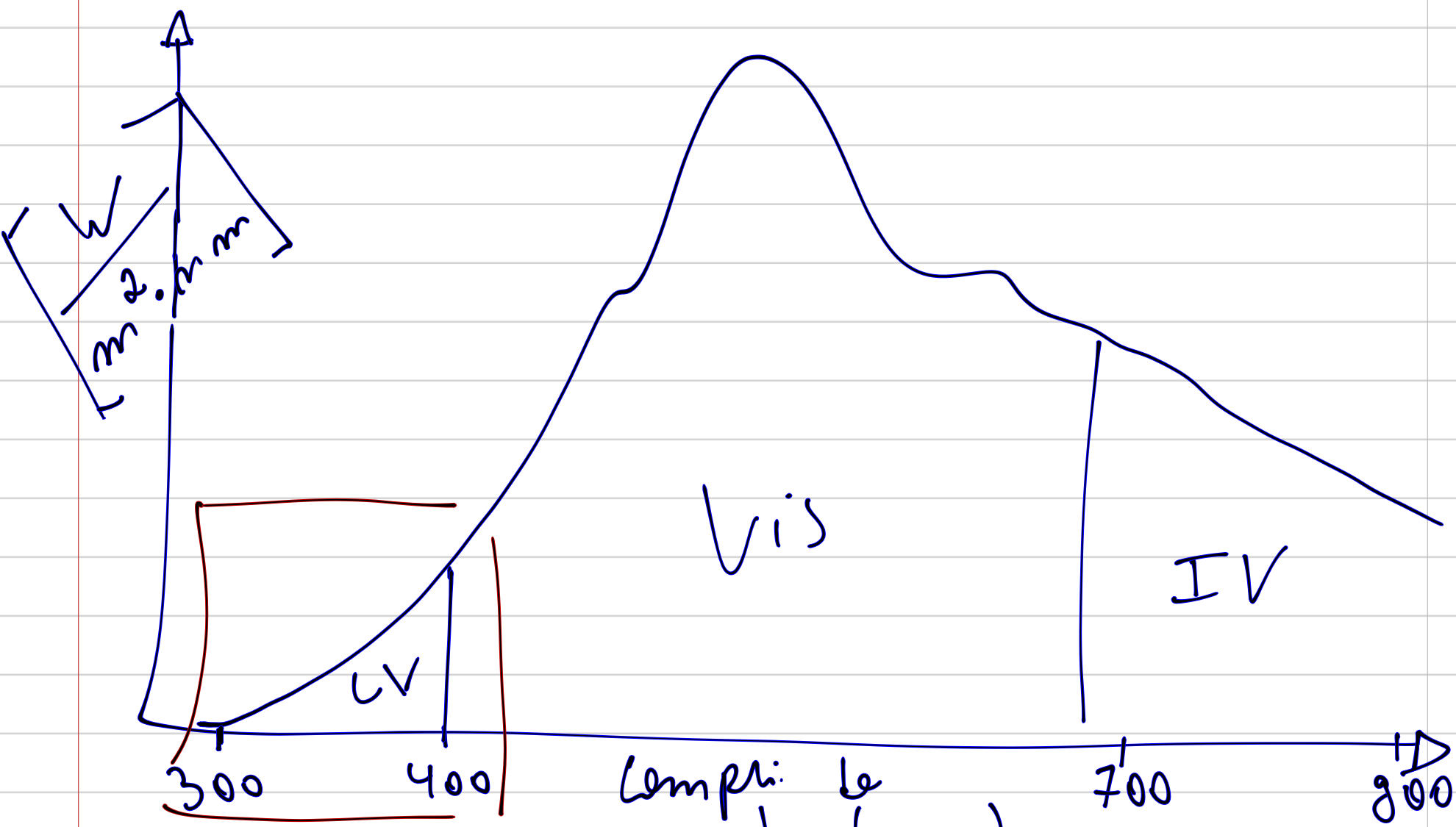
