Abstract Submitted
for the 4CF17 Meeting of
The American Physical Society

Cavity enhanced high power 243 nm CW laser for two-photon laser cooling of hydrogen.[1] ZAKARY BURKLEY, SAMUEL COOPER, CORY RASOR, ADAM BRANDT, DYLAN YOST, Colorado State University — High power 243 nm CW laser sources have long enabled spectroscopic studies of atomic hydrogen through excitation of the 1S-2S 2-photon transition. With sufficient power, such lasers could also allow for two-photon laser cooling of hydrogen. In this talk, we present a 243 nm laser system with 750 mW of average power. We couple this radiation to a simple linear optical cavity and obtain 30 W of intracavity power. This power level is sufficient for one-dimensional laser cooling if it can be overlapped with a cryogenic beam of magnetically guided atomic hydrogen.

[1]Funded by the NSF

Zakary Burkley
Colorado State University

Date submitted: 20 Sep 2017 Electronic form version 1.4