1) In the BS compute for each t_i

$v_x, v_y \longrightarrow \Delta x$ and Δy btw t_{-1}, t

2) For each one t_i compute $\alpha(t_i)$

" " " " use α to rotate $\Delta x, \Delta y$ from BS to IS

3) For each epoch compute x, y in IS as

$$x(t) = x(t-1) + \Delta x(t)$$

$$y(t) = y(t-1) + \Delta y(t)$$

1) $$x(t) = x_0 + \int_{t_0}^{t} v(\tau)\, d\tau$$

constant velocity $v(T) = v_0 + a(t - t_0)$

$$x(t) = x_0 + v_0(t - t_0) + 1/2\, a(t - t_0)^2$$

Apply to $[t-1, t]$ interval

$$x_t = x_{t-1} + v_{t-1}\Delta t + \frac{1}{2} a_t \Delta t^2$$

which a btw $i-1$ and i?

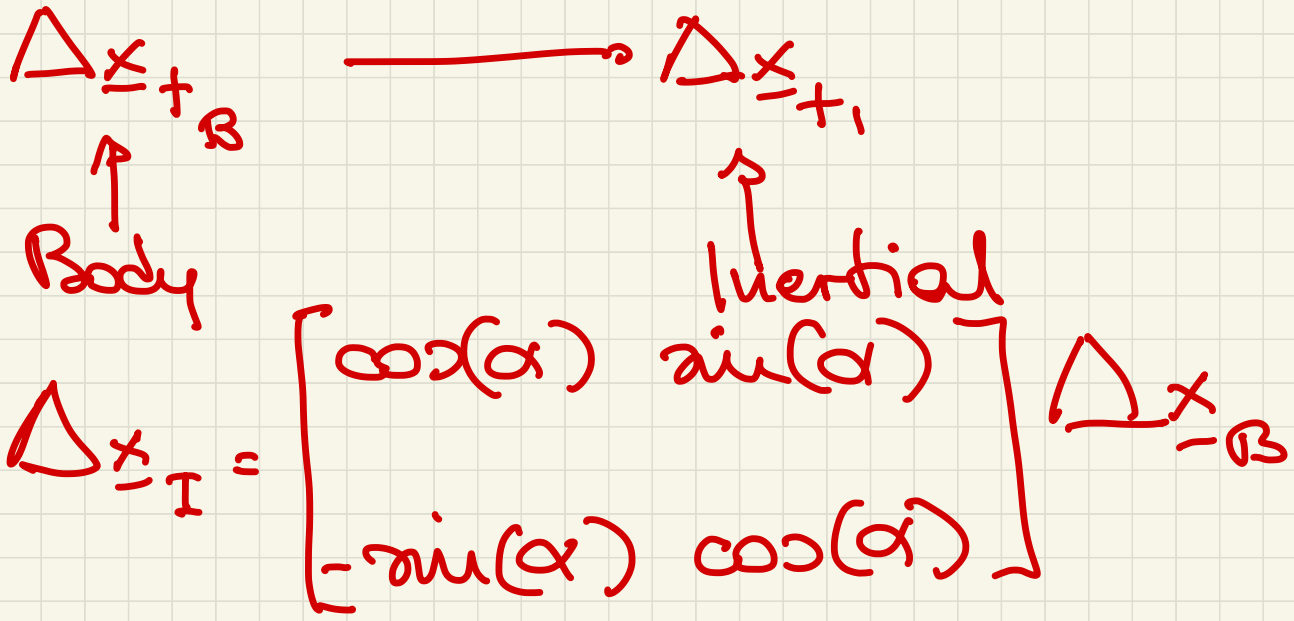
$$\Delta_t = x_t - x_{t-1}$$

2nd) $$\alpha(t) = \alpha_0 + \int_{t_0}^{t} \omega(\tau)\, d\tau$$

ω const $\longrightarrow$ $\alpha(t) = \alpha_0 + \omega(t - t_0)$

$$\alpha_t = \alpha_{t-1} + \omega_t \Delta t$$

Rotations



3)

$$x_I(t) = x_I(t-1) + \Delta x_{I_t}$$

$$y_I(t) = y_I(t-1) + \Delta y_{I_t}$$