Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Floquet Dynamics of Boundary-Driven Conformal Field Theories[1] WILLIAM BERDANIER, Univ of California - Berkeley, MICHAEL KOLODRUBETZ, ROMAIN VASSEUR, JOEL MOORE, Univ of California - Berkeley; LBNL — We study the dynamics of quantum critical 1D systems described by a conformal field theory (CFT) subject to a periodic boundary drive. We focus on the transverse-field Ising CFT with a boundary field step-drive, and analytically and numerically calculate its entanglement entropy and Loschmidt echo. We identify three regimes with distinct dynamics, and show that two are well-described by boundary CFT: a slow-driving limit where the Loschmidt echo is given by an N-point function of boundary condition changing operators, and a fast-driving limit where the Floquet-Magnus high-frequency Hamiltonian converges to a single quench at half field, plus irrelevant terms. An intermediate regime governed by resonant processes produces extensive entropy and dynamics described by quantum field theory. We comment on generalizations to other kinds of boundary drives and CFTs, and on applications to quenches involving π-Majorana fermions.

[1]This work used the Extreme Science and Engineering Discovery Environment (XSEDE), which is supported by NSF grant number ACI-1053575. WB acknowledges support from the DoD through the National Defense Science and Engineering Graduate Fellowship Program.

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Date submitted: 05 Nov 2016 Electronic form version 1.4