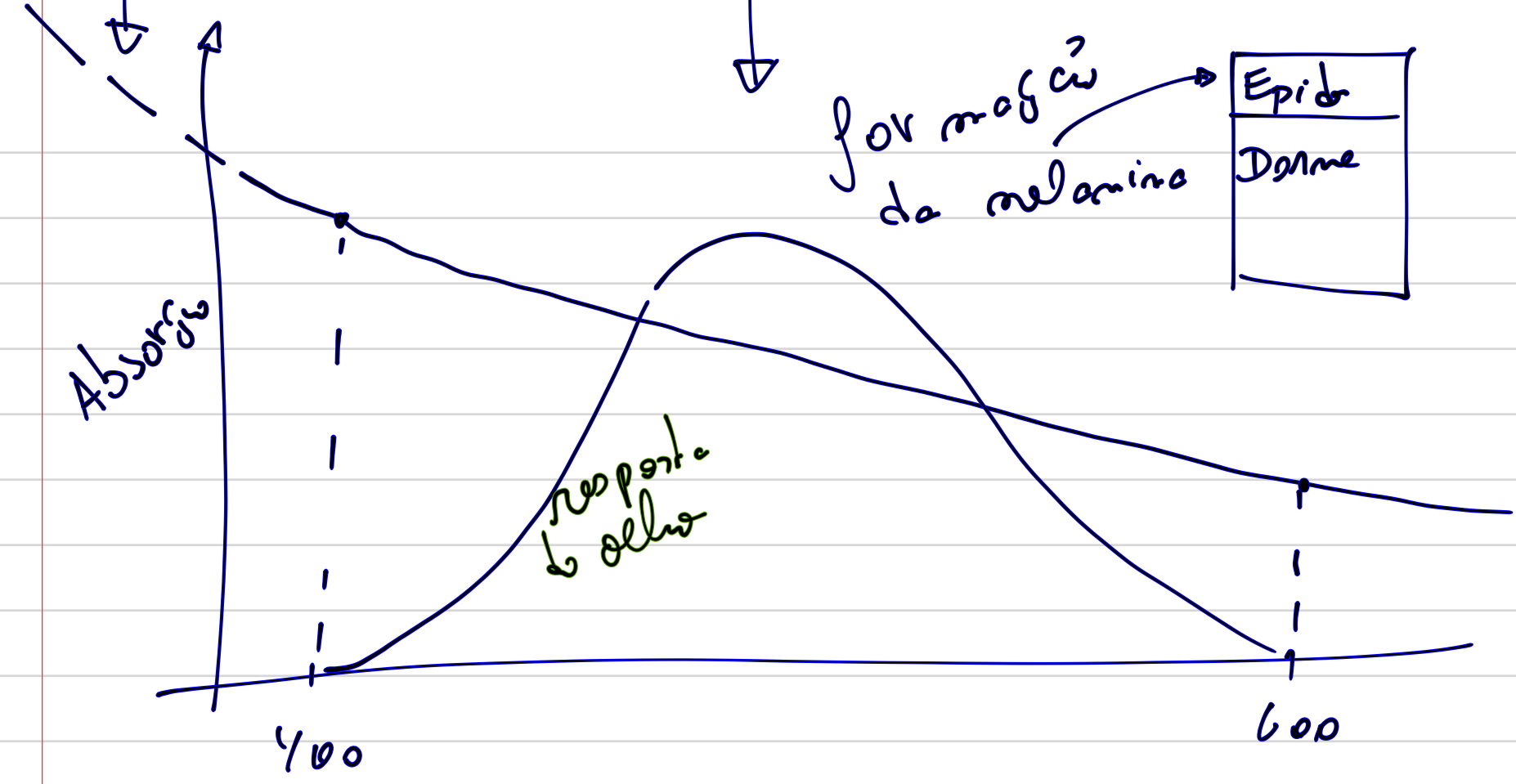
