$$P = \frac{Q}{t} = \frac{dQ(t)}{dt}$$

$$P = -\lambda S \frac{\Delta T}{\Delta x}$$

$$j = \frac{P}{S} = -\lambda \frac{\Delta T}{\Delta x}$$

$$\eta = \frac{|A_{ODV}|}{Q_{DOV}} = 1 - \frac{|Q_{ODV}|}{Q_{DOV}}$$

$$\eta_{Carnotov KS} = 1 - \frac{T_{NIZ}}{T_{VIS}}$$

$$\frac{Q_{DOV}}{T_{VIS}} = \frac{|Q_{ODV}|}{T_{NIZ}} \quad \equiv \quad \frac{Q_{DOV}}{T_{VIS}} + \frac{Q_{ODV}}{T_{NIZ}} = 0$$

$$T = T_{ref} \cdot \frac{Q}{Q_{ref}}$$

$$Q_t = m \cdot q_t$$

$$Q_i = m \cdot q_i$$

$$Q_s = m \cdot q_s = \lambda S \frac{\Delta T}{\Delta x} t$$

$$U = K \cdot \Delta T \quad K = 41 \mu V/K$$

$$\frac{V_{voda}}{V_{led}} = \frac{\rho_{led}}{\rho_{voda}}$$

$$\Delta S_{KS} = \oint \frac{dQ}{T} = 0$$

$$\Delta S_{rev} = S_2 - S_1 = \int_1^2 \frac{dQ}{T}$$

$$\Delta S_{HIRN} = \frac{m \cdot R}{M} \cdot \ln \frac{V}{V_0}$$

$$\Delta S \geq \int_1^2 \frac{dQ}{T}$$

$$(\Delta S)_V = m c_v \ln \frac{T_2}{T_1}$$

$$(\Delta S)_p = m c_p \ln \frac{T_2}{T_1}$$

$$(\Delta S)_Q = 0$$

$$(\Delta S)_T = \frac{p_1 V_1}{T} \cdot \ln \frac{V_2}{V_1}$$

$$dQ_t = q_t \cdot dm$$

$$dQ_i = q_i \cdot dm$$

$$dW_n = dQ + dA = dQ - p dV$$

$$dQ = dW_n + p dV$$

$$dp_{vrel} = \frac{m \cdot q_i}{(V_{para} - V_{tek})} \cdot \frac{dT}{T} \Rightarrow \frac{dp}{p} \frac{RT}{M} = q_i \cdot \frac{dT}{T}$$

$$dp_{tal} = \frac{m \cdot q_t}{(V_{tek} - V_{trd})} \cdot \frac{dT}{T}$$

$$e_0 = \pm 1{,}6 \cdot 10^{-19} As$$

$$\varepsilon_0 = 8{,}85 \cdot 10^{-12} \frac{As}{Vm}$$

$$1J = 1{,}6 \cdot 10^{-19} eV$$

$$1D = 3{,}336 \cdot 10^{-30} As\,m$$

$$J = VAs \quad V = \frac{J}{As}$$

$$F = \frac{As}{V} \quad \Omega = \frac{V}{A} \quad W = VA$$

$$F_e = \frac{e_1 e_2}{4\pi\varepsilon_0 r^2} = E_1 e_2$$

$$\vec{F}_e = \frac{e_1 e_2}{4\pi\varepsilon_0 r^2} \cdot \frac{\vec{r}}{\|\vec{r}\|} = \vec{E}_1 e_2$$

