

Abstract Submitted
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Fast Non-Destructive Evaluation of Superconducting Magnet Wires using a Flow-Through SQUID Microscope¹ JOHN MATTHEWS, FREDERICK WELLSTOOD, University of Maryland, HAROLD WEINSTOCK, Air Force Office of Scientific Research — We have developed a cryocooled high-Tc SQUID microscope for fast non-destructive evaluation (NDE) of long wires, designed for detecting defects in superconducting magnet wire. A feedthrough mechanism pulls the wire at speeds of up to 20 cm/s through a thin mylar tube that separates the room temperature wire from the SQUID. We present results on test wires where we detect defects down to about 0.3 mm diameter. We discuss how we extract information from the data, such as defect size and location, and also outline a method for fast automated detection of defects in long wires.

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