

Abstract Submitted
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Quantum temperature of a modulated oscillator: spectral signatures MARK DYKMAN, Department of Physics and Astronomy, Michigan State University, East Lansing, Michigan 48824, MICHAEL MARTHALER, Institut fuer Theoretische Festkoerperphysik and DFG-Center for Functional Nanostructures (CFN), Karlsruhe Institute of Technology, D-76128 Karlsruhe, VITTORIO PEANO, Department of Physics and Astronomy, Michigan State University, East Lansing, Michigan 48824 — Relaxation of a quantum system is usually due to emission of excitations of a thermal reservoir. The emission events happen at random. For periodically modulated systems, the corresponding noise leads to a finite-width distribution over the quasi-energy (Floquet) states. It can be characterized by an effective nonzero quantum temperature even where the temperature of the reservoir is zero. We show that, as a result, the spectra of fluctuations and response of a parametrically modulated underdamped nonlinear oscillator can display a fine structure. The form of the spectra sensitively depends on the temperature of the reservoir.

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