



The diagram illustrates a quantum particle in a one-dimensional box. A horizontal axis labeled  $x$  starts at a vertical wall on the left, which is marked with diagonal hatching. The origin of the coordinate system is labeled  $0$  at the bottom left. Above the axis, the Hamiltonian operator is given as:

$$H = -\frac{\hbar^2}{2m} \frac{d^2}{dx^2}$$