

4 Quantum Numbers

(1) Principle quantum number, n
describes major energy level or volume
 $n = 1, 2, 3 \dots \infty$



(2) Angular momentum / azimuthal / subsidiary Q.N., l
designates shape of orbital; energy sublevel

$l = 0, 1, 2, 3 \dots n-1$
s p d f

(3) Magnetic Quantum Number, m_l
gives no. of orbitals in an energy sublevel
 $m_l = -l \dots 0 \dots +l$

(4) Spin Quantum Number, m_s
 $m_s = +\frac{1}{2}, -\frac{1}{2}$

Quantum #s 1, 2 + 3 describe an orbital
Quantum # 4 describes an electron in
an orbital