

Abstract Submitted
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Vortex dynamics in a single weak-pinning superconducting channel with a Corbino geometry.¹ T.W. HEITMANN, K. YU, C. SONG, M.P. DEFEO, B.L.T. PLOURDE, Syracuse University, M.B.S. HESSELBERTH, P.H. KES, Leiden University — We report transport measurements of vortex flow dynamics in nanofabricated weak-pinning channels of a-NbGe with strong-pinning NbN channel edges. The channels are arranged in circular patterns on a Corbino disk geometry with a radial bias current, thus eliminating the influence of edge barriers to vortex entry on the dynamics. We have developed a SQUID voltmeter arrangement for resolving the flux flow voltage from a small number of vortices moving through such a single mesoscopic channel. We discuss the configuration of this measurement scheme, along with potential applications of this system for measuring the flow of vortices around single weak-pinning channels free from edge barriers.

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T.W. Heitmann

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