

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Realizing a lattice-based quantum simulator using circuit quantum electrodynamics DEVIN UNDERWOOD, WILL SHANKS, Princeton University, ANDY LI, Northwestern University, JAMES RAFTERY, DARIUS SADRI, Princeton University, JENS KOCH, Northwestern University, ANDREW HOUCK, Princeton University — Recent experimental progress in circuit quantum electrodynamics (CQED) has triggered extensive theoretical research on using these systems to implement a CQED lattice-based quantum simulator for non-equilibrium physics. CQED systems are inherently open due to unavoidable photon loss and the ease of replenishing photons through driving. The focus of this research is to experimentally realize proposals focused on building lattice-based simulators, where each lattice site contains a single CQED element. Results will be presented on a kagome lattice of 49 niobium coplanar waveguide resonators, each coupled a single aluminum transmon qubit

Devin Underwood
Princeton University

Date submitted: 09 Nov 2012

Electronic form version 1.4