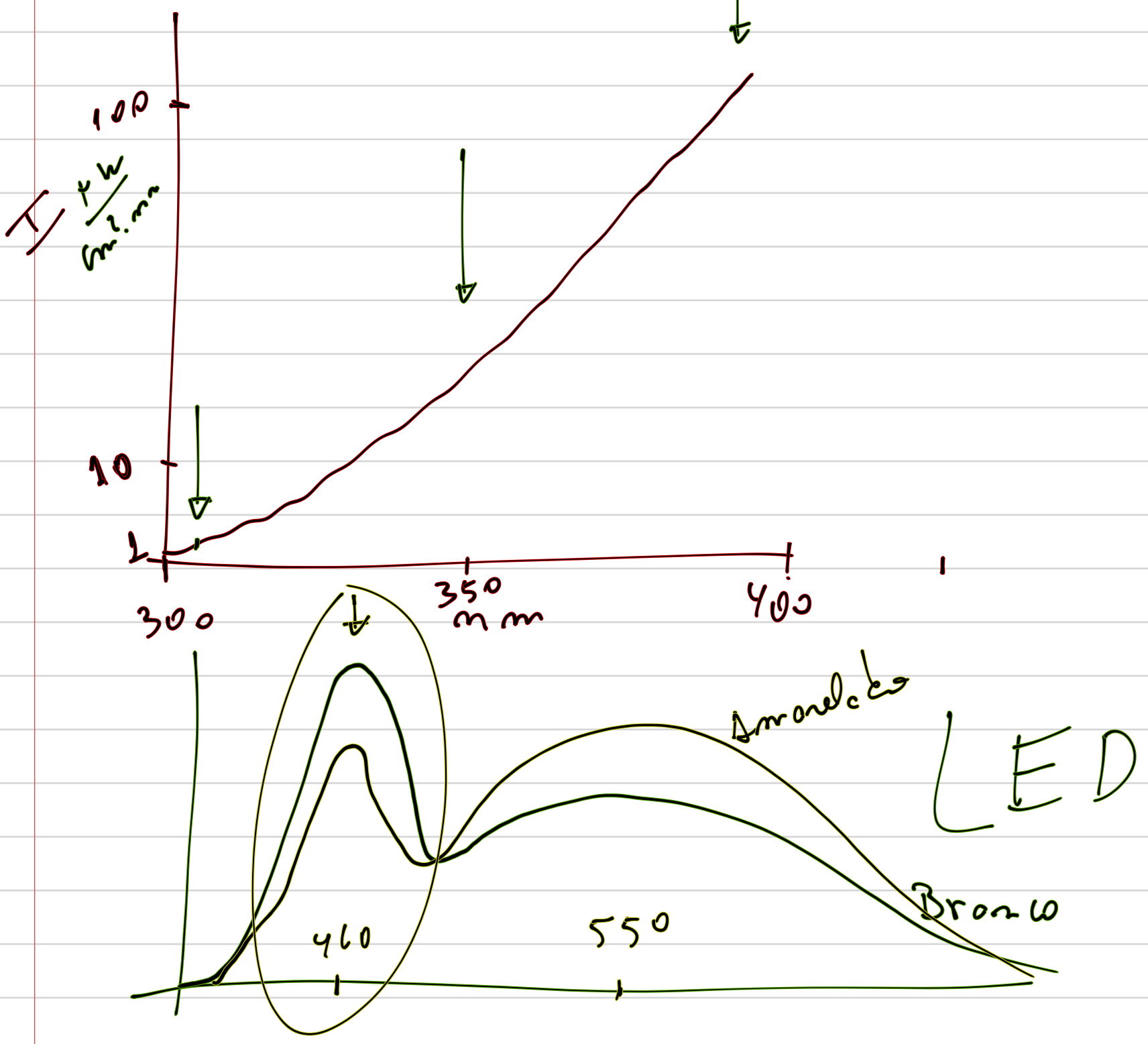
Radiação Ultravioleta

