

PIANIFICAZIONE

DESIDERIAMO PIANIFICARE
NELLO SPAZIO CARTESIANO

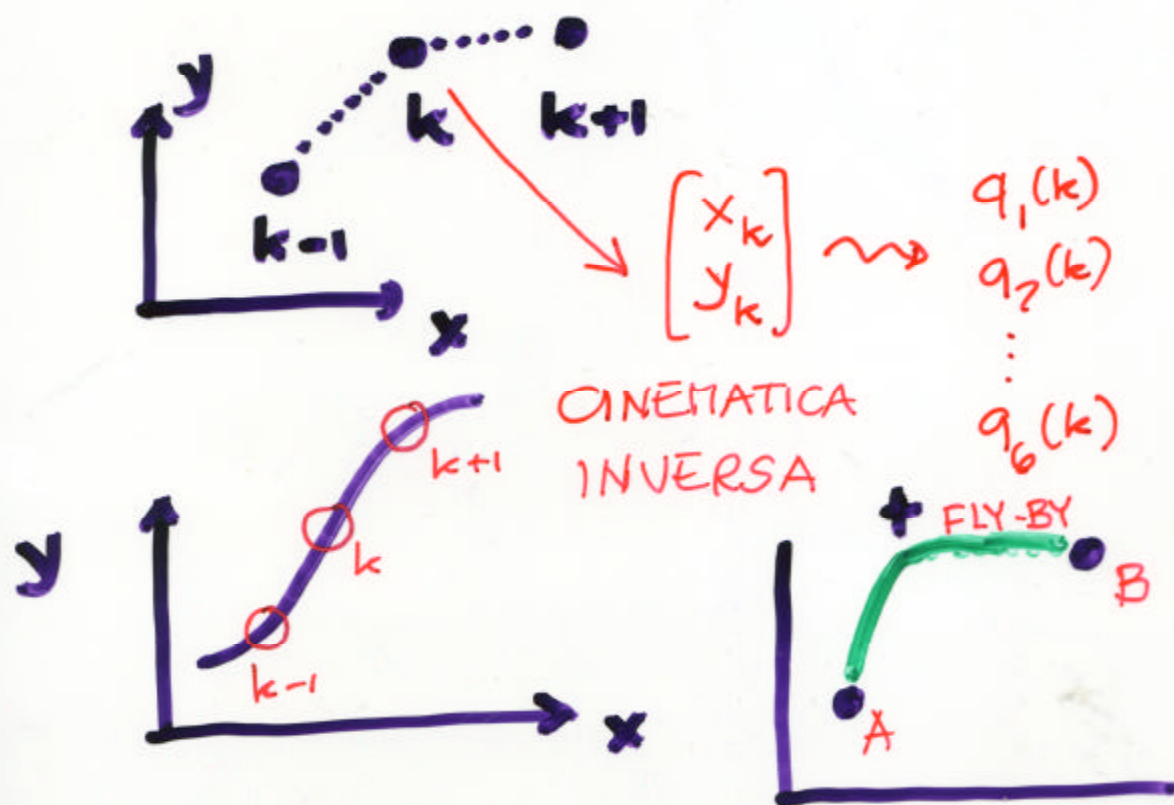
I COMANDI SONO NELLO SPAZIO GIUNTI

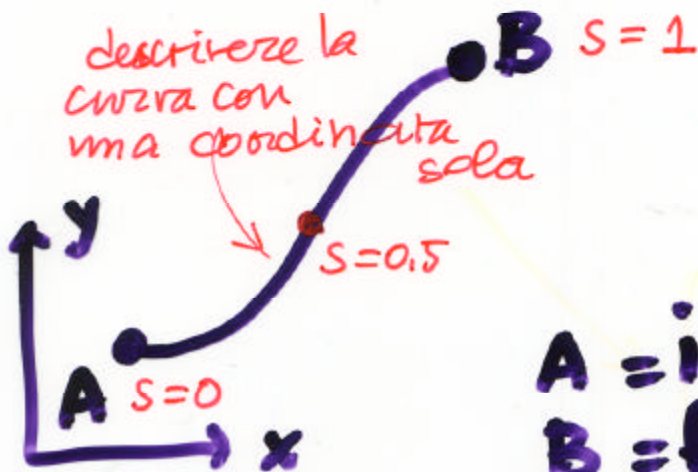
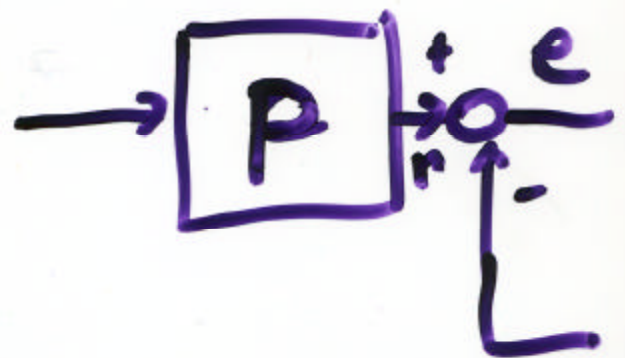
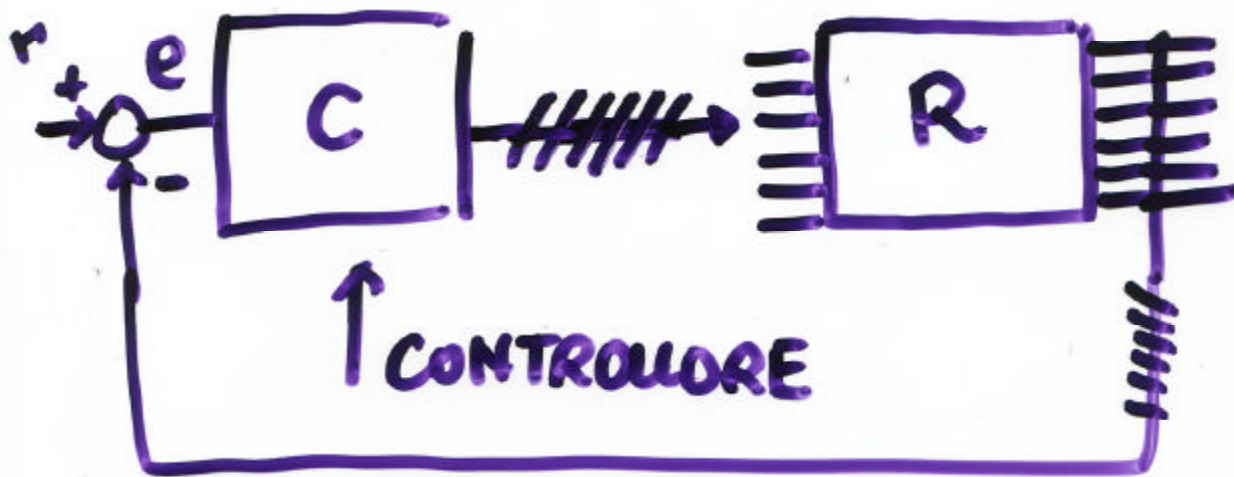
- fornire a ogni ΔT i riferimenti

$$q_i(k\Delta T) \rightarrow q_i(k)$$

$\Delta T \sim$ ordine $1 \div 10$ ms

$$k = 0, 1, 2, \dots, N, \dots$$





A = iniziale
B = finale

$$S = S(t)$$

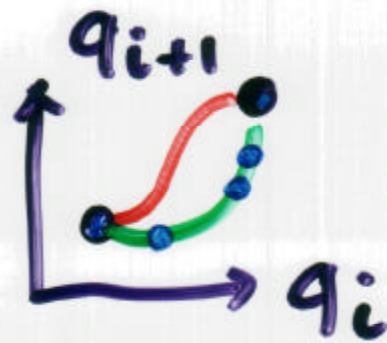
CAMMINO (GEOMETRICO)

+ $S(t)$ DATO = TRAIETTORIA

VANTAGGI DI USARE $s(t)$

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- MOTO COORDINATO
- UNICO "MOTORE" SOFTWARE
- VALE SIA IN CARTESIANO
SIA IN GIUNTI



