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Study of ac-plane Magnetic Microstructure of Fe_3GeTe_2 Using Magnetic Force Microscopy[1] NELIZA LEON BRITO, ERIC D. BAUER, FILIP RONNING, JOE D. THOMPSON, ROMAN MOVSHOVICH, Los Alamos National Laboratory — In the quest to develop design principles governing high performance rare earth-free ferromagnets our group has focused on materials where electronic correlations and crystal environment lead to high magnetic anisotropy. The present study concentrates its efforts on one of these materials, the layered itinerant ferromagnet Fe_3GeTe_2, which has a high degree of magnetic anisotropy and an easy magnetization direction along the c-axis. Magnetic force microscopy was used to observe the ground state magnetic microstructure of the a-c plane, and its evolution in an external magnetic field along the b-axis. We built a "surface magnetization loop" based on the MFM data from -5 Tesla to +5 Tesla. We will discuss our results in view of the bulk magnetization data obtained with a superconducting quantum interference device magnetometer.

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