

Abstract Submitted
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Cryomagnetic STM Study of Multi-Gap Spectra in Superconducting 2H-NbSe₂¹ IGOR FRIDMAN, JOHN Y.T. WEI, University of Toronto and Canadian Institute for Advanced Research, CHRISTIAN KLOC, Nanyang Technological University, Singapore — The interplay between superconductivity and density wave order has been a subject of great interest, especially in materials with complex band structures. For the dichalcogenide 2H-NbSe₂, it is believed that multiband superconductivity co-exists with charge density waves (CDW), but little is known about how they co-evolve in a magnetic field. In this study, we use a cryomagnetic scanning tunneling microscope (STM) at 300 mK and in a field of up to 5 Tesla to measure the quasiparticle tunneling spectra of 2H-NbSe₂ single crystals. Our STM data are analyzed in light of other recent experiments which have probed the multiband features of this material. Our analysis suggests that the appearance of sub-gap spectral peaks and their non-trivial field evolution are distinct signatures of a second superconducting gap, and are likely related to the CDW order in 2H-NbSe₂.

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