

$\delta X = X - X_0$	$X_0 \in \langle X - \Delta X, X + \Delta X \rangle$	$\bar{T} = \frac{T_1 + T_2 + T_3 + \dots + T_n}{n}$		
$s_T = \sqrt{\frac{(T_1 - \bar{T})^2 + (T_2 - \bar{T})^2 + \dots + (T_n - \bar{T})^2}{n-1}}$		$s_{\bar{T}} = \frac{s_T}{\sqrt{n}}$	$\Delta T = 3 \cdot s_{\bar{T}}$	
$F = const \cdot A^a \cdot B^b \cdot C^c \dots$	$\Delta F = \pm F \cdot \left[\left a \cdot \frac{\Delta A}{A} \right + \left b \cdot \frac{\Delta B}{B} \right + \left c \cdot \frac{\Delta C}{C} \right + \dots \right]$		$F = A \pm B \Rightarrow \Delta F = \Delta A + \Delta B$	
$\frac{\sin(\alpha)}{\sin(\beta)} = \frac{v_\alpha}{v_\beta} = \frac{\lambda_\alpha}{\lambda_\beta} = \frac{n_\beta}{n_\alpha} = n_{\beta/\alpha}$	$n_\alpha = \frac{c}{v_\alpha}$	$\frac{1}{x} + \frac{1}{y} = \frac{1}{f}$	$z_l = \frac{1}{a_m}$	$z_k = \frac{1}{\alpha_m}$
$A = n \cdot \sin(u)$	$a_m = \frac{\lambda}{2 \cdot n \cdot \sin(u)}$	$z_{mik} = \frac{2 \cdot A}{\lambda}$	$p = p_{ob} \cdot p_{ok} \approx \frac{l \cdot d}{f_{ob} \cdot f_{ok}}$	
$500 \cdot A < p_{uz} < 1000 \cdot A$		$p = \frac{h'}{h}$		
$\frac{\sin(\alpha)}{\sin(\beta)} = \frac{v_\alpha}{v_\beta} = \frac{\lambda_\alpha}{\lambda_\beta} = \frac{n_\beta}{n_\alpha} = n_{\beta/\alpha}$	$n_\alpha = \frac{c}{v_\alpha}$	$\sin(\gamma) = n_{2,1}$	$R = \frac{n^2 - 1}{n^2 + 2} \cdot \frac{M}{\rho}$	$R^{obl.} - R^{do\acute{s}w.}$
$n = \text{tg}(\varphi)$	$I = I_0 \cdot \cos^2(\beta)$		$\alpha = [\alpha]_\lambda \cdot c \cdot l$	
$E = E_{el} + E_{osc} + E_{rot}$	$h \cdot v = E_2 - E_1 = \Delta E_{el} + \Delta E_{osc} + \Delta E_{rot}$	$P = P_0 \cdot e^{-k \cdot d}$	$k = \alpha_\lambda \cdot c$	
$P = P_0 \cdot e^{-\alpha_\lambda \cdot c \cdot d}$	$\tau = \frac{P}{P_0}$	$\tau = e^{-\alpha_\lambda \cdot c \cdot d}$	$A = -\log(\tau)$	
$A = \varepsilon_\lambda \cdot c \cdot d$		$\varepsilon_\lambda = \alpha_\lambda \cdot \log(e)$		
$h \cdot v = E_k + W$	$h \cdot v = E_k + h \cdot v' + W$	$h \cdot v = E_{kp} + m_{op} \cdot c^2 + E_{ke} + m_{oe} \cdot c^2$	$I = I_0 \cdot e^{-\mu \cdot d}$	
$\mu_m = \frac{\mu}{\rho}$	$d_{1/2} = \frac{\ln(2)}{\mu} \approx \frac{0,693}{\mu}$	$a = a_0 \cdot e^{-\mu \cdot d}$	$\ln(a) = \ln(a_0) - \mu \cdot d$	
$R = \frac{U}{I} = \frac{1}{G}$	$\kappa = \frac{1}{\rho}$	$R = \rho \cdot \frac{\ell}{S} = \frac{1}{G}$	$\varepsilon_r = \frac{C}{C_0}$	
$C = \varepsilon_0 \cdot \varepsilon_r \cdot \frac{S}{d}$	$P = \frac{q}{S}$	$\vec{p} = \frac{\sum_i \vec{p}_i}{V}$	$\tau = \frac{4 \cdot \pi \cdot \eta \cdot r^3}{k \cdot T}$	
$K = \frac{R_{10^4}}{R_{10^6}}$	$\Phi = \frac{V_{krwinek}}{V_{krwinek+osocza}}$	$\frac{\frac{\kappa}{\kappa_0} - 1}{\frac{\kappa}{\kappa_0} + 2} = \Phi \cdot \frac{\frac{\kappa_k}{\kappa_0} - 1}{\frac{\kappa_k}{\kappa_0} + 2}$	$\Phi = \frac{2 \cdot (\kappa_0 - \kappa)}{\kappa + 2 \cdot \kappa_0}$	
$\kappa = \frac{C}{R}$	$X_C = \frac{1}{\omega \cdot C}$			
$F = \eta \cdot S \cdot \frac{\Delta v}{\Delta x}$	$\eta_{wt} = \frac{\eta}{\eta_0} - 1$	$[\eta] = \lim_{c \rightarrow 0} \left(\frac{\eta_{wt}}{c} \right)$	$\Delta V = \frac{\pi \cdot r^4 \cdot \Delta t}{8 \cdot l \cdot \eta} \cdot \Delta p$	
$R = 6 \cdot \pi \cdot r \cdot v \cdot \eta$	$\eta = \frac{2 \cdot r^2 \cdot g \cdot (\rho - \rho_c)}{9 \cdot v}$	$\frac{\eta}{\eta_0} = \frac{t}{t_0} \cdot \frac{\rho}{\rho_0}$	$\Phi = \frac{V_c}{V_r}$	
$\frac{\eta}{\eta_0} = 1 + 2,5 \cdot \Phi$	$[\eta] = 2,5 \cdot \frac{N_A}{M} \cdot v_{cz}$	$r = \sqrt[3]{\frac{3 \cdot M}{10 \cdot \pi \cdot N_A} \cdot [\eta]}$	$\frac{\rho}{\rho_0} = 1 + 0,23 \cdot c$	
$Q = \frac{\Delta V}{\Delta t}$	$S_1 \cdot v_1 = S_2 \cdot v_2 = const$	$p_{S1} + \rho \cdot g \cdot h_1 + \frac{1}{2} \cdot \rho \cdot v_1^2 = p_{S2} + \rho \cdot g \cdot h_2 + \frac{1}{2} \cdot \rho \cdot v_2^2 = const.$		
$Q = \frac{\pi \cdot r^4}{8 \cdot l \cdot \eta} \cdot \Delta p$		$Q = \frac{1}{R_N} \cdot \Delta p$	$N_R = \frac{2 \cdot r \cdot v \cdot \rho}{\eta}$	
$v = \sqrt{\frac{K}{\rho}}$	$K = \frac{\Delta p}{\Delta V}$	$v_t = F \cdot \sqrt{\frac{E \cdot d}{2 \cdot R \cdot \rho_c}}$	$v_p = \frac{\Delta V}{S \cdot \Delta t}$	$v_t = \frac{l_{AB}}{\Delta t}$