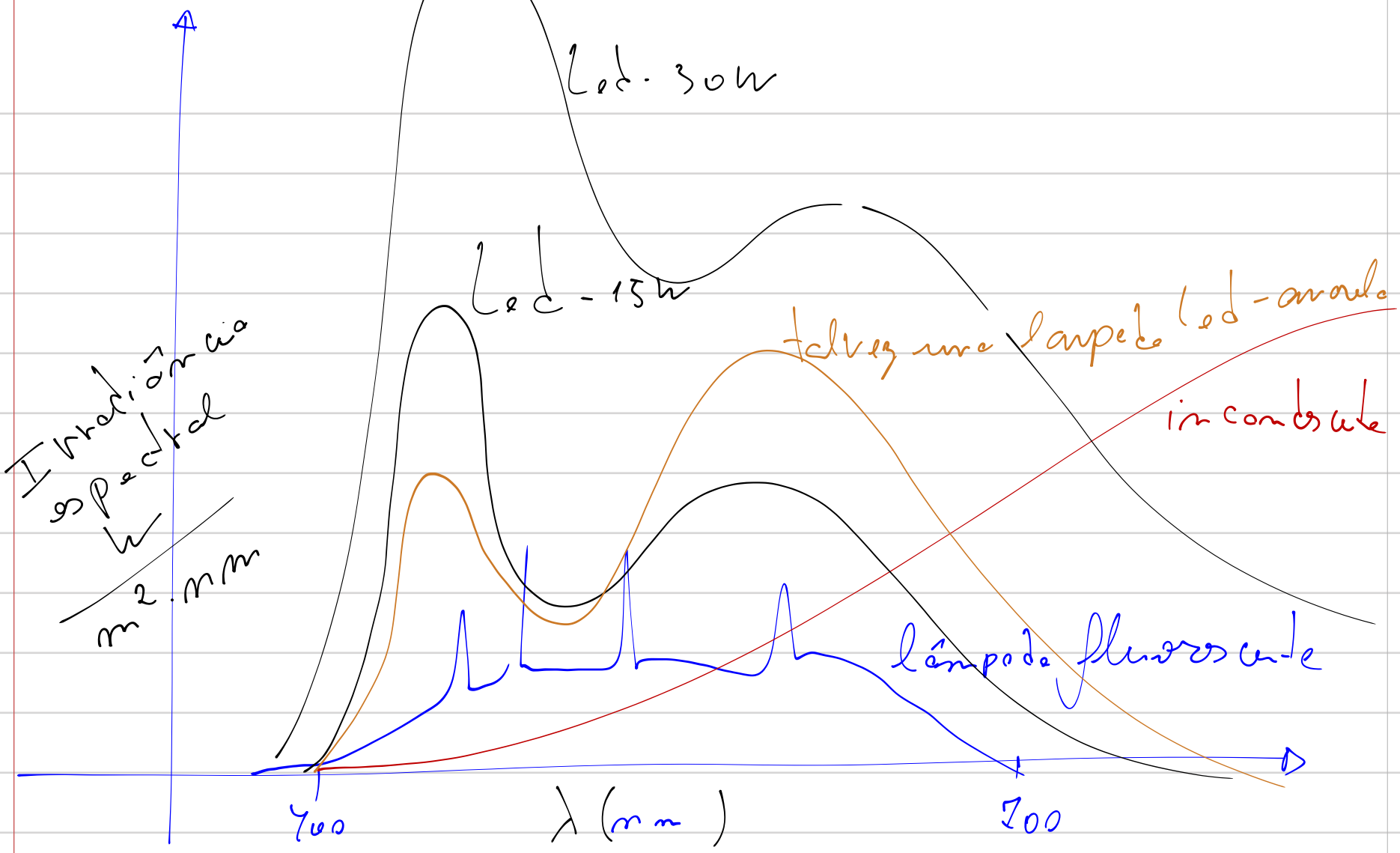


$$I \Rightarrow \left[\frac{\text{Potência}}{\text{área} \cdot \text{Comp. de Onda}}\right]$$

