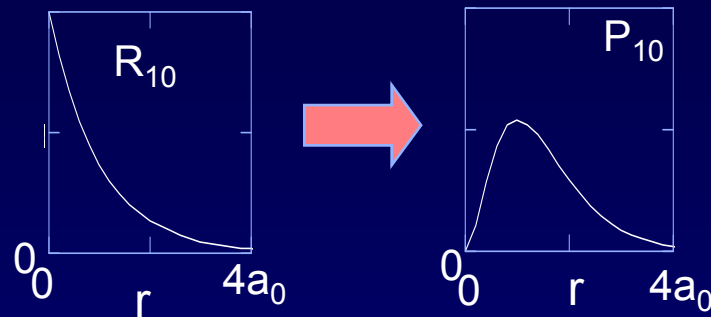


# Radial Probability Densities for S-states

Summary of wave functions and radial probability densities for some s-states.



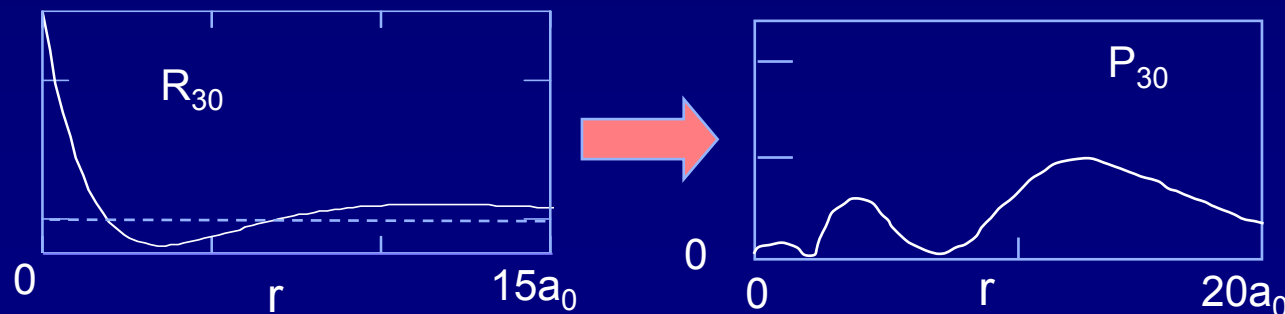
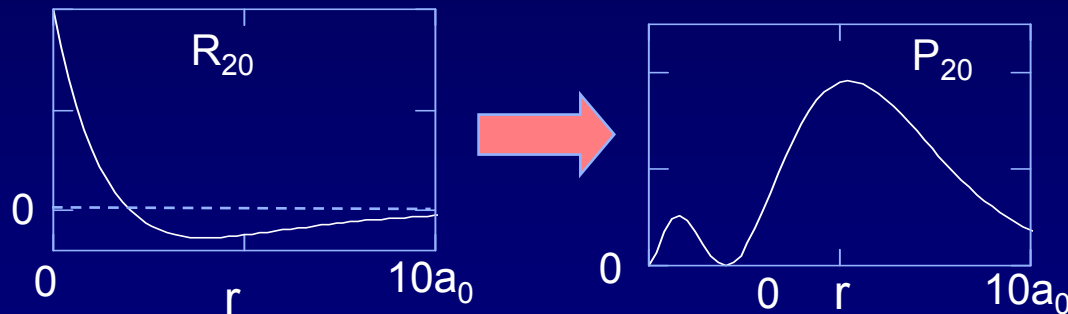
The radial probability density has an extra factor of  $r^2$  because there is more volume at large  $r$ . That is,  $P_{n0}(r) \propto r^2 R_{n0}^2$ .

This means that:

**The most likely  $r$  is not 0 !!!**

Even though that's where  $|\psi(r)|^2$  is largest.

This is always a confusing point. See the supplementary slide for more detail.



radial wave functions

radial probability densities,  $P(r)$

<http://www.falstad.com/qmatom/>