

PROPRIETA' DEI FLUIDI

PREMESSA

DENSITA' ASSOLUTA per corpo omogeneo

$$\rho = \frac{\text{massa}}{\text{Volume}} = \frac{[kg]}{[m^3]} = \frac{M}{V} = \frac{dm}{dV} \text{ (pos. nel corpo)}$$

(Vale per solidi, liq. e aerif.)

DENSITA' RELATIVA

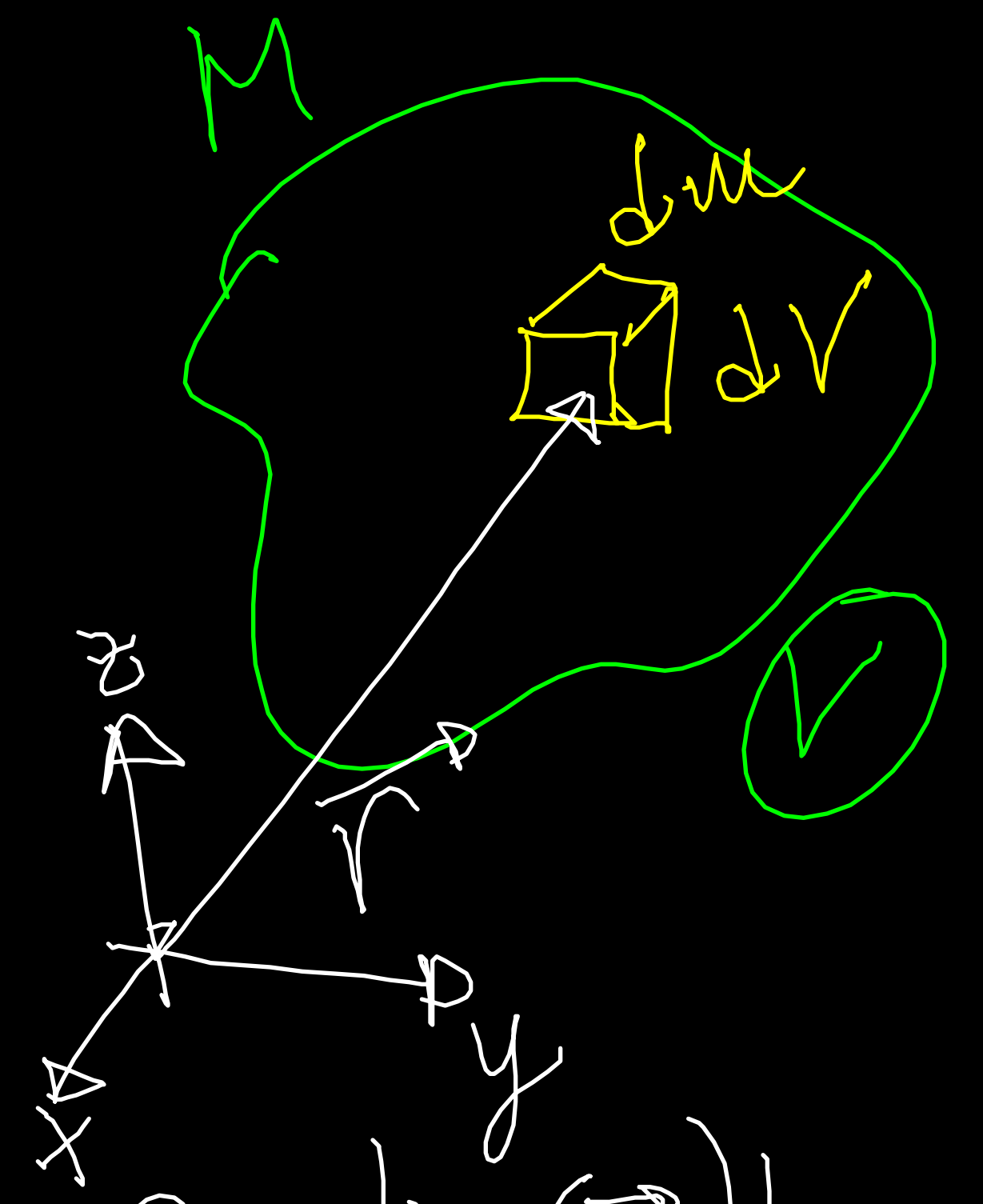