$$E = hf = \frac{hc}{\lambda}$$

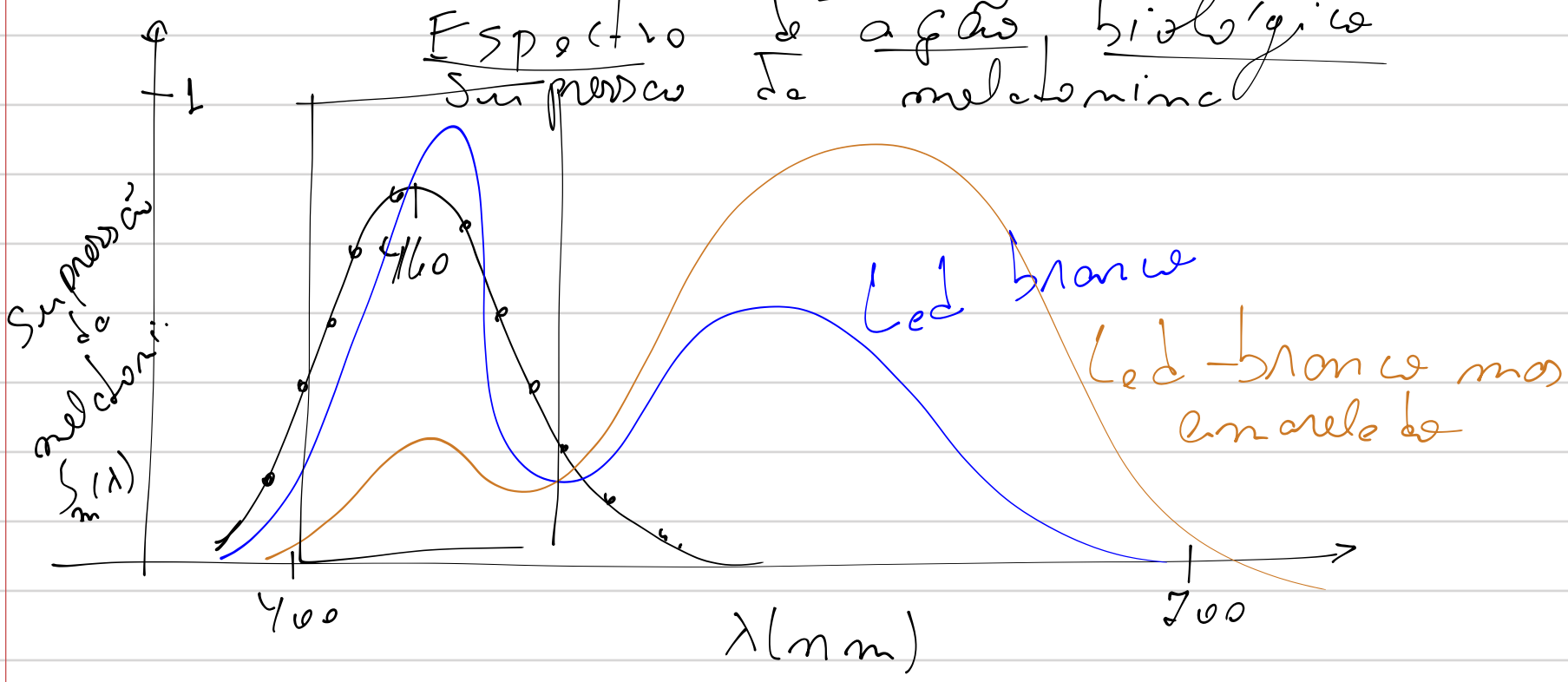

formação da melanina
Epid
Derme
Absorção
resposta à luz
400
600


100
10
1
I
μW/cm².nm
300
350
nm
400
Amarelo
Branco
460
550
LED



→ atenção → Suprimir a melatonina

→ Ter luminosidade superior a 2500 lm/m²



Led branco - Suprime mais a melatonina

" " amarelado " menos " "

maior concentração de melanina ⇒ mais calmante

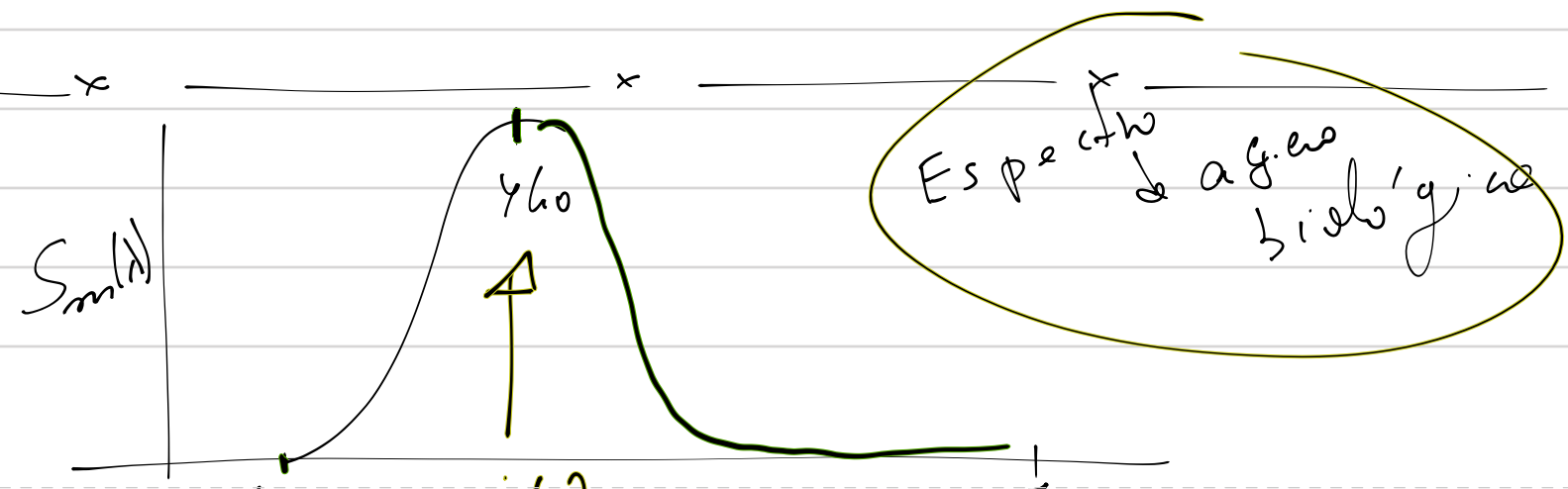
Solução p/ os anos à dormir é usar uma luz <u>sem</u> muitos <u>comprimentos</u> no <u>azul</u>

