Quantum Physics

Gordon Ng

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1 Classical vs Quantum Physics

It describes a deterministic world where we can use initial conditions to make predictions about a Classical system.

In principle, Quantum does not have a initial condition. It describes probabilistic world where the results of all measurements cannot be precisely defined. As a result Quantum Physics redefine how physics is conducted in the 20th century.

Rutherford originally devised alpha-particle experiment using classical mechanics.

2 Wave Function

$$\Psi(x,t) = Asin(kx - \omega t + \varphi) \tag{2.1}$$

2.1 Speed of Light

$$C = \frac{\omega}{k} = \frac{2\pi f}{\frac{2\pi}{\lambda}} = \lambda f \tag{2.2}$$