Introduction to Quantum Mechanics by David J. Griffiths Notes

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Part I
Theory

1 The Wave Function

1.1 The Schrödinger Equation

- The **Schrödinger equation**

$$i\hbar\frac{\partial\Psi}{\partial t} = -\frac{\hbar^2}{2m}\frac{\partial^2\Psi}{\partial x^2} + V\Psi$$

is to quantum mechanics what Newton's second law is to classical mechanics. Given suitable initial conditions — typically $\Psi(x,0)$ — the Schrödinger equation determines $\Psi(x,t)$ for all future time.