→ Led azul-ciano → <u>pico em 460nm</u>

Iglitive para supressão

$$I_{eg} = K \int_{380}^{760} I(\lambda) \cdot S_m(\lambda)\, d\lambda =$$

K = Constante

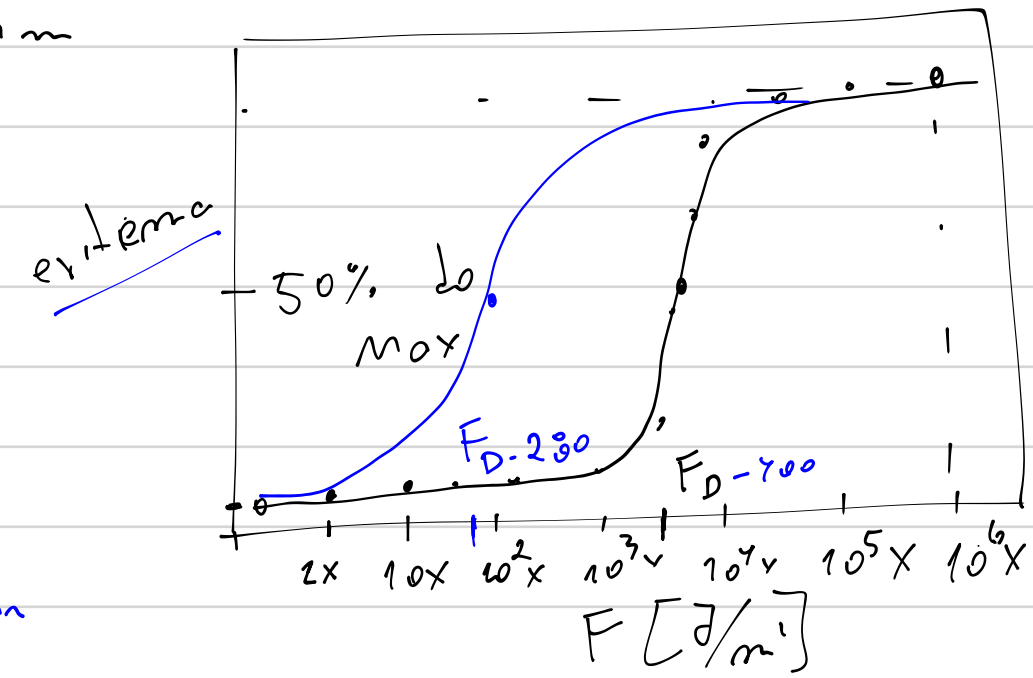


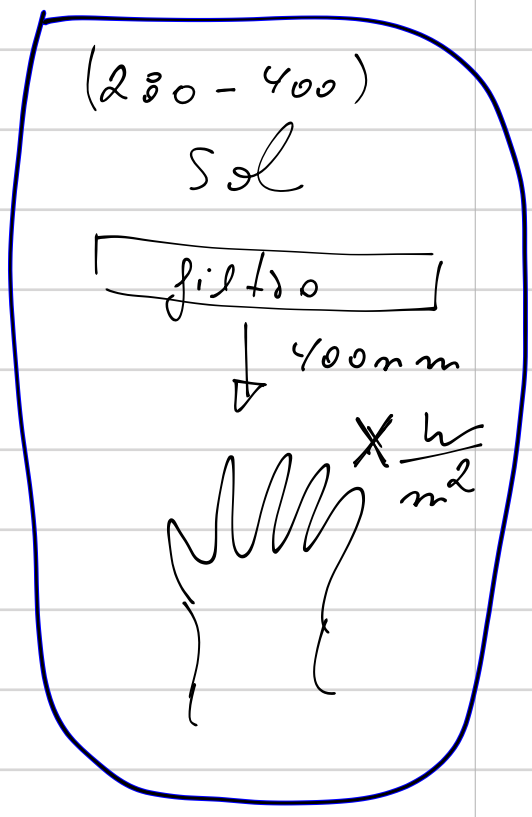
400 PWM LED

Formação de Eritema

