

Abstract Submitted
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Decoherence of Coupled Oscillators and Qubits¹ KEVIN RAN-
DLES, Weber State University, DAVID DIAZ, University of Rochester, MANUEL
BERRONDO, JEAN-FRANCOIS VAN HUELE, Brigham Young University — We
study the dynamics of open systems of coupled oscillators and qubits in minimal
environments. To determine the decoherence of the system, we calculate the linear
entropy for various initial states and visualize the dynamics with Husimi functions
and Bloch spheres. Increasing the interaction of the system with its environment
results in more rapid decoherence. For coupled oscillators under the rotating wave
approximation we find periodic linear entropies whereas for the anti-rotating wave
approximation the linear entropy can lose periodicity. For a qubit system coupled
to an oscillator environment we find oscillatory linear entropies that are pseudo-
periodic.

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Kevin Randles
Weber State University

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