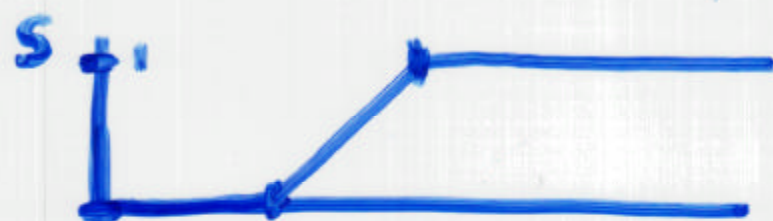
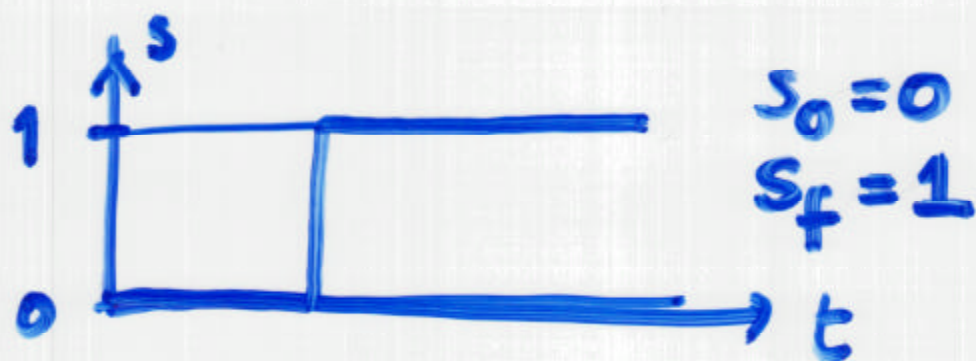
$s(t)$ è quello che vogliamo
calcolare, anzi $s(k)...$

$\dot{s}(t)$ VELOCITÀ

$\ddot{s}(t)$ ACCELERAZIONE

$\dddot{s}(t)$ JERK

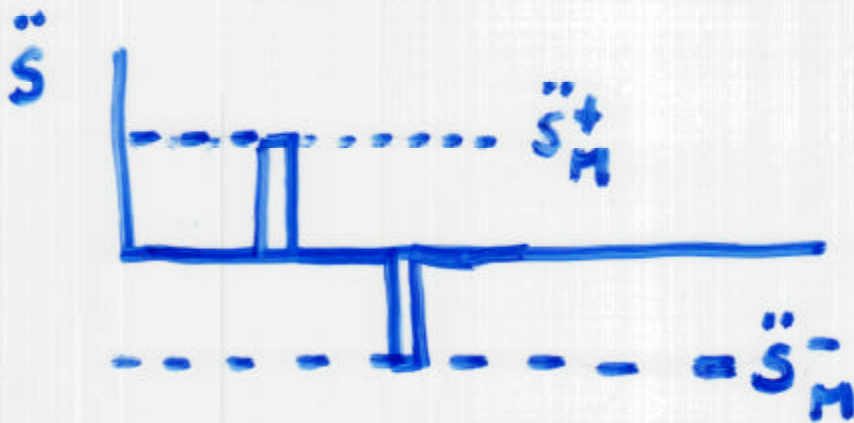
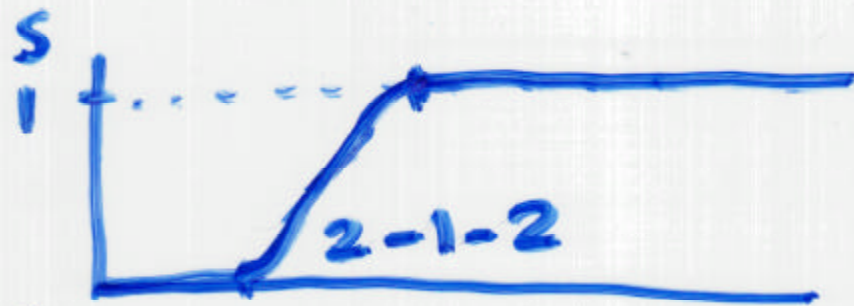
4



