

## Questions from the discussion of “Anti-Hydrogen trapping at CERN”

1. How do you produce anti-protons for the experiment? How were the anti-protons and positrons slowed down in the experiment?(Anthony Paul)
2. How stable is anti-hydrogen? Shouldn't it be as stable as hydrogen? Is there any hydrogen in the trap? If so, don't they annihilate?(Sushil)
3. What is the average lifetime of anti-hydrogen in the trap?(Dilu)
4. What do you mean by “cold” hydrogen? Why is it crucial to keep the anti-hydrogen atoms cold? Can it be formed only at 0.4 K temperatures? What is evaporative cooling?(Ken Moore)
5. Why do they assume the weak equivalence principle? Why would matter and anti-matter obey different gravitational laws but not difference in other laws?(Daniel Sayre)
6. What is a Rydberg state? At what point is a Rydberg state considered “high”? Does a high Rydberg state decay faster or slower than a low Rydberg state? Why?(Young Shin)
7. Why does the 2s state have a long lifetime? How does it decay?(Harsha)
8. How does 2 photon absorption work? Is it limited only to back-to-back photons? How does it eliminate first-order Doppler broadening?(Martin)
9. The Hamiltonian has a L.S term. How much are the orbital and spin states split? What is meant by “microwave spectroscopy of hyperfine splitting?(Shamim)