

1. McIntyre 13.4 (Toy problem about exchange symmetry)
2. McIntyre 13.3 (Two identical spin-1 particles)
Table 11.5 should help.
3. McIntyre 13.7 (inter-particle spacing of 2 identical particles; HO system)
This problem is interesting because it shows that requiring symmetry or antisymmetry of the 2-particle wave function affects the expectation value of the separation! Fermions tend to be further apart and bosons tend to be closer together than distinguishable particles. That's surprising.
We will start this problem in class and you can finish it.
4. McIntyre 14.2 (Infinite square well – probability of transition)

Example problem requested in class:

5. (a) Consider a 2-particle system where each particle has spin angular momentum quantum number $s_1=1$ and $s_2 = 1$. Use Table 11.5 to write the ket representing the state with total angular momentum quantum number $S = 2$, $M_S = 0$ as a superposition of the uncoupled state kets.
(b) Supposed the 2-particle system is prepared in such a state. A measurement is then made of the z -component of the spin of particle #1. What are the possible outcomes of the measurement and with what probability do they occur?

LAST homework set. Best 8 homework sets will count towards homework portion of grade.

Final exam venue is Weniger 116.