



UNIVERSITY OF NAPLES **FEDERICO II**

1224 A.D.

Propulsione Aerospaziale

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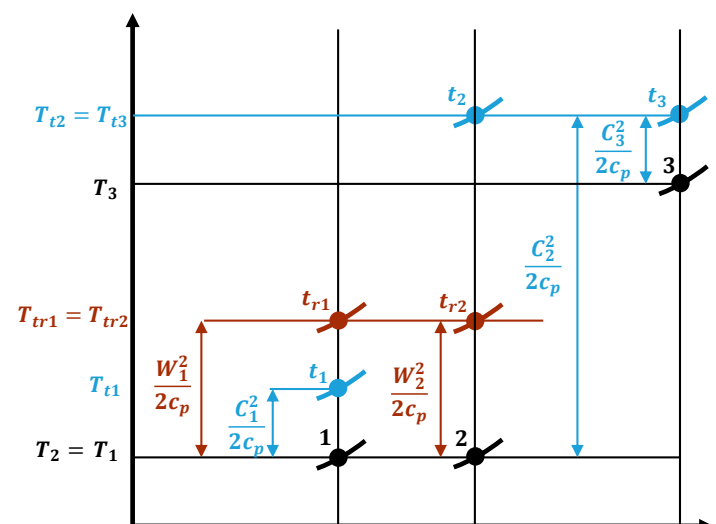
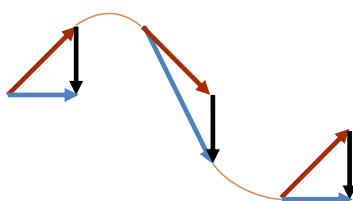
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Versione del 13.5.2021

Grado di reazione

Ipotesi	C_z	C_θ	U	W_θ	C^2	W^2	$\tan \alpha$	$\tan \beta$	Ψ_c
1	1	0	1	-1	1	2	0	-1	
2	1	2	1	1	5	2	2	1	2

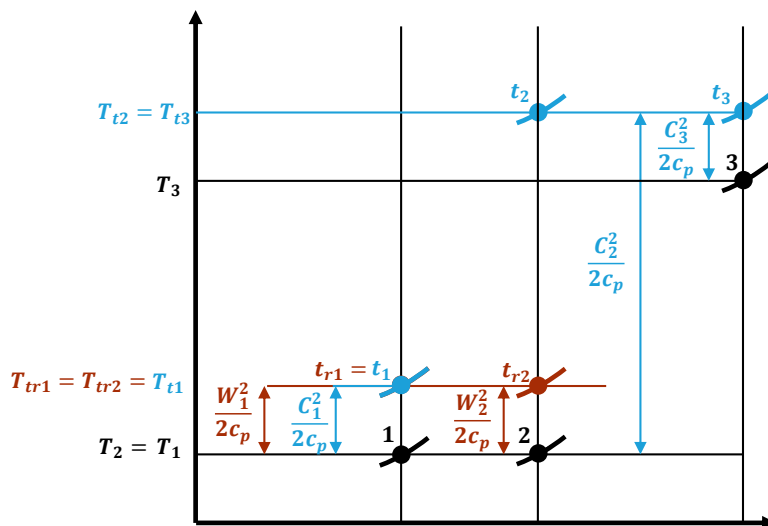
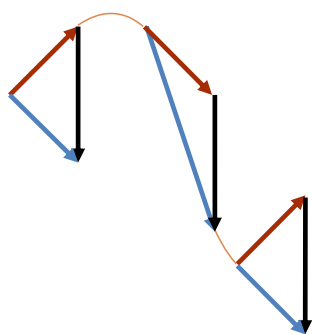
$$\begin{aligned} \circ R &= \frac{h_2 - h_1}{h_3 - h_1} \\ \Psi_c &= \frac{\Delta h_t}{U^2} = \frac{C_{\theta 2}}{U} - \frac{C_{\theta 1}}{U} \\ C_z \tan \alpha &= C_\theta \\ \circ R = 0 &\rightarrow h_2 = h_1 \end{aligned}$$



Grado di reazione

Ipotesi	C_z	C_θ	U	W_θ	C^2	W^2	$\tan \alpha$	$\tan \beta$	Ψ_c
1	1	1	2	-1	2	2	1	-1	
2	1	3	2	1	10	2	3	1	1

