

$$\int\limits_0^t i(t)dt=Q,\; U(t)=\frac{1}{C}\int\limits_0^ti(t')\exp\left(\frac{t'-t}{RC}\right)dt',\; H\equiv U_{\max}=\frac{Q}{C},\; N(H_1 < H < H_2)=\int\limits_{H_1}^{H_2}\frac{\mathrm{d}N}{\mathrm{d}H}\mathrm{d}H,\; G(H)=\frac{N_0}{\sigma\sqrt{2\pi}}\exp\left(-\frac{(H-H_0)^2}{2\sigma^2}\right),\; R=\frac{\Delta H}{H_0}=\frac{\Delta E}{E_0},\; Q=N_{\mathrm{c}}e,\; H=KN_{\mathrm{c}},\; \sigma_H=K\sqrt{\bar{N}_{\mathrm{c}}},$$

$$\Delta H = 2,35\sigma,\; F\equiv \frac{D_{N_c}}{\bar{N}_c},\; E_{\mathrm{f}}=h\nu-\varepsilon_{\mathrm{r}},\; E_{\mathrm{C\; max}}=\frac{h\nu}{1+\frac{m_0c^2}{2h\nu}},\; h\nu'_{\min}=h\nu-E_{\mathrm{C\; max}},\; E_{\mathrm{C}}(\theta)=h\nu\frac{\frac{h\nu}{m_0c^2}(1-\cos\theta)}{1+\frac{h\nu}{m_0c^2}(1-\cos\theta)},\; h\nu=\frac{E_{\mathrm{C}}}{2}\Bigg[1+\sqrt{1+\frac{4m_0c^2}{E_{\mathrm{C}}(1-\cos\theta)}}\Bigg],\; i=\frac{Q\varkappa\nu}{U_0},\; i_0^\pm=N\frac{e\nu^\pm}{d},$$

$$U_{\max}\approx U_{\max}^-\approx\frac{Ne}{C}\frac{\nu^-}{d}t^-=\frac{Ne}{C}\frac{x_0}{d},\;\;\mathcal{E}(r)=\frac{U_0}{r\ln\frac{r_{\mathrm{k}}}{r_{\mathrm{a}}}},\;\;\frac{\mathrm{d}N}{N(r)}=-\Sigma_{\mathrm{ion}}(r)\mathrm{d}r,\;\;\Sigma_{\mathrm{ion}}=\frac{p\sigma_{\mathrm{sm}}}{kT}\exp\left(-\frac{E_{\mathrm{ion}}\sigma}{kTe}\cdot\frac{p}{\mathcal{E}}\right),\;\;K=\frac{N}{N_0}=\exp\left[\int_{r_{\mathrm{a}}}^{r_0}\Sigma_{\mathrm{ion}}(r)\mathrm{d}r\right]\approx\exp\left[\int_{r_{\mathrm{a}}}^{r'}\Sigma_{\mathrm{ion}}(r)\mathrm{d}r\right],\;\;\sigma\sim\frac{1}{\nu},$$

$${}^{10}_5\mathrm{B}+{}^1_0\mathrm{n}\rightarrow\begin{cases} {}^7_3\mathrm{Li}+{}^4_2\alpha & +2,792\;\mathrm{MeV}\\ {}^7_3\mathrm{Li}^*+{}^4_2\alpha & +2,310\;\mathrm{MeV}\end{cases}\;\;\mathrm{d}n=np(\nu)\mathrm{d}\nu,\;\;\mathrm{d}j=\nu\mathrm{d}n,\;\;R=\sigma N j,\;\;R\sim Nn\;.\;\;m_{\mathrm{Li}}\nu_{\mathrm{Li}}=m_\alpha\nu_\alpha,\;\;\sqrt{2m_{\mathrm{Li}}E_{\mathrm{Li}}}=\sqrt{2m_\alpha E_\alpha},\;\;E_{\mathrm{Li}}+E_\alpha=Q,\;\;E_{\mathrm{Li}}=0,84\;\mathrm{MeV},\;\;E_\alpha=1,47\;\mathrm{MeV};$$

