V sivo polje ne pišite.

Konstante in enačbe

srednji polmer Zemlje	$r_z = 6370\ \text{km}$
težni pospešek	$g = 9{,}81\ \text{m s}^{-2}$
hitrost svetlobe	$c = 3{,}00 \cdot 10^8\ \text{m s}^{-1}$
osnovni naboj	$e_0 = 1{,}60 \cdot 10^{-19}\ \text{A s}$
Avogadrovo število	$N_A = 6{,}02 \cdot 10^{26}\ \text{kmol}^{-1}$
splošna plinska konstanta	$R = 8{,}31 \cdot 10^3\ \text{J kmol}^{-1}\ \text{K}^{-1}$
gravitacijska konstanta	$G = 6{,}67 \cdot 10^{-11}\ \text{N m}^2\ \text{kg}^{-2}$
električna (influenčna) konstanta	$\varepsilon_0 = 8{,}85 \cdot 10^{-12}\ \text{A s V}^{-1}\ \text{m}^{-1}$
magnetna (indukcijska) konstanta	$\mu_0 = 4\pi \cdot 10^{-7}\ \text{V s A}^{-1}\ \text{m}^{-1}$
Boltzmannova konstanta	$k = 1{,}38 \cdot 10^{-23}\ \text{J K}^{-1}$
Planckova konstanta	$h = 6{,}63 \cdot 10^{-34}\ \text{J s} = 4{,}14 \cdot 10^{-15}\ \text{eV s}$
Stefanova konstanta	$\sigma = 5{,}67 \cdot 10^{-8}\ \text{W m}^{-2}\ \text{K}^{-4}$
poenotena atomska masna enota	$m_u = 1\ \text{u} = 1{,}66054 \cdot 10^{-27}\ \text{kg} = 931{,}494\ \text{MeV}/c^2$
lastna energija atomske enote mase	$m_u c^2 = 931{,}494\ \text{MeV}$
masa elektrona	$m_e = 9{,}109 \cdot 10^{-31}\ \text{kg} = 1\ \text{u}/1823 = 0{,}5110\ \text{MeV}/c^2$
masa protona	$m_p = 1{,}67262 \cdot 10^{-27}\ \text{kg} = 1{,}00728\ \text{u} = 938{,}272\ \text{MeV}/c^2$
masa nevtrona	$m_n = 1{,}67493 \cdot 10^{-27}\ \text{kg} = 1{,}00866\ \text{u} = 939{,}566\ \text{MeV}/c^2$

Gibanje

$s = vt$

$s = \bar{v}t$

$s = v_0 t + \frac{at^2}{2}$

$v = v_0 + at$

$v^2 = v_0^2 + 2as$

$\nu = \frac{1}{t_0}$

$\omega = 2\pi\nu$

$v_o = \frac{2\pi r}{t_0}$

$a_r = \frac{v_o^2}{r}$

$s = s_0 \sin \omega t$

$v = \omega s_0 \cos \omega t$

$a = -\omega^2 s_0 \sin \omega t$

Sila

$g(r) = g\frac{r_z^2}{r^2}$

$F = G\frac{m_1 m_2}{r^2}$

$\frac{r^3}{t_0^2} = \text{konst.}$

$F = ks$

$F = pS$

$F = k_t F_n$

$F = \rho g V$

$\vec{F} = m\vec{a}$

$\vec{G} = m\vec{v}$

$\vec{F}\Delta t = \Delta\vec{G}$

$M = rF \sin \alpha$

$\Delta p = \rho g h$

Energija

$A = \vec{F} \cdot \vec{s}$

$A = Fs \cos \varphi$

$W_k = \frac{mv^2}{2}$

$W_p = mgh$

$W_{pr} = \frac{ks^2}{2}$

$P = \frac{A}{t}$

$A = \Delta W_k + \Delta W_p + \Delta W_{pr}$

$A = -p\Delta V$

Elektrika

$$I = \frac{e}{t}$$

$$F = \frac{e_1 e_2}{4\pi\varepsilon_0 r^2}$$

$$\vec{F} = e\vec{E}$$

$$U = \vec{E} \cdot \vec{s} = \frac{A_e}{e}$$

$$E = \frac{e}{2\varepsilon_0 S}$$

$$e = CU$$

$$C = \frac{\varepsilon_0 S}{l}$$

$$W_e = \frac{CU^2}{2} = \frac{e^2}{2C}$$

$$U = RI$$

$$R = \frac{\varsigma l}{S}$$

$$U_{ef} = \frac{U_0}{\sqrt{2}};\ I_{ef} = \frac{I_0}{\sqrt{2}}$$

$$P = UI$$

Magnetizem

$$\vec{F} = I\vec{l} \times \vec{B}$$

$$F = IlB\sin\alpha$$

$$\vec{F} = e\vec{v} \times \vec{B}$$

$$B = \frac{\mu_0 I}{2\pi r}$$

$$B = \frac{\mu_0 NI}{l}$$

$$M = NISB\sin\alpha$$

$$\Phi = BS\cos\alpha$$

$$U_i = lvB$$

$$U_i = \omega SB\sin\omega t$$

$$U_i = -\frac{\Delta\Phi}{\Delta t}$$

$$L = \frac{\Phi}{I}$$

$$W_m = \frac{LI^2}{2}$$

$$\frac{U_1}{U_2} = \frac{N_1}{N_2}$$

Nihanje in valovanje

$$t_0 = 2\pi\sqrt{\frac{m}{k}}$$

$$t_0 = 2\pi\sqrt{\frac{l}{g}}$$

$$t_0 = 2\pi\sqrt{LC}$$

$$c = \lambda\nu$$

$$d\sin\alpha = N\lambda$$

$$j = \frac{P}{4\pi r^2}$$

$$\nu = \nu_0\left(1 \pm \frac{v}{c}\right)$$

$$\nu = \frac{\nu_0}{1 \mp \frac{v}{c}}$$

$$c = \sqrt{\frac{Fl}{m}}$$

$$\sin\varphi = \frac{c}{v}$$

Toplota

$$n = \frac{m}{M} = \frac{N}{N_A}$$

$$pV = nRT$$

$$\Delta l = \alpha l \Delta T$$

$$\Delta V = \beta V \Delta T$$

$$A + Q = \Delta W$$

$$Q = cm\Delta T$$

$$Q = qm$$

$$W_0 = \frac{3}{2}kT$$

$$P = \frac{Q}{t}$$

$$P = \lambda S\frac{\Delta T}{\Delta l}$$

$$j = \frac{P}{S}$$

$$j = \sigma T^4$$

Optika

$$n = \frac{c_0}{c}$$

$$\frac{\sin\alpha}{\sin\beta} = \frac{c_1}{c_2} = \frac{n_2}{n_1}$$

$$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$$

$$\frac{s}{p} = \frac{b}{a}$$

Moderna fizika

$$W_f = h\nu$$

$$W_f = A_i + W_k$$

$$W_f = \Delta W_n$$

$$\Delta W = \Delta mc^2$$

$$N = N_0 2^{-\frac{t}{t_{1/2}}} = N_0 e^{-\lambda t}$$

$$\lambda = \frac{\ln 2}{t_{1/2}}$$

$$A = N\lambda$$