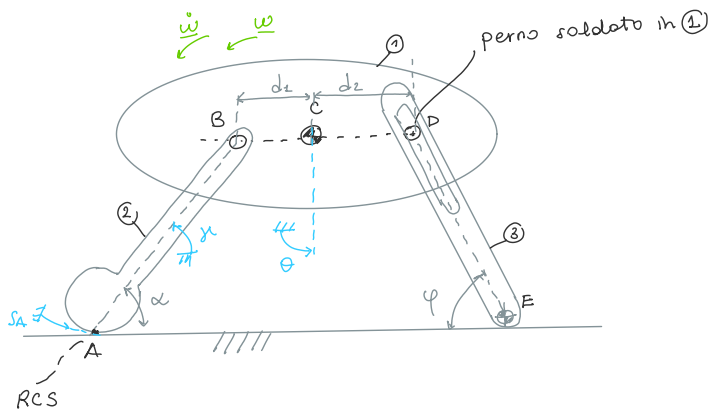


Eserc: RCS e Perno in asola

venerdì 29 novembre 2024 11:34



Nota: geometria

$\dot{\theta}, \ddot{\theta}$

Valutare: 1) tipo di rotol. in C per avere 1 gdl

2) tipo moto assoluto e relativo tra (1 e 2) e (1 e 3)

3) $\dot{\theta}$ < soluz. grafica
soluz. analit. / geom.

4) \dot{a} Assoluti

5) \underline{a}

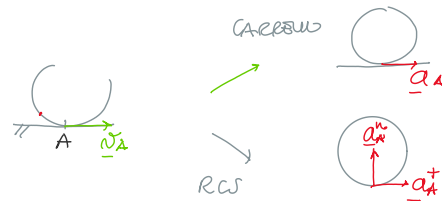
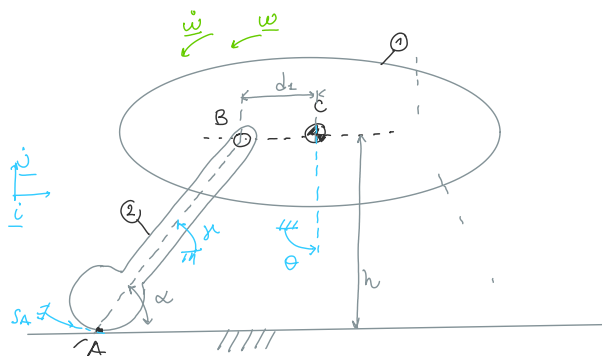
$$1) \quad n_{gdl} = 3 \times 3 - 3 \times 2 - 1 \times 1 - X = 1$$

CERN. B, C, E CARRELLI D PERNO IN ASOLA

$$X = 1 \Rightarrow RCS$$

- 2) ① ROT ①② ROT
③ ROT ①③ ROT-TRAS
② ROT-TRAS

3) VEL. ①②



$$\underline{v}_{B(2)} = \underline{v}_{B(1)}$$

FFC FFC

VELOCITÀ DI STRISCAMENTO

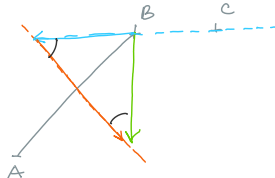
$$\underline{v}_{B(2)} = \underline{v}_A + \dot{\theta} \underline{k} \wedge \underline{AB}$$

$$= \dot{s}_A \underline{i} + \dot{\theta} \underline{k} \wedge \underline{AB}$$

$$\| \dot{s}_A \underline{i} + \dot{\theta} \underline{k} \wedge \underline{AB} = \dot{\theta} \underline{k} \wedge \underline{CB} \| \quad \text{Ep}^{\text{re}} \text{ chiusura}$$

noto dir. ① ? noto dir. ② noto ③

soluz. Grafica



$$\begin{cases} \dot{s}_A < 0 \\ \dot{\theta} < 0 \end{cases}$$

soluz. Anal.

$$\begin{cases} \dot{s}_A - h \dot{x} = 0 \\ + \dot{x} h = - \dot{\theta} d_1 \end{cases}$$

$$\begin{cases} \dot{s}_A = h \dot{y} = -\dot{\theta} d_1 < 0 \\ \dot{y} = -\dot{\theta} \frac{d_1}{h} < 0 \end{cases}$$

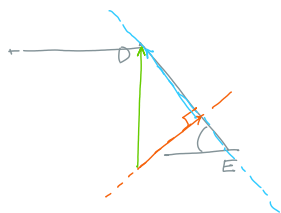
A diagram showing a horizontal disk rotating with angular velocity $\dot{\omega}$ and ω . A rod is pivoted at point C on the disk's axis. The rod has a pivot at point D on the disk and a support at point E. The rod is at an angle θ to the vertical. The distance from the axis to point D is d_2 . The rod has a length d_1 from E to D. The angle between the rod and the vertical is θ . The rod is labeled with points 1, 2, and 3. The angle between the rod and the vertical is θ . The angle between the rod and the vertical is θ .

