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STM Study of Bosonic Modes in the Cuprate Superconductor $Pr_{0.88}LaCe_{0.12}CuO_4$ VIDYA MADHAVAN, FRANCIS NIESTEMSKI, Boston College Dept. of Physics, SHILIANG LI, University of Tennessee, PENGCHENG DAI, University of Tennessee & ORNL — We use a low temperature (4 K) ultra-high vacuum scanning tunneling microscope (STM) to investigate the electron-doped high temperature superconductor $Pr_{0.88}LaCe_{0.12}CuO_4$ (PLCCO). We examine the superconducting gap and the satellite features identified as bosonic modes. We investigate these modes with increasing oxygen reduction which represents the third dimension in the electron-doped superconducting phase diagram. We relate our findings to neutron scattering results performed on the same sample.

Francis Niestemski
Boston College Dept. of Physics

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