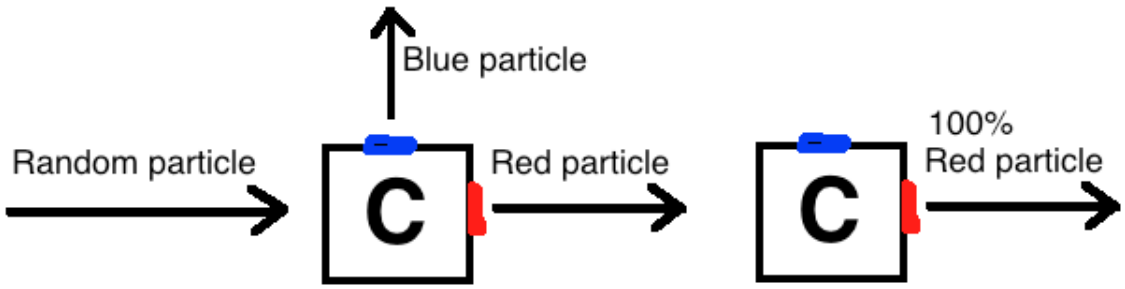
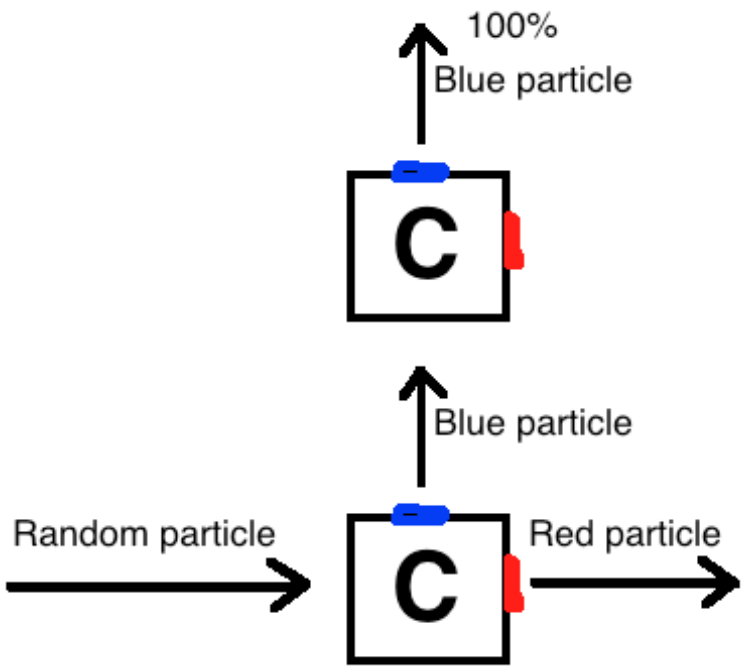
HSSP Philosophy of Quantum Mechanics
07/10/11
Activity: Stern-Gerlach Experiment
Lab Group 1: Persistence

Question: Are color and hardness **persistent**? For example, does a particle's color change mid-flight, or inside the box? Does measuring a particle's hardness change its hardness?

Question: A particle is flying around the lab. I say, "that particle's color is blue," even though I can't see it. What do I mean by that? If that statement is true, what can you predict about future experiments? If that statement is false, what can you predict about future experiments? Does it ever make sense to say, "that particle doesn't have a color," or "the particle's color is neither red nor blue"?

Data: In pictures:





Data: In words:

When you pass a random particle through a hardness box, hard particles come out the side and soft particles come out the top. When you put a second hardness box to the right of a first hardness box, 100% of the particles that come out of the second box come out the hard side. When you put a second hardness box above a first hardness box, the 100% of the particles that come out of the second box come out the soft side.

Investigate:

1. Describe the Data in pictures using words.
2. Draw pictures to represent the Data in words.
3. Discuss and answer the questions at the top of the lab.
4. Discuss: what other experiments would be interesting to perform?