

## Questions from Nuclear Lunch presentation September 29, 2010

1. What is “fine structure”? How is that different from the “hyperfine structure” shown in Fig. 1c? **Nowo**
2. Please explain Figure 4. **Youngshin**
3. Could one of the other 2S-2P hyperfine transitions give better results if the signal could be detected well? **Cody**
4. Why is the lifetime of the 2P state so much shorter than that of the 2S state? **Sushil**
5. What is vacuum polarization? **Azamat**
6. What is the Lamb shift? In hydrogen? In muonic hydrogen? **Anton**
7. How is the equation for  $\Delta E$  obtained? How sure are we that it is correct? **Ken**
8. How is the muonic hydrogen produced? **Bing**
9. What does this result tell us about the Standard Model? **Daniel S.**
10. What implications does this result have for the scale of the universe? Size? Mass? Cosmological constant? **Bijaya**