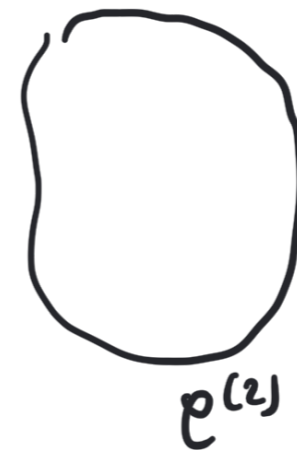


CENTRO DI ROTAZIONE RELATIVA

$$\rightarrow \underline{u}_P^{(1)} = \underline{u}_O^{(1)} + \underline{\vartheta}^{(1)} \times \underline{OP}$$

$$\underline{u}_P^{(2)} = \underline{u}_O^{(2)} + \underline{\vartheta}^{(2)} \times \underline{OP}$$



$$\Delta \underline{u} = \underline{u}^{(2)} - \underline{u}^{(1)}$$

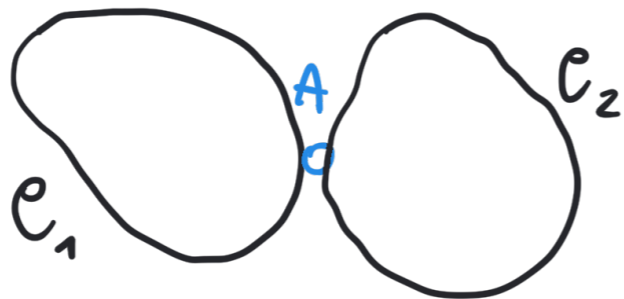
$$\Delta \underline{\vartheta} = \underline{\vartheta}^{(2)} - \underline{\vartheta}^{(1)}$$

$$\Delta \underline{u}_P = \Delta \underline{u}_O + \Delta \underline{\vartheta} \times \underline{OP}$$

$\Delta \underline{u} \neq 0 \Rightarrow \Delta \underline{u}$ ammette un centro.

Vincoli interni \Rightarrow restringono centri relativi.

CERNIERA INTERNA

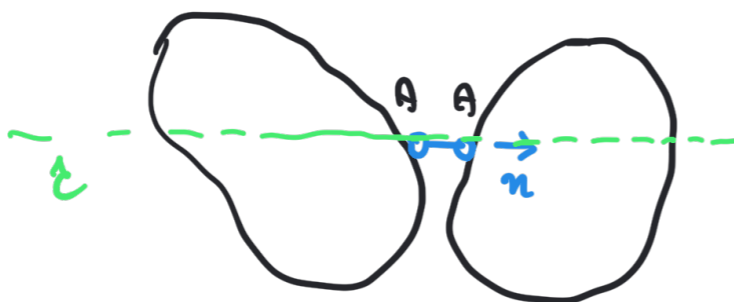


OSS:

se $\Delta \underline{u} = 0$, allora C^{12} non è def. n. F.

$$\underline{u}_A^{(1)} = \underline{u}_A^{(2)} \Rightarrow \Delta \underline{u}_A = 0 \Rightarrow C^{12} = A$$