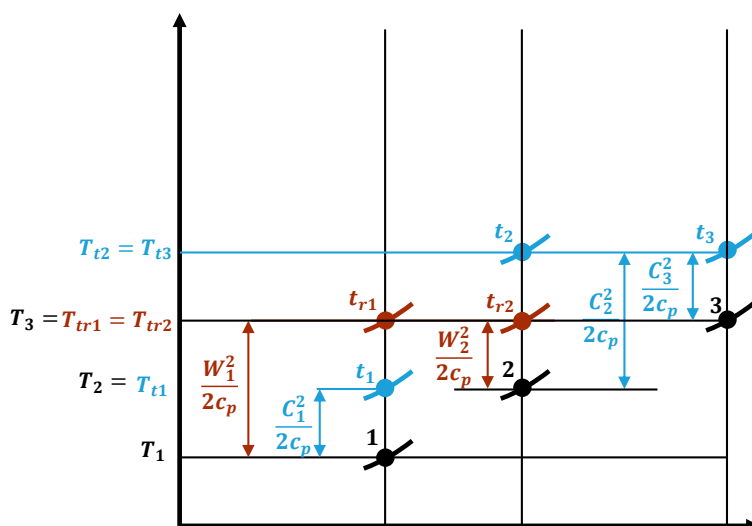
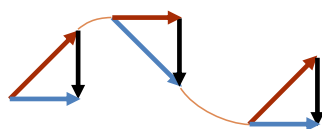
$$\begin{aligned} \circ R &= \frac{h_2 - h_1}{h_3 - h_1} \\ \Psi_c &= \frac{\Delta h_t}{U^2} = \frac{C_{\theta 2}}{U} - \frac{C_{\theta 1}}{U} \\ C_z \tan \alpha &= C_\theta \\ \circ R = 0 &\rightarrow h_2 = h_1 \end{aligned}$$



Grado di reazione

Ipotesi	C_z	C_θ	U	W_θ	C^2	W^2	$\tan \alpha$	$\tan \beta$	Ψ_c
1	1	0	1	-1	1	2	0	-1	
2	1	1	1	0	2	1	1	0	1

$$\begin{aligned} \circ R &= \frac{h_2 - h_1}{h_3 - h_1} \\ \Psi_c &= \frac{\Delta h_t}{U^2} = \frac{C_{\theta 2}}{U} - \frac{C_{\theta 1}}{U} \\ C_z \tan \alpha &= C_\theta \\ \circ R = 0.5 &\rightarrow h_3 - h_2 = h_2 - h_1 \end{aligned}$$



Grado di reazione

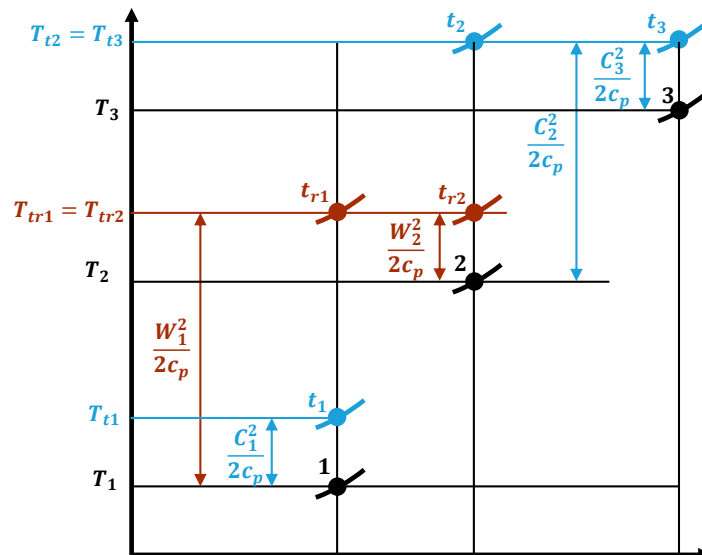
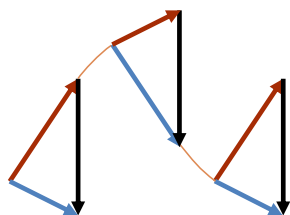
Ipotesi	C_z	C_θ	U	W_θ	C^2	W^2	$\tan \alpha$	$\tan \beta$	Ψ_c
1	2	1	5	-4	5	20	0.5	-2	
2	2	4	5	-1	20	5	2	-0.5	3/5

$$\circ R = \frac{h_2 - h_1}{h_3 - h_1}$$

$$\Psi_c = \frac{\Delta h_t}{U^2} = \frac{C_{\theta 2}}{U} - \frac{C_{\theta 1}}{U}$$

$$C_z \tan \alpha = C_\theta$$

$$\circ R = 0.5 \rightarrow h_3 - h_2 = h_2 - h_1$$



Grado di reazione

Ipotesi	C_z	C_θ	U	W_θ	C^2	W^2	$\tan \alpha$	$\tan \beta$	Ψ_c
1	1	-1	2	-3	2	10	-1	-3	
2	1	1	2	-1	2	2	1	-1	1

$$\circ R = \frac{h_2 - h_1}{h_3 - h_1}$$

$$\Psi_c = \frac{\Delta h_t}{U^2} = \frac{C_{\theta 2}}{U} - \frac{C_{\theta 1}}{U}$$

$$C_z \tan \alpha = C_\theta$$

$$\circ R = 1 \rightarrow h_3 = h_1$$

