

Abstract Submitted  
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**Measurement of a weak-link Josephson junction in a p-wave superconducting ring** JOONHO JANG, RAFFI BUDAKIAN, DAVID FERGUSON, University of Illinois at Urbana-Champaign, VICTOR VAKARYUK, Argonne National Laboratory, PAUL GOLDBART, University of Illinois at Urbana-Champaign, YOSHITERU MAENO, Kyoto University, Japan — We report the fabrication of a weak-link Josephson junction in a micron-size  $\text{Sr}_2\text{RuO}_4$  ring by focused ion beam milling, and the measurement of the current-phase relation (CPR) using cantilever torque magnetometry. In the presence of a magnetic field applied perpendicular to the crystal  $c$ -axis, a second harmonic term in the CPR appears which may be related to the underlying spin texture of the spin-triplet condensate. The observed CPR is similar to that previously reported for weak-link junctions in  $^3\text{He-B}$ . By including the contribution from both the charge and the spin current into the Gibbs-free energy, we can accurately model the observed CPR of the  $\text{Sr}_2\text{RuO}_4$  weak-link junction.

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