$$\vec{F}_{sk} = \sum_i e_i \vec{E}_i$$

$$E = \frac{e}{4\pi\varepsilon_0 r^2}$$

$$\vec{E} = \frac{e}{4\pi\varepsilon_0 r^2} \cdot \frac{\vec{r}}{\|\vec{r}\|}$$

$$V = \frac{e}{4\pi\varepsilon_0 r}$$

$$W_{ep} = \frac{e_1 e_2}{4\pi\varepsilon_0 r}$$

$$E_{žica} = \frac{\mu}{2\pi\varepsilon_0 r}$$

$$\mu = \frac{e}{l}$$

$$V_{žica} = -\frac{\mu}{2\pi\varepsilon_0} \ln \frac{r}{r_0} \quad (r_0 = 1m)$$

$$U_{žica} = -\frac{\mu}{2\pi\varepsilon_0} \ln \frac{r_2}{r_1}$$

$$\Phi_e = \vec{D} \circ \vec{S}$$

$$\vec{D} = \varepsilon_0 \vec{E}$$

$$\oint \vec{D} \circ d\vec{S} = e$$

$$A_{zun} = W_{ep}(r) - W_{ep}(r_0) = -e \int_{r_0}^{r} \vec{E} \circ d\vec{r}$$

$$U(r, r_0) = -\int_{r_0}^{r} \vec{E} \circ d\vec{r}$$

$$E_{plošč1} = \frac{e}{2\varepsilon_0 S}$$

$$E_C = \frac{e}{\varepsilon_0 S}$$

$$U_C = Ed$$

$$e_C = CU_C$$

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

$$W_e = \frac{1}{2} C U_C^2$$

$$E_{zdielektrikom} = \frac{1}{\varepsilon} E_{zun}$$

$$C_{zdielektrikom} = \varepsilon C$$

$$|U|_{valjastiC} = \frac{e}{2\pi\varepsilon_0 d} \cdot \ln \frac{r_{zun}}{r_{notr}}$$

$$C_{valjasti} = 2\pi\varepsilon_0 d \cdot \left(\ln \frac{r_{zun}}{r_{notr}} \right)^{-1}$$

$$p_{e(-\rightarrow+)} = a \cdot e$$

$$M = p_e E \cdot \sin\varphi$$

$$W = -p_e E \cdot \cos\varphi$$

$$E_x(r) = \frac{3p_e xy}{4\pi\varepsilon_0 r^5} \qquad E_x(\varphi) = \frac{3p_e \sin 2\varphi}{8\pi\varepsilon_0 r^3}$$

$$E_y(r) = \frac{p_e(3y^2 - r^2)}{4\pi\varepsilon_0 r^5} = -\frac{p_e(x^2 - 2y^2)}{4\pi\varepsilon_0 r^5}$$

$$E_y(\varphi) = \frac{p_e(3\sin^2\varphi - 1)}{4\pi\varepsilon_0 r^3} = -\frac{p_e(3\cos^2\varphi - 2)}{4\pi\varepsilon_0 r^3}$$

$$I = \frac{de}{dt}$$

$$U = R \cdot I$$

$$R = \xi \cdot \frac{l}{S}$$

$$P = \frac{dA}{dt} = U \cdot \frac{de}{dt} = U \cdot I = R \cdot I^2 = \frac{U^2}{R}$$

$$\sum_i I_i = \sum_j I_j$$

$$U_g + \sum_i U_{Ri} = 0$$

$$R_{zap} = \sum_i R_i$$

$$\frac{1}{R_{vzp}} = \sum_i \frac{1}{R_i}$$

$$\frac{1}{C_{zap}} = \sum_i \frac{1}{C_i}$$

$$C_{vzp} = \sum_i C_i$$

$$RC = \tau$$

$$e_{praz} = e_0 \cdot e^{-\frac{t}{RC}}$$

$$U_{praz} = U_0 \cdot e^{-\frac{t}{RC}}$$

$$I_{praz} = I_0 \cdot e^{-\frac{t}{RC}}$$

$$e_{pol} = e_0 \cdot \left(1 - e^{-\frac{t}{RC}} \right)$$

$$U_{pol} = U_0 \cdot \left(1 - e^{-\frac{t}{RC}} \right)$$

$$I_{pol} = I_0 \cdot \left(1 - e^{-\frac{t}{RC}} \right)$$