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Dynamics of vortices driven by magnetic field changes observed by LT-STM JONGHEE LEE, MICHAEL DREYER, HUI WANG, University of Maryland, BARRY BARKER, Lab. for Phys. Sci. — When changing the magnetic field for a type two superconductor the vortex density has to change accordingly. Vortices have to enter/leave the superconductor to facilitate that change. Since vortex-defect interactions impede the vortex motion such a change does not happen instantaneously. Observing the vortex lattice at a given distance from the center by STM allows to study that behavior. The velocity usually decays close to exponentially. Although the first 'fast' phase ($\tilde{3}$0 min) is unaccessible to STM due to its limited scan speed the tail section ($\tilde{5}$ h) can be studied in detail. We will present analysis of the data and compare it to previous results on slow moving vortices driven by a slowly decaying magnetic field.

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