

# Solution

Consider a non-cubic box:

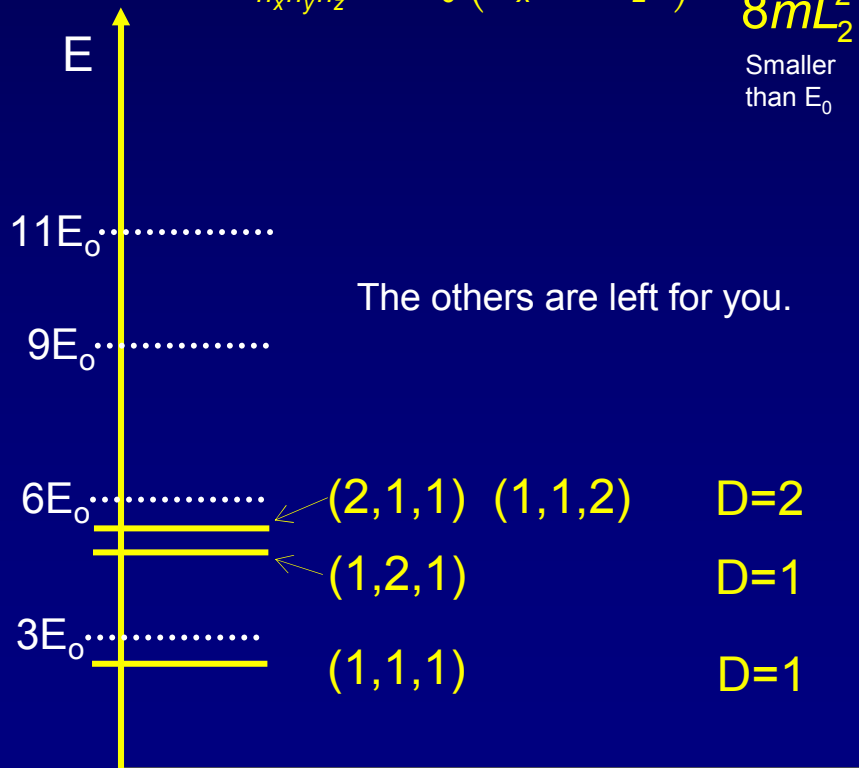
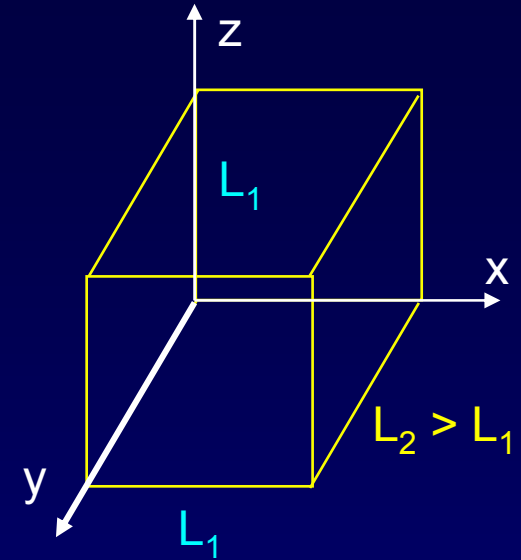
The box is stretched along the y-direction.

What will happen to the energy levels?

Define  $E_0 = h^2/8mL_1^2$

$$E_{n_x n_y n_z} = E_0 (n_x^2 + n_z^2) + \frac{h^2}{8mL_2^2} (n_y^2)$$

Smaller  
than  $E_0$



- 1: The symmetry is “broken” for y, so the 3-fold degeneracy is lowered. A 2-fold degeneracy remains, because x and z are still symmetric.
- 2: There is an overall lowering of energies due to decreased confinement along y.