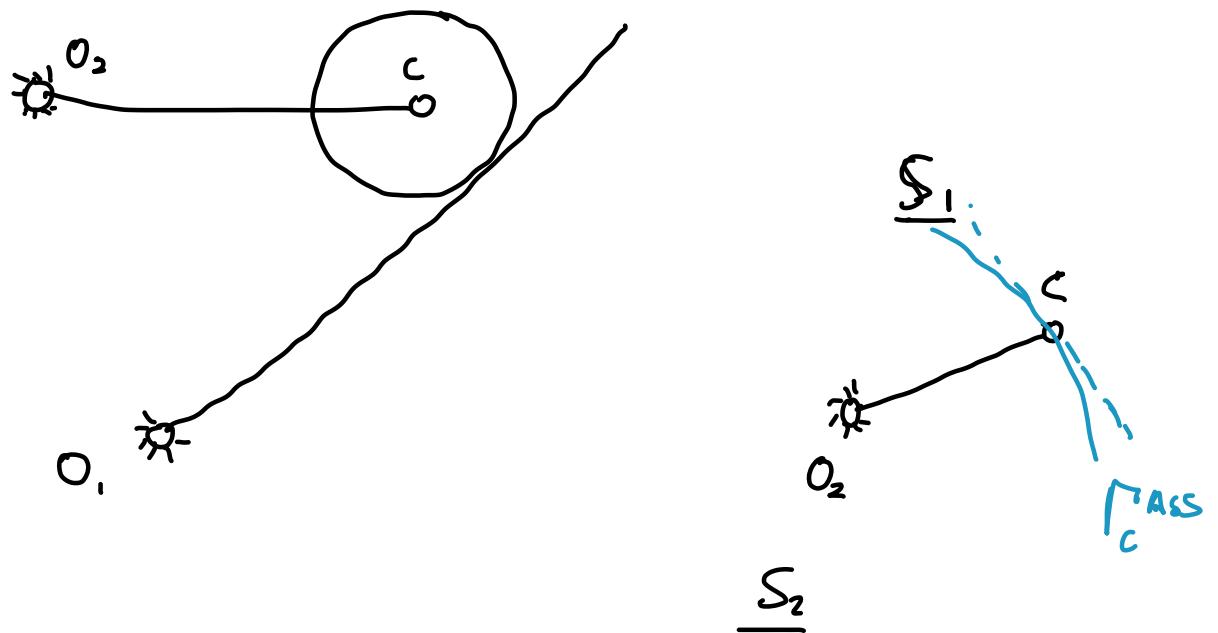
$\hookrightarrow$  non  $O_2 A$   
non conformati



I candeli non hanno alcuna propria  
c'è un'immagine gravitazionale

Se invece fossero blocchi:





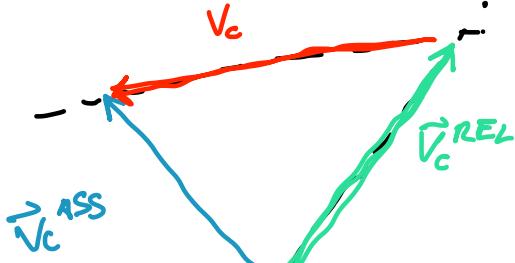
In questo caso bisognerà calcolare  
bene  $\omega_{\text{disco}}$

$$\frac{V_c^{\text{ASS}}}{\omega_{O_2 C}} = \frac{V_c^{\text{REL}}}{?} + V_c^{\text{TRA}}$$

