

## Assignment 9

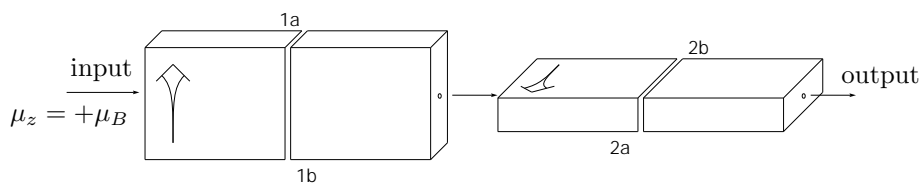
Wednesday, 8 December

*Reading:* From *Invitation to Quantum Mechanics* read chapter 4, (“Quantum Mechanics of Position”).

*Take-home exam* instead of problems this week (i.e. exam due on 15 December). The exam will cover classical waves and the quantum mechanics ideas in chapters 1 and 2 of *Invitation to QM*.

*Sample exam:*

1. *Oil slick.* Notes on Waves problem 5.1.
2. *Width of the single-slit diffraction intensity curve.* Notes on Waves problem 6.2.
3. *Light bulb photons.* *Invitation to Quantum Mechanics* problem 1.6.
4. *Two more analyzer loops.*



Atoms with  $\mu_z = +\mu_B$  are channeled through a vertical analyzer loop (number 1), then a horizontal analyzer loop (number 2). If all paths are open, 100% of the incoming atoms exit from the output. What percentage of the incoming atoms leave from the output if the following paths are blocked?

- |        |               |
|--------|---------------|
| (a) 1a | (d) 2b        |
| (b) 1b | (e) 1b and 2a |
| (c) 2a | (f) 1a and 2b |