

Alternating Current Response of Two-Dimensional Vortex Lattice with Random Pinning

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(Received: 2002-4-30; Revised: 2002-7-4)

Abstract: Using a model of long-range interactions between vortices, we investigate numerically the alternating current (ac) response of two-dimensional vortex lattice with randomly distributed point-like pinning centers. Mode-locking steps are observed in the simulated current-voltages characteristics, and the number of steps increases with the superimposed ac amplitude and frequency. Our results are in good agreement with recent experiments.

PACS: 74.60.Ge, 05.60.+w

Key words: vortex lattice, mode locking

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