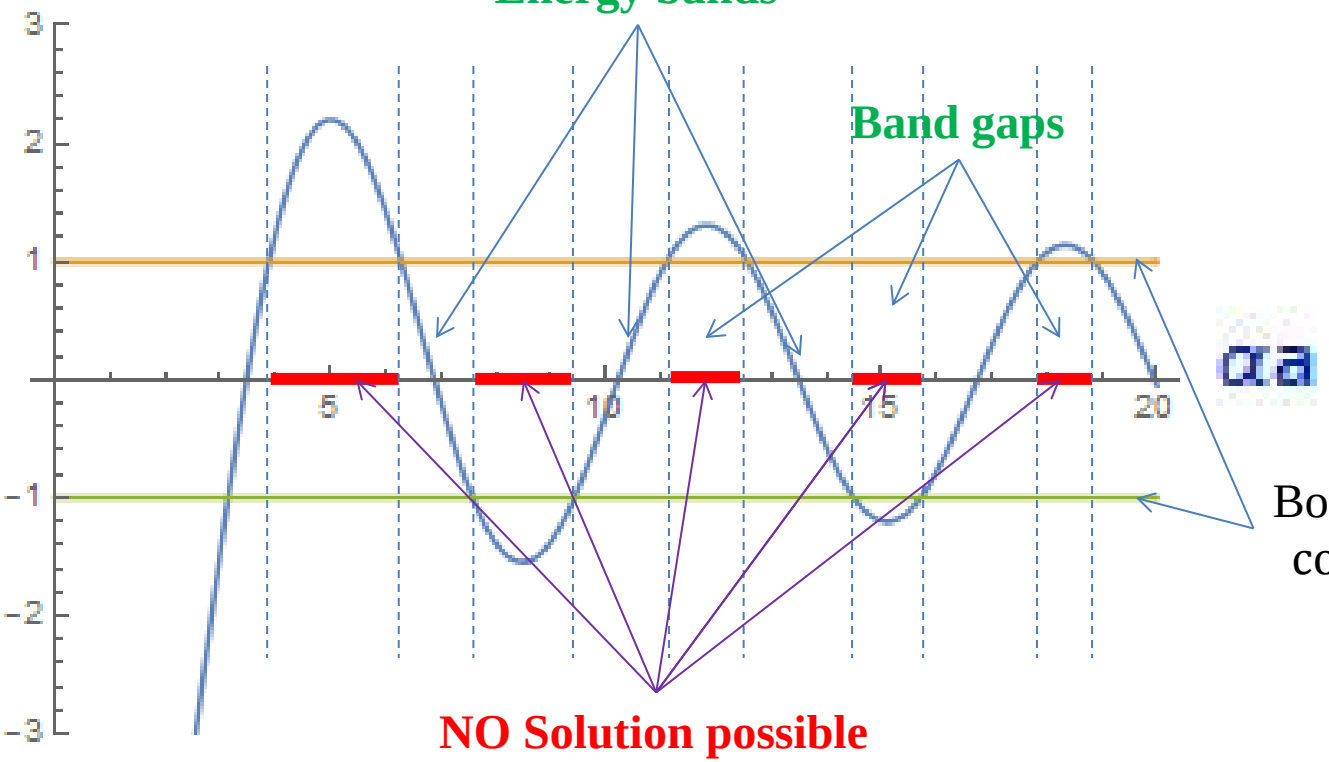
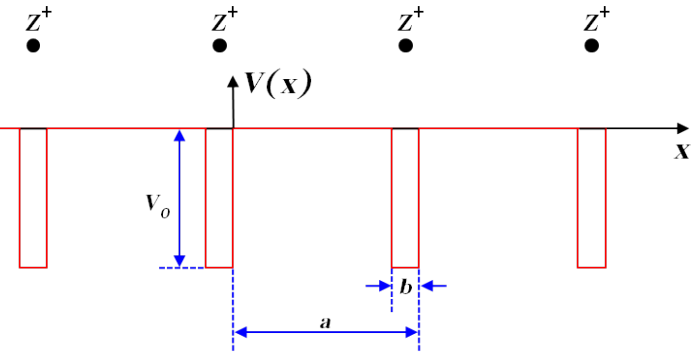
Kronig-Penney Model Solution

$$-P\,\frac{\sin[\alpha a]}{\alpha a}+\cos(\alpha a)=\cos(ka)$$





$$\alpha=\sqrt{\frac{2mE}{\hbar^2}}\qquad \beta=\sqrt{\frac{2m(E+V_0)}{\hbar^2}}\qquad P\equiv\frac{\beta^2 ba}{2}$$