$$E_{\mathrm{at}}=E_{\mathrm{n}}\frac{2A}{(1+A)^2}(1-\cos\Theta)=E_{\mathrm{n}}\frac{4A}{(1+A)^2}\cos^2\theta,\;\;P(\Theta)\mathrm{d}\Theta=P(E_{\mathrm{at}})\mathrm{d}E_{\mathrm{at}}=\frac{\sigma(\Theta)\mathrm{d}\Omega}{\sigma_{\mathrm{s}}}=2\pi\sin\Theta\mathrm{d}\Theta\frac{\sigma(\Theta)}{\sigma_{\mathrm{s}}},\;\;P(E_{\mathrm{at}})\sim\sigma(\Theta),\;\;\sigma(\Theta)=\frac{\sigma_{\mathrm{s}}}{4\pi}=const,\;\;H=kE^{3/2},\;\;\frac{\mathrm{d}N}{\mathrm{d}H}\equiv\frac{\mathrm{d}N/\mathrm{d}E}{\mathrm{d}H/\mathrm{d}E},$$

$$V_{\mathrm{mc}}=\frac{m}{m+M}\nu_0,\;\;\nu_0=\nu^*+V_{\mathrm{mc}},\;\;\nu^*=\frac{M}{m+M}\nu_0,\;\;\mathbf{v}_1=\mathbf{v}_1^*+\mathbf{V}_{\mathrm{mc}},\;\;E_1=E_0\frac{M^2+m^2+2Mm\cos\theta}{(M+m)^2}\approx E_0\frac{A^2+1+2A\cos\theta}{(A+1)^2},\;\;E_1(\min)=E_0\Bigg(\frac{M-m}{M+m}\Bigg)^2\approx E_0\Bigg(\frac{A-1}{A+1}\Bigg)^2=\alpha E_0,$$

$$P(E_1)=-\frac{p(\theta)}{\mathrm{d}E_1/\mathrm{d}\theta},\;\;p(\theta)=\frac{1}{2}\sin\theta,\;\;\frac{\mathrm{d}E_1}{\mathrm{d}\theta}=-\frac{2AE_0\sin\theta}{(A+1)^2},\;\;E'_n\equiv\exp(\overline{\ln E_n}),\;\;\xi=\overline{\ln(E_0/E_1)}=\int\limits_{\alpha E_0}^{E_0}\ln(E_0/E_1)P(E_1)\mathrm{d}E_1=\ln E_0-\overline{\ln E_1},$$

$$\xi=\frac{1}{1-\alpha}\int\limits_1^\alpha\ln x\,\mathrm{d}x=1+\frac{\alpha}{1-\alpha}\ln\alpha=1+\frac{(A-1)^2}{2A}\ln\Bigg(\frac{A-1}{A+1}\Bigg),\;\;\overline{\ln E_n}=\ln E_0-n\xi,\;\;\Delta E=E_{\mathrm{R1}}+E_{\mathrm{R2}}-E_{\mathrm{R}},\;\;U(R)=\frac{1}{4\pi\varepsilon_0}\cdot\frac{Z_1Z_2e^2}{R},\;\;E_{\mathrm{R}}=\alpha A-\beta A^{2/3}-\gamma Z(Z-1)A^{-1/3}-\eta(N-Z)^2A^{-1}+C,$$

