

Abstract Submitted  
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**STM Spectroscopic Mapping of Quasi-Particle States in the Vortex State of CeCoIn<sub>5</sub>**<sup>1</sup> BRIAN ZHOU, SHASHANK MISRA, PEGOR AYNAJIAN, EDUARDO DA SILVA NETO, Princeton University, RYAN BAUMBACH, J.D. THOMPSON, ERIC BAUER, Los Alamos National Laboratory, ALI YAZDANI, Princeton University — The superconducting properties of the heavy-fermion CeCoIn<sub>5</sub> emerge from a remarkable backdrop of strong electron correlation and magnetic criticality. Fittingly, this superconducting phase is itself remarkable, displaying signatures of unconventional pairing with (d-wave) line nodes in the order parameter and a Pauli-limited upper critical field below 700 mK [1]. Through scanning tunneling microscopy at milli-kelvin temperatures, we present, for the first time, atomically-resolved spectroscopy of CeCoIn<sub>5</sub> as the application of a magnetic field weakens and eventually destroys superconductivity.

[1] J. D. Thompson and Z. Fisk, J. Phys. Soc. Jpn. **81**, 011002 (2012).

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