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Scanning SQUID microscopy in cryogen-free refrigerators DAVID LOW, BRIAN T. SCHAEFER, MATT FERGUSON, ALEXANDER JARJOUR, KATJA C. NOWACK, Cornell University — Scanning magnetic probe microscopy becomes more challenging in cryogen-free systems due to vibrations introduced at the sample by the cryocooler. We are implementing superconducting quantum interference device (SQUID) microscopes in two cryogen-free systems: a Montana Instruments Nanoscale Workstation and a BlueFors Cryogenics LD400 dilution refrigerator. We evaluate the vibrations in our microscopes from magnetic flux noise spectral densities measured near a localized source of magnetic field following a recently developed method by Schiessl et al. (arXiv:1610.00285) and outline methods intended to reduce vibrations.

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