

Abstract Submitted
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Fluxoid Quantization in Superconducting Al Nano-Rings¹

STEPHEN SNYDER, ALLEN GOLDMAN, University of Minnesota — The Little-Parks experiment on superconducting cylinders is an important demonstration of fluxoid quantization in superconductors. The transition temperature oscillations in magnetic field have a period of $h/2e$ for the micro cylinders in their studies, which was further evidence for Cooper pairing at the time [W. A. Little, R. D. Parks, PRL 1964, 9, 9]. However recent theoretical works have suggested that in superconducting loops smaller than the coherence length this period changes from $h/2e$ to h/e , for details see [F. Loder, et al. PRB, 2008, 78, 174526] and references therein. We present experimental work in an effort to achieve this limit with Al nano-rings prepared by electron beam lithography. The rings presented here are smaller than others reported in the literature by as much as a factor of two or three [H. Wang, et al. PRB, 2007, 75, 064509].

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