Wednesday, October 24

Agenda

• Announce:
  – Test Two Weeks
  – Project Ideas due by Halloween (1 week)
• Discuss Movie Part I
• Probability Waves

Momentum versus Wavelength

• For massive objects:
  – High momentum means small wavelength (very localized)

Electrons in the Atom

• Finally a good explanation
• Electrons reach a balance
  – Charge attracts electron to nucleus
  – Electron “wants” to stay far away to minimize its momentum/energy
• QM can now solve for the states of the electron in atoms...

Wavefunction

• QM finds the wavefunction for a particle
  \( \psi(x, y, z) \)
• Its square gives a probability
  \( |\psi(x, y, z)|^2 \)

Tunneling (again)

• Makes more sense (well, almost)
  – Probability wave doesn’t just stop at wall
  – Extends a bit into wall