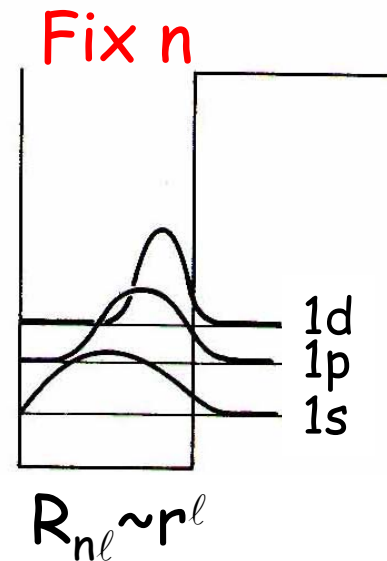
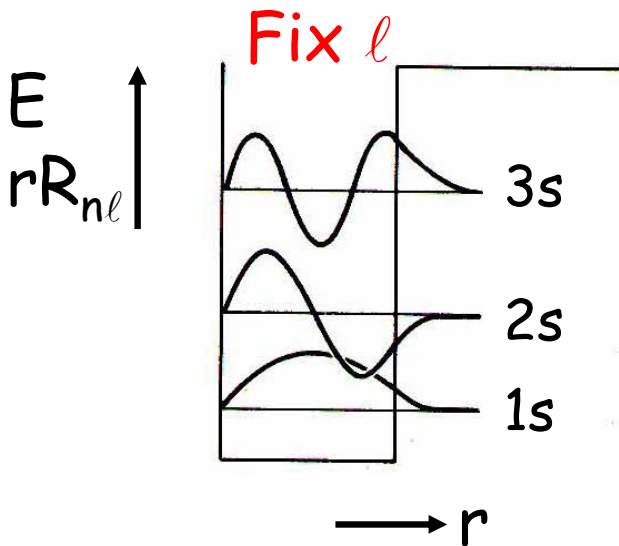


Energy levels increase with n and l

Example

Notation $n\ell$



As n increases,
 rR_{nl} has more nodes,
 greater curvature
 and E increases.

As l increases,
 rR_{nl} has greater
 curvature and E
 increases.

Fill shells for
 both p and n

$$\begin{aligned} \text{Degeneracy} &= (2s+1)(2l+1) \\ &= \underline{2(2l+1)} \quad s=1/2 \end{aligned}$$

No central potential can reproduce magic numbers. Need to include non-central term

\Rightarrow Spin-Orbit Interaction