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In-plane electronic anisotropy from core states of tilted vortices. HERMANN SUDEROW, Univ Autonoma de Madrid, JOSE AUGUSTO GALVIS, National high magnetic field laboratory, EDWIN HERRERA, ISABEL GUILLAMON, SEBASTIAN VIEIRA, Univ Autonoma de Madrid — Magnetic field enters type II superconductors in form of quantized vortices. Each vortex has a core with the superconducting wavefunction vanishing at its center. Quasiparticles at the vortex core form bound states whose radial extension depends on the superconducting gap value and Fermi surface shape. In the layered superconductor 2H-NbSe2 vortex cores have been studied using scanning tunneling microscopy (STM) mostly with magnetic fields applied perpendicular to the layers. It is found that vortices have a six-fold star shape due to the in-plane anisotropy of the superconducting gap and of the electronic density of states. Here we study vortex core states with the magnetic field applied parallel to the layers. We find that the vortex cores change their shape depending on the angle of the tilted magnetic field with respect to the in-plane crystalline directions, providing a lateral view of the electronic structure.

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