

ΤΑΛΑΝΤΩΣΕΙΣ

- $f = \frac{N}{t}$
- $f = \frac{1}{T}$
- $\omega = \frac{2\pi}{T}$
- $x = A\eta\mu(\omega t + \varphi_0)$
- $v = \omega A\sigma\upsilon\nu(\omega t + \varphi_0)$
- $a = -\omega^2 A\eta\mu(\omega t + \varphi_0)$
- $a = -\omega^2 x$
- $v = \pm\omega\sqrt{A^2 - x^2}$
- $D = m\omega^2$
- $F_{o\lambda} = -Dx$
- $\omega = \sqrt{\frac{D}{m}}$, $T = 2\pi\sqrt{\frac{m}{D}}$
- $W_{A \rightarrow B} = U_A - U_B$
- $F_{o\lambda} = \frac{dp}{dt}$
- $U = \frac{1}{2}Dx^2$
- $K = \frac{1}{2}mv^2$
- $E = K + U$
- $E = \frac{1}{2}DA^2 = \frac{1}{2}m\upsilon_{\max}^2$
- $U = E\eta\mu^2\omega t$
- $K = E\sigma\upsilon\nu^2\omega t$
- $P_F = Fv$
- $\frac{dK}{dt} = F_{o\lambda}v$
- $\frac{dU}{dt} = -F_{\sigma\upsilon\nu\tau} \cdot v$
- $v_L = L\frac{di}{dt}$
- $p_L = iv_L$
- $U_B = \frac{1}{2}Li^2$
- $q_c = Cv_c$
- $p_c = iv_c$
- $U_E = \frac{q^2}{2C}$
- $L\frac{di}{dt} + \frac{1}{C}q = 0$
- $i = \frac{dq}{dt}$
- $q = Q\sigma\upsilon\nu\omega t$
- $i = -I\eta\mu\omega t$
- $I = Q\omega$
- $i = \pm\omega\sqrt{Q^2 - q^2}$
- $\frac{dv_c}{dt} = \frac{d(\frac{q}{C})}{dt} = \frac{1}{C}i$
- $\frac{di}{dt} = -\omega^2q$
- $E = \frac{Q^2}{2C} = \frac{1}{2}LI^2$
- $U_E = E\sigma\upsilon\nu^2\omega t$
- $U_B = E\eta\mu^2\omega t$
- $x = A_0e^{-\Lambda t}\eta\mu(\omega t + \varphi_0)$
- $A = A_0e^{-\Lambda t}$
- $\frac{A_0}{A_1} = \frac{A_1}{A_2} = \frac{A_2}{A_3} = \dots$
- $Q = Q_0e^{-\Lambda t}$
- $E = \frac{q^2}{2C} + \frac{1}{2}Li^2$
- Συντονισμός $\Leftrightarrow A = \max$, $f \cong f_0$
- $A = \sqrt{A_1^2 + A_2^2 + 2A_1A_2\sigma\upsilon\nu\varphi}$
- $\varepsilon\varphi\theta = \frac{A_2\eta\mu\varphi}{A_1 + A_2\sigma\upsilon\nu\varphi}$
- $x = \left(2A\sigma\upsilon\nu\frac{\omega_1 - \omega_2}{2}t\right)\eta\mu\frac{\omega_1 + \omega_2}{2}t$
- $T_\delta = \frac{1}{|f_1 - f_2|}$
- $f_\delta = |f_1 - f_2|$

ΚΥΜΑΤΑ

- $v = \frac{x}{t}$
- $\lambda = vT$
- $v = \lambda f$
- $y = A\eta\mu\omega\left(t - \frac{x}{v}\right)$
- $y = A\eta\mu 2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)$
- $u = \omega A\sigma\upsilon\nu 2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)$
- $y = A\eta\mu 2\pi\left(\frac{t}{T} + \frac{x}{\lambda}\right)$
- $\varphi = 2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)$
- $\Delta\varphi = -2\pi\frac{\Delta x}{\lambda}$
- $\Delta\varphi = 2\pi\frac{\Delta t}{T}$
- $y = 2A\sigma\upsilon\nu 2\pi\frac{r_1 - r_2}{2\lambda}\eta\mu 2\pi\left(\frac{t}{T} - \frac{r_1 + r_2}{2\lambda}\right)$
- Απόσβεση
 - $r_1 - r_2 = (2k + 1)\frac{\lambda}{2}, \quad k \in \mathbb{Z}$
 - $\Delta\varphi = 2k\pi + \pi$
 - $\Delta\tau = kT + \frac{T}{2}$
- Ενίσχυση
 - $r_1 - r_2 = k\lambda, \quad k \in \mathbb{Z}$
 - $\Delta\varphi = 2k\pi$
 - $\Delta\tau = kT$
- $y = 2A\sigma\upsilon\nu\frac{2\pi x}{\lambda}\eta\mu\omega t$
- Κοιλίες
 - $x_K = k\frac{\lambda}{2}, \quad k \in \mathbb{Z}$
- Δεσμοί
 - $x_\Delta = (2k + 1)\frac{\lambda}{4}, \quad k \in \mathbb{Z}$
- $u = 2\omega A\sigma\upsilon\nu\frac{2\pi x}{\lambda}\sigma\upsilon\nu\omega t$
- $E = E_{\max}\eta\mu 2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)$
- $B = B_{\max}\eta\mu 2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)$
- $\frac{E}{B} = c$
- $n = \frac{c}{v}$
- $n_1\eta\mu\theta_1 = n_2\eta\mu\theta_2$
- $\lambda = \frac{\lambda_0}{n}$
- $\eta\mu\theta_c = \frac{n_2}{n_1}$
- $\eta\mu\theta_c = \frac{1}{n}$

