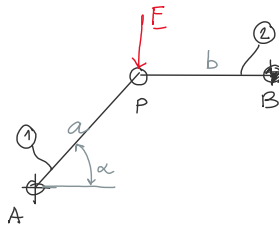


Perno carico: Teoria ed esercizio

venerdì 8 novembre 2024 11:51

Nota: (P, E) , a , b , α

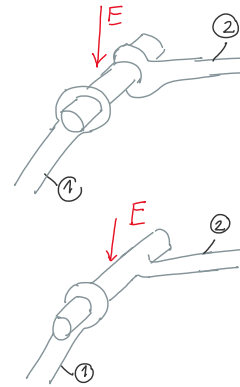
Valutare: DCL DEF.



POSSIBILI SOLUZIONI

1) PERNO = 3° CORPO

2) PERNO come G ① (o ②)

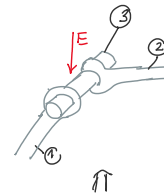
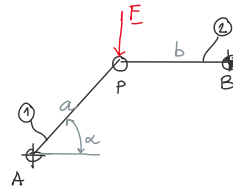


CASO 1

PERNO COLLEGATO CON 2 CERNIERE A ① e ②

a) AGV:

$n^{\circ} \text{gdl} = 3 \text{ CORPI}$
 2 CORPI a 3 gdl
 1 PERNO a 2 gdl
 II
 PUNTO MATERIALI



$$n^{\circ} \text{gdl} = (2 \times 3 + 2) - 2 - 2 - 2 \times 2 = 0 \text{ gdl}$$

3 ①A ②B ③C

DOPPIA CERNIERA
PERNO CARICATO!

a) AFV: $(R_x, R_y) \neq \text{CERNIERA}$

$$\Rightarrow 2 \text{ INC.} \times 4 \text{ CERN} = 8 \text{ INCOGNITE}$$

a) SCI? $3 \times 2 + 2 = 8 \text{ EQU} = 8 \text{ INCOG.}$

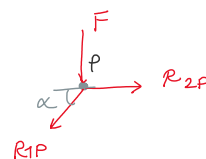
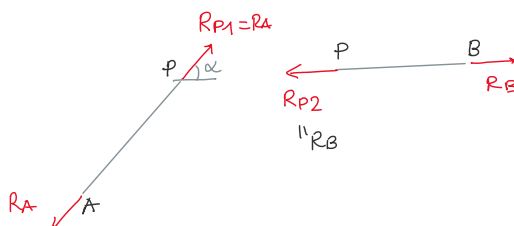
(SI) / |

$x_1, y_1, 0$ x_1, y

a) SEI? (NO)

a) CORPI SCARICATI? SI ① e ②

DCL P.

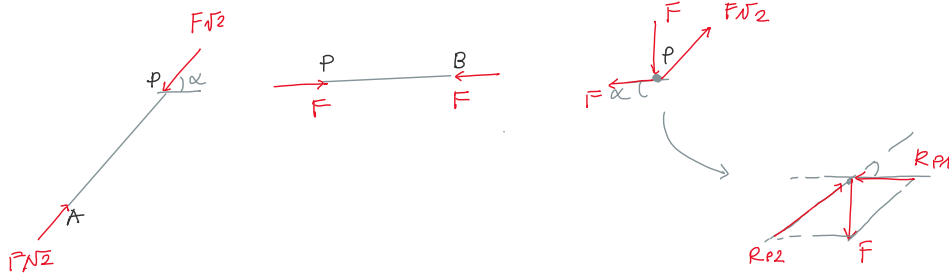


2 INC. $\Rightarrow R_{1P}, R_{2P}$
(note direzione)

CORPO 3

$$\sum X: R_{2P} - R_{1P} \cos \alpha = 0$$

$$y: \begin{cases} -F - R_{1p} \sin \alpha = 0 \\ R_{2p} = R_{1p} \frac{\sqrt{2}}{2} = -F \sqrt{2} \frac{\sqrt{2}}{2} = -F < 0 \\ R_{1p} = \frac{-F}{\sin \alpha} = -F \frac{2}{\sqrt{2}} = -F \sqrt{2} < 0 \end{cases}$$



CASO 2

*) AGV: $3 \times 2 - 3 \times 2 = 0$ gdl CORPI

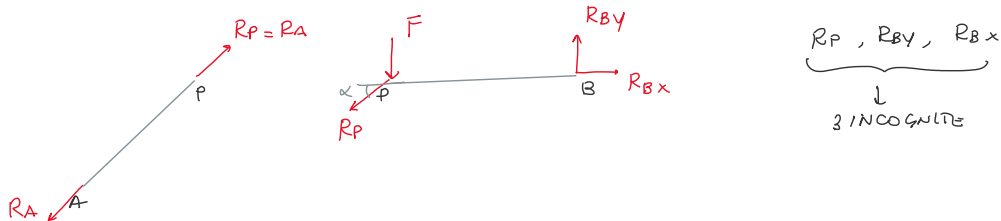
*) AFV: $\oplus A, P, B \Rightarrow 2 \times 3 = 6$ INC.

*) SCI: $6 \text{ Ep}^w = 3 \text{ Ep}^w \times 2 \text{ CORPI} = 6$ INC

*) SET: (No)

*) CORPI SCARICHI? 1 E' SCARICO

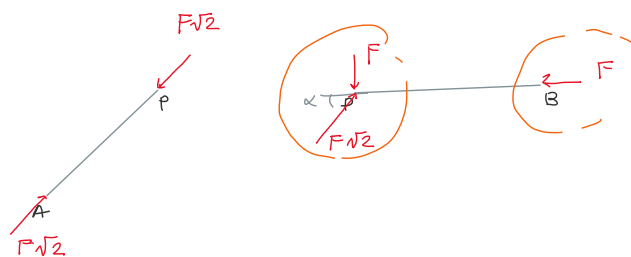
DCL P.



Eq^{NI}: (2) $\begin{cases} R_{By} = 0 \\ -R_p \cos \alpha + R_{Bx} = 0 \\ -F - R_p \sin \alpha = 0 \end{cases} \Rightarrow \begin{cases} R_{By} = 0 \\ R_{Bx} = R_p \cos \alpha = -F < 0 \\ R_p = \frac{-F}{\sin \alpha} = -\frac{F}{\sqrt{2}} = -F \sqrt{2} < 0 \end{cases}$

DCL DEFINI.

CASO 2



CASO 1