$$\rho_r = \frac{\rho}{\rho_{H_2O}}$$

$$\rho_{H_2O} \approx 10^3 \frac{kg}{m^3}$$

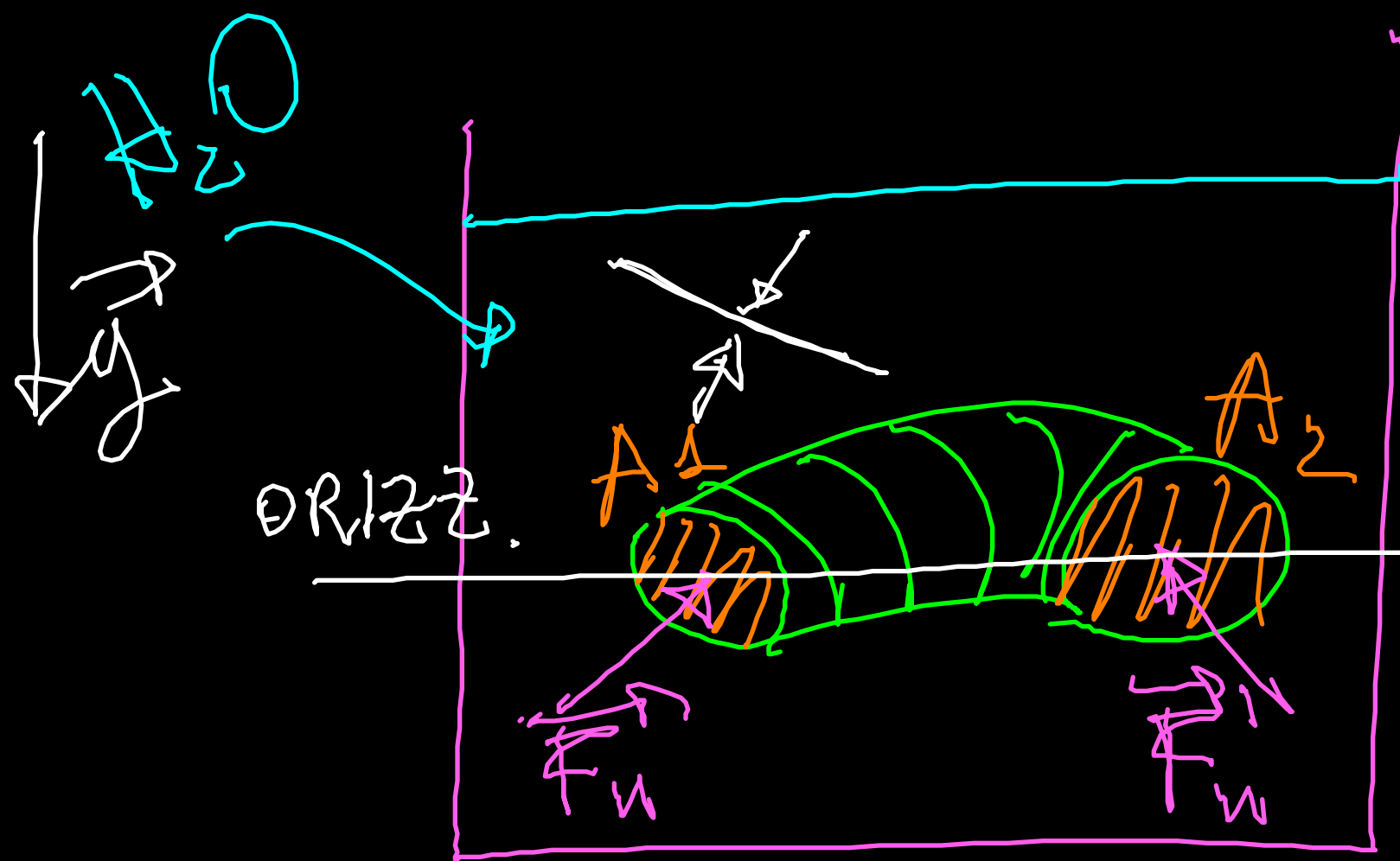
$$\rho = \frac{dm}{dV}(\vec{r})$$

$\vec{r} \in \text{corpo}$

PESO SPECIFICO $\sigma = \frac{mg}{V} = \rho g \frac{[N]}{[m^3]}$
 (P.S. REL $\sigma_r = \frac{\sigma}{\sigma_{H_2O}}$)



