

Abstract Submitted
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Vortex-lattices in quasiperiodic pinning potentials¹ JAVIER E. VILLEGAS, MARIA I. MONTERO, CHANG-PENG LI, IVAN K. SCHULLER, Physics Department, University of California-San Diego, 9500 Gilman Drive, La Jolla CA 92093-0319, USA — We have investigated vortex-lattice dynamics in superconducting Nb thin films with different types of quasiperiodic arrays of magnetic pinning centers. The mixed-state magnetoresistance show minima for particular applied fields, which reveal matching effects between the vortex-lattice and the quasiperiodic array. These minima are as sharp and well defined as those found with periodic pinning arrays. Moreover, a larger number of minima are observed for quasiperiodic arrays, which in some cases indicate a high ratio of vortices per pinning site. These results suggest that matching between the vortex-lattice and the array of magnetic dots takes place on a very local scale, indicating a short local correlation-length of the vortex-lattice.

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