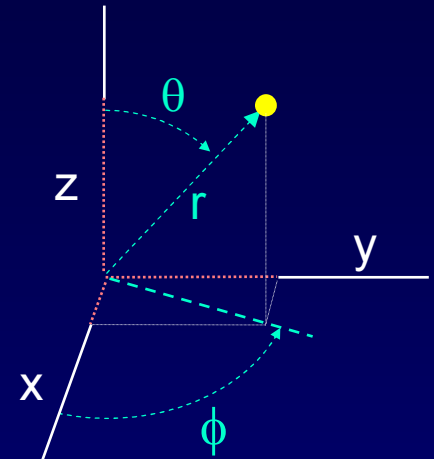


Total Wave Function of the H-atom

We will now consider non-zero values of the other two quantum numbers: l and m .

$$\psi_{nlm}(r, \theta, \phi) = R_{nl}(r) Y_{lm}(\theta, \phi)$$

- n “principal” ($n \geq 1$)
 - l “orbital” ($0 \leq l < n-1$)
 - m “magnetic” ($-l \leq m \leq +l$)
- } *



The $Y_{lm}(\theta, \phi)$ are known as “spherical harmonics”.

They are related to the angular momentum of the electron.

* The constraints on l and m come from the boundary conditions one must impose on the solutions to the Schrodinger equation. We'll discuss them briefly.