

Abstract Submitted  
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**Magic Wavelength for the Hydrogen 1S-2S Transition** AKIO KAWASAKI, Massachusetts Inst of Tech-MIT — The state of the art precision measurement of the transition frequencies of neutral atoms is performed with atoms trapped by the magic wavelength optical lattice that cancels the ac Stark shift of the transitions. Trapping with magic wavelength lattice is also expected to improve the precision of the hydrogen 1S-2S transition frequency, which so far has been measured only with the atomic beam. In this talk, I discuss the magic wavelength for the hydrogen 1S-2S transition, and the possibility of implementing the optical lattice trapping for hydrogen. Optical trapping of hydrogen also opens the way to perform magnetic field free spectroscopy of antihydrogen for the test of CPT theorem.

Akio Kawasaki  
Massachusetts Inst of Tech-MIT

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