PENDOLO INTERNO

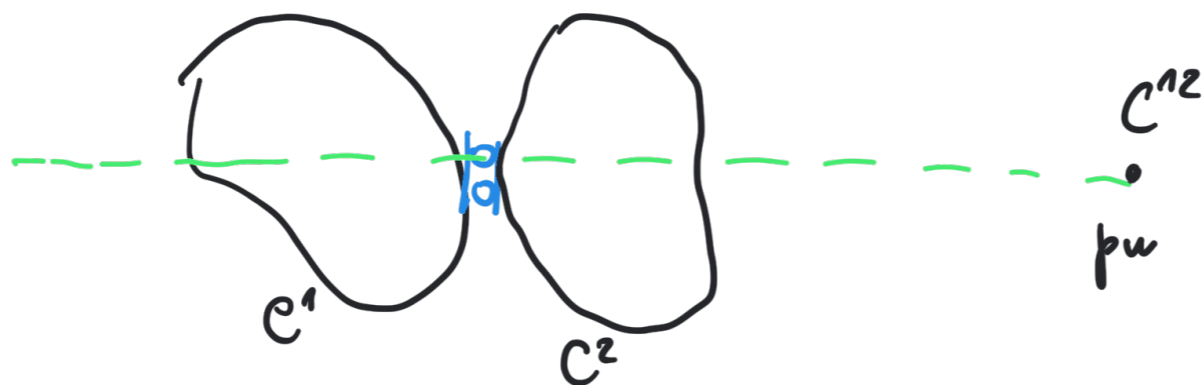


$$\underline{u}_A^{(2)} \cdot \underline{n} = \underline{u}_A^{(1)} \cdot \underline{n}$$

$$\Delta \underline{u}_A \cdot \underline{n} = 0$$

$$C^{12} \in \mathcal{L}$$

GLIFO



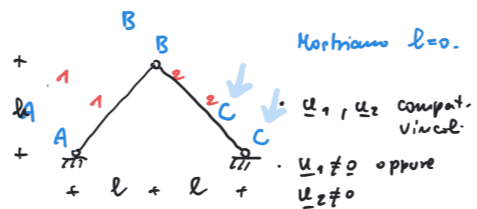
TEOREMI DI ALLINEAMENTO

Sistema lineare o dipendente di n_c corpi $P_1 \dots P_{n_c}$

Teorema 1 : $\forall i, j \in 1 \dots n_c$

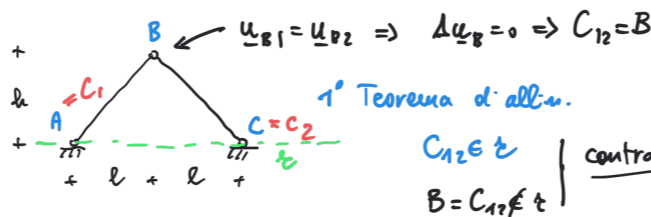
C_i, C_j e C_{ij} sono allineati.

ESEMPIO: arco a tre cerniere



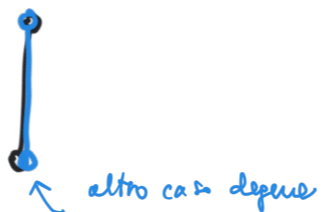
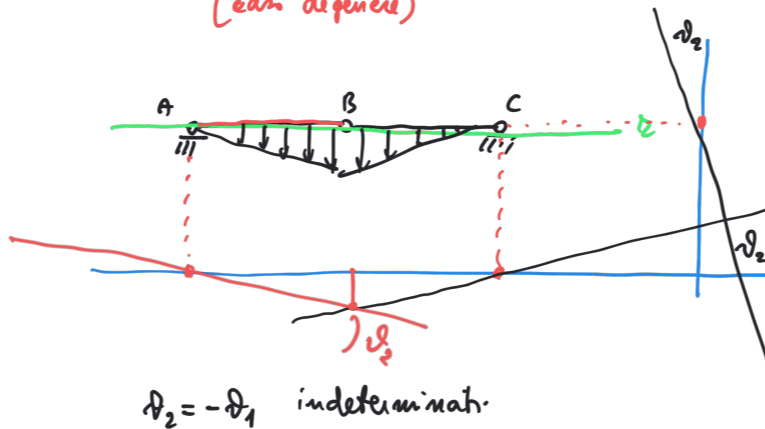
$\underline{u}_1 \neq 0 \Rightarrow \underline{u}_1$ ammette centro C_1
 $\underline{u}_{A1} = 0 \Rightarrow C_1 = A$
 2 pot. $\nearrow \underline{u}_2 = 0 \Rightarrow \underline{u}_{B2} = 0 \Rightarrow \underline{u}_{B1} = 0 \Rightarrow C_1 = B$ (contradd.)
 $\searrow \underline{u}_2 \neq 0$
 \underline{u}_2 ammette centro C_2 } $\Rightarrow C_2 = C$
 $\underline{u}_{C2} = 0$

