

Ak je baniera široka $\Rightarrow R \gg R_0$

$$\arccos\left(\frac{R_0}{R}\right)^{1/2} \approx \frac{1}{2}\pi - \left(\frac{R_0}{R}\right)^{1/2}$$

$$\left(1 - \frac{R_0}{R}\right)^{1/2} \approx 1$$

$$\Rightarrow \ln P = -2 \left(\frac{2mT}{\hbar^2}\right)^{1/2} R \left[\frac{1}{2}\pi - \left(\frac{R_0}{R}\right)^{1/2}\right]$$

žaimons R za $\frac{2Ze^2}{4\pi\epsilon_0 T}$

Dostávame

$$\ln P = \frac{4e}{\hbar} \left(\frac{m}{4\epsilon_0}\right)^{1/2} z^{1/2} R_0^{1/2} - \frac{e^2}{\hbar\epsilon_0} \left(\frac{1}{2}m\right)^{1/2} zT^{-1/2}$$

Dosadíme za konštanty

$$\ln P = 2.97 z^{1/2} R_0^{1/2} - 3.95 zT^{-1/2}$$

↑
kľúčová energia
atómové číslo jača
↓
pdomer jača vo fun

$$I = vP = \frac{v}{2R_0} P$$

$$\Rightarrow \ln I = \ln\left(\frac{v}{2R_0}\right) + 2.97 z^{1/2} R_0^{1/2} - 3.95 zT^{-1/2}$$

$$\ln A = \frac{\log A}{\log e} = \frac{\log A}{0.4343}$$

$$\log I = \log \frac{v}{2R_0} + 1.29 z^{1/2} R_0^{1/2} - 1.72 zT^{-1/2}$$