FLUIDI IN EQUILIBRIO (FLUIDOSTATICA)

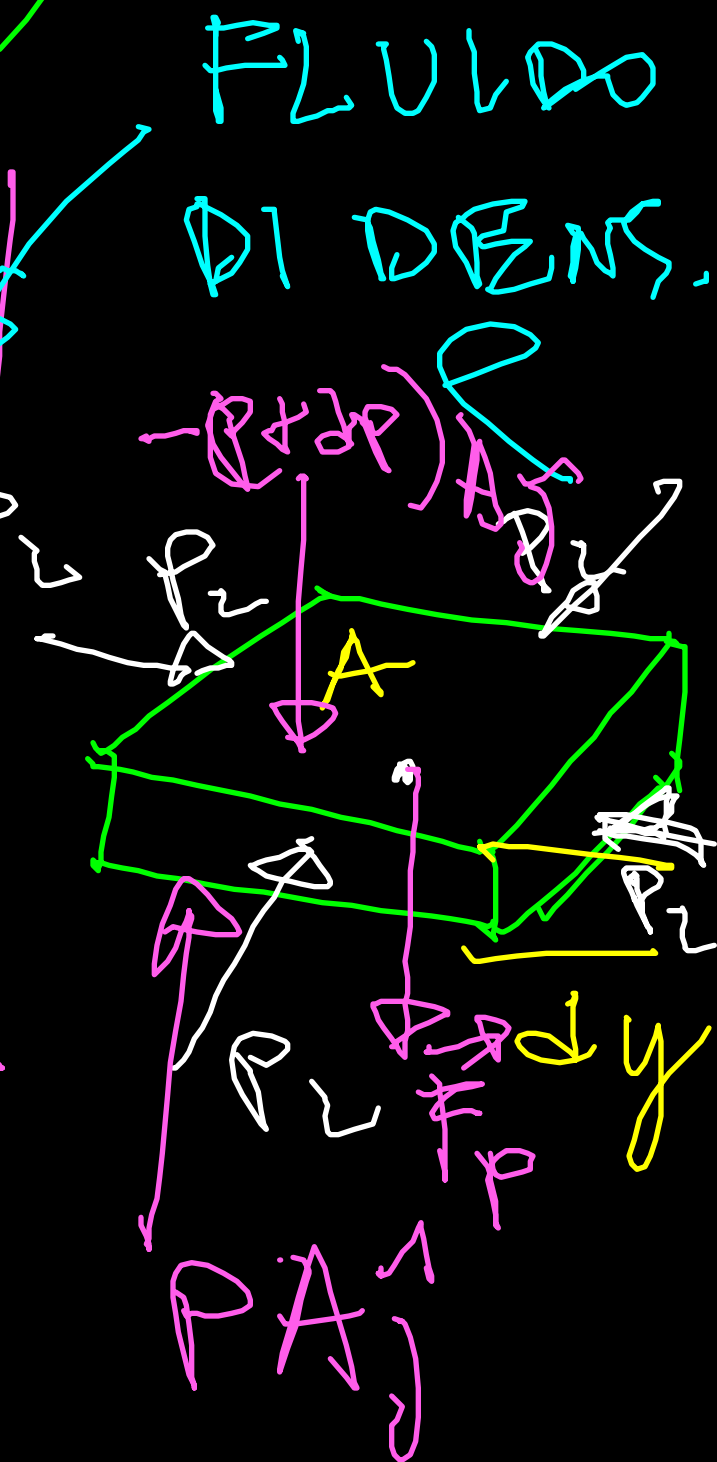
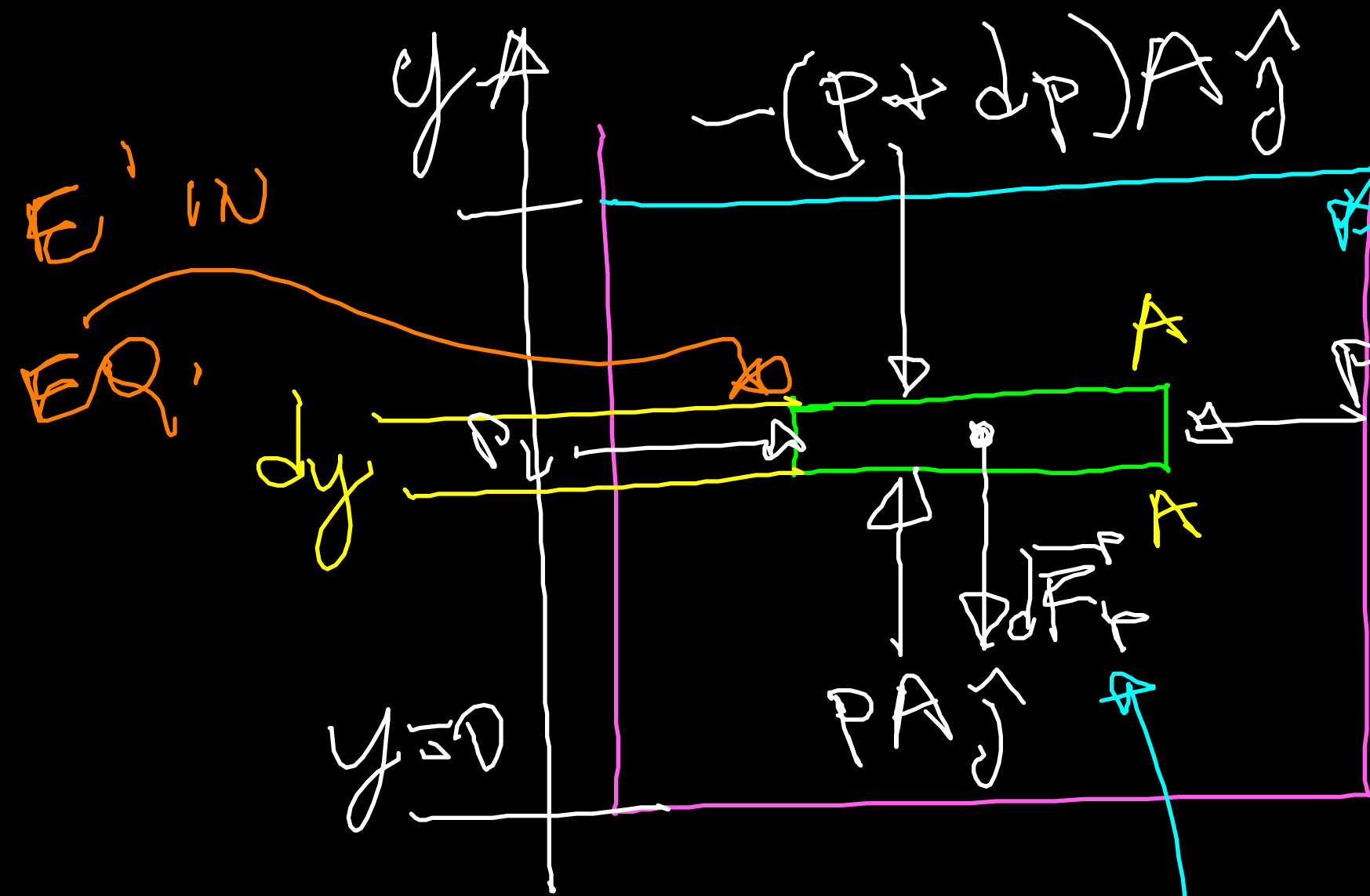


A₂ O
IN EQ.

$$\frac{F_u}{A_1} = \frac{F_w}{A_2}$$

$$P_1 = P_2$$

$\sum_{H_2O} = 0$ (NO SF. DI TAGLIO) SI SE ORIZZ.



(y)

$$pA - (p+dp)A - \rho A dy g = 0$$

$$dp = -\rho g dy$$

$$P_2 - P_1 = \int_{y_1}^{y_2} dp = \int_{y_1}^{y_2} -\rho g dy = \rho g (y_1 - y_2)$$

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$$y_1 = 0 \quad (\text{fondo})$$

$$P_2 - P_1 = -\rho g h$$

$$P_2(h) = P_1 - \rho g h$$

