$W_{\lambda,T}=\frac{8\pi}{\lambda^4}\langle E_\lambda\rangle$, $\langle E_\lambda\rangle = k_\mathrm{B}T$, $E\equiv E_n=nE_1$ $(n = 0, 1, 2, ...)$, $\langle E\rangle=\frac{E_1}{\exp\left(\frac{E_1}{k_\mathrm{B}T}\right)-1}$, $E_1=h\nu=h\frac{c}{\lambda}=\hbar\omega$, $E=h\nu$, $m_\mathrm{f}=\frac{E}{c^2}$, $p_\mathrm{f}=m_\mathrm{f}c$, $\boldsymbol{p}_\mathrm{f}=\hbar\boldsymbol{k}$,

$\nu=(E_{n2}-E_{n1})/h$, $L_n=n\frac{h}{2\pi}=n\hbar$, $a=\frac{\upsilon_n^2}{r_n}$, $F(r)=\frac{1}{4\pi\varepsilon_0}\cdot\frac{e^2}{r^2}$, $W_n=\frac{1}{n^2}\cdot\frac{me^4}{8\varepsilon_0^2h^2}$, $U_n=-\frac{1}{n^2}\cdot\frac{me^4}{4\varepsilon_0^2h^2}$, $R=\frac{me^4}{8\varepsilon_0^2h^3c}$, $r_n=n^2\frac{\varepsilon_0h^2}{\pi mZe^2}\approx n^2\frac{0{,}529\ \text{Å}}{Z}$,

$E_n=W_n+U_n=-\frac{Z^2}{n^2}\cdot 13{,}6\ \text{eV}$, $\frac{1}{\lambda}=Z^2R\left(\frac{1}{n_1^2}-\frac{1}{n_2^2}\right)$ $(n_2 > n_1)$, $\lambda=\frac{h}{\sqrt{2mE}}$, $\Delta x\cdot\Delta p_x\geq\frac{\hbar}{2}$, $2d\sin\theta=n\lambda$ $(n = 1, 2, 3, \ldots)$, $|\varPsi|^2=\frac{\mathrm{d}P}{\mathrm{d}V}$,

$\varPsi=\sum_{i=0}^{N}a_i\varPsi_i$, $-\frac{\hbar^2}{2m}\nabla^2\varPsi+U(x,y,z,t)\varPsi=\mathrm{i}\hbar\frac{\partial\varPsi}{\partial t}$, $\varPsi(x,y,z,t)=\psi(x,y,z)\mathrm{e}^{-\mathrm{i}Et/\hbar}$, $\nabla^2\psi+\frac{2m}{\hbar^2}[E-U(x,y,z)]\psi=0$, $\frac{\partial\rho(\boldsymbol{r},t)}{\partial t}=-\nabla\boldsymbol{j}(\boldsymbol{r},t)$,

$\frac{\partial\rho(\boldsymbol{r},t)}{\partial t}=N\frac{\partial}{\partial t}(\varPsi\varPsi^*)=N\left(\varPsi^*\frac{\partial\varPsi}{\partial t}+\varPsi\frac{\partial\varPsi^*}{\partial t}\right)$, $\boldsymbol{j}=N\frac{\mathrm{i}\hbar}{2m}(\varPsi\nabla\varPsi^*-\varPsi^*\nabla\varPsi)$, $\frac{\mathrm{d}^2\psi}{\mathrm{d}x^2}=\frac{2m}{\hbar^2}(U(x)-E)\psi$, $\frac{\mathrm{d}^2\psi}{\mathrm{d}x^2}+k^2\psi=0$, $k=\frac{\sqrt{2mE}}{\hbar}$,

$\psi(x)=A\mathrm{e}^{\mathrm{i}kx}+B\mathrm{e}^{-\mathrm{i}kx}$, $\varPsi(x,t)=\psi(x)\mathrm{e}^{-\mathrm{i}Et/\hbar}$, $j=\frac{\hbar k}{m}|A|^2$, $\frac{\mathrm{d}^2\psi_1}{\mathrm{d}x^2}+k_1^2\psi_1=0$, $\frac{\mathrm{d}^2\psi_2}{\mathrm{d}x^2}-k_2^2\psi_2=0$, $k_1=\frac{\sqrt{2mE}}{\hbar}$, $k_2=\frac{\sqrt{2m(U_0-E)}}{\hbar}$,

