Graph L(E)

Igor Roshin

26/05/19

- m = 9.1 * 10^{-31}
- a = 1-10
- U = 3-10
- $\hbar = 6.6 * 10^{-34}$
- E-U>0, E>0 $\begin{cases} æ_1 = \frac{2mE}{\hbar^2} \\ æ_2 = \frac{2m(E-U)}{\hbar^2} \\ 2L = 2\cos\frac{æ_1^2 * a}{2}\cos\frac{æ_2^2 * a}{2} - (\frac{æ_1}{æ_2} + \frac{æ_2}{æ_1})\sin æ_1\frac{a}{2}\sin æ_2\frac{a}{2} \end{cases}$
- E-U<0, E>0 $\begin{cases} æ_1 = \frac{2mE}{\hbar^2} \\ æ_2 = \frac{2m(U-E)}{\hbar^2} \\ 2L = 2\cos\frac{æ_1^2 * a}{2}\cosh\frac{æ_2^2 * a}{2} - (\frac{æ_1}{æ_2} + \frac{æ_2}{æ_1})\sin æ_1\frac{a}{2}\sinh æ_2\frac{a}{2} \end{cases}$
- E-U<0, E<0 $\begin{cases} æ_1 = -\frac{2mE}{\hbar^2} \\ æ_2 = \frac{2m(U-E)}{\hbar^2} \\ 2L = 2\cosh\frac{æ_1^2 * a}{2}\cosh\frac{æ_2^2 * a}{2} - (\frac{æ_1}{æ_2} + \frac{æ_2}{æ_1})\sinh æ_1\frac{a}{2}\sinh æ_2\frac{a}{2} \end{cases}$

