PH3521701 现代原子物理 **2019-04-02**

Lecture summary

- Helium
  1. Spin singlet and triplet
  2. Exchange symmetry
  3. Variational method
  4. Ground and first excited state of Helium

Homework (due on 4/9)

1. Find out the ground state energy of helium atom with variational method. Assume the wave function has the form

$$\psi = \psi_{1s}(r_1)\psi_{1s}(r_2)$$

where $\psi_{1s}(r)$ and is the hydrogen like 1s state wave function with an effective charge Z* as the variational parameter. Compare the result with the experimental result (-79.0eV) and the first order perturbation result (-74.8eV).