$\psi_1=A\exp(\mathrm{i}k_1x)+B\exp(-\mathrm{i}k_1x)$, $\psi_2=C\exp(k_2x)+D\exp(-k_2x)$, $S\equiv\frac{|F|^2}{|A|^2}$, $k_2w>>1$, $S\approx\exp\left[-\frac{2}{\hbar}\sqrt{2m(U_0-E)}\cdot w\right]<<1$,

$S\approx\lim_{N\to\infty}\prod_{n=1}^{N}S_n\approx\exp\left[-\frac{2}{\hbar}\int_{x_1}^{x_2}\sqrt{2m(U(x)-E)}\mathrm{d}x\right]$, $U(x)=\begin{cases}0, & 0\leq x\leq w;\\ \infty, & x<0 \text{ ir } x>w.\end{cases}$, $\psi(x)=A\sin kx+B\cos kx$, $\psi(0)=0$, $\psi(w)=0$, $\psi(x)=A\sin kx$,

$k=\frac{n\pi}{w}$ $(n = 1, 2, \ldots)$, $E=E_n=n^2\frac{\pi^2\hbar^2}{2mw^2}=n^2\frac{h^2}{8mw^2}$, $A=\sqrt{\frac{2}{w}}$, $\frac{\partial^2\psi}{\partial x^2}+\frac{\partial^2\psi}{\partial y^2}+\frac{\partial^2\psi}{\partial z^2}+k^2\psi=0$, $\psi(x,y,z)=X(x)Y(y)Z(z)$,

$-\frac{\hbar^2}{2m}\left(\frac{1}{X}\frac{\partial^2X}{\partial x^2}\right)=const=E_x$, $E_x+E_y+E_z=E$, $k_x=\frac{n_x\pi}{w}$, $E=E_n=\frac{h^2}{8mw^2}\left(n_x^2+n_y^2+n_z^2\right)$ $(n_x, n_y, n_z = 1, 2, 3, \ldots)$, $\nabla^2\psi+\frac{2m}{\hbar^2}\left(E-U(r)\right)\psi=0$,

$\psi(r,\theta,\phi)=X(r)Y(\theta,\phi)$, $\hat{\boldsymbol{L}}^2Y=|\boldsymbol{L}|^2Y$, $|\boldsymbol{L}|=\hbar\sqrt{l(l+1)}$ $(l=0,\ 1,\ 2,\ ...)$, $Y(\theta,\phi)=P(\theta)\varPhi(\phi)$, $L_z=m_l\hbar$ $(m_l=-l,-l+1,...,l-1,l)$,

$Y_{lm_l}(\pi-\theta,\pi+\phi)=(-1)^lY_{lm_l}(\theta,\phi)$, $|\boldsymbol{L}_s|=\hbar\sqrt{s(s+1)}=\frac{\sqrt{3}}{2}\hbar$, $L_{sz}=m_s\hbar$ $(m_s=\pm s=\pm 1/2)$, n, l, m_l, m_s, $\boldsymbol{L}_j=\boldsymbol{L}+\boldsymbol{L}_s$,

$L_\Sigma=\hbar\sqrt{l_\Sigma(l_\Sigma+1)}$ $(l_\Sigma=|l_1-l_2|,|l_1-l_2|+1,...,l_1+l_2)$, $|\boldsymbol{L}_j|=\hbar\sqrt{j(j+1)}$, $L_{jz}=m_j\hbar$ $(m_j=-j,-j+1,...,j-1,j)$, n, l, j, m_j, $\mu=\frac{eS}{T}=\frac{\pi er^2}{T}$,

$$\boldsymbol{\mu} = -\frac{e}{2m}\boldsymbol{L} = -\mu_{\mathrm{B}}\frac{\boldsymbol{L}}{\hbar}, \quad \boldsymbol{\mu}_s = -2\mu_{\mathrm{B}}\frac{\boldsymbol{L}_s}{\hbar}, \quad \boldsymbol{B}_{\mathrm{ef}} = \frac{\mu_0 Ze}{4\pi r^3}\boldsymbol{v}_{\mathrm{br}}\times\boldsymbol{r} = -\frac{\mu_0 Ze}{4\pi r^3}\boldsymbol{v}\times\boldsymbol{r} = \frac{\mu_0 Ze}{4\pi r^3}\boldsymbol{r}\times\boldsymbol{v} = \frac{\mu_0 Ze}{4\pi m r^3}\boldsymbol{L},$$