Sol → 280 — 400 nm

→ 400 nm
390
380
370
|
|
|
280 nm

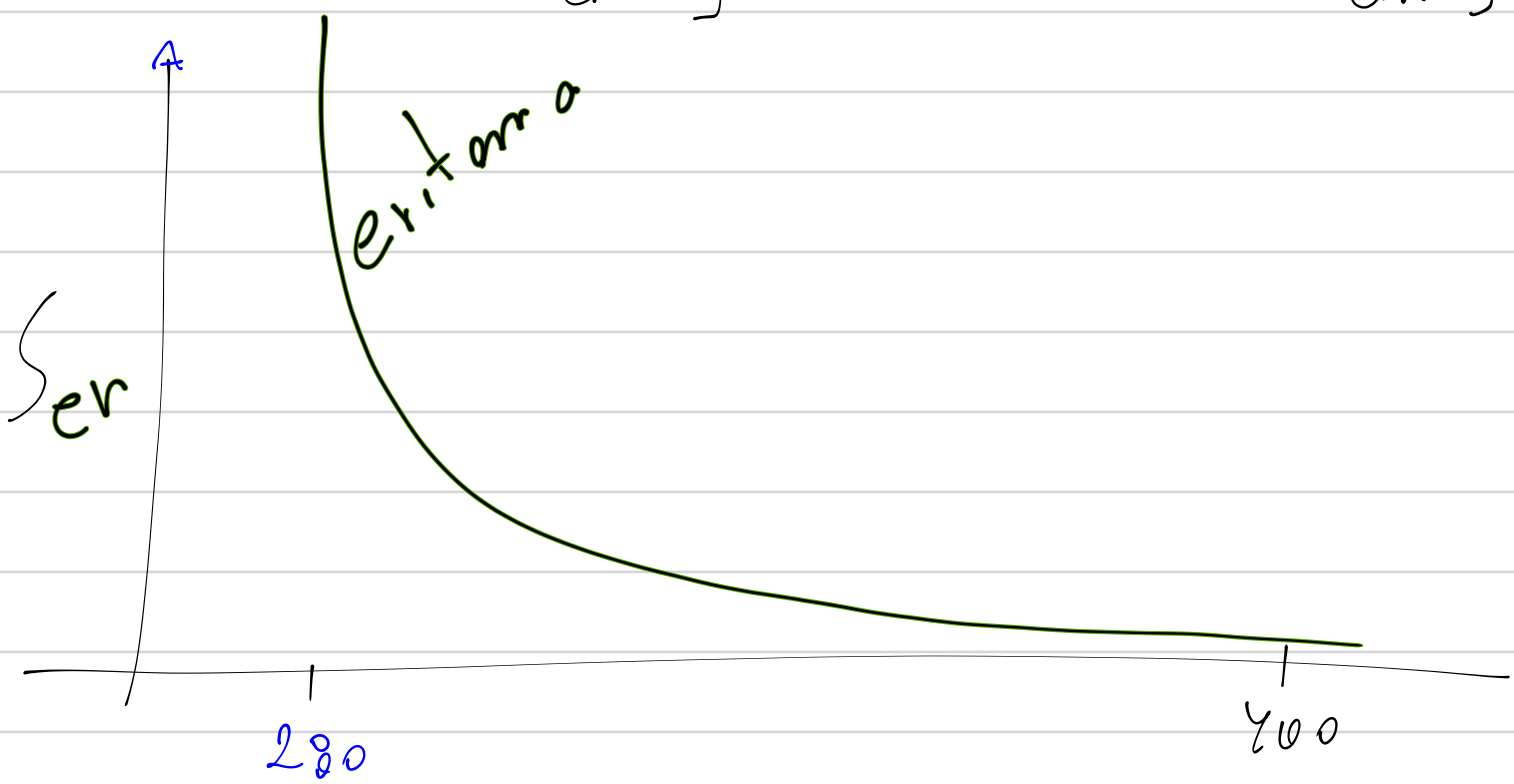




F = Fluência $\left[\frac{J}{m^2}\right]$

I = Irradiância $\left[\frac{W}{m^2}\right]$

$F = I \cdot \Delta t = \left[\frac{W}{m^2}\right] \cdot [s] = \left[\frac{J}{m^2}\right]$



