Abstract Submitted
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Detection of Individual Vortices in Micron-Size Sr_2RuO_4 Rings by Phase-Locked Cantilever[1] JOONHO JANG, RAFFI BUDAKIAN, Department of Physics, University of Illinois at Urbana-Champaign, YOSHITERU MAENO, Department of Physics, Kyoto University — We describe a feedback-based dynamic cantilever magnetometry technique capable of achieving high magnetic moment sensitivity with low applied fields. Using this technique, we have observed periodic entry of vortices into mesoscopic Sr_2RuO_4 rings. The quantized jump in the magnetic moment of the particle produced by individual vortices was measured with a resolution of $7 \times 10^{-19} J/T$ at an applied field of 1 G.

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