

Abstract Submitted  
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**Experimental study of a 72-site Jaynes-Cummings lattice in the nonlinear dispersive regime** MATTIAS FITZPATRICK, NEEREJA SUNDARESAN, Princeton University, ANDY C. Y. LI, JENS KOCH, Northwestern University, ANDREW HOUCK, Princeton University — The building blocks of circuit-QED provide useful tools for the study of nonequilibrium and highly nonlinear behavior. In particular, the inherent dissipation in circuit-QED systems naturally gives rise to crossovers between different steady-states and dynamical phase transitions in even as few as two-site lattices. We explore the steady-state behavior of a 72-site Jaynes-Cummings lattice in the dispersive regime, highlighting the sharp transition in fluorescence at critical drive powers as well as strong nonlinear wave-mixing phenomena.

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