$$\Delta U = -\boldsymbol{\mu}_s\cdot\boldsymbol{B}_{\mathrm{ef}} \equiv U_{\mathrm{so}}(r)\boldsymbol{L}_s\cdot\boldsymbol{L} \equiv U_{\mathrm{so}}(r)\,|\boldsymbol{L}_s|\,|\boldsymbol{L}|\cos(\boldsymbol{L}_s,\boldsymbol{L}), \quad \Delta E_j = \langle\Delta U\rangle_j = \langle U_{\mathrm{so}}\rangle\langle\boldsymbol{L}_s\cdot\boldsymbol{L}\rangle_j, \quad |\boldsymbol{L}_j|^2 = |\boldsymbol{L}|^2 + |\boldsymbol{L}_s|^2 + 2\boldsymbol{L}\cdot\boldsymbol{L}_s,$$

$$\boldsymbol{L}\cdot\boldsymbol{L}_s = \begin{cases}\frac{1}{2}l\hbar^2, & \text{kai } j = l+\frac{1}{2};\\ -\frac{1}{2}(l+1)\hbar^2, & \text{kai } j = l-\frac{1}{2}.\end{cases} \quad \psi(x,y,z,L_{sz}) = \psi_1(x,y,z)\chi^+ + \psi_2(x,y,z)\chi^- = \psi_1(x,y,z)\begin{pmatrix}1\\0\end{pmatrix} + \psi_2(x,y,z)\begin{pmatrix}0\\1\end{pmatrix}, \quad \psi = \psi(\boldsymbol{r}_1 s_1, \boldsymbol{r}_2 s_2, \ldots, \boldsymbol{r}_N s_N),$$

$$|\psi(\boldsymbol{r}_1 s_1, \boldsymbol{r}_2 s_2, \ldots, \boldsymbol{r}_i s_i, \ldots, \boldsymbol{r}_j s_j, \ldots, \boldsymbol{r}_N s_N)|^2 = |\psi(\boldsymbol{r}_1 s_1, \boldsymbol{r}_2 s_2, \ldots, \boldsymbol{r}_j s_j, \ldots, \boldsymbol{r}_i s_i, \ldots, \boldsymbol{r}_N s_N)|^2, \quad (\hat{H}_1 + \hat{H}_2 + \ldots\hat{H}_N)\psi(\boldsymbol{r}_1, s_1, \boldsymbol{r}_2, s_2, \ldots, \boldsymbol{r}_N, s_N) = E\psi(\boldsymbol{r}_1, s_1, \boldsymbol{r}_2, s_2, \ldots, \boldsymbol{r}_N, s_N),$$

$$\hat{H}_i = -\frac{\hbar^2}{2m}\nabla_i^2 + U(\boldsymbol{r}_i), \quad \psi^{(-)}(\boldsymbol{r}_1, s_1, \boldsymbol{r}_2, s_2, \ldots, \boldsymbol{r}_N, s_N) = \frac{1}{\sqrt{N!}}\begin{vmatrix}\psi_{k_1}(\boldsymbol{r}_1, s_1) & \psi_{k_2}(\boldsymbol{r}_1, s_1) & \ldots & \psi_{k_N}(\boldsymbol{r}_1, s_1)\\ \psi_{k_1}(\boldsymbol{r}_2, s_2) & \psi_{k_2}(\boldsymbol{r}_2, s_2) & \ldots & \psi_{k_N}(\boldsymbol{r}_2, s_2)\\ \ldots & \ldots & \ldots & \ldots\\ \psi_{k_1}(\boldsymbol{r}_N, s_N) & \psi_{k_2}(\boldsymbol{r}_N, s_N) & \ldots & \psi_{k_N}(\boldsymbol{r}_N, s_N)\end{vmatrix}, \quad \boldsymbol{L}_J = \sum_k \boldsymbol{L}_{jk}, \quad \boldsymbol{L}_L = \sum_k \boldsymbol{L}_k, \quad \boldsymbol{L}_S = \sum_k \boldsymbol{L}_{sk},$$