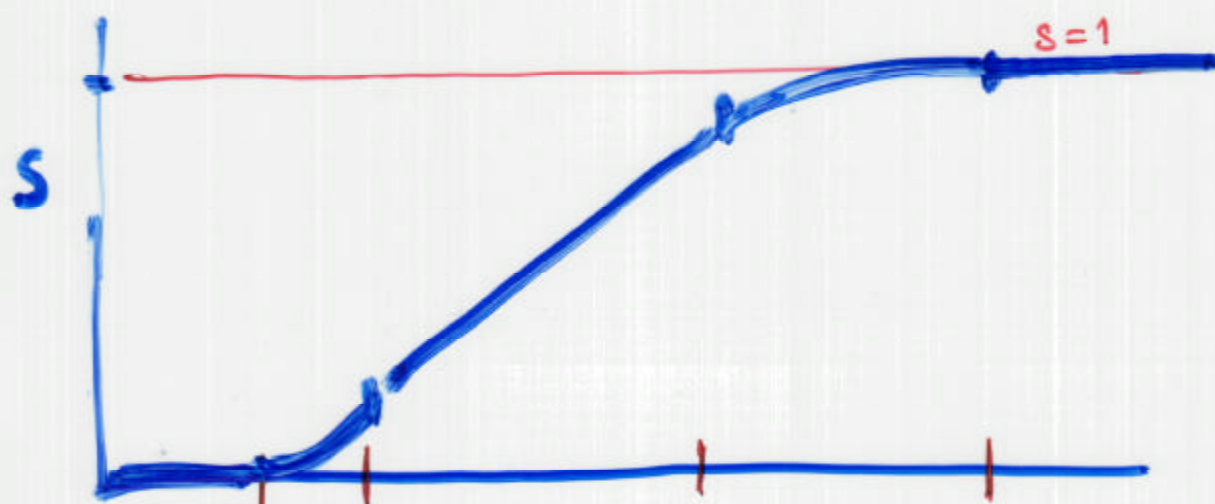
$\dot{s}_0 = 0$ $\dot{s}_f = 0$



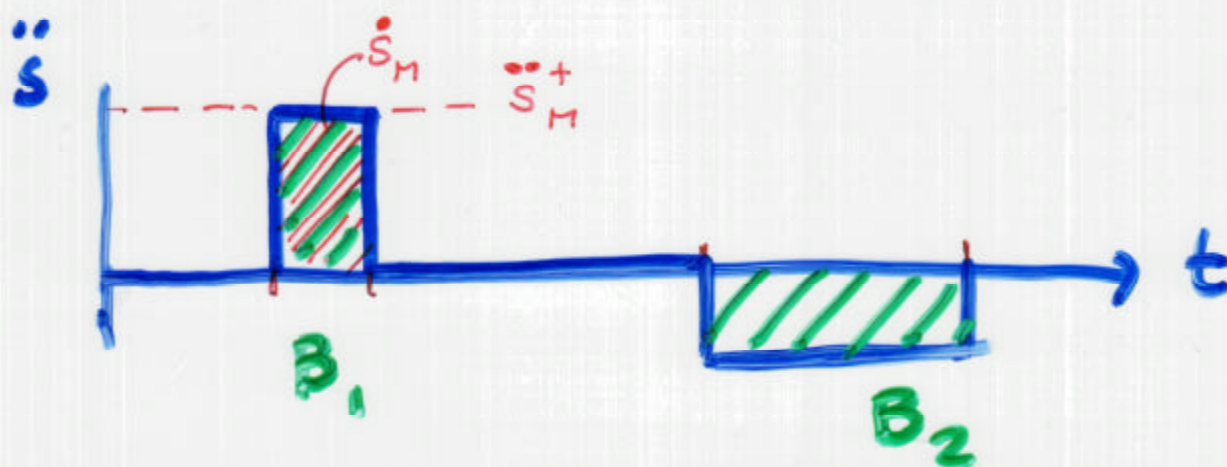
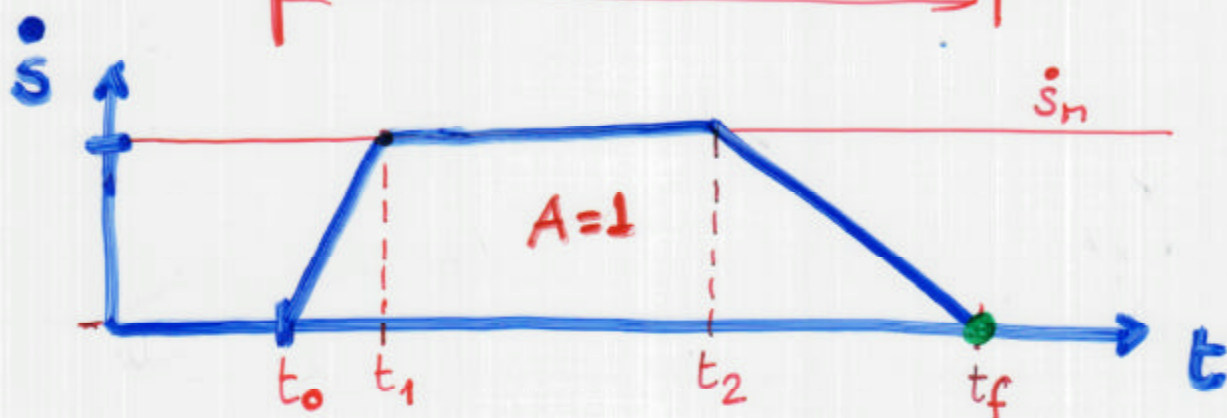
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TEMPO TOTALE $(t_f - t_0)$



