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The Superconducting Heterodyne Approach to Axion Detection

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Though most axion dark matter experiments use static background fields, the axion also induces transitions between oscillating modes of an excited cavity. This "heterodyne" detection approach benefits from the very high quality factors available in superconducting cavities, and has a parametrically enhanced signal power at low axion masses. I will review recent experimental progress on this concept, which is currently being pursued by a number of groups, with a particular focus on new results from SLAC.

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