$$\boldsymbol{L}_J = \boldsymbol{L}_L + \boldsymbol{L}_S, \quad |\boldsymbol{L}_J| = \hbar\sqrt{J(J+1)}, \quad L_{Jz} = m_J\hbar \;\; (m_J = -J, -J+1, \ldots, J), \quad J = |L-S|, |L-S|+1, \ldots, L+S-1, L+S, \quad \hbar\omega_{nm} = E_n - E_m, \quad \mathrm{d}P_{nm}^{(\mathrm{s})} = A_{nm}\mathrm{d}t,$$

$$\mathrm{d}P_{mn}^{(\mathrm{p})} = B_{mn}W_\omega(\omega_{nm})\mathrm{d}t, \quad \mathrm{d}P_{nm}^{(\mathrm{p})} = B_{nm}W_\omega(\omega_{nm})\mathrm{d}t, \quad \Gamma\tau \geq \frac{\hbar}{2}, \quad P(E)\mathrm{d}E = \frac{2\Gamma_n}{\pi}\cdot\frac{1}{4(E-E_n)^2 + \Gamma_n^2}\mathrm{d}E, \quad \Gamma_n = \hbar/\tau_n, \quad I(t) = I_0\exp(-t/\tau), \quad \Delta j = 0, \pm 1, \quad \Delta l = \pm 1;$$

$$\Delta J = 0, \pm 1, \quad \Delta S = 0, \quad \Delta L = 0, \pm 1, \quad \Delta m_J = 0, \pm 1, \quad \Pi = -\Pi', \quad h\nu_{\max} = eU, \quad \frac{1}{\lambda} = (Z-\sigma)^2 R\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right), \quad R = R_0 A^{1/3},$$

$$E_{\mathrm{R}} = \Delta mc^2 = [Zm_{\mathrm{p}} + (A-Z)m_{\mathrm{n}} - M]c^2, \quad \delta E_{\mathrm{R}} = \frac{E_{\mathrm{R}}}{A}, \quad E_{\mathrm{R}} = \alpha A - \beta A^{2/3} - \gamma Z(Z-1)A^{-1/3} - \eta(N-Z)^2 A^{-1} + C, \quad 2, 8, 20, 28, 50, 82, 126;$$

$$U(r) \approx -\frac{U_0}{1+\exp\left(\dfrac{r-R}{a}\right)} + U_{\mathrm{Kul}}(r), \quad E_{\mathrm{so}} = U_{\mathrm{so}}\boldsymbol{L}_{\mathrm{s}}\cdot\boldsymbol{L}, \quad \Delta E_{\mathrm{so}} = \frac{1}{2}|U_{\mathrm{so}}|\hbar^2(2l+1), \quad L_J = \sqrt{J(J+1)}\hbar \quad (J = 0,\ 1,\ 2,\ \ldots \text{ arba } J = 1/2,\ 3/2,\ 5/2,\ \ldots),$$

$$L_{Jz} = m_J\hbar \quad (m_J = -J, -J+1, \ldots J-1, J), \quad |j_1 - j_2| \leq J \leq |j_1 + j_2|, \quad \frac{\mathrm{d}N}{\mathrm{d}t} = -\lambda N, \quad N(t) = N_0 \mathrm{e}^{-\lambda t} = N_0\cdot 2^{-t/T_{1/2}}, \quad \tau = \frac{1}{\lambda}, \quad \Phi = \lambda N, \quad {}^A_Z\mathrm{X} \to {}^{A-4}_{Z-2}\mathrm{Y} + {}^4_2\mathrm{He},$$

$$\lg T_{1/2} = C + \frac{D}{\sqrt{E}}, \quad U(x) \approx \begin{cases}Ze^2/(2\pi\varepsilon_0 x), & \text{kai } x > d,\\ U_0 < 0, & \text{kai } x \leq d.\end{cases} \quad U_{\max} \approx U(d), \quad x_1 \approx d \approx 10^{-14}\ \mathrm{m}, \quad x_2 = \frac{Ze^2}{2\pi\varepsilon_0 E}, \quad \lambda \approx \frac{\upsilon}{d}S, \quad E = M\upsilon^2/2,$$

$$-\int_{x_1}^{x_2}\sqrt{2m(U(x)-E)}\mathrm{d}x \approx -\int_{x_1}^{x_2}\sqrt{2mU(x)}\mathrm{d}x = -\int_{x_1}^{x_2}\sqrt{2m\frac{Ze^2}{2\pi\varepsilon_0 x}}\mathrm{d}x = const(\sqrt{x_1} - \sqrt{x_2}) \sim -\frac{1}{\sqrt{E}}, \quad E = h\nu = E_a - E_b, \quad E_{\mathrm{e}} = E - \varepsilon_{\mathrm{r}}, \quad \lambda = \frac{2\pi}{\hbar}|H_{21}|^2\rho(E_0),$$

