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Measuring Quasiparticle Diffusion in Superconducting Al Films with a TES and Microscopic Laser-Scanning Technique

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We present preliminary data from a laser-scanning microscopy-based technique for measuring 100 μm -scale quasiparticle (QP) diffusion in superconducting Al films. QP are produced at a localized origin in the Al film using a focused 1550nm laser coupled to a single-mode optical fiber mounted on piezoelectric nanopositioners. The resulting QP propagation can then be monitored using a transition edge sensor (TES), and described using a simple diffusion model.

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