$$\perp O_2 C \quad // O_2 B \quad \perp O_2 C$$

Il disco ha dimensione  
non come il carrello prima

$\rightarrow \text{TRA}$

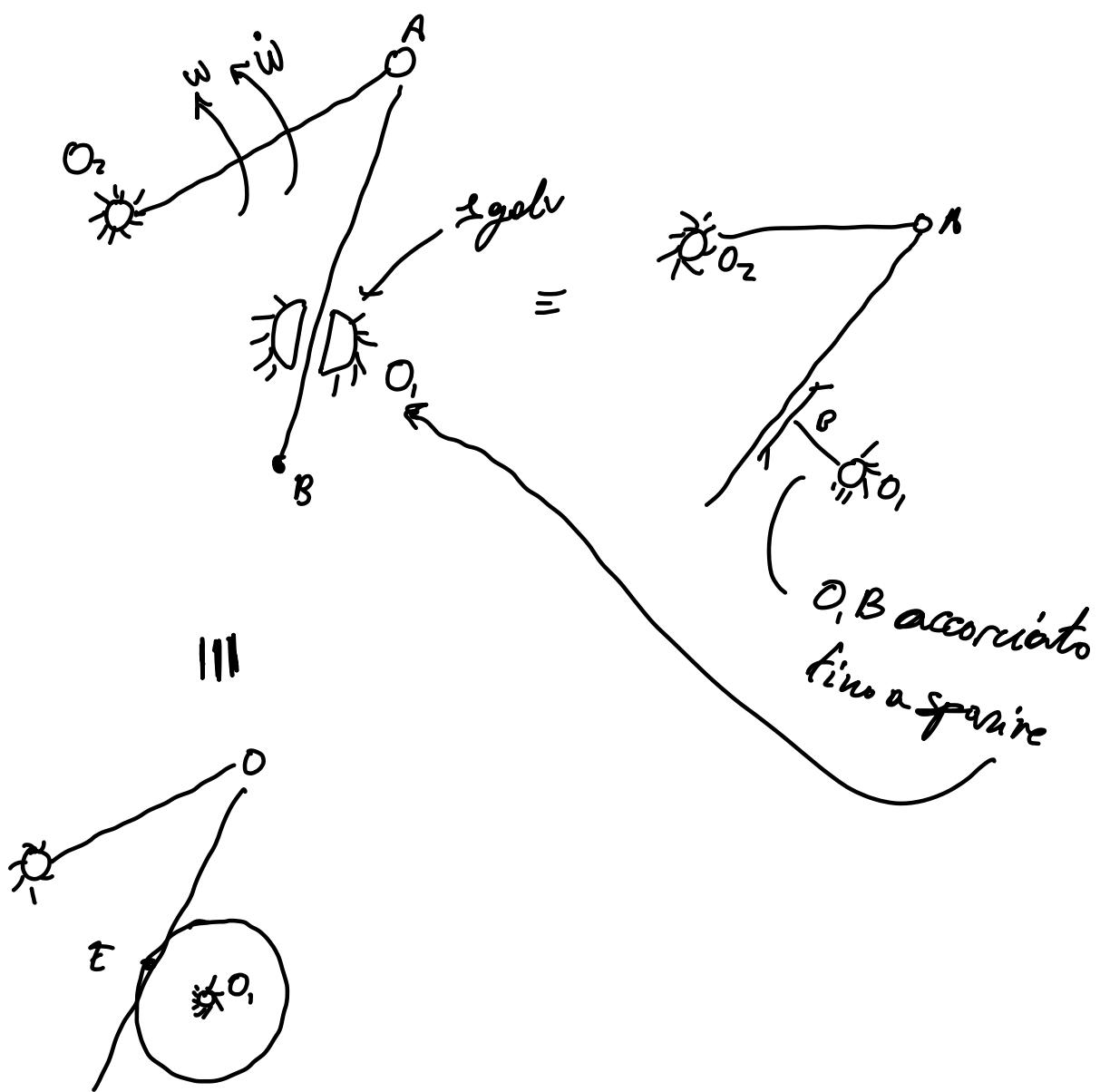


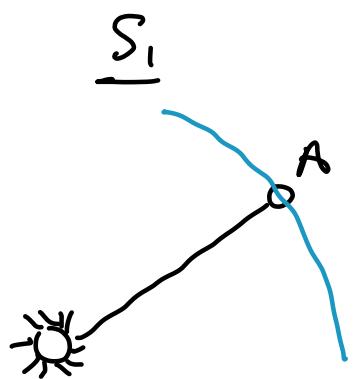
$$|\vec{v}_c| = \frac{|\vec{v}_{c, \text{TRAN}}|}{\alpha_{c,c}}$$

$$|\vec{w}_d^{\text{REL}}| = \frac{|\vec{v}_c^{\text{REL}}|}{r}$$

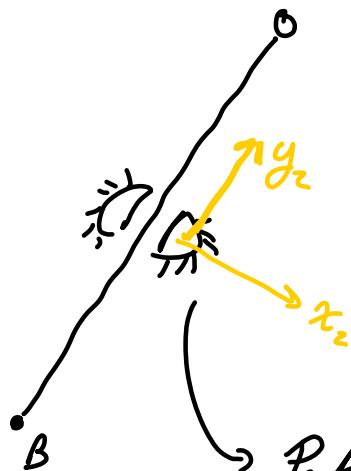
$$\vec{w}_d^{\text{ASS}} = \vec{w}_d^{\text{REL}} + \underbrace{\vec{w}_{\text{rif}}}_{\text{perduta}}$$

perduta  
ho scritto nif a O, x,y,  
rotante



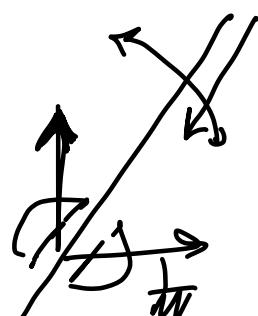


S<sub>2</sub>



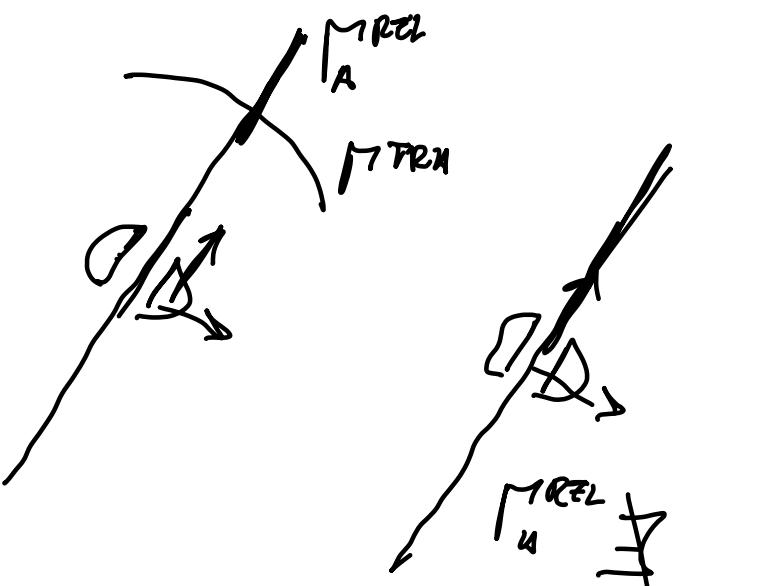
Potrebbe esser  
di regalo sull'asta  
ma implicherebbe  
rotolo-traslante,  
invece mettevole  
sulla cerniera  
implica solo rotante.

Quindi esplicitiamo  
per evitare  
confusione



Può fare  
tutti e due

allo stesso momento  
se blocciamo la rotazione  
del sistema, non va bene



$\Gamma_A^{TRA}$  è complesso