$H_{21} \equiv \int \psi_2^* H \psi_1 \mathrm{d}V$, $\rho(E_0) \equiv \left.\frac{\mathrm{d}n}{\mathrm{d}E}\right|_{E=E_0}$, $\mathrm{d}^2 n = \mathrm{d}n_e \mathrm{d}n_\nu = V^2 \frac{(4\pi)^2 p^2 \mathrm{d}p q^2 \mathrm{d}q}{h^6}$, $E_0 = E_\mathrm{e} + E_\nu$, $E_\nu = \sqrt{m_\nu^2 c^4 + q^2 c^2} \approx qc$, $q = (E_0 - E_\mathrm{e})/c$, $\mathrm{d}q = \mathrm{d}E_0 / c$,

$\frac{\mathrm{d}^2 n}{\mathrm{d}E_0} \sim p^2 (E_0 - E_\mathrm{e})^2 \mathrm{d}p \sim \mathrm{d}\lambda$, $\frac{\mathrm{d}\lambda}{\mathrm{d}p} \sim p^2 (E_0 - E_\mathrm{e})^2$, $\mathrm{a} + \mathrm{X} \to \mathrm{Y} + \mathrm{b}$, $Q = (m_\mathrm{a} + m_\mathrm{X} - m_\mathrm{b} - m_\mathrm{Y})c^2$, $\mathrm{d}P = \mathrm{d}S'/S = \sigma n \mathrm{d}x$, $\sigma = \sum_i \sigma_i$, $\sigma = \sum_i p_i \sigma_i$,

$l = \frac{1}{\sigma n}$, $\Sigma = \frac{\mathrm{d}P}{\mathrm{d}x} = \sigma n = \frac{1}{l}$, $\frac{\mathrm{d}P}{\mathrm{d}t} = \sigma n \upsilon$, $R = \Sigma V j$, $R = \sigma N j = \sigma (N/S)(Sj) = \sigma n_S \Phi$, $\sigma_\Omega = \frac{\mathrm{d}\sigma}{\mathrm{d}\Omega}$, $\sigma = \int \sigma_\Omega \mathrm{d}\Omega = 2\pi \int_0^\pi \sigma_\Omega \sin\theta \mathrm{d}\theta$,

$\sigma_\Omega = \frac{d^2}{16 \sin^4(\theta/2)} = \left(\frac{zZe^2}{4\pi\varepsilon_0}\right)^2 \left(\frac{1}{4E}\right)^2 \frac{1}{\sin^4(\theta/2)}$, $d = \frac{zZe^2}{4\pi\varepsilon_0 E}$, $\mathrm{a} + \mathrm{X} \to \mathrm{X}^* + \mathrm{a}$, $\mathrm{a} + \mathrm{X} \to \mathrm{Y}^* \to \mathrm{Z} + \mathrm{b}$, $\sigma(E) \sim \frac{1}{(E - E_\mathrm{r})^2 + (\Gamma/2)^2}$, $R = R_1 + R_2$,

$\sigma = \pi R^2$, $\sigma = \pi b^2$, $B = \frac{Z_1 Z_2 e^2}{4\pi\varepsilon_0 R}$, $E = E' + B$, $L = pb = p'R$, $\sigma = \pi R^2 \frac{E'}{E} = \pi R^2 \left(1 - \frac{B}{E}\right)$, $\sigma = \pi b^2 = \pi \left(\frac{L}{p}\right)^2 = \frac{\pi l(l+1)\hbar^2}{(\hbar k)^2} \approx \frac{\pi l^2}{k^2}$,

