

HW4, Quantum Mechanics 2

Problem 1

- (a) Suppose you put both electrons in a helium atom into the $n = 2$ state; what would the energy of the emitted electron be?
- (b) Describe (quantitatively) the spectrum of the helium ion, He^+ .

Problem 2 Discuss (qualitatively) the energy level scheme for helium (a) if electrons were identical bosons, and (b) if electrons were distinguishable particles (but still with the same mass and charge). Pretend the electrons still have spin $1/2$.