

Abstract Submitted  
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**Confined Vortices in NbSe<sub>2</sub> Nanowires** ABRAM FALK, Department of Physics, Harvard University, MANDAR DESHMUKH, AMY PRIETO<sup>1</sup>, ANDREA JONES, Department of Chemistry, Harvard University, HONGKUN PARK, Department of Chemistry, Department of Physics, Harvard University — Superconducting NbSe<sub>2</sub> nanowires have been studied with electrical transport. The cross-sectional dimensions are smaller than the London penetration depth, and signatures of confined magnetic vortices have been observed. The critical current shows non-monotonic behavior as the external magnetic field is increased, including periodic features corresponding to matching fields. In the vicinity of the critical current, we observe several peaks in the differential resistance as a function of bias current, consistent with the plastic flow of vortices. These observations are discussed in the context of theoretical London model studies and experiments in thin-film superconductors and bulk NbSe<sub>2</sub>.

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