$\sigma_p = \frac{F}{l}$	$\sigma_p = \sigma_0 - \sigma$	$\sigma_p \cdot S_w = n_{cz} \cdot k_B \cdot T$	$S_w = n_{cz} \cdot s_0$
$V_w = \frac{c \cdot V_k}{\rho}$	$s_{cz} = \frac{S_w}{n_{cz}} = \frac{S_w \cdot M}{c \cdot V_k \cdot N_A}$	$d_{cz} = \sqrt{\frac{4 \cdot s_{cz}}{\pi}}$	$l_{cz} = \frac{c \cdot V_k}{\rho \cdot S_w}$

$W = \sigma \cdot \Delta S$	$\sigma = \frac{F}{l}$	$\Delta p = \frac{2 \cdot \sigma}{R}$	$\frac{\sigma}{\sigma_0} = \frac{n_0 \cdot \rho}{n \cdot \rho_0}$	$\sigma = \frac{r \cdot h \cdot \rho \cdot g}{2 \cdot \cos(\alpha)}$	$\sigma = \frac{\rho \cdot V \cdot g}{2 \cdot \pi \cdot r \cdot n}$
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$\frac{dn}{dt} = -D \cdot S \cdot \frac{dc}{dx}$	$D = \frac{k \cdot T}{6 \cdot \pi \cdot r \cdot \eta}$	$\overline{\Delta x^2} = 2 \cdot D \cdot t$	$P = \frac{D}{dx}$
$\frac{dn}{dt} = P \cdot S \cdot (c_1 - c_2)$	$c_2 = \frac{c_0}{2} \cdot (1 - e^{-C \cdot D \cdot t})$	$C = \frac{2 \cdot A}{V \cdot dx}$	$\ln\left(\frac{c_0}{c_0 - 2 \cdot c_2}\right) = C \cdot D \cdot t$
$\frac{c_0}{2} = c_0 \cdot e^{-\kappa_E \cdot t_{1/2}}$	$c = c_0 \cdot e^{-\kappa_D \cdot t}$	$c = c_0 \cdot e^{-\kappa_E \cdot t}$	$\kappa_E = \frac{\ln(2)}{t_{1/2}} \approx \frac{0,693}{t_{1/2}}$

$Me \rightleftharpoons Me^{z+} + z \cdot e^-$	$\Delta V_e = V_e - V_r = \Delta V_0 + \left(\frac{R \cdot T}{z \cdot F}\right) \cdot \ln(c_j)$	$\Delta V_d = V_2 - V_1 = \left(\frac{u^+ - u^-}{u^+ + u^-}\right) \cdot \left(\frac{R \cdot T}{z \cdot F}\right) \cdot \ln\left(\frac{c_1}{c_2}\right)$
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$u = \frac{v}{E}$	$E = \left(\frac{R \cdot T}{z \cdot F}\right) \cdot \ln\left(\frac{c_1}{c_2}\right)$	$E = \Delta V_{e1} - \Delta V_{e2}$	$E = \Delta V_e - \Delta V_{kal}$	$W = q \cdot U$	$I = \frac{1}{R} \cdot U$	$R = \rho \cdot \frac{l}{S}$
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$J = \frac{I}{S}$	$J \cdot \Delta t = \frac{I \cdot \Delta t}{S} = \frac{\Delta Q}{S}$	$I_p = (CH \cdot R) \cdot \frac{1}{\Delta t} + R$
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Przedrostek	giga	mega	kilo	hekto	deka	decy	centy	mili	mikro	nano	piko
Symbol	G	M	k	h	da	d	c	m	μ	n	p
Mnożnik	10 ⁹	10 ⁶	10 ³	10 ²	10 ¹	10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁶	10 ⁻⁹	10 ⁻¹²