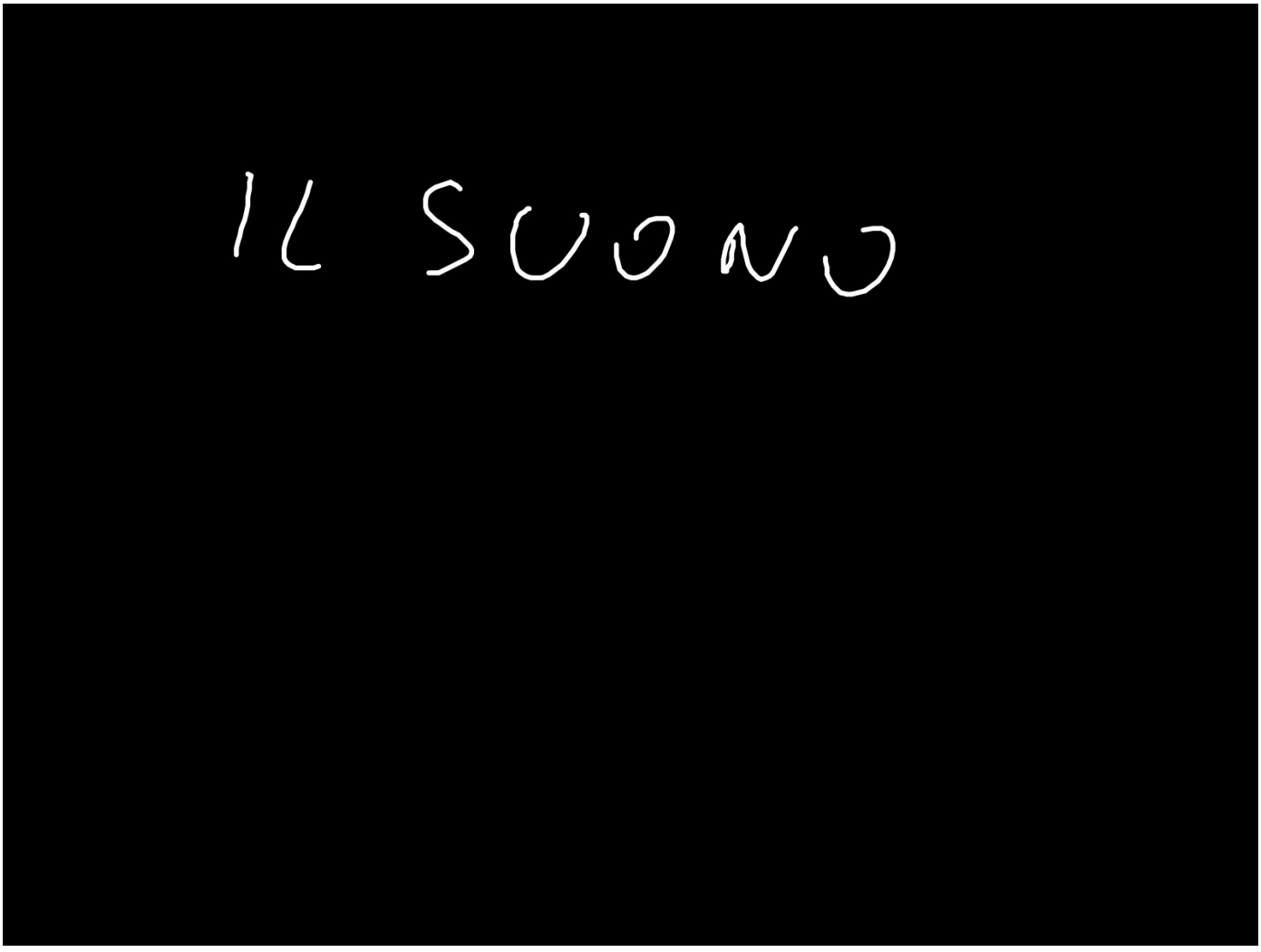

IL SUONO

MINIMO UDIBILE

$$I_0 = 10^{-12} \ W/m^2$$

$$I = \frac{E}{\Delta t \cdot A}$$

$$L_s = 10 \cdot \log_{10} \frac{I}{I_0}$$

$$L_S(I_0) = 10 \cdot \underbrace{\log_{10} \frac{I_0}{I_0}}_{0} = 0\ dB$$

$$L_s(10 I_0) =$$

$$= 10 \cdot \underbrace{\log_{10} \frac{10 I_0}{I_0}}_{1}$$

$$= 10 \text{ dB}$$

$$L_s(100 I_0) = 10 \cdot \underbrace{\lg_{10} \frac{100 I_0}{I_0}}_{2} = 20 \text{ dB}$$