ΣΤΕΡΕΟ ΣΩΜΑ

- $\omega = \frac{d\varphi}{dt}$
- $s = \varphi R$
- $v = \omega R$
- $\alpha_{\gamma\omega\nu} = \frac{d\omega}{dt}$
- Ομαλή κυκλική κίνηση
 - $\alpha_{\gamma\omega\nu} = 0$
 - $\omega = \text{σταθ.}$
 - $\varphi = \varphi_0 + \omega t$
- Ομαλά μεταβαλλόμενη κυκλική κίνηση
 - $\alpha_{\gamma\omega\nu} = \text{σταθ.}$
 - $\omega = \omega_0 + \alpha_{\gamma\omega\nu} t$
 - $\varphi = \varphi_0 + \omega_0 t + \frac{1}{2} \alpha_{\gamma\omega\nu} t^2$
- $\alpha_k = \frac{v^2}{R}$
- $\alpha_\varepsilon = \frac{dv}{dt}$
- $\vec{a} = \vec{a}_k + \vec{a}_\varepsilon$
- $\vec{v} = \vec{v}_{\text{cm}} + \vec{v}_{\text{περ}}$
- $a_\varepsilon = \alpha_{\gamma\omega\nu} R$
- $v_{\text{cm}} = \omega R$
- $a_\varepsilon = a_{\text{cm}} = \alpha_{\gamma\omega\nu} R$
- $\tau = F\ell$
- $\tau = Fd$
- $\sum \vec{F} = \vec{0}$
- $\sum \vec{\tau} = \vec{0}$
- $I = mr^2$
- $I = m_1 r_1^2 + m_2 r_2^2 + \dots + m_N r_N^2$
- $I = I_{\text{cm}} + Md^2$
- $\sum \tau = I_{\text{cm}} a_{\gamma\omega\nu}$
- $L = mvr$
- $L = m\omega r^2$
- $L = I\omega$
- $\sum \tau = \frac{dL}{dt}$
- $I_1 \omega_1 = I_2 \omega_2$
- $K = \frac{1}{2} I \omega^2$
- $K = \frac{1}{2} m v_{\text{cm}}^2 + \frac{1}{2} I_{\text{cm}} \omega^2$
- $W = \tau\theta$
- $P = \tau\omega$
- $W_{\text{ολ}} = \frac{1}{2} I \omega_2^2 - \frac{1}{2} I \omega_1^2$

ΚΡΟΥΣΕΙΣ

- $\Delta \vec{p} = \vec{F}_{\varepsilon\xi} \Delta t$
- $\vec{p}_{\pi\rho\nu} = \vec{p}_{\mu\epsilon\tau\acute{\alpha}}$
- $m_1 v_1 + m_2 v_2 = m_1 v'_1 + m_2 v'_2$
- $v_1 + v'_1 = v_2 + v'_2$
- $v'_1 = \frac{2m_2}{m_1+m_2} v_2 + \frac{m_1-m_2}{m_1+m_2} v_1$
- $v'_2 = \frac{2m_1}{m_1+m_2} v_1 + \frac{m_2-m_1}{m_1+m_2} v_2$
- $v_2 = 0$
 - $v'_1 = \frac{m_1-m_2}{m_1+m_2} v_1$
 - $v'_2 = \frac{2m_1}{m_1+m_2} v_1$
- $m_2 \gg m_1, v_2 = 0$
 - $v'_1 \cong -v_1$
 - $v'_2 \cong 0$
- $m_1 \gg m_2, v_2 = 0$
 - $v'_1 \cong v_1$
 - $v'_2 \cong 2v_1$

- $m_2 = 3m_1, v_2 = 0$

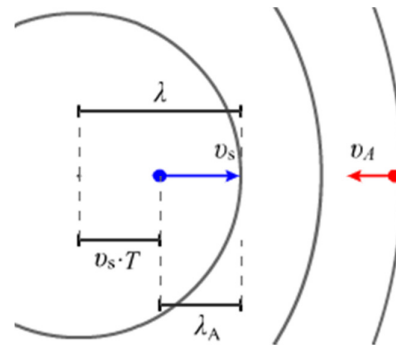
- $v'_1 = -\frac{v_1}{2}$

- $v'_2 = \frac{v_1}{2}$

- $f_A = \frac{v+v_A}{v-v_s} f_s$

- $\lambda_A = \lambda - v_s T_s$

- $v'_{\eta\chi} = v_{\eta\chi} + v_A$



- Ο παρατηρητής προς την πηγή +

- Η πηγή προς τον παρατηρητή -