$r_l = \frac{L_l}{\hbar k} \approx \frac{l}{k} = l\lambda\!\!\!^{-}$, $r_{l+1} = (l+1)\lambda\!\!\!^{-}$, $\sigma_l = \pi r_{l+1}^2 - \pi r_l^2 = (2l+1)\pi\lambda\!\!\!^{-2}$, $l < \frac{R}{\lambda\!\!\!^{-}}$, $\Delta E_\mathrm{max} = E \frac{4m_\mathrm{e}}{M} = 2m_\mathrm{e}\upsilon^2$, $F = \frac{1}{4\pi\varepsilon_0} \cdot \frac{ze^2}{x^2 + b^2}$, $\boldsymbol{p} = \int_{-\infty}^{\infty} \boldsymbol{F} \mathrm{d}t$,

$p = \int_{-\infty}^{\infty} F_\perp \mathrm{d}t = \frac{1}{\upsilon} \int_{-\infty}^{\infty} F_\perp \mathrm{d}x = \frac{ze^2}{4\pi\varepsilon_0 \upsilon} \int_{-\infty}^{\infty} \frac{b}{(x^2 + b^2)^{3/2}} \mathrm{d}x = \frac{1}{2\pi\varepsilon_0} \frac{ze^2}{b\upsilon}$, $\Delta E = \frac{p^2}{2m_\mathrm{e}}$, $-\frac{\mathrm{d}E}{\mathrm{d}x} = \int_{b_\mathrm{min}}^{b_\mathrm{max}} \Delta E \cdot n 2\pi b \mathrm{d}b = \frac{1}{4\pi\varepsilon_0^2} \frac{z^2 e^4 n}{m_\mathrm{e}\upsilon^2} \ln \frac{b_\mathrm{max}}{b_\mathrm{min}}$, $\ln \frac{b_\mathrm{max}}{b_\mathrm{min}} = \ln \frac{\sqrt{\Delta E_\mathrm{max}}}{\sqrt{\Delta E_\mathrm{min}}}$,

$\Delta E_\mathrm{min} = \overline{I}$, $-\frac{\mathrm{d}E}{\mathrm{d}x} = \frac{1}{4\pi\varepsilon_0^2} \frac{z^2 e^4 n}{m_\mathrm{e}\upsilon^2} \left[\ln \frac{2m_\mathrm{e}\upsilon^2}{I(1-\beta^2)} - \beta^2\right]$, $E_\mathrm{kr} \approx \frac{1600 m_\mathrm{e} c^2}{Z} \approx \frac{800}{Z}\mathrm{MeV}$, $T = E_\gamma - E_\mathrm{r}$, $\sigma_{fe} \sim \frac{Z^5}{E_\gamma^{3,5}}$, $T = E_\gamma - E'_\gamma = E - mc^2$, $\boldsymbol{p} = \boldsymbol{p}_\gamma - \boldsymbol{p}'_\gamma$,

$p_\gamma = E_\gamma / c$, $E'_\gamma = \frac{E_\gamma}{1 + (E_\gamma / mc^2)(1 - \cos\theta)}$, $T_- + T_+ = E_\gamma - 2mc^2$, $\mathrm{d}I = -N\sigma I \mathrm{d}x$, $\mu = N\sigma$, $Q = E_\mathrm{R1} + E_\mathrm{R2} - E_\mathrm{R}$,

$Q = A_1 \delta E_\mathrm{R1} + A_2 \delta E_\mathrm{R2} - A\delta E_\mathrm{R} = A_1 \delta E_\mathrm{R1} + (A - A_1)\delta E_\mathrm{R2} - A\delta E_\mathrm{R} = A_1(\delta E_\mathrm{R1} - \delta E_\mathrm{R2}) + A(\delta E_\mathrm{R2} - \delta E_\mathrm{R})$, $^{235}\mathrm{U} + \mathrm{n} \to {}^{236}\mathrm{U}^* \to {}^{93}\mathrm{Rb} + {}^{141}\mathrm{Cs} + 2\mathrm{n}$,

$k = N_1/N$, $k_\infty = \eta\varepsilon p f$, $\eta = \nu \frac{\sigma_\mathrm{d}}{\sigma_\mathrm{d} + \sigma_\mathrm{p}}$, $f = \frac{\Sigma_\mathrm{a}(\mathrm{K})}{\Sigma_\mathrm{a}(\mathrm{K}) + \Sigma_\mathrm{a}(\mathrm{L}) + \Sigma_\mathrm{a}(\mathrm{S})} \equiv \frac{N_\mathrm{K}\sigma_\mathrm{a}(\mathrm{K})}{N_\mathrm{K}\sigma_\mathrm{a}(\mathrm{K}) + N_\mathrm{L}\sigma_\mathrm{a}(\mathrm{L}) + N_\mathrm{S}\sigma_\mathrm{a}(\mathrm{S})}$, $Q = E_\mathrm{R} - E_\mathrm{R1} - E_\mathrm{R2}$,

$Q = A\delta E_\mathrm{R} - A_1 \delta E_\mathrm{R1} - A_2 \delta E_\mathrm{R2} = A\delta E_\mathrm{R} - A_1 \delta E_\mathrm{R1} - (A - A_1)\delta E_\mathrm{R2} = A_1(\delta E_\mathrm{R2} - \delta E_\mathrm{R1}) + A(\delta E_\mathrm{R} - \delta E_\mathrm{R2})$, $\frac{m_\mathrm{x}\upsilon_\mathrm{x}^2}{2} + \frac{m_\mathrm{Y}\upsilon_\mathrm{Y}^2}{2} \approx Q$, $m_\mathrm{x}\upsilon_\mathrm{x} = m_\mathrm{Y}\upsilon_\mathrm{Y}$,

$\frac{1}{2} m_\mathrm{x}\upsilon_\mathrm{x}^2 = \frac{Q}{1 + m_\mathrm{x}/m_\mathrm{Y}}$, $\frac{1}{2} m_\mathrm{Y}\upsilon_\mathrm{Y}^2 = \frac{Q}{1 + m_\mathrm{Y}/m_\mathrm{x}}$, $\sigma \approx \pi\lambda\!\!\!^{-2} S = \frac{\pi}{k^2} S = \frac{\pi\hbar^2}{p^2} S = \frac{h^2}{4\pi m^2 \upsilon^2} S$, $S = \mathrm{e}^{-2G}$, $G \sim \frac{1}{\upsilon}$, $\Phi = n_1 n_2 \langle\sigma\upsilon\rangle$, $\langle\sigma\upsilon\rangle = \int_0^\infty p(\upsilon)\sigma(\upsilon)\upsilon \mathrm{d}\upsilon$,

$p(\upsilon) \sim \upsilon^2 \exp\left(-\frac{m\upsilon^2}{2kT}\right)$, $W = \Phi VQ$, $\langle\sigma\upsilon\rangle = \frac{W}{n_1 n_2 VQ}$, $\langle\sigma\upsilon\rangle \sim 10^{-22}$ m^3/s, $E_\mathrm{r} = \Phi Q\tau = n_1 n_2 \langle\sigma\upsilon\rangle Q\tau = \frac{n^2}{4}\langle\sigma\upsilon\rangle Q\tau$, $E_\mathrm{p} = 3nkT$, $E_\mathrm{r} > E_\mathrm{p}$,
$|U| = \frac{C}{r}\mathrm{e}^{-r/R}$ $(C = (2{,}5\cdot 10^{-27} - 1{,}87\cdot 10^{-64})$ J·m, $R = (2\cdot 10^{-18} - \infty)$ m), „3q“, „$3\overline{\mathrm{q}}$“, „$\mathrm{q}\overline{\mathrm{q}}$“, $L = n_\mathrm{l} - n_{\overline{\mathrm{l}}} = L_\mathrm{e} + L_\mu + L_\tau$, $B = (N_\mathrm{q} - N_{\overline{\mathrm{q}}})/3$,
$q = I_z + \frac{1}{2}(B + S + C + B' + T)$, $I_z = -I, -I+1, ..., I-1, I$, $E = Mc^2$, $\Delta x \cdot \Delta p_x \geq \frac{\hbar}{2}$, $E \approx cp$, $\mathrm{a} + \mathrm{b} \rightarrow \mathrm{a} + \mathrm{b}$, $\mathrm{a} + \mathrm{b} \rightarrow \mathrm{c}_1 + \mathrm{c}_2 + ... + \mathrm{c}_n$,
$\mathrm{a} \rightarrow \mathrm{c}_1 + \mathrm{c}_2 + ... + \mathrm{c}_n$.