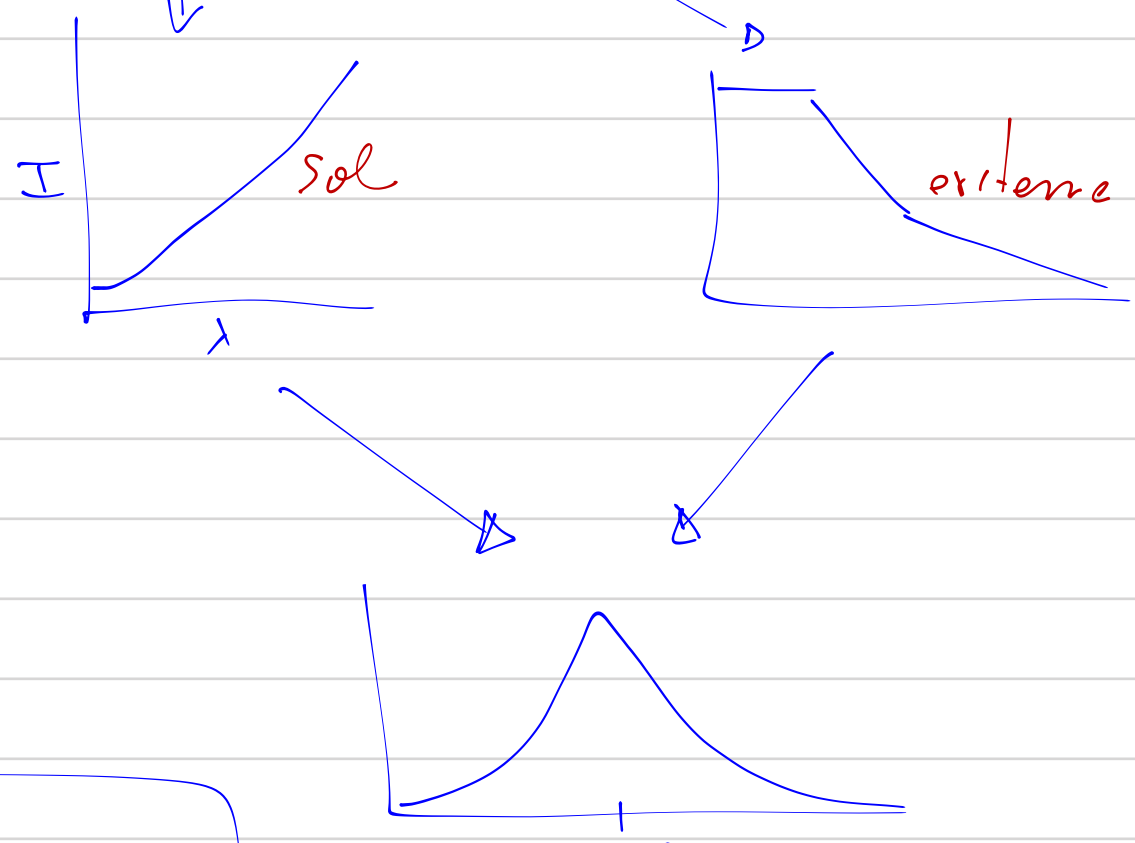
Índice UV

[0, 1, ⟶ 12, 14 ⟶ etc ∞

$$I_{UV} = \boxed{K} \int_{280}^{400} I_{\lambda}(\lambda) \cdot S_{er}(\lambda)\, d\lambda = I_{UV\text{-}8:00} = 2,2$$

$$I_{UV\text{-}9:00} = 4,3$$

$K = 40 \frac{m^2}{W}$



I_{UV} = calculer