$$B_1 = B_2$$

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$$t_f - t_0 = \frac{1}{\dot{s}_n} + \frac{1}{2} \left(\frac{\dot{s}_n}{\ddot{s}_n^+} + \frac{\dot{s}_n}{\ddot{s}_n^-} \right)$$

∵ $\ddot{s}_n^- = \ddot{s}_n^+ \equiv \ddot{s}_n$

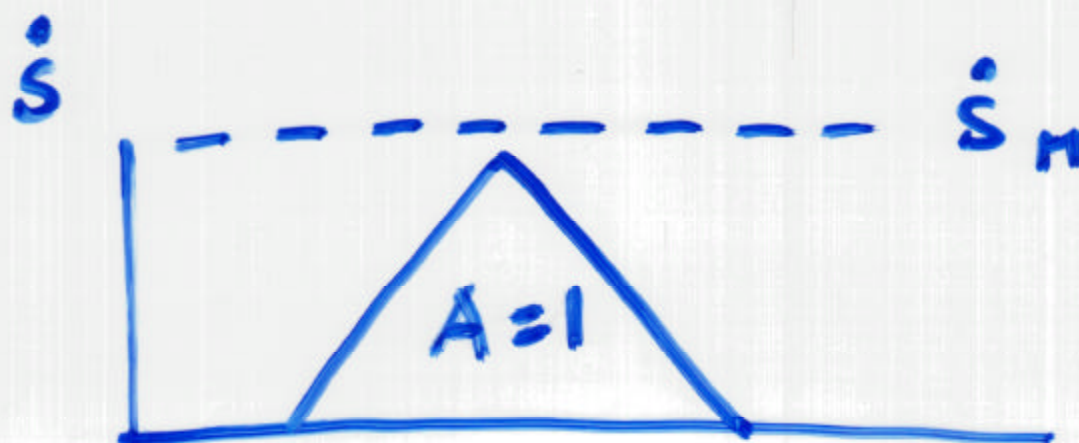
$$t_f - t_0 = \frac{1}{\dot{s}_n} + \frac{\dot{s}_n}{\ddot{s}_n}$$

$$t_1 - t_0 = \frac{\dot{s}_n}{\ddot{s}_n^+}$$

$$t_f - t_2 = \frac{\dot{s}_n}{\ddot{s}_n^-}$$

$$t_2 - t_1 = \frac{1}{\dot{s}_n} - \frac{1}{2} \left(\right)$$

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**BANG-BANG**