$L_S = 130$ dB SOGLIA DEL DOLORE

$L_S \sim 120$ dB CONCERTO ROCK LIVE

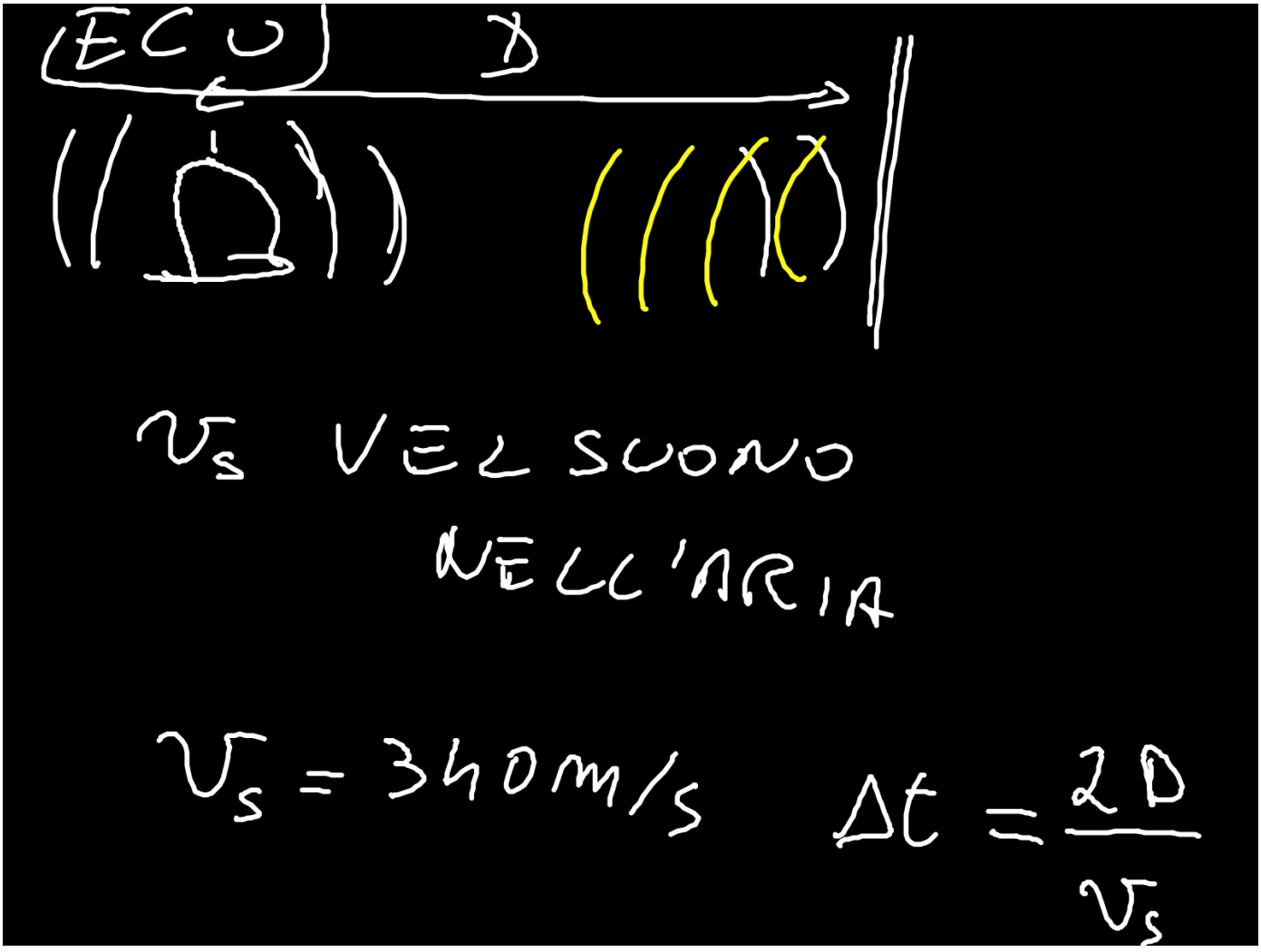
140 dB AEREO in DECOLLO

100 dB DISCOTECA

LIMITI DI UDIBILITÀ IN FREQUENZA

INTERVALLO DI FREQUENZE UDIBILE DALL'ORECCHIO UMANO:

$20\ Hz \div 20000\ Hz$



v_s VEL SUONO NELL'ARIA

$v_s = 340\ m/s$ $\quad \Delta t = \frac{2D}{v_s}$

$D = 100\ m$

$v_s = 340\ m/s$

$$\Delta t = \frac{2 \cdot 100 m}{340 m/s} = 0{,}588\ s$$

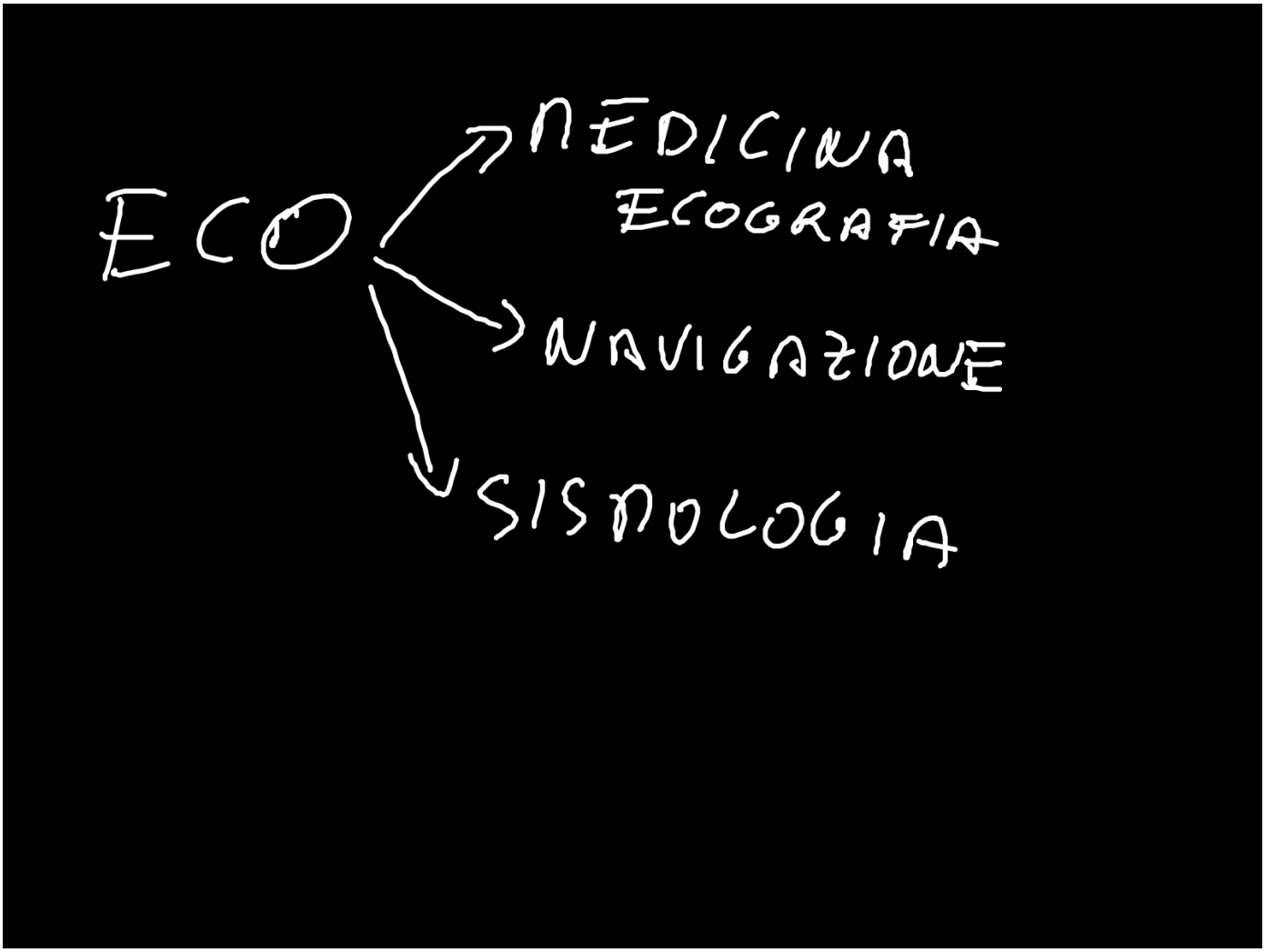
$$\approx 0.6\ s$$

se $D = 20\,m$

$$\Delta t = \frac{2 \cdot 20\,m}{340\,m/s}$$

$$= 0.117\,s$$

$$\Delta t_{min} = 0.1\,s$$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