

Abstract Submitted
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STM Investigation of Bosonic Modes and a Superconducting Gap in the Electron Doped Cuprate $\text{Pr}_{1-x}\text{LaCe}_x\text{CuO}_4$ FRANCIS NIESTEMSKI, SHANKAR KUNWAR, SEN ZHOU, Boston College, SHILIANG LI, University of Tennessee, Knoxville, HONG DING, ZIQIANG WANG, Boston College, PENGCHENG DAI, U Tennessee, Knoxville & ORNL, VIDYA MADHAVAN, Boston College — While continual effort in scanning tunneling microscopy (STM) remains focused on the hole-doped cuprates less attention has been given to the equally important electron-doped side of the phase diagram. We use a variable temperature UHV STM to investigate the electron-doped cuprate superconductor $\text{Pr}_{1-x}\text{LaCe}_x\text{CuO}_4$. We explore temperatures 2 K and higher and find a superconducting gap that disappears above T_c . We also find satellite features anti-correlated to the gap which we associate with bosonic modes. We relate our findings to neutron scattering results and discuss how this electron doped superconductor differs from more familiar hole-doped cuprates.

Francis Niestemski
Boston College

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