

Abstract Submitted
for the DAMOP18 Meeting of
The American Physical Society

Characterization of an Atom Chip with Integrated Coplanar Waveguides BYRON LOWRY, Georgia Institute of Technology, Georgia Tech Research Institute, ROBERT WYLLIE, Georgia Tech Research Institute, MICHAEL CHAPMAN, Georgia Institute of Technology, CRESTON HEROLD, Georgia Tech Research Institute — We describe a new neutral atom trapping apparatus at GTRI based on a multilayer atom chip that was designed and fabricated in-house. The bottom conductive layer provides a set of flexible magnetic trap geometries, while the top layer integrates two microwave coplanar waveguides (CPWs) into a gold mirror. Here we present experimental characterization of the atom chip. Future work will focus on guided wave atom interferometry. Similar to the scheme proposed in [1], the near field pattern of the CPWs will be used to manipulate and dress the internal hyperfine states of the rubidium atoms. [1] Ammar M *et al* 2015 Symmetric microwave potentials for interferometry with thermal atoms on a chip **Phys. Rev. A** **91** 053623

Byron Lowry
Georgia Institute of Technology, Georgia Tech Research Institute

Date submitted: 26 Jan 2018

Electronic form version 1.4