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Non-equilibrium vortex relaxation in disordered type-II superconductors¹ ULRICH DOBRAMYSL, MICHEL PLEIMLING, UWE C. TAUBER, Department of Physics, Virginia Tech — We study the non-equilibrium steady states and relaxation properties of driven vortex lines in the presence of both randomly distributed point and columnar pinning centers. We model the vortices as interacting elastic lines and employ a Langevin molecular dynamics algorithm to extract steady-state and non-stationary time-dependent behavior. In order to characterize the relaxation properties towards thermal equilibrium, we investigate transient two-time correlation functions. In particular we compare results obtained for systems with randomly distributed point pins and parallel columnar defects.

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