Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Neutralization of Rb Surface Adsorbate Electric Fields by Slow Electron Attachment JONATHON SEDLACEK, YUANXI CHAO, JAMES SHAFFER, University of Oklahoma — We present progress on our studies of rubidium adsorbates on a z-cut single crystal quartz surface. Many systems that consist of cold atoms interacting with a surface or surface devices require knowledge and control of adsorbate fields. Rydberg EIT is used to measure the electric fields caused by the adsorbates. A macroscopic sheet of uniform dipoles is used to model the electric field produced by the adsorbates. Large adsorbate fields can be reduced in this system by binding free electrons with low kinetic energy to the dipole field produced by the adsorbates. The low energy electrons are produced by blackbody ionization of Rydberg atoms. Prospects for using the bound electrons for other experiments will be presented.

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Date submitted: 28 Jan 2015 Electronic form version 1.4