

## From thermal to quantum: A detailed look at escape rates in Josephson junctions

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The switching in underdamped Josephson junctions from zero voltage to the dissipative state is known to be driven by either thermal fluctuations or quantum tunneling depending on temperature. We have measured escape rates of junctions with systematically varying size as a function of temperature with high precision. All junctions show the crossover from the thermal to the quantum regime at the expected temperature. The thermal regime is described with high accuracy by the low damping limit of transition state theory. The observed quantum rate, however, is by orders of magnitude smaller than what can be expected from existing theories.