Dissipation-Induced Quantum Phase Transition in a Resonant Level

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We measure tunneling through a resonant level embedded in a dissipative environment, which suppresses tunneling rate at low energies. We study the shape of the resonant conductance peak, with the expectation that its width and height, both dependent on the tunneling rate, will be suppressed at low temperatures. We observe several distinct regimes and extract the scaling exponents. Interestingly, we find a regime where the unitary conductance limit is reached for resonant tunneling with dissipation. We discuss the implication of these findings for a dissipation-induced quantum phase transition.