

Wave-Particle Duality

Physics

The evidence on both sides, and the de Broglie relation.

Evidence for waves

- Interference and diffraction
- Young's double slit
- Polarisation
- Refraction

Evidence for particles

- Photoelectric effect
- Compton scattering
- Photon detection one at a time
- Blackbody radiation

THE DIFFERENCE THAT MATTERS

de Broglie: every particle has a wavelength $\lambda = h/p$. Electron diffraction confirmed it experimentally.

Everyday objects have a de Broglie wavelength far too small to observe: a cricket ball's is around 10^{-34} m.