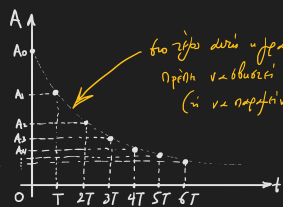


$$\frac{A_0}{A_1} = \frac{A_1}{A_2} = \frac{A_2}{A_3} = \dots = \frac{A_V}{A_{V+1}} = e^{\lambda \Delta t}$$

$$A = A_0 e^{-\lambda t}$$

$$t = k \cdot T$$

ήδη ελαττώσεις



στο γέγονος ότι η φέρει
η φέρει η φέρει
(η φέρει η φέρει η φέρει)

$\phi = \pi/2$

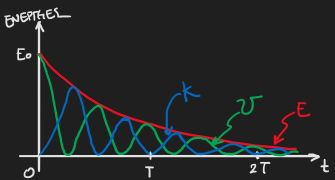
$$x = A \cdot \sin \omega t = A_0 e^{-\lambda t} \cdot \sin \omega t$$

$$v = \omega A \cdot (-\cos \omega t) = -\omega A_0 e^{-\lambda t} \cdot \cos \omega t$$

$$F' = -b \cdot v = +b \omega A_0 e^{-\lambda t} \cdot \cos \omega t$$

► ΕΝΕΡΓΕΙΑ: $E = \frac{1}{2} D A^2 = \frac{1}{2} D (A_0 e^{-\lambda t})^2 = \frac{1}{2} D A_0^2 e^{-2\lambda t} \Rightarrow$

$$E = E_0 e^{-2\lambda t}$$



$$x = A \cdot \sin \omega t \Rightarrow v = \frac{1}{2} D x^2 = \frac{1}{2} D A_0^2 e^{-2\lambda t} \cdot \sin^2 \omega t \Rightarrow$$

$$\Rightarrow v = E_0 e^{-2\lambda t} \cdot \sin^2 \omega t$$

$$v = E_0 \cdot \sin^2 \omega t$$

$$v = -\omega A \cdot \cos \omega t \Rightarrow k = \frac{1}{2} m v^2 = \frac{1}{2} m \omega^2 A_0^2 e^{-2\lambda t} \cdot \cos^2 \omega t = E_0 e^{-2\lambda t} \cdot \cos^2 \omega t$$

$$\frac{A_V}{A_{V+1}} = \frac{A_0 e^{-\lambda t_V}}{A_0 e^{-\lambda t_{V+1}}} = \frac{e^{-\lambda \cdot V \cdot T}}{e^{-\lambda \cdot (V+1) \cdot T}} = e^{-\lambda V T + \lambda (V+1) T} =$$

$$= e^{-\lambda V T + \lambda V T + \lambda T} \Rightarrow \frac{A_V}{A_{V+1}} = e^{\lambda T}$$

αρκ: $\frac{A_0}{A_1} = e^{\lambda T}$
 $\frac{A_{12}}{A_{13}} = e^{\lambda T}$
 $\frac{A_{16}}{A_{17}} = e^{\lambda T}$
 $\frac{A_{102}}{A_{103}} = e^{\lambda T}$

Χρονος ημικοινασισμω
το ημικοινασισμω

$$\left. \begin{aligned} A &= A_0 e^{-\lambda t} \\ A &= \frac{A_0}{2} \end{aligned} \right\} \Rightarrow \frac{A_0}{2} = A_0 e^{-\lambda t} \Rightarrow \frac{1}{2} = e^{-\lambda t} \Rightarrow$$

$$\Rightarrow \frac{1}{2} = \frac{1}{e^{\lambda t}} \Rightarrow e^{\lambda t} = 2 \Rightarrow$$

$$\Rightarrow \ln e^{\lambda t} = \ln 2 \Rightarrow \lambda t = \ln 2 \Rightarrow$$

$$e^{\ln x} = x$$

$$\Rightarrow t = \frac{\ln 2}{\lambda}$$

Χρονος ημικοινασισμω

$$\left. \begin{aligned} A &= A_0 e^{-\lambda t} \\ A &= \frac{A_0}{x} \end{aligned} \right\} \Rightarrow \frac{A_0}{x} = A_0 e^{-\lambda t} \Rightarrow \frac{1}{x} = e^{-\lambda t} \Rightarrow$$

$$\Rightarrow e^{\lambda t} = x \Rightarrow \ln e^{\lambda t} = \ln x \Rightarrow$$

$$\Rightarrow \lambda t = \ln x \Rightarrow t = \frac{\ln x}{\lambda}$$