$\Delta \underline{u} = \underline{u}_2 - \underline{u}_1 \rightarrow \Delta \underline{u} = 0 \Rightarrow \underline{u}_2 = \underline{u}_1 \Rightarrow \underline{u}_2$ e \underline{u}_1 stesso centro
 $A = C_1 = C_2 = C$ contraddizione
 $\Delta \underline{u} \neq 0$
 $\Delta \underline{u}$ ammette centro C_{12}

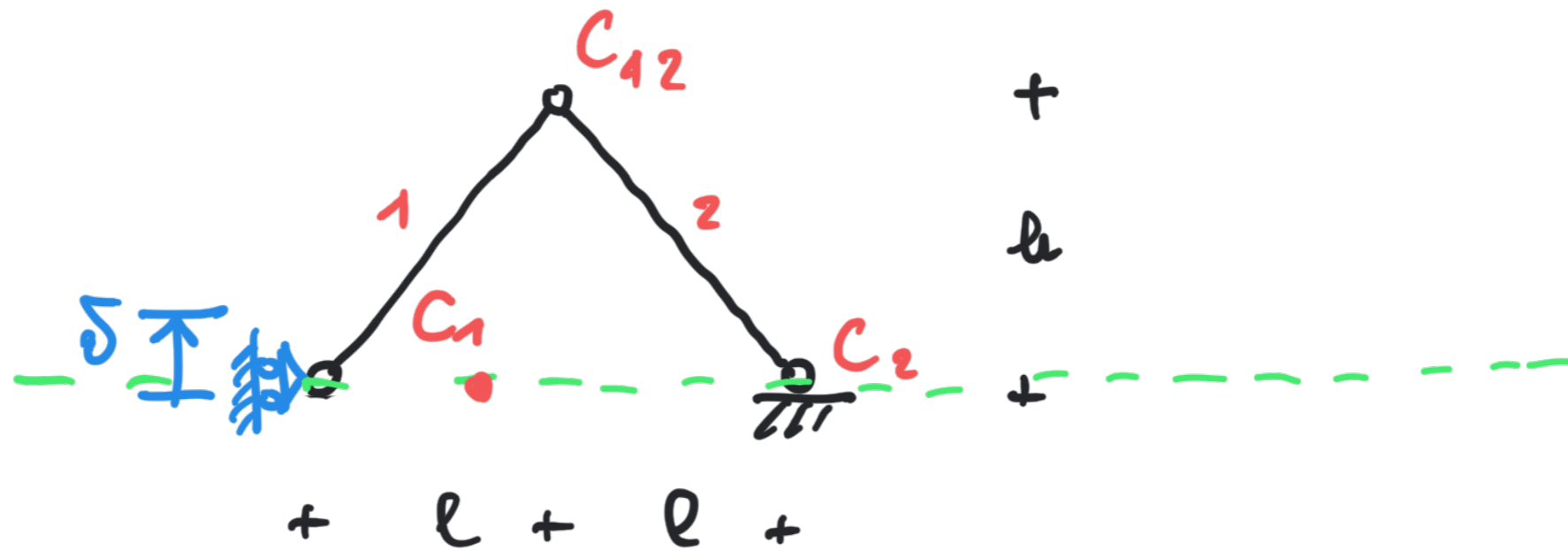


IN SINTESI: dall'ipotesi $l \neq 0$ si ottiene una contraddizione.

OSI: la contradd. viene meno se $B \in t$ (caso degenere)



ESEMPIO : risolv. prob. cinematica
 con a tre corvine



1) Soppressione vincoli con corolliamento
 \rightarrow sistema $l=1$

2) Identif. centri

ESEMPIO: manovellismo