$$\frac{V_{D(3)}}{I} = \frac{V_{D(1)}}{1}$$

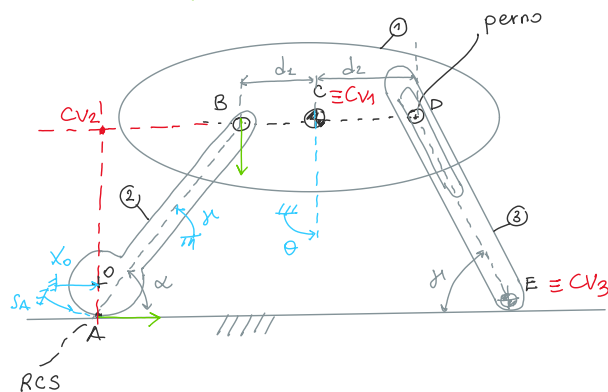
FFC TCV $\Sigma(3)$

$$\Sigma_{(3)} \overset{\text{class}}{\nu_D} \textcircled{1} = \overset{\text{rel}}{\nu_D} + \overset{\text{tr}}{\nu_D} \quad \text{with } \nu_D \textcircled{3}$$

$$\vec{OC} \wedge \vec{CD} = \vec{OC} + \vec{CD} \wedge \vec{ED}$$



$$\begin{cases} \dot{c} < 0 \\ \dot{\varphi} < 0 \end{cases}$$

 C_{v1} C_{N2} C_{V3} 
$$\boxed{\frac{a_{B(2)}}{1} = \frac{a_{B(2)}}{1}} \Rightarrow 25\text{p}^{\text{w}} \text{ SCARPERI VS 3 INCOGNITE}$$

$\frac{a_{AB(1)}}{1_{TR}}$ $\frac{TR}{(w)}$ \rightarrow $\underline{a}_{AB} = \underline{a}_A + \ddot{\gamma} \cdot \underline{K} \cdot 1_{AB} - \dot{\gamma}^2 \cdot \underline{A}_{AB} = \ddot{\gamma} \cdot \underline{S}_A \cdot \underline{\dot{U}} + \ddot{\gamma} \cdot \underline{K} \cdot 1_{AB} - \dot{\gamma}^2 \cdot \underline{A}_{AB}$
 \downarrow
 $\underline{a}_{A(2)} = \ddot{\gamma} \cdot \underline{S}_A \cdot \underline{\dot{U}} + \frac{\dot{\gamma}^2}{\rho_A} \cdot \underline{\dot{U}}$

$$\frac{a_B \textcircled{2}}{a_B \textcircled{1}} = \frac{a_B \textcircled{2}}{r_B} \quad \text{---} \quad a_B = \underbrace{(a_B)}_{\text{centrifugal}} + \underbrace{\ddot{y}}_{\text{tangential}} \cdot \overrightarrow{AB} - \dot{y}^2 \overrightarrow{AB}$$

$$(0) \quad \vec{a}_0 = \ddot{\vec{x}}_0 \dot{\vec{t}}$$

$$\vec{a}_0 \cdot \vec{CB} - \dot{\theta}^2 \vec{CB} = \ddot{\vec{x}}_0 \dot{\vec{t}} + \ddot{\theta} \vec{K} \cdot \vec{AB} - \dot{\theta}^2 \vec{AB}$$

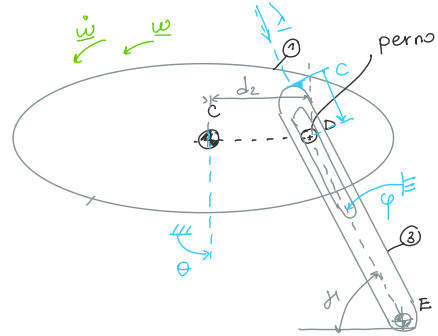
PROBLEMA ACCELERAZ. ①-③

$$\vec{a}_{D①} = \vec{a}_{D③}$$

TR TCA - Σ③

$$\sum \vec{a}_{D①} = \vec{a}_0^{rel} + \vec{a}_0^{tr} + \vec{a}_0^{cor}$$

$\ddot{\lambda}$ $\frac{\vec{a}_{D③}}{TR}$ $2 \vec{\omega}^{tr} \wedge \vec{v}^{rel}$
 $\vec{\omega}_3 = \dot{\theta} \vec{K}$ $\dot{\lambda}$



$$\vec{a}_0 \cdot \vec{CB} - \dot{\theta}^2 \vec{CB} = \ddot{\lambda} + \dot{\theta} \vec{K} \cdot \vec{EB} - \dot{\theta}^2 \vec{EB} + 2 \dot{\theta} \vec{K} \cdot \dot{\lambda}$$