

20. Electron Waves: Summary

For each of the statements below, answer the accompanying questions to summarize the structure of an electron cloud in a hydrogen atom.

1) *When bound to a nucleus, electrons are delocalized energy that behave as waves.*

What does it mean to be delocalized?

2) *Three-dimensional electron clouds are made up of energy.*

How is an electron cloud different than a classical cloud you see in the sky?

3) *Energy clouds form specific physical shapes based on their energy*

How does the energy of an electron cloud affect the number of radial loops and nodal planes?

4) *Electron cloud shapes and energies are defined by a set of four quantum numbers.*

What are the four quantum numbers, and what does each one represent in the electron cloud?