

Qualitative understanding of many-electron atoms

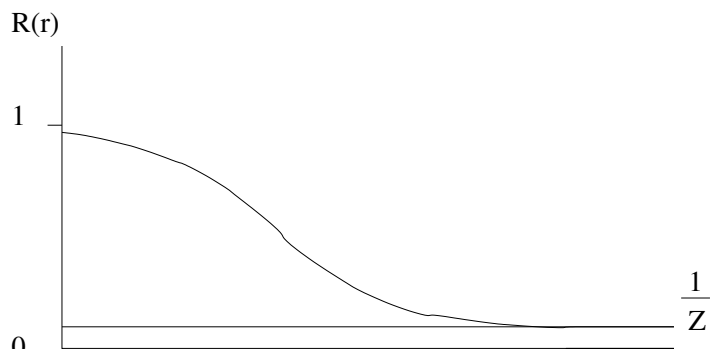
1. centr. field $\Upsilon(r)$ "close" to $+Ze$ nucleus

$$V(r) = -\frac{Ze^2}{r}$$

the ratio $R(r)$

$$R(r) = \frac{\Upsilon(r)}{V(r)} = \frac{\Upsilon(r)}{-\frac{Ze^2}{r}}$$

is such that close to nucleus, $R(r \rightarrow 0) \rightarrow 1 - \frac{5}{16Z} \approx 1$ while for large r
 $R(r \rightarrow \infty) \rightarrow \frac{1}{Z}$



hsmallfigure

