COMPITO MASMS 15 gennaio

DOMANDE (1)

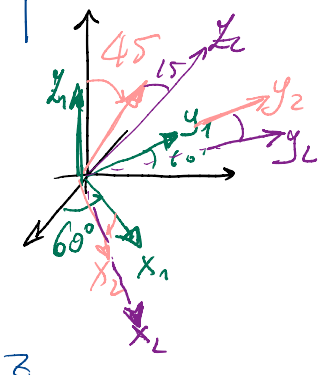
1) SCRIVERE (SENZA RICAVARE) LE PROPRIETÀ DELLA MATRICE DI ROTAZIONE

$$\begin{cases} R^T = R^{-1} \\ \det R = 1 \end{cases}$$

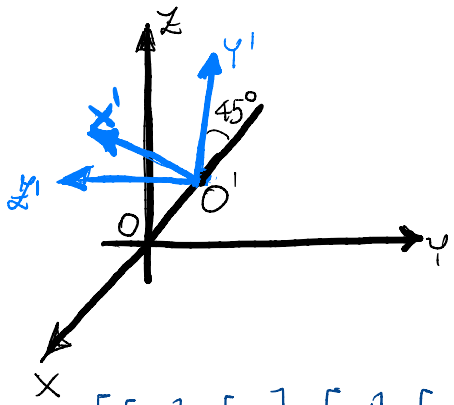
2) RAPPRESENTARE LA TERNA L ORIENTATA RISPETTO ALLA S SECONDO LA SEQUENZA Z-Y-X (ASSI CORRENTI) DI $60°, 45°, -30°$.

MOSTRARE I PASSAGGI IN UNA FIGURA

ESERCITARSI CON VISTA



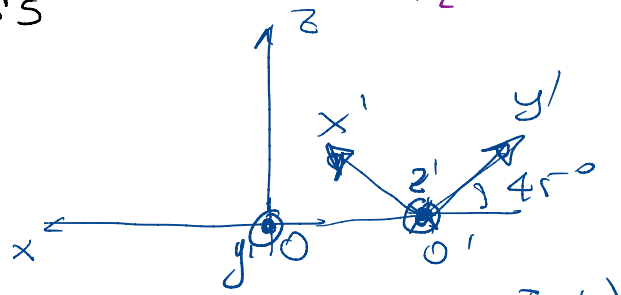
3)



$Y' \parallel Y \qquad \overline{OO'} = l$

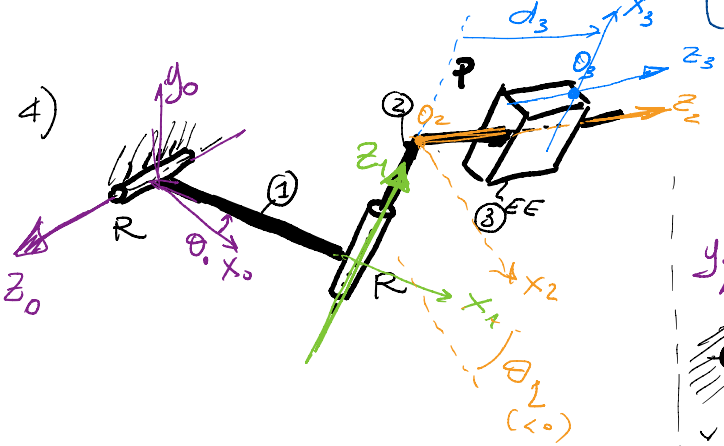
SCRIVERE MATRICI $T_{SS'}$ E $T_{S'S}$

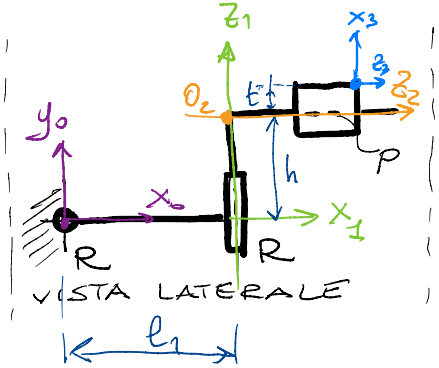
$$T_{SS'} = \begin{bmatrix} [i']_S & [j']_S & [k']_S & [O']_S \\ 0 & 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} \sqrt{2}/2 & -\sqrt{2}/2 & 0 & -l \\ 0 & 0 & -1 & 0 \\ \sqrt{2}/2 & \sqrt{2}/2 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$



(Provare $T_{S'S} \neq T_{SS'}^T$!)

