Optimal Resonance Forcing of Nonlinear Systems GLENN FOS-
TER, ALFRED HUBLER, Center for Complex Systems Research, Department of
Physics, University of Illinois at Urbana-Champaign — We study the response of
dynamical systems to additive forcing and find that, for a broad class of systems, the
response is maximized by a pattern of forcing that mimics the time-reversed dynam-
ics of the unforced system. Applying these results, we numerically construct families
of optimal inputs and successfully perform spectroscopic system identification on our
modeled systems.

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