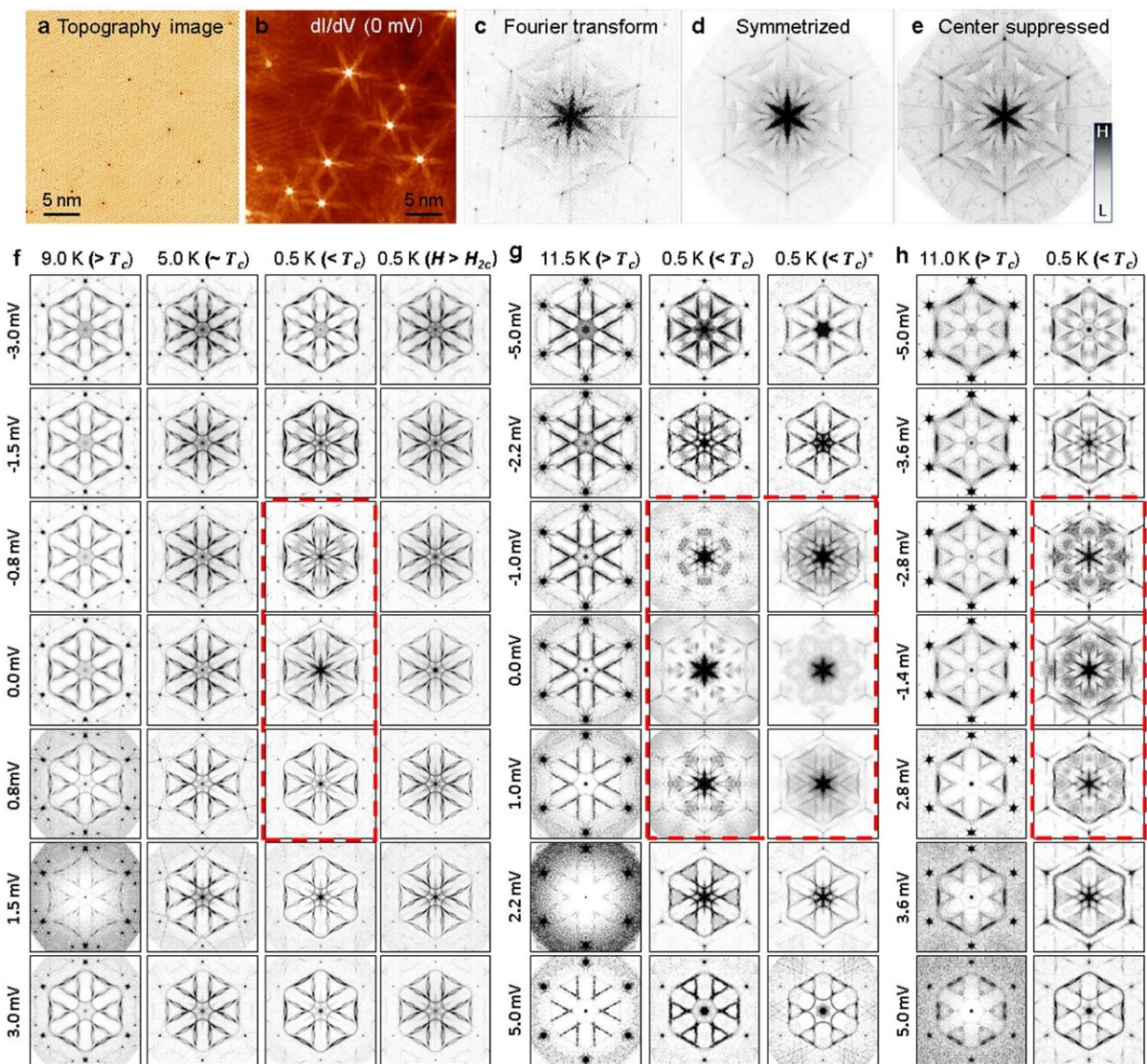


Evidence for a chiral superconductor could bring quantum computing closer to the mainstream

February 9 2023



Experimental QPI results. a-e) QPI data and processing procedures. a) STM image ($V_s = 0.1$ V, $I_t = 0.1$ nA) of a $(3-\sqrt{3}-\sqrt{3})$ -Sn surface ($p = 0.1$) with several surface defects appearing as dark spots. b) Corresponding dI/dV image at $T = 0.5$ K. The bright star-like features are centered at the defect locations in panel a. c) The power spectrum of panel b, symmetrized and rotated in panel d. The central region is subsequently suppressed to enhance the high frequency features, as shown in panel e. f-h show 4, 3, and 2 sets of QPI results obtained from $(3-\sqrt{3}-\sqrt{3})$ -Sn surfaces for $p=0.1$, 0.08, and 0.06, respectively. Each column shows QPI images obtained in a fixed spatial region but with different biases, as indicated on the left. The measurement temperatures are labeled above each column, and data are shown for temperatures above and below T_c . The central flower leafs only appear when the sample is in superconducting state and when the measurement bias is within the superconducting gap (within ± 1.5 mV, ± 2.2 mV, and ± 3.6 mV, in f, g, and h, respectively). These QPI images are enclosed by the dashed red rectangles. Panel f shows QPI results obtained at $T=5$ K (slightly larger than $T_c=4.7$ K for this sample), or at 0.5 K in an 8 T B-field ($H_{2c}=3$ T). These data have a significantly reduced flower leaf feature, which could come from superconducting fluctuations. In panel g, the “0.5 K (

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