4)

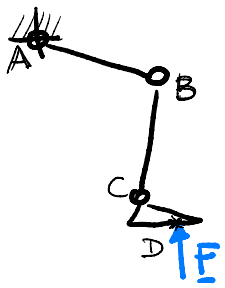




METTERE TERNE SECONDO DH E FARE TABELLA

Indicare lunghezze utili

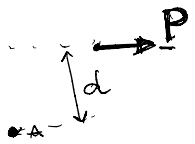
	d	ϑ	a	α
0-1	0	ϑ_1	l_1	$-\pi/2$
1-2	h	ϑ_2	0	$-\pi/2$
2-3	d_3	$-\pi/2$	t	0

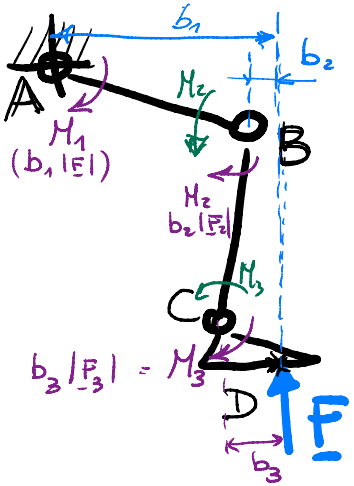


- $\underline{F}$ forza nota, - geometria e configurazione assegnate (statica)

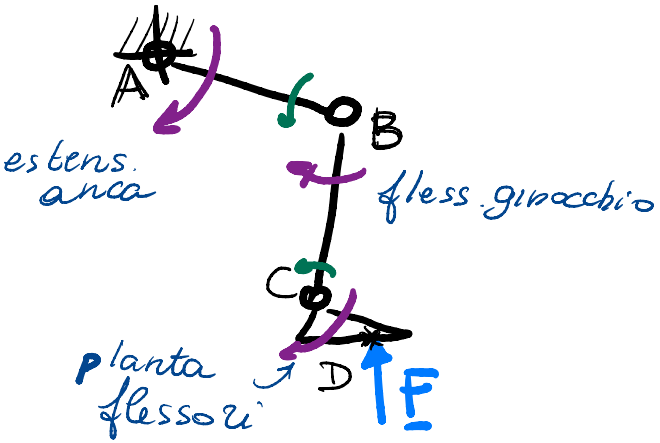
- rappresentare le coppie ai giunti per equilibrio con verso giusto e riportare espressione modulo.

Es. $M = Pd$





$$M_1 = b_1 |\underline{F}|$$
$$M_2 = b_2 |\underline{F}|$$
$$M_3 = b_3 |\underline{F}|$$



- quali muscoli devono essere reclutati?
  flessori / estensori anca - ginocchio - caviglia

$\otimes \underline{k}_0, \underline{k}_1, \underline{k}_2$ entrano

- Come si trovano coppie ai giunti usando J_g? (eq. fondamentale, commentare)

$$\underline{\tau} = -J_g^T \underline{f}$$

$$\begin{bmatrix} M_1 \\ M_2 \\ M_3 \end{bmatrix} = - \left[\begin{array}{c|c|c} \underline{k}_0 \wedge \vec{AD} & \underline{k}_1 \wedge \vec{BD} & \underline{k}_2 \wedge \vec{CD} \\ \underline{k}_0 & \underline{k}_1 & \underline{k}_2 \end{array} \right]^T \begin{bmatrix} \underline{F} \\ \underline{0} \end{bmatrix}$$