$${}^{235}\mathrm{U}+\mathrm{n}\rightarrow{}^{93}\mathrm{Rb}+{}^{141}\mathrm{Cs}+2\mathrm{n},\;\;k_\infty=\eta\varepsilon pf,\;\;\eta=\nu\frac{\sigma_{\mathrm{d}}}{\sigma_{\mathrm{d}}+\sigma_{\mathrm{p}}},\;p=\exp\left[-\frac{2,73}{\langle\xi\rangle}\bigg(\frac{N_{238}}{N_{\mathrm{L}}\Sigma_{\mathrm{s}}}\bigg)^{0,514}\right],\;\;f=\frac{\Sigma_{\mathrm{a}}(\mathrm{K})}{\Sigma_{\mathrm{a}}(\mathrm{K})+\Sigma_{\mathrm{a}}(\mathrm{L})+\Sigma_{\mathrm{a}}(\mathrm{S})},\;\;\frac{\mathrm{d}N}{\mathrm{d}t}=\frac{(k-1)N}{\tau},\;\;1< k<\frac{1}{g},\;\;Q=E_{\mathrm{R}}-E_{\mathrm{R1}}-E_{\mathrm{R2}},$$

$$\mathrm{d}+\mathrm{t}\rightarrow{}^4\mathrm{He}+\mathrm{n},\;\;\frac{m_{\mathrm{x}}\nu_{\mathrm{x}}^2}{2}+\frac{m_{\mathrm{Y}}\nu_{\mathrm{Y}}^2}{2}\approx Q,\;\;m_{\mathrm{x}}\nu_{\mathrm{x}}=m_{\mathrm{Y}}\nu_{\mathrm{Y}},\;\;\sigma=\pi(R+\lambda)^2,\;\;\sigma\sim\frac{1}{\nu^2}\mathrm{e}^{-2G},\;\;G\sim\frac{1}{\nu},\;\;\Phi=n_1n_2\langle\sigma v\rangle,\;\;\langle\sigma v\rangle=\int\limits_0^\infty p(v)\sigma(v)v\mathrm{d}v,\;\;p(v)\sim\nu^2\exp\left(-\frac{mv^2}{2kT}\right),\;\;W=\varPhi VQ,$$

$$E_{\mathrm{r}}=\varPhi Q\tau=n_1n_2\langle\sigma v\rangle Q\tau,\;\;E_{\mathrm{p}}=3nkT,\;\;N_1(t)=N_{01}\mathrm{e}^{-\lambda t},\;\;N_{01}+N_{02}=N_1+N_2,\;\;\frac{N_{01}-N_1}{N'_2}+\frac{N_{02}}{N'_2}=\frac{N_2}{N'_2},\;\;\frac{N_2}{N'_2}=\frac{N_1}{N'_2}(e^{\lambda t}-1)+\frac{N_{02}}{N'_2},\;\;\varPhi(t_{\mathrm{a}})=\lambda N(t_{\mathrm{a}})=\sigma N_0j(1-e^{-\lambda t_{\mathrm{a}}}),$$

$$N_{\mathrm{c}}=\frac{\sigma N_0j}{\lambda}(1-e^{-\lambda t_{\mathrm{a}}})e^{-\lambda t_{\mathrm{tr}}}(1-e^{-\lambda t_{\mathrm{m}}})f\varepsilon,\;\;E_2(180^\circ)=E_1\Bigg(\frac{M-m}{M+m}\Bigg)^2,\;\;\sigma_\varOmega=1,296\Bigg(\frac{zZ}{E_1}\Bigg)^2\Bigg[\frac{1}{\sin^4(\theta/2)}-\Bigg(\frac{m}{M}\Bigg)^2+...\Bigg],\;\;x_{\mathrm{R}}(E_0)=\int\limits_{E_{\mathrm{R}}}^{E_0}\frac{\mathrm{d}E}{|\mathrm{d}E/\mathrm{d}x|}=\cos\varphi\int\limits_{E_{\mathrm{R}}}^{E_0}\frac{\mathrm{d}E}{|\mathrm{d}E/\mathrm{d}x'|},\;\;R_{\mathrm{X}}=I\sigma_{\mathrm{X}}nd,$$

$$p(r,\phi)=\int\limits_{\mathrm{A}}^{\mathrm{B}}f(x,y)\mathrm{d}l,\;\;\ln\Bigg(\frac{I_{\mathrm{A}}}{I_{\mathrm{B}}}\Bigg)=\int\limits_{\mathrm{A}}^{\mathrm{B}}\mu\mathrm{d}l$$