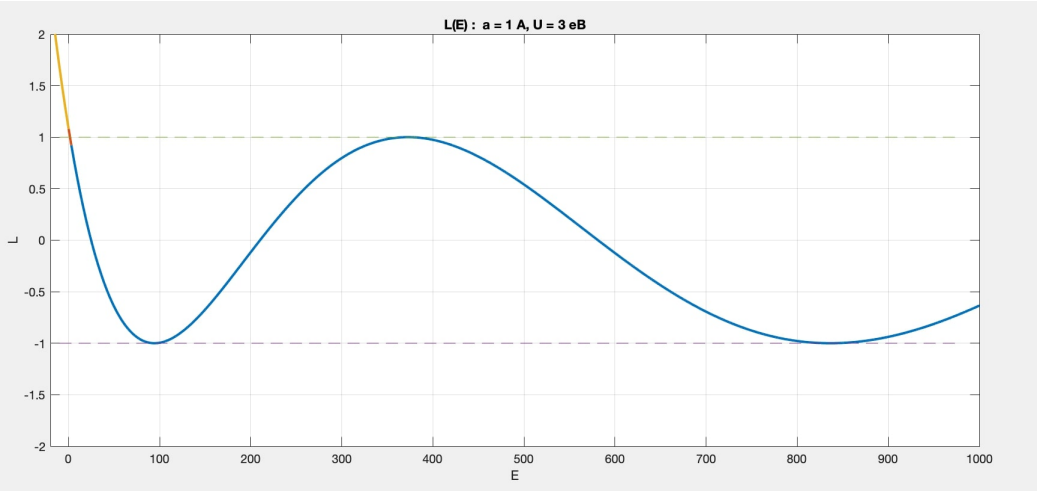

Figure 1: a = 1A, U = 3eB

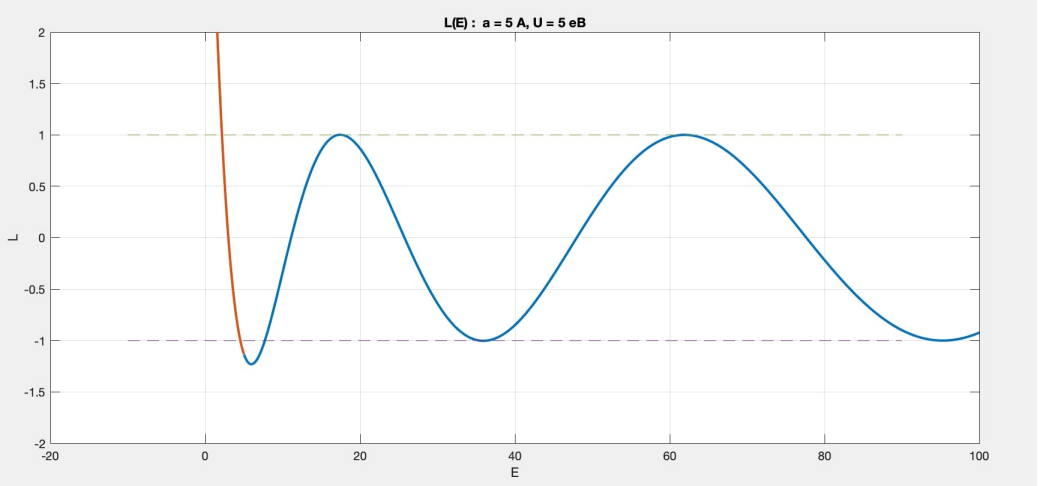

Figure 2: a = 5A, U = 5eB

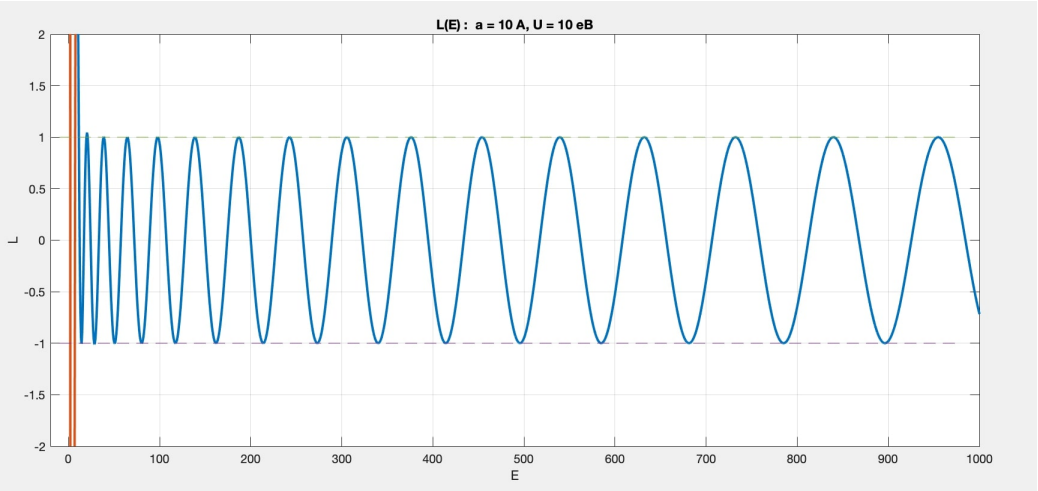

Figure 3: a = 10A, U = 10eB

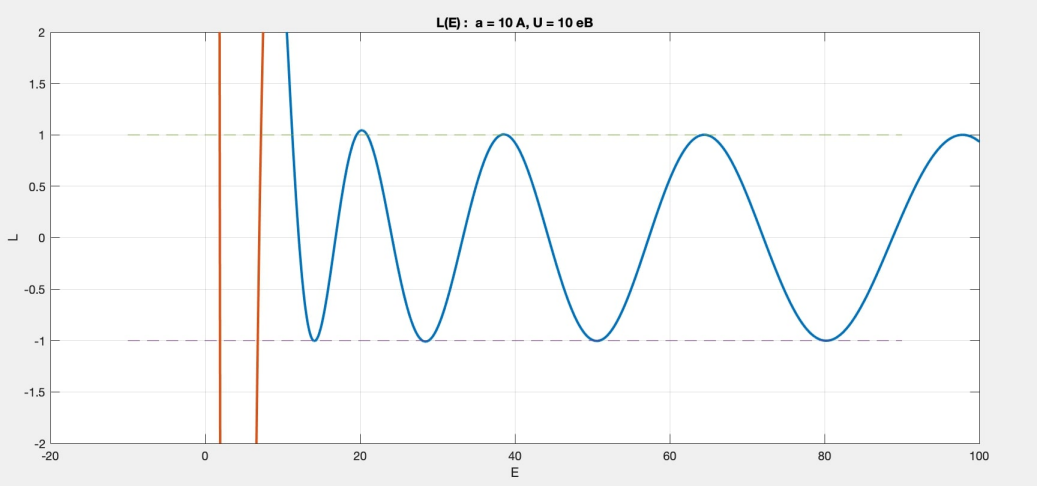

Figure 4: a = 10A, U = 10eB