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Quasiparticle Interference Imaging on SmB_6 ¹ HARRIS PIRIE, University of British Columbia, Harvard University, YANG HE, Harvard University, MOHAMMAD HAMIDIAN, Harvard University, Cornell University, MICHAEL YEE, Harvard University, DAE-JEONG KIM, ZACHARY FISK, University of California, Irvine, JENNIFER HOFFMAN, University of British Columbia, Harvard University — Theoretical interest in SmB_6 as a possible topological Kondo insulator with spin-textured Dirac surface states spanning the bulk hybridization gap has been well supported by recent transport, quantum oscillation, and spin-resolved ARPES experiments. However, the influence of surface reconstruction and polarization on the observed dispersion remains unclear. Scanning tunneling microscopy (STM) and spectroscopy (STS) enable simultaneous measurement of local real- and momentum-space structure through quasiparticle interference (QPI) imaging. We use QPI imaging to detect and measure the dispersion of states near the hybridization gap on a non-polar, 2×1 reconstructed surface of SmB_6 . We compare these results with recent theoretical predictions to gain insight into the low energy excitations of SmB_6 .

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