
Schrodinger's Equation

In Chapter 10, you are already studying the solution of Schrodinger's Equation even though Moore is not going to explain it until Chapter 12. Moore often does this (shows you a solution to help you gain intuition before even giving you the full problem).

I'd like to introduce Schrodinger's Equation now, and in fact, we have already been doing it, so this is mostly a summary of what you know so far.

De Broglie Waves

Let's recall de Broglie's explanation for electron interference. He supposed that an electron was a wave and its wavefunction was

$$e^{i p x/\hbar - i E t/\hbar}$$

In this wave function, p is the electron's momentum and E is its energy. We know that $E = \frac{p^2}{2m}$ for a free particle.

Bohr

Bohr took this wave idea seriously and saw that he could explain the energy levels of hydrogen by demanding that an integer number of electron wavelengths wrapped around the hydrogen nucleus.